

VIII-3-1	Declaration: Entitlement to claim priority Declaration as to the applicant's entitlement, as at the international filing date, to claim the priority of the earlier application specified below, where the applicant is not the applicant who filed the earlier application or where the applicant's name has changed since the filing of the earlier application (Rules 4.17(iii) and 51bis.1(a)(iii)) Name	In relation to this international application INTEX RECREATION CORP. is entitled to claim priority of earlier application No. CN 201620598406.9 by virtue of the following:
VIII-3-1(i v)		an assignment from LIN, HUA HSIANG (Deceased) to INTEX MARKETING LTD., dated 17 June 2016 (17.06.2016)

VIII-3-2	Declaration: Entitlement to claim priority Declaration as to the applicant's entitlement, as at the international filing date, to claim the priority of the earlier application specified below, where the applicant is not the applicant who filed the earlier application or where the applicant's name has changed since the filing of the earlier application (Rules 4.17(iii) and 51bis.1(a)(iii)) Name	In relation to this international application INTEX RECREATION CORP. is entitled to claim priority of earlier application No. CN 201630270359.0 by virtue of the following:
VIII-3-2(i v)		an assignment from LIN, HUA HSIANG (Deceased) to INTEX MARKETING LTD., dated 17 June 2016 (17.06.2016)

VIII-3-3	Declaration: Entitlement to claim priority Declaration as to the applicant's entitlement, as at the international filing date, to claim the priority of the earlier application specified below, where the applicant is not the applicant who filed the earlier application or where the applicant's name has changed since the filing of the earlier application (Rules 4.17(iii) and 51bis.1(a)(iii)) Name	In relation to this international application INTEX RECREATION CORP. is entitled to claim priority of earlier application No. CN 201621039473.3 by virtue of the following:
VIII-3-3(i v)		an assignment from LIN, HUA HSIANG (Deceased) to INTEX MARKETING LTD., dated 17 June 2016 (17.06.2016)

VIII-3-4	Declaration: Entitlement to claim priority Declaration as to the applicant's entitlement, as at the international filing date, to claim the priority of the earlier application specified below, where the applicant is not the applicant who filed the earlier application or where the applicant's name has changed since the filing of the earlier application (Rules 4.17(iii) and 51bis.1(a)(iii)) Name	In relation to this international application INTEX RECREATION CORP. is entitled to claim priority of earlier application No. CN 201620598406.9 by virtue of the following:
VIII-3-4(i v)		an assignment from HSU, Yaw Yuan to INTEX MARKETING LTD., dated 17 June 2016 (17.06.2016)

VIII-3-5	Declaration: Entitlement to claim priority Declaration as to the applicant's entitlement, as at the international filing date, to claim the priority of the earlier application specified below, where the applicant is not the applicant who filed the earlier application or where the applicant's name has changed since the filing of the earlier application (Rules 4.17(iii) and 51bis.1(a)(iii)) Name	In relation to this international application INTEX RECREATION CORP. is entitled to claim priority of earlier application No. CN 201630270359.0 by virtue of the following:
VIII-3-5(i v)		an assignment from HSU, Yaw Yuan to INTEX MARKETING LTD., dated 17 June 2016 (17.06.2016)

VIII-3-6	<p>Declaration: Entitlement to claim priority Declaration as to the applicant's entitlement, as at the international filing date, to claim the priority of the earlier application specified below, where the applicant is not the applicant who filed the earlier application or where the applicant's name has changed since the filing of the earlier application (Rules 4.17(iii) and 51bis.1(a)(iii))</p> <p>Name</p>	<p>In relation to this international application</p> <p>INTEX RECREATION CORP. is entitled to claim priority of earlier application No. CN 201621039473.3 by virtue of the following:</p>
VIII-3-6(i v)		<p>an assignment from HSU, Yaw Yuan to INTEX MARKETING LTD., dated 17 June 2016 (17.06.2016)</p>

VIII-3-7	<p>Declaration: Entitlement to claim priority Declaration as to the applicant's entitlement, as at the international filing date, to claim the priority of the earlier application specified below, where the applicant is not the applicant who filed the earlier application or where the applicant's name has changed since the filing of the earlier application (Rules 4.17(iii) and 51bis.1(a)(iii))</p> <p>Name</p>	<p>In relation to this international application</p> <p>INTEX RECREATION CORP. is entitled to claim priority of earlier application No. CN 201620598406.9 by virtue of the following:</p>
VIII-3-7(i v)		<p>an assignment from INTEX MARKETING LTD. to INTEX RECREATION CORP., dated 13 June 2017 (13.06.2017)</p>

VIII-3-8	<p>Declaration: Entitlement to claim priority Declaration as to the applicant's entitlement, as at the international filing date, to claim the priority of the earlier application specified below, where the applicant is not the applicant who filed the earlier application or where the applicant's name has changed since the filing of the earlier application (Rules 4.17(iii) and 51bis.1(a)(iii))</p> <p>Name</p>	<p>In relation to this international application</p> <p>INTEX RECREATION CORP. is entitled to claim priority of earlier application No. CN 201630270359.0 by virtue of the following:</p>
VIII-3-8(i v)		<p>an assignment from INTEX MARKETING LTD. to INTEX RECREATION CORP., dated 13 June 2017 (13.06.2017)</p>

VIII-3-9	<p>Declaration: Entitlement to claim priority Declaration as to the applicant's entitlement, as at the international filing date, to claim the priority of the earlier application specified below, where the applicant is not the applicant who filed the earlier application or where the applicant's name has changed since the filing of the earlier application (Rules 4.17(iii) and 51bis.1(a)(iii))</p> <p>Name</p>	<p>In relation to this international application</p> <p>INTEX RECREATION CORP. is entitled to claim priority of earlier application No. CN 201621039473.3 by virtue of the following:</p>
VIII-3-9(i v)		<p>an assignment from INTEX MARKETING LTD. to INTEX RECREATION CORP., dated 13 June 2017 (13.06.2017)</p>

CERTIFICATE OF AVAILABILITY OF A CERTIFIED INDUSTRIAL DESIGN DOCUMENT IN A DIGITAL LIBRARY

The International Bureau certifies that a copy of the industrial design application indicated below has been available to the WIPO Digital Access Service since the date of availability indicated, and that the industrial design application has been available to the indicated Office(s) as of the date specified following the relevant Office code:

Document details: Country/Office: CN

Filing date: 22 Jun 2016 (22.06.2016)

Application number: 2016302703590

Date of availability of document: 11 Jul 2017 (11.07.2017)

The following Offices can retrieve this document by using the access code:

JP, US, SE, NZ, KR, GB, AU, ES, IB, EE, CN, MA, FI

Date of issue of this certificate: 05 Aug 2017 (05.08.2017)



证 明

本证明之附件是向本局提交的下列专利申请文件副本。

申 请 号：201630270359.0

申 请 类 型：外观设计专利

发 明 创 造 名 称：管接头(T 型)

申 请 日：2016 年 06 月 22 日

申 请 人：明达实业（厦门）有限公司

发明人或设计人：林华乡、许耀元

局长

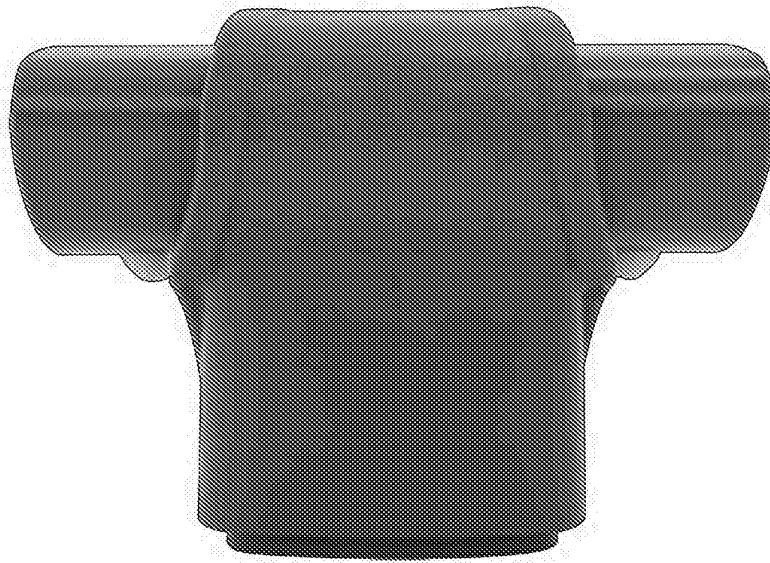
申长雨

2017 年 07 月 10 日

20160622



外观设计图片或照片

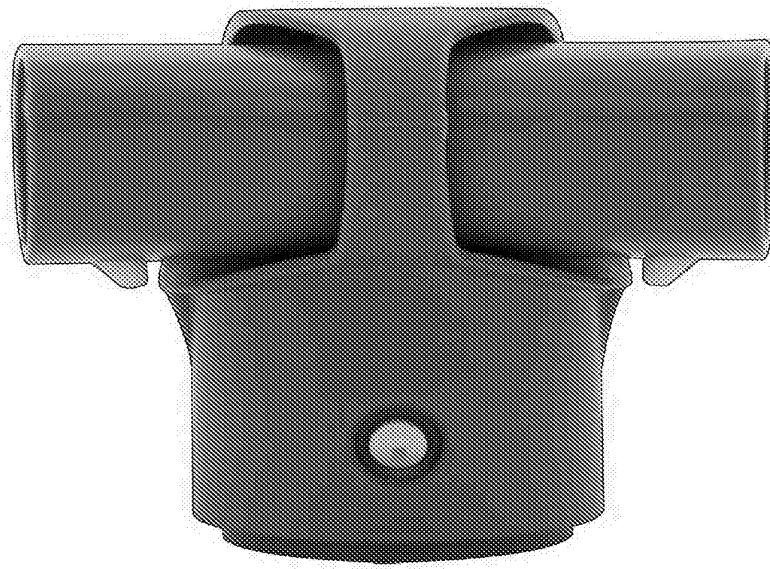


【视图名称】 主视图

20160622



外观设计图片或照片



【视图名称】 后视图

20160622



2016302703590

外观设计图片或照片

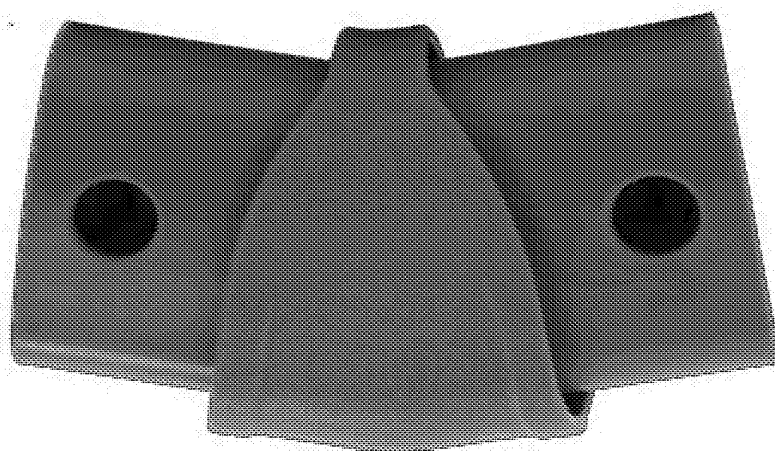


【视图名称】 左视图

20160622



外观设计图片或照片



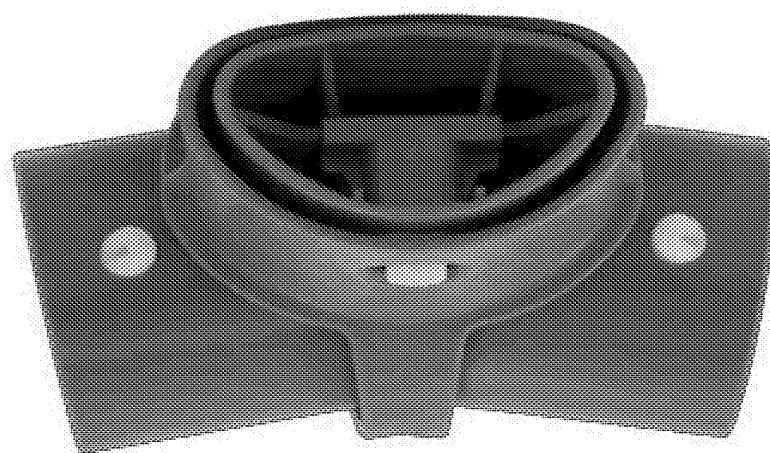
【视图名称】 俯视图

20160622



2016302703590

外观设计图片或照片



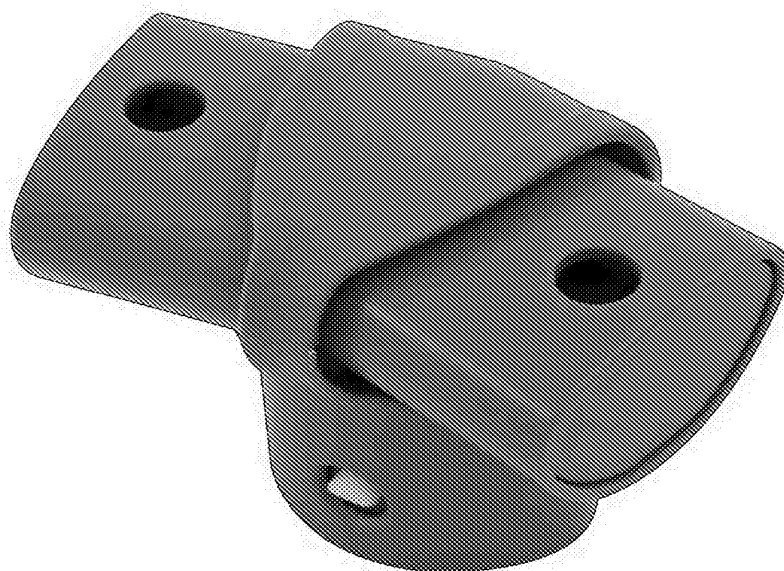
【视图名称】 仰视图

20160622



2016302703590

外观设计图片或照片



【视图名称】 立体图



外观设计简要说明

1. 本外观设计产品的名称：管接头(T 型)
2. 本外观设计产品的用途：本外观设计产品用于管道的连接。
3. 本外观设计产品的设计要点：产品的形状。
4. 最能表明本外观设计设计要点的图片或照片：立体图。
5. 省略视图：右视图与左视图对称，省略右视图。

**DOCUMENT MADE AVAILABLE UNDER THE
PATENT COOPERATION TREATY (PCT)**

International application number:	PCT/US2017/037892
International filing date:	16 June 2017 (16.06.2017)
Document type:	Certified copy of priority document
Document details:	Country/Office: CN
	Number: 201630270359.0
	Filing date: 22 June 2016 (22.06.2016)
Date of receipt at the International Bureau:	05 August 2017 (05.08.2017)

Remark: Priority document submitted or transmitted to the International Bureau in compliance with Rule 17.1(a),(b) or (b-bis)

Search History:

Limited Classification Search

The Patent Analyst performed a limited classification search within the following US, IPC, CPC, ECLA, or F-Term classification areas:

CPC Class/Subclass(es): E04H 4/0056; E04B 2/766; E04H 2004/146; Y10T 403/604; Y10T 403/7079; Y10T 403/32459; Y10T 403/32483 (2017.08)

IPC (8) Class/Subclass(es): E04H 4/00; A47B 9/14; E04H 4/02; E04H 4/04; E04H 4/14; F16B 7/10; F16B 7/14 (2017.01)

U.S. Class/Subclass(es): 4/506; 4/513; 52/169.7; 211/105.3; 211/105.6; 211/182; 211/208; 220/4.16; 403/109.3; 403/170; 403/171; 403/178; 403/326; 403/327; 403/377

See Global Search Results.

Global Patent Literature Text Search

The Patent Analyst performed the following global text search, which was not limited by classification but may or may not have been limited by other criteria:

Minesoft PatBase: <https://www.patbase.com>

#	Search query	Results
1	PA=("INTEX_RECREATION_A_CA_CORP_CORP" OR "INTEX_RECREATION_CORP" OR "INTEX_RECREATION_CORP_LONG_BEACH" OR "INTEX_RECREATION_GROUP")	73
2	1 and (connect* or joint*) and (frame or pool)	29
3	INV=(lin hua hsian)	38
4	INV=(hsu yaw y)	46
5	PN=(US2002042948 OR US5083327)	2
6	(ctb 5) or (ctf 5)	78
7	PN=(US2002042948 OR US5083327 OR CN204531509 OR CN204475914)	4
8	UC=(4/506 or 4/513)	544
9	8 and (connect* or joint*) and spring	49
10	8 and frame and (connect* or coupl* or joint*)	150
11	UC=(52/169.7 or 220/4.16)	594
12	11 and (connect* or joint*) and spring	53
13	11 and frame and (connect* or coupl* or joint*)	138
14	11 and pool	354
15	14 and frame	101

16	UC=(403/109.3)	375
17	16 and (coil or helical)	74
18	16 and pool	6
19	UC=(211/182 or 211/208 or 211/105.3 or 211/105.6)	1560
20	19 and pool	4
21	19 and (coil or helical)	70
22	UC=(403/170 or 403/171 or 403/178)	867
23	22 and pool	9
24	22 and (coil or helical)	60
25	PN=(CN204531509 OR CN204475914 OR US6079894 OR US4385849 OR US2319992)	5
26	(ctb 25) or (ctf 25)	189
27	FN=(719983 OR 2985089 OR 4382221 OR 7181113 OR 7605540 OR 10218626 OR 11491623 OR 11766333 OR 12384904 OR 15015265 OR 17020044 OR 20007667 OR 28451963 OR 30725269 OR 51771212 OR 52131096 OR 55323165 OR 66116501)	18
28	UC=(403/327 or 403/377 or 403/326)	1883
29	28 and pool and frame and (connect* or joint* or coupl*)	4
30	28 and (helical or coil)	316
31	PN=(US2002042948 OR US5083327 OR CN204531509 OR CN204475914 OR US6079894 OR US4385849 OR US2319992 OR US2005019138 OR US2980456)	9
32	IC=(F16B7/10 or F16B7/14 or A47B9/14)	8262
33	32 and pool	30
34	32 and frame and (connect* or joint* or coupl*) and (spring w3 (coil or helical))	90
35	32 and (t shape*) and (detent or spring or pin)	89
36	FT=((((t shape*) w2 (coupling or connect*)) and (tube* or tubular) and ((detent or pin or button) w3 (spring))))	102
37	IC=(E04H4/04 or E04H4/00 or E04H4/14 or E04H4/02)	13075
38	37 and pool and frame and (tube* or tubular) and (coupling or connector)	198
39	37 and frame and (connect* or joint* or coupl*) and (spring w3 (coil or helical))	41
40	PN=(US2002042948 OR US5083327 OR CN204531509 OR CN204475914 OR US6079894 OR US4385849 OR US2319992 OR US2005019138 OR US2980456 OR CN200968073 OR US7967522 OR US3556569 OR US5143476)	13
41	CPC=("Y10T403/32483" OR "Y10T403/32459" OR "Y10T403/604" OR "Y10T403/7079")	1529

42	41 and pool	11
43	41 and frame and (connect* or joint* or coupl*) and (spring w3 (coil or helical))	56
44	41 and (t shape*)	46
45	41 and (tube* or tubular) and ((pin or button or detent) w5 spring)	223
46	45 and (connect* or coupl* or joint)	204
47	CPC=(E04H2004/146 or E04H4/0056 or E04B2/766)	531
48	47 and frame and (connect* or coupl* or joint*) and (tube* or tubular)	98
49	47 and (tube* or tubular) and ((pin or button or detent) w5 spring)	10
50	47 and (connect* or joint* or coupl*) and (spring w3 (coil or helical))	9
51	PN=(US2002042948 OR US5083327 OR CN204531509 OR CN204475914 OR US6079894 OR US4385849 OR US2319992 OR US2005019138 OR US2980456 OR CN200968073 OR US7967522 OR US3556569 OR US5143476 OR US3472539 OR US4323319 OR US2004118844)	16
52	(ctb 51) or (ctf 51)	490
53	52 and (t shape*)	42
54	52 and pool and frame and (tube* or tubular) and (connect* or coupl* or joint*)	16
55	52 and (tube* or tubular) and ((pin or button or detent) w5 spring)	87
56	52 and (connect* or joint* or coupl*) and (spring w3 (coil or helical))	51

Google Patents: <https://patents.google.com>

#	Search query	Results
1	frame connector for a swimming pool	7500+
2	"above ground" pool frame connector	1170+
3	swimming pool liner support frame	9500+
4	tubular frame t connector spring detent tubular frame t connector spring detent	7200+
5	t connector coil spring detent	7000+
6	tube connector helical spring pin	65000+
7	ends of t-shaped connector fit inside tubular members	50000+
8	tubular frame connector with spring button	21400+

Computer Accessed Text Databases Searched

The Patent Analyst searched the following computer accessed text databases:

Google: <https://www.google.com/>

#	Search query	Results
1	frame connector for a swimming pool	900000+
2	"above ground" pool frame connector	598000+
3	swimming pool liner support frame	596000+
4	tubular frame t connector spring detent	2980000+
5	t connector coil spring detent	3400000+
6	tube connector helical spring pin	530000+
7	ends of t-shaped connector fit inside tubular members	240000+
8	tubular frame connector with spring button	580000+

Google Scholar: <https://scholar.google.com/>

#	Search query	Results
1	frame connector for a swimming pool	22000+
2	"above ground" pool frame connector	1650+
3	swimming pool liner support frame	13900+
4	tubular frame t connector spring detent	4600+
5	t connector coil spring detent	5600+
6	tube connector helical spring pin	21600+
7	ends of t-shaped connector fit inside tubular members	5700+
8	tubular frame connector with spring button	13000+

Date search was completed: 04 August 2017

BG/DD

PCT REQUEST

Print Out (Original in Electronic Form)

0	For receiving Office use only	PCT/US17/37892
0-1	International Application No.	
0-2	International Filing Date	16-06-2017 16 JUN 2017
0-3	Name of receiving Office and "PCT International Application"	PCT INTERNATIONAL APPLICATION RO/US
0-4	Form PCT/RO/101 PCT Request	
0-4-1	Prepared Using	ePCT-Filing for data package download Version 4.0.012 MT/FOP 20151028/0.20.5.24
0-5	Petition The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty	
0-6	Receiving Office (specified by the applicant)	United States Patent and Trademark Office (USPTO) (RO/US)
0-7	Applicant's or agent's file reference	IRC004202WO
I	Title of Invention	JOINT FOR ABOVE GROUND POOL FRAME
II	Applicant	
II-1	This person is	Applicant only
II-2	Applicant for	All designated States
II-4	Name	INTEX RECREATION CORP.
II-5	Address	4001 Via Oro Avenue Suite 210 Long Beach, California 90810 United States of America
II-6	State of nationality	US
II-7	State of residence	US
II-10	e-mail	ipforeign@faegrebd.com
II-10(a)	E-mail authorization The receiving Office, the International Searching Authority, the International Bureau and the International Preliminary Examining Authority are authorized to use this e-mail address, if the Office or Authority so wishes, to send notifications issued in respect of this international application:	as advance copies followed by paper notifications
III-1	Applicant and/or inventor	
III-1-1	This person is	Inventor only (deceased)
III-1-4	Name (LAST, First)	LIN, HUA HSIANG

PCT REQUEST

Print Out (Original in Electronic Form)

III-2	Applicant and/or inventor	
III-2-1	This person is	Inventor only
III-2-3	Inventor for	All designated States
III-2-4	Name (LAST, First)	HSU, Yaw Yuan
III-2-5	Address	Xinyang Industrial Zone No. 858 Wengjiao Road Haicang, Xiamen, Fujian 361022 China
IV-1	Agent or common representative; or address for correspondence	
	The person identified below is hereby/ has been appointed to act on behalf of the applicant(s) before the competent International Authorities as:	Agent
IV-1-1	Name (LAST, First)	DREWRY, Jamie M.
IV-1-2	Address	300 N. Meridian Street Suite 2700 Indianapolis, Indiana 46204 United States of America
IV-1-3	Telephone No.	3172370300
IV-1-4	Facsimile No.	3172371000
IV-1-5	e-mail	ipforeign@gmail.com
IV-1-5(a))	E-mail authorization The receiving Office, the International Searching Authority, the International Bureau and the International Preliminary Examining Authority are authorized to use this e-mail address, if the Office or Authority so wishes, to send notifications issued in respect of this international application:	as advance copies followed by paper notifications
IV-1-6	Agent's registration No.	61, 320
V	DESIGNATIONS	
V-1	The filing of this request constitutes under Rule 4.9(a), the designation of all Contracting States bound by the PCT on the international filing date, for the grant of every kind of protection available and, where applicable, for the grant of both regional and national patents.	
VI-1	Priority claim of earlier national application	
VI-1-1	Filing date	17 June 2016 (17.06.2016)
VI-1-2	Number	201620598406.9
VI-1-3	Country or Member of WTO	CN
VI-2	Priority claim of earlier national application	
VI-2-1	Filing date	22 June 2016 (22.06.2016)
VI-2-2	Number	201630270359.0
VI-2-3	Country or Member of WTO	CN

PCT REQUEST

Print Out (Original in Electronic Form)

VI-3	Priority claim of earlier national application		
VI-3-1	Filing date	06 September 2016 (06.09.2016)	
VI-3-2	Number	201621039473.3	
VI-3-3	Country or Member of WTO	CN	
VI-4	Incorporation by reference : where an element of the international application referred to in Article 11(1)(iii)(d) or (e) or a part of the description, claims or drawings referred to in Rule 20.5(a) is not otherwise contained in this international application but is completely contained in an earlier application whose priority is claimed on the date on which one or more elements referred to in Article 11(1)(iii) were first received by the receiving Office, that element or part is, subject to confirmation under Rule 20.6, incorporated by reference in this international application for the purposes of Rule 20.6.		
VII-1	International Searching Authority Chosen	United States Patent and Trademark Office (USPTO) (ISA/US)	
VIII	Declarations	Number of declarations	
VIII-1	Declaration as to the identity of the inventor	—	
VIII-2	Declaration as to the applicant's entitlement, as at the international filing date, to apply for and be granted a patent	3	
VIII-3	Declaration as to the applicant's entitlement, as at the international filing date, to claim the priority of the earlier application	9	
VIII-4	Declaration of inventorship (only for the purposes of the designation of the United States of America)	—	
VIII-5	Declaration as to non-prejudicial disclosures or exceptions to lack of novelty	—	

PCT REQUEST

Print Out (Original in Electronic Form)

IX	Check list	Number of sheets	Electronic file(s) attached
IX-1	Request (including declaration sheets)	16	✓
IX-2	Description	8	✓
IX-3	Claims	4	✓
IX-4	Abstract	1	✓
IX-5	Drawings	4	✓
IX-7	TOTAL	33	
	Accompanying Items	Paper document(s) attached	Electronic file(s) attached
IX-8	Fee calculation sheet	—	✓
IX-20	Figure of the drawings which should accompany the abstract	1	
IX-21	Language of filing of the international application	English	
X-1	Signature of applicant, agent or common representative	/Jamie M. Drewry, Reg. No. 61,320/	
X-1-1	Name (LAST, First)	DREWRY, Jamie M.	
X-1-3	Capacity (if such capacity is not obvious from reading the request)	Agent	

FOR RECEIVING OFFICE USE ONLY

10-1	Date of actual receipt of the purported international application	16-06-2017	16 JUN 2017
10-2	Drawings:		
10-2-1	Received		
10-2-2	Not received		
10-3	Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application		
10-4	Date of timely receipt of the required corrections under PCT Article 11(2)		
10-5	International Searching Authority	ISA/US	
10-6	Transmittal of search copy delayed until search fee is paid		

FOR INTERNATIONAL BUREAU USE ONLY

11-1	Date of receipt of the record copy by the International Bureau	
-------------	---	--

PCT

(PCT Rule 92*bis*.1 and Administrative Instructions, Section 422)

To:

DREWRY, Jamie M.
300 N. Meridian Street
Suite 2700
Indianapolis, Indiana 46204
ÉTATS-UNIS D'AMÉRIQUE

Date of mailing (<i>day/month/year</i>) 07 July 2017 (07.07.2017)	
Applicant's or agent's file reference IRC004202WO	IMPORTANT NOTIFICATION
International application No. PCT/US2017/037892	International filing date (<i>day/month/year</i>) 16 June 2017 (16.06.2017)

1. The following indications appeared on record concerning:			
☐ the applicant	☐ the inventor	☒ the agent	☐ the common representative
Name and Address DREWRY, Jamie M. 300 N. Meridian Street Suite 2700 Indianapolis, Indiana 46204 United States of America		State of Nationality	State of Residence
		Telephone No. 3172370300	
		Facsimile No. 3172371000	
		E-mail address ipforeign@gmail.com	

2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning:		
☐ the person	☐ the name	☐ the address
☐ the nationality	☐ the residence	
Name and Address DREWRY, Jamie M. 300 N. Meridian Street Suite 2700 Indianapolis, Indiana 46204 United States of America		State of Nationality
		State of Residence
		Telephone No. 3172370300
		Facsimile No. 3172371000
		E-mail address ipforeign@faegrebd.com ☒ Notifications by e-mail authorized

3. Further observations, if necessary: Please note the change of e-mail address.

4. A copy of this notification has been sent to:		☐	the International Preliminary Examining Authority
☒	the receiving Office	☐	the designated Offices concerned
☐	the International Searching Authority	☐	the elected Offices concerned
☐	the Authority(ies) specified for supplementary search	☐	other:

<p>The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland</p> <p>Facsimile No. +41 22 338 70 90</p>	<p>Authorized officer</p> <p>Jo Roduit Ji Hyun</p> <p>e-mail pct.team1@wipo.int Telephone No. +41 22 338 74 01</p>
--	---

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference IRC004202WO	FOR FURTHER ACTION		See item 4 below
International application No. PCT/US2017/037892	International filing date (day/month/year) 16 June 2017 (16.06.2017)	Priority date (day/month/year) 17 June 2016 (17.06.2016)	
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237			
Applicant INTEX RECREATION CORP.			

1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).

2. This REPORT consists of a total of 8 sheets, including this cover sheet.

In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.

3. This report contains indications relating to the following items:



Box No. I

Basis of the report



Box No. II

Priority



Box No. III

Non-establishment of opinion with regard to novelty, inventive step and industrial applicability



Box No. IV

Lack of unity of invention



Box No. V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement



Box No. VI

Certain documents cited



Box No. VII

Certain defects in the international application



Box No. VIII

Certain observations on the international application

4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).

Date of issuance of this report 18 December 2018 (18.12.2018)	
The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No. +41 22 338 82 70	Authorized officer Kihwan Moon e-mail: pct.team1@wipo.int

Form PCT/IB/373 (January 2004)

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To: JAMIE M. DREWRY
300 N. MERIDIAN STREET
SUITE 2700
INDIANAPOLIS, IN 46204

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing
(day/month/year)

24 AUG 2017

Applicant's or agent's file reference
IRC004202WO

FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/US2017/037892

International filing date (day/month/year)

16 June 2017

Priority date (day/month/year)

17 June 2016

International Patent Classification (IPC) or both national classification and IPC

IPC(8) - E04H 4/00; A47B 9/14; E04H 4/02; E04H 4/04; E04H 4/14; F16B 7/10; F16B 7/14 (2017.01)

CPC - E04H 4/0056; E04B 2/766; E04H 2004/146 (2017.08)

Applicant INTEX RECREATION CORP.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

Name and mailing address of the ISA/US
Mail Stop PCT, Attn: ISA/US
Commissioner for Patents
P.O. Box 1450, Alexandria, VA 22313-1450
Facsimile No. 571-273-8300

Date of completion of this opinion

04 August 2017

Authorized officer

Blaine R. Copenheaver

PCT Helpdesk: 571-272-4300

PCT OSP: 571-272-7774

Form PCT/ISA/237 (cover sheet) (January 2015)

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/US2017/037892

Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of:
 - ☒ the international application in the language in which it was filed.
 - ☐ a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).
2. ☐ This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43*bis*.1(a)).
3. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of a sequence listing:
 - a. ☐ forming part of the international application as filed:
 - ☐ in the form of an Annex C/ST.25 text file.
 - ☐ on paper or in the form of an image file.
 - b. ☐ furnished together with the international application under PCT Rule 13*ter*.1(a) for the purposes of international search only in the form of an Annex C/ST.25 text file.
 - c. ☐ furnished subsequent to the international filing date for the purposes of international search only:
 - ☐ in the form of an Annex C/ST.25 text file (Rule 13*ter*.1(a)).
 - ☐ on paper or in the form of an image file (Rule 13*ter*.1(b) and Administrative Instructions, Section 713).
4. ☐ In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that forming part of the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
5. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/US2017/037892

Box No. V	Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement			
1. Statement				
Novelty (N)	Claims	1-8, 11, 13-20	YES	
	Claims	9, 10, 12	NO	
Inventive step (IS)	Claims	None	YES	
	Claims	1-20	NO	
Industrial applicability (IA)	Claims	1-20	YES	
	Claims	None	NO	
2. Citations and explanations:				
<p>Claims 9, 10, and 12 lack novelty under PCT Article 33(2) as being anticipated by Hake.</p> <p>Regarding claims 9, 10, 12, Hake discloses [Cl. 9] a frame joint ((11); fig. 4) for an above ground pool frame (intended use; figs. 7-8) having a first horizontal frame member (14), a second horizontal frame member (14), and a vertical frame member (18), the frame joint (11) comprising: a first horizontal joint portion (left side of (11); fig. 4) configured to couple with the first horizontal frame member (14), the first horizontal joint portion (left side of (11); fig. 4) being constructed of plastic ([0057], lines 1-5), a second horizontal joint portion (right side of (11); fig. 4) configured to couple with the second horizontal frame member (14), the second horizontal joint portion (right side of (11); fig. 4) being constructed of plastic ([0057], lines 1-5), and a vertical joint portion (vertical portion of (11); fig. 4) fixedly coupled to the first and second horizontal joint portions (left and right portions of (11); fig. 4) and configured to couple with the vertical frame member (18), the vertical joint portion (vertical portion of (11); fig. 4) being constructed of plastic ([0057], lines 1-5); [Cl. 10] wherein the vertical joint portion (vertical portion of (11); fig. 4) is centered between the first and second horizontal joint portions (left and right portions of (11); fig. 4) to form a T-shaped frame joint (figs. 4, 7-8); and [Cl. 12]; wherein the vertical joint portion (vertical portion of (11); fig. 4) is integrally formed with the first and second horizontal joint portions (left and right portions of (11); fig. 4) as a single piece (figs. 4, 7-8; [0057], lines 1-5).</p> <p>Claims 1-3, 14, 15, and 17 lack an inventive step under PCT Article 33(3) as being obvious over Lee.</p> <p>Regarding claims 1-3, Lee discloses [Cl. 1] a frame joint (130) for an above ground pool frame (100) having a first horizontal frame member (left side (120)), a second horizontal frame member (right side (120)), and a vertical frame member (110), the frame joint (130) comprising: a first horizontal joint portion (left side (132)) including a first coupling assembly (134, 135) configured to couple with the first horizontal frame member (left side (120)), a second horizontal joint portion (right side (132)) including a second coupling assembly (134, 135) configured to couple with the second horizontal frame member (right side (120)), and a vertical joint portion (vertical portion (131)) fixedly coupled to (figs. 3-4) the first and second horizontal joint portions (left and right sides (132)) and configured to couple with the vertical frame member (110).</p> <p>Lee fails to specifically disclose that [Cl. 1] a width of the vertical joint portion accounts for at least 50% of a width between the first and second coupling assemblies of the first and second horizontal joint portions; [Cl. 2] wherein the width of the vertical joint portion accounts for at least 40% of a total width of the frame joint; and [Cl. 3] wherein the width of the vertical joint portion accounts for about 50% of the total width of the frame joint.</p> <p>However, modifications regarding dimensions and relative dimensions are generally considered to be modifications that are obvious to and well within the purview of one with ordinary skill in the art. Further, it is known that in the course of ordinary research and discovery a skilled artisan will attempt to design a device comprised of elements having dimensions and relative dimensions that will allow the device to operate in an optimal manner in its intended environment and/or application.</p> <p>Therefore, it would have been obvious to one with ordinary skill in this art at the time of the invention to modify the joint of Lee by forming the joint such that a width of the vertical joint portion accounts for at least 50% of a width between the first and second coupling assemblies of the first and second horizontal joint portions, wherein the width of the vertical joint portion accounts for at least 40% of a total width of the frame joint, and wherein the width of the vertical joint portion accounts for about 50% of the total width of the frame joint, as a matter of preference based on the intended application, e.g. material of the joint, size of the frame, etc., for the purpose of improving the strength a stability of the joint, and thus the strength and stability of the pool frame.</p>				

Form PCT/ISA/237 (Box No. V) (January 2015)

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US2017/037892

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

Claim 11 is objected to under PCT Rule 66.2(a)(v) as lacking clarity under PCT Article 6, because claim 16 is indefinite for the following reason(s):

In claim 11, the recitation "to form an obtuse angle that defines a water cavity" is vague and lacking in clarity. In this regard, the specification provides no support for this recitation, and it is unclear as to what this recitation is referring or how the obtuse angle formed by the first and second horizontal joint portions "defines a water cavity".

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/US2017/037892

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of:

Regarding claims 14, 15, 17, Lee discloses [Cl. 14] a method of assembling an above ground pool (abstract; figs. 1-9), the method comprising: coupling a first horizontal joint portion (left side (132)) of a frame joint (130) to a first horizontal frame member (left side (120)) with a first coupling assembly (134, 135), coupling a second horizontal joint portion (right side (132)) of the frame joint (130) to a second horizontal frame member (right side (120)) with a second coupling assembly (134, 135), and coupling a vertical joint portion (vertical portion (131)) of the frame joint (130) to a vertical frame member (110); [Cl. 15] wherein, an external cross-section (figs. 4, 5, 6) of the first horizontal joint portion (left side (132)) matches an internal cross-section (figs. 4, 5, 6) of the first horizontal frame member (left side (120)), an external cross-section (figs. 4, 5, 6) of the second horizontal joint portion (right side (132)) matches an internal cross-section (figs. 4, 5, 6) of the second horizontal frame member (right side (120)), and an external cross-section (fig. 4) of the vertical joint portion (vertical portion (131)) matches an internal cross-section (fig. 4) of the vertical frame member (110); and [Cl. 17] wherein: coupling the first horizontal joint portion (left side (132)) to the first horizontal frame member (left side (120)) comprises depressing a first pin (134) into the first horizontal joint portion (left side (132)) and releasing the first pin (134) into engagement with (via (121)) the first horizontal frame member (left side (120)), and coupling the second horizontal joint portion (right side (132)) to the second horizontal frame member (right side (120)) comprises depressing a second pin (134) into the second horizontal joint portion (right side (132)) and releasing the second pin (134) into engagement (via (121)) with the second horizontal frame member (right side (120)).

Lee fails to disclose [Cl. 14] that a width of the vertical joint portion accounts for a majority of a width between the first and second coupling assemblies of the first and second horizontal joint portions.

However, modifications regarding dimensions and relative dimensions are generally considered to be modifications that are obvious to and well within the purview of one with ordinary skill in the art. Further, it is known that in the course of ordinary research and discovery a skilled artisan will attempt to design a device comprised of elements having dimensions and relative dimensions that will allow the device to operate in an optimal manner in its intended environment and/or application.

Therefore, it would have been obvious to one with ordinary skill in this art at the time of the invention to modify the method of Lee by forming the joint such that a width of the vertical joint portion accounts for a majority of a width between the first and second coupling assemblies of the first and second horizontal joint portions, as a matter of preference based on the intended application, e.g. material of the joint, size of the frame, etc., for the purpose of improving the strength a stability of the joint, and thus the strength and stability of the pool frame.

Claims 4 and 5 lack an inventive step under PCT Article 33(3) as being obvious over Lee in view of Obitts.

Regarding claim 4, the modified Lee discloses the joint of claim 1, including that [Cl. 4] each of the first and second coupling assemblies (134, 135) comprises a spring (135), which may be a helical spring ((135); [0067], lines 1-2), and a pin (134) biased outward through a hole (unreferenced; fig. 7) in the respective horizontal joint portion (left and right sides (132)) by the helical spring ((135); [0067], lines 1-2) to engage a corresponding recess (121) of the respective horizontal frame member (left and right sides (120)).

The modified Lee fails to disclose that [Cl. 4] each of the first and second coupling assemblies comprises a base, with the helical spring supported by the base.

However, Obitts discloses a similar coupling assembly (figs. 6-7) for telescoping tubular members (12, 24), wherein the coupling assembly (figs. 6-7) includes a base (158), a helical spring (170) supported by the base (158), and a pin (144) biased outward through a hole (44) in the an inner tube (24) by the helical spring (170) to engage a corresponding recess (14) of an outer tube (12).

Therefore, it would have been obvious to one with ordinary skill in this art at the time of the invention to modify the joint of Lee by providing each of the first and second coupling assemblies with a base, with the helical spring supported by the base, as taught by Obitts, for the purpose of making the coupling assemblies self-contained, as well as making them easier to place and to have the springs remain properly in place within the frame joint.

Regarding claim 5, the modified Lee discloses the joint of claim 4, but fails to specifically disclose that [Cl. 5] the width of the vertical joint portion accounts for about 70% of a width between the pins of the first and second coupling assemblies.

However, modifications regarding dimensions and relative dimensions are generally considered to be modifications that are obvious to and well within the purview of one with ordinary skill in the art. Further, it is known that in the course of ordinary research and discovery a skilled artisan will attempt to design a device comprised of elements having dimensions and relative dimensions that will allow the device to operate in an optimal manner in its intended environment and/or application.

Therefore, it would have been obvious to one with ordinary skill in this art at the time of the invention to modify the joint of Lee by forming the joint such that the width of the vertical joint portion accounts for about 70% of a width between the pins of the first and second coupling assemblies, as a matter of preference based on the intended application, e.g. material of the joint, size of the frame, etc., for the purpose of improving the strength a stability of the joint, and thus the strength and stability of the pool frame.

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/US2017/037892

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of:

Claims 6-8 and 18-20 lack an inventive step under PCT Article 33(3) as being obvious over Lee in view of Shanghai Bestway Inflatables & Material Corp (hereinafter Shanghai Bestway).

Regarding claims 6, 8, the modified Lee discloses the joint of claim 1, including [Cl. 6] a liner (220, 221) wrapped around (via (221)) the first and second horizontal frame members (left and right side (120)), the liner defining a hole (222); and [Cl. 8] wherein a height of the frame joint (130) exceeds a height of the hole (222) in the liner (220, 221) (figs. 2, 9).

Lee fails to specifically disclose that [Cl. 6] the hole is sized to expose the first and second coupling assemblies.

Initially, it is noted that modifications regarding dimensions and relative dimensions are generally considered to be modifications that are obvious to and well within the purview of one with ordinary skill in the art. Further, it is known that in the course of ordinary research and discovery a skilled artisan will attempt to design a device have dimensions and relative dimensions that will allow the device to operate in an optimal manner in its intended environment and/or application. In addition, Shanghai Bestway discloses a similar frame joint ((4); figs. 7-9) and pool liner (B), wherein the liner (B) is wrapped around (fig. 7; (b11)) first and second horizontal frame members (left and right (111, 121)), the liner (B) defining a hole (unreferenced; figs. 1, 7, 9), wherein a height of the frame joint (4) exceeds a height of the hole (unreferenced; figs. 1, 7, 9) in the liner (B), and wherein the hole (unreferenced; figs. 1, 7, 9) is sized to expose (figs. 1, 7, 9) first and second coupling assemblies (5).

Therefore, it would have been obvious to one with ordinary skill in this art at the time of the invention to modify the joint of Lee by making the hole in the liner sized to expose the first and second coupling assemblies by making the hole wider than the distance between the coupling assemblies, in view of Shanghai Bestway, as a matter of preference based on the application and for the purpose of making it easier to assemble and disassemble the frame and frame joints by leaving the coupling assemblies exposed for easy access.

Regarding claim 7, the modified Lee discloses the joint of claim 6, but fails to specifically disclose that [Cl. 7] a width of the frame joint exceeds a width of the hole in the liner.

Initially, it is again noted that modifications regarding dimensions and relative dimensions are generally considered to be modifications that are obvious to and well within the purview of one with ordinary skill in the art. Further, it is known that in the course of ordinary research and discovery a skilled artisan will attempt to design a device have dimensions and relative dimensions that will allow the device to operate in an optimal manner in its intended environment and/or application. It is also noted that Lee discloses a frame joint (130) that exceeds a width of the hole (222) in the liner (220, 221), but that does not expose the coupling assemblies (134, 135), and that Shanghai Bestway discloses a hole (figs. 1, 7, 9) in the liner (B) that exposes coupling assemblies (5), but exceeds a width of the frame joint (4).

It would have been obvious to and well within the purview of one with ordinary skill in this art at the time of the invention to merely modify the liner hole and frame joint dimensions of Lee such that the liner hole exposes the coupling assemblies, but does not exceed the width of the frame joint, as a matter of preference based on the application for the purpose of helping to prevent water from entering the frame joint at the seam between the frame joint and the horizontal members.

Regarding claims 18-19, the modified Lee discloses the method of claim 14, including [Cl. 18] wrapping (via. (221) a liner (220, 221) around the first and second horizontal frame members (left and right (120)) with a hole (222).

Lee fails to disclose [Cl. 18] that the liner hole exposes the first and second coupling assemblies; [Cl. 19] wherein a width of the hole in the liner exceeds a width between the first and second coupling assemblies.

Initially, it is noted that modifications regarding dimensions and relative dimensions are generally considered to be modifications that are obvious to and well within the purview of one with ordinary skill in the art. Further, it is known that in the course of ordinary research and discovery a skilled artisan will attempt to design a device have dimensions and relative dimensions that will allow the device to operate in an optimal manner in its intended environment and/or application. In addition, Shanghai Bestway discloses a similar frame joint ((4); figs. 7-9) and pool liner (B), wherein the liner (B) is wrapped around (fig. 7; (b11)) first and second horizontal frame members (left and right (111, 121)), the liner (B) defining a hole (unreferenced; figs. 1, 7, 9), wherein a width of the hole (unreferenced; figs. 1, 7, 9) in the liner (B) exceeds a width (figs. 1, 7, 9) between first and second coupling assemblies (left and right (5)), and wherein the hole (unreferenced; figs. 1, 7, 9) is sized to expose (figs. 1, 7, 9) the first and second coupling assemblies (5).

Therefore, it would have been obvious to one with ordinary skill in this art at the time of the invention to modify the method of Lee by making the hole in the liner sized to expose the first and second coupling assemblies by making the hole wider than the distance between the coupling assemblies, in view of Shanghai Bestway, as a matter of preference based on the application and for the purpose of making it easier to assemble and disassemble the frame and frame joints by leaving the coupling assemblies exposed for easy access.

Regarding claim 20, the modified Lee discloses the method of claim 18, but fails to specifically disclose [Cl. 20] the vertical joint portion of the frame joint is coupled to the vertical frame member with a third coupling assembly, and wherein a height of the hole in the liner is less than a distance between the first and third coupling assemblies.

However, Shanghai Bestway discloses a similar method of assembling an above ground pool (abstract; figs. 1-9) that includes a frame joint (4) having a vertical portion (figs. 6-9) that is coupled to a vertical frame member (2) with a third coupling assembly (6).

It would have been obvious to one with ordinary skill in this art at the time of the invention to modify the method of Lee by provide a third coupling assembly that couples the vertical portion of the frame joint to the vertical frame member, as taught by Shanghai Bestway, for the purpose of making sure that the vertical frame members do not disengage accidentally from the vertical portions of the frame joints. Regarding the limitation that a height of the hole in the liner is less than a distance between the first and third coupling assemblies, it is noted that the height of the hole (222) in the liner (220, 221) of Lee would be less than a distance between the first and third coupling assemblies.

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/US2017/037892

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of:

Claims 9, 11, 13, and 16 lack an inventive step under PCT Article 33(3) as being obvious over Lee in view of Pruis.

Regarding claims 9, 11, Lee discloses [Cl. 9] a frame joint (130) for an above ground pool frame (100) having a first horizontal frame member (left side (120)), a second horizontal frame member (right side (120)), and a vertical frame member (110), the frame joint (130) comprising: a first horizontal joint portion (left side (132)) configured to couple with the first horizontal frame member (left side (120)), a second horizontal joint portion (right side (132)) configured to couple with the second horizontal frame member (right side (120)), and a vertical joint portion (vertical portion (131)) fixedly coupled to the first and second horizontal joint portions (left and right sides (132)) and configured to couple with the vertical frame member (110); [Cl. 11] wherein the first and second horizontal joint portions (left and right side (132)) cooperate to form an obtuse angle (figs. 1, 2, 8, 9) that defines a water cavity (Lee's obtuse angle forms "a water cavity" to the extent that the obtuse angle of applicant's invention defines "a water cavity").

Lee fails to disclose [Cl. 9] the first horizontal joint portion being constructed of plastic, the second horizontal joint portion being constructed of plastic, and the vertical joint portion being constructed of plastic.

Initially, it is noted that modifications regarding materials are generally considered to be modifications that are obvious to and well within the purview of one with ordinary skill in the art. Further, it is known that in the course of ordinary research and discovery a skilled artisan will attempt to design a device using materials that will allow the device to operate in an optimal manner in its intended environment and/or application. And, Pruis discloses a similar joint ((10); figs. 1-2) that may be used as a frame joint having a first horizontal joint portion ((18) left side) being constructed of plastic (col. 3, lines 26-28), a second horizontal joint portion ((18) right side) constructed of plastic (col. 3, lines 26-28) and a vertical joint portion ((18) vertical portion) constructed of plastic (col. 3, lines 26-28).

Therefore, it would have been obvious to one with ordinary skill in this art at the time of the invention to modify the joint of Lee by forming the first, second and vertical joint portions of plastic, as a matter of preference and in view of the teachings of Pruis, for the purpose of making the joint more light weight, as well as easier and cheaper to manufacture.

Regarding claim 13, the modified Lee discloses the joint of claim 9, including [Cl. 13] a first coupling assembly (134, 135) associated with the first horizontal joint portion (left side (132)), and a second coupling assembly (134, 135) associated with the second horizontal joint portion (right side (132)), but fails to disclose that [Cl. 13] a width of the vertical joint portion accounts for a majority of a width between the first and second coupling assemblies.

However, modifications regarding dimensions and relative dimensions are generally considered to be modifications that are obvious to and well within the purview of one with ordinary skill in the art. Further, it is known that in the course of ordinary research and discovery a skilled artisan will attempt to design a device having dimensions and relative dimensions that will allow the device to operate in an optimal manner in its intended environment and/or application.

Therefore, it would have been obvious to one with ordinary skill in this art at the time of the invention to modify the joint of Lee by forming the joint such that the vertical joint portion accounts for a majority of a width between the first and second coupling assemblies, as a matter of preference based on the application and for the purpose of increasing the strength and stability of the vertical joint portion and the vertical frame member.

Regarding claim 16, the modified Lee discloses the method of claim 14, but fails to specifically disclose that [Cl. 16] the first horizontal joint portion, the second horizontal joint portion, and the vertical joint portion are constructed of plastic.

Initially, it is noted that modifications regarding materials are generally considered to be modifications that are obvious to and well within the purview of one with ordinary skill in the art. Further, it is known that in the course of ordinary research and discovery a skilled artisan will attempt to design a device using materials that will allow the device to operate in an optimal manner in its intended environment and/or application. And, Pruis discloses a similar joint ((10); figs. 1-2) that may be used as a frame joint having a first horizontal joint portion ((18) left side) being constructed of plastic (col. 3, lines 26-28), a second horizontal joint portion ((18) right side) constructed of plastic (col. 3, lines 26-28) and a vertical joint portion ((18) vertical portion) constructed of plastic (col. 3, lines 26-28).

Therefore, it would have been obvious to one with ordinary skill in this art at the time of the invention to modify the joint of Lee by forming the first, second and vertical joint portions of plastic, as a matter of preference and in view of the teachings of Pruis, for the purpose of making the joint more light weight, as well as easier and cheaper to manufacture.

Claims 1-20 meet the criteria set out in PCT Article 33(4), and thus have industrial applicability because the subject matter claimed can be made or used in industry.

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization

International Bureau

(43) International Publication Date
21 December 2017 (21.12.2017)



(10) International Publication Number
WO 2017/218904 A1

(51) International Patent Classification:

A47B 9/14 (2006.01) E04H 4/14 (2006.01)
E04H 4/00 (2006.01) F16B 7/10 (2006.01)
E04H 4/02 (2006.01) F16B 7/14 (2006.01)
E04H 4/04 (2006.01)

(21) International Application Number:

PCT/US2017/037892

(22) International Filing Date:

16 June 2017 (16.06.2017)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

201620598406.9 17 June 2016 (17.06.2016) CN
201630270359.0 22 June 2016 (22.06.2016) CN
201621039473.3 06 September 2016 (06.09.2016) CN

(71) Applicant: **INTEX RECREATION CORP.** [US/US];
4001 Via Oro Avenue, Suite 210, Long Beach, California
90810 (US).

(72) Inventor: **LIN, Hua Hsiang** (deceased).

(72) Inventor: **HSU, Yaw Yuan**; Xinyang Industrial Zone No.
858 Wengjiao, Road, Haicang, Xiamen, Fujian 361022
(CN).

(74) Agent: **DREWRY, Jamie M.**; 300 N. Meridian Street,
Suite 2700, Indianapolis, Indiana 46204 (US).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ,
CA, CH, CL, CN, CO, CR, CU, CZ, DE, DJ, DK, DM, DO,
DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN,
HR, HU, ID, IL, IN, IR, IS, JO, JP, KE, KG, KH, KN, KP,
KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME,
MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ,
OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA,
SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN,
TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ,

(54) Title: **JOINT FOR ABOVE GROUND POOL FRAME**

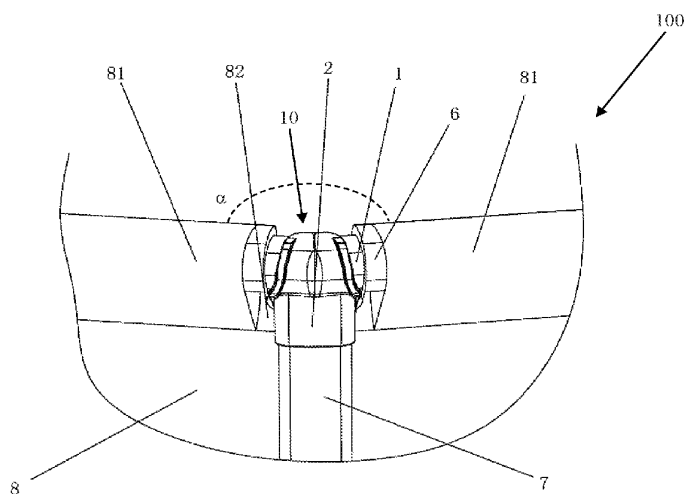


FIG. 1

(57) Abstract: A frame pool is disclosed including a frame assembly and a pool liner, the frame assembly including horizontal frame members and a vertical frame member coupled together via a T-shaped joint. The T-shaped joint may be constructed of plastic to facilitate attachment and detachment to the adjacent frame members and to resist galling and corrosion. The T-shaped joint may also be relatively small to improve the appearance and water containment of the frame pool.

[Continued on next page]

WO 2017/218904 A1

UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*
- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

Published:

- *with international search report (Art. 21(3))*

WHAT IS CLAIMED IS:

1. A frame joint for an above ground pool frame having a first horizontal frame member, a second horizontal frame member, and a vertical frame member, the frame joint comprising:
 - a first horizontal joint portion including a first coupling assembly configured to couple with the first horizontal frame member;
 - a second horizontal joint portion including a second coupling assembly configured to couple with the second horizontal frame member; and
 - a vertical joint portion fixedly coupled to the first and second horizontal joint portions and configured to couple with the vertical frame member;wherein a width of the vertical joint portion accounts for at least 50% of a width between the first and second coupling assemblies of the first and second horizontal joint portions.
2. The frame joint of claim 1, wherein the width of the vertical joint portion accounts for at least 40% of a total width of the frame joint.
3. The frame joint of claim 2, wherein the width of the vertical joint portion accounts for about 50% of the total width of the frame joint.
4. The frame joint of claim 1, wherein each of the first and second coupling assemblies comprises a base, a helical spring supported by the base, and a pin biased outward through a hole in the respective horizontal joint portion by the helical spring to engage a corresponding recess of the respective horizontal frame member.
5. The frame joint of claim 4, wherein the width of the vertical joint portion accounts for about 70% of a width between the pins of the first and second coupling assemblies.
6. The frame joint of claim 1, further comprising a liner wrapped around the first and second horizontal frame members, the liner defining a hole that is sized to expose the first and second coupling assemblies.

7. The frame joint of claim 6, wherein a width of the frame joint exceeds a width of the hole in the liner.
8. The frame joint of claim 6, wherein a height of the frame joint exceeds a height of the hole in the liner.
9. A frame joint for an above ground pool frame having a first horizontal frame member, a second horizontal frame member, and a vertical frame member, the frame joint comprising:
 - a first horizontal joint portion configured to couple with the first horizontal frame member, the first horizontal joint portion being constructed of plastic;
 - a second horizontal joint portion configured to couple with the second horizontal frame member, the second horizontal joint portion being constructed of plastic; and
 - a vertical joint portion fixedly coupled to the first and second horizontal joint portions and configured to couple with the vertical frame member, the vertical joint portion being constructed of plastic.
10. The frame joint of claim 9, wherein the vertical joint portion is centered between the first and second horizontal joint portions to form a T-shaped frame joint.
11. The frame joint of claim 9, wherein the first and second horizontal joint portions cooperate to form an obtuse angle that defines a water cavity.
12. The frame joint of claim 9, wherein the vertical joint portion is integrally formed with the first and second horizontal joint portions as a single piece.
13. The frame joint of claim 9, further comprising:
 - a first coupling assembly associated with the first horizontal joint portion; and
 - a second coupling assembly associated with the second horizontal joint portion;wherein a width of the vertical joint portion accounts for a majority of a width between the first and second coupling assemblies.

14. A method of assembling an above ground pool, the method comprising:
coupling a first horizontal joint portion of a frame joint to a first horizontal frame member with a first coupling assembly;
coupling a second horizontal joint portion of the frame joint to a second horizontal frame member with a second coupling assembly; and
coupling a vertical joint portion of the frame joint to a vertical frame member;
wherein a width of the vertical joint portion accounts for a majority of a width between the first and second coupling assemblies of the first and second horizontal joint portions.
15. The method of claim 14, wherein:
an external cross-section of the first horizontal joint portion matches an internal cross-section of the first horizontal frame member;
an external cross-section of the second horizontal joint portion matches an internal cross-section of the second horizontal frame member; and
an external cross-section of the vertical joint portion matches an internal cross-section of the vertical frame member.
16. The method of claim 14, wherein the first horizontal joint portion, the second horizontal joint portion, and the vertical joint portion are constructed of plastic.
17. The method of claim 14, wherein:
coupling the first horizontal joint portion to the first horizontal frame member comprises depressing a first pin into the first horizontal joint portion and releasing the first pin into engagement with the first horizontal frame member; and
coupling the second horizontal joint portion to the second horizontal frame member comprises depressing a second pin into the second horizontal joint portion and releasing the second pin into engagement with the second horizontal frame member.
18. The method of claim 14, further comprising wrapping a liner around the first and second horizontal frame members with a hole exposing the first and second coupling assemblies.

19. The method of claim 18, wherein a width of the hole in the liner exceeds a width between the first and second coupling assemblies.

20. The method of claim 18, wherein the vertical joint portion of the frame joint is coupled to the vertical frame member with a third coupling assembly, and wherein a height of the hole in the liner is less than a distance between the first and third coupling assemblies.

JOINT FOR ABOVE GROUND POOL FRAME**CROSS REFERENCE TO RELATED APPLICATIONS**

[0001] The present application claims priority to the following Chinese patent applications, the disclosures of which are hereby expressly incorporated by reference herein in their entirety:

Application Number	Filing Date
CN 201620598406.9	June 17, 2016
CN 201630270359.0	June 22, 2016
CN 201621039473.3	September 6, 2016

FIELD OF THE DISCLOSURE

[0002] The present disclosure relates to an above ground pool. More particularly, the present disclosure relates to a joint for an above ground pool, and to a method for using the same.

BACKGROUND OF THE DISCLOSURE

[0003] A frame pool may include a frame assembly and a pool liner supported by the frame assembly to form a water cavity of the pool. The frame assembly may include one or more horizontal frame members (e.g., horizontal pipes) that form an upper rim of the pool and one or more vertical frame members (e.g., vertical pipes) that extend downward from the horizontal frame members to the ground. To allow the frame assembly to be disassembled for storage and assembled for use, the horizontal frame members and the vertical frame members may be removably coupled together via a plurality of T-shaped joints. Existing T-shaped joints are formed of metal, which may be susceptible to galling and corrosion, especially as any protective coating on the metal becomes worn or damaged. Also, existing T-shaped joints are relatively wide, so existing pool liners may require wide holes or gaps to accommodate such T-shaped joints, which may impact the pool's appearance and ability to contain water.

SUMMARY

[0004] The present disclosure provides a frame pool including a frame assembly and a pool liner, the frame assembly including horizontal frame members and a vertical frame member coupled together via a T-shaped joint. The T-shaped joint may be constructed of plastic to facilitate attachment and detachment to the adjacent frame members and to resist galling and corrosion. The T-shaped joint may also be relatively small to improve the appearance and water containment of the frame pool.

[0005] According to an embodiment of the present disclosure, a frame joint is disclosed for an above ground pool frame having a first horizontal frame member, a second horizontal frame member, and a vertical frame member. The frame joint includes: a first horizontal joint portion including a first coupling assembly configured to couple with the first horizontal frame member; a second horizontal joint portion including a second coupling assembly configured to couple with the second horizontal frame member; and a vertical joint portion fixedly coupled to the first and second horizontal joint portions and configured to couple with the vertical frame member; wherein a width of the vertical joint portion accounts for at least 50% of a width between the first and second coupling assemblies of the first and second horizontal joint portions.

[0006] According to another embodiment of the present disclosure, a frame joint is disclosed for an above ground pool frame having a first horizontal frame member, a second horizontal frame member, and a vertical frame member. The frame joint includes: a first horizontal joint portion configured to couple with the first horizontal frame member, the first horizontal joint portion being constructed of plastic; a second horizontal joint portion configured to couple with the second horizontal frame member, the second horizontal joint portion being constructed of plastic; and a vertical joint portion fixedly coupled to the first and second horizontal joint portions and configured to couple with the vertical frame member, the vertical joint portion being constructed of plastic.

[0007] According to yet another embodiment of the present disclosure, a method is disclosed for assembling an above ground pool. The method includes: coupling a first horizontal joint portion of a frame joint to a first horizontal frame member with a first coupling assembly;

coupling a second horizontal joint portion of the frame joint to a second horizontal frame member with a second coupling assembly; and coupling a vertical joint portion of the frame joint to a vertical frame member, wherein a width of the vertical joint portion accounts for a majority of a width between the first and second coupling assemblies of the first and second horizontal joint portions.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008] The above-mentioned and other features and advantages of this disclosure, and the manner of attaining them, will become more apparent and will be better understood by reference to the following description of embodiments of the invention taken in conjunction with the accompanying drawings, wherein:

[0009] FIG. 1 is a partial perspective view of a frame pool including a frame assembly and a pool liner, the frame assembly including horizontal frame members and a vertical frame member coupled together via an exemplary T-shaped joint of the present disclosure;

[0010] FIG. 2 is an exploded perspective view of the frame assembly of FIG. 1;

[0011] FIG. 3 is an exploded perspective view of the T-shaped joint of FIG. 1; and

[0012] FIG. 4 is an assembled cross-sectional view of the T-shaped joint of FIG. 3.

[0013] Corresponding reference characters indicate corresponding parts throughout the several views. The exemplifications set out herein illustrate exemplary embodiments of the invention and such exemplifications are not to be construed as limiting the scope of the invention in any manner.

DETAILED DESCRIPTION

[0014] A portion of an exemplary frame pool 100 is shown in FIGS. 1 and 2. The illustrative portion of the frame pool 100 includes two adjacent horizontal frame members 6 (e.g., horizontal pipes) that cooperate to form an upper rim of the frame pool 100 and a vertical frame member 7 (e.g., vertical pipe) that extends downward from the horizontal frame members 6 to support the frame pool 100 on the ground. Although not shown in FIGS. 1 and 2, similar frame members 6 and 7 may be provided around the remaining perimeter of the frame pool 100.

The frame pool 100 may vary in size and shape. For example, the frame pool 100 may be rectangular, circular, elliptical, or other suitable shapes.

[0015] Referring still to FIGS. 1 and 2, a T-shaped joint 10 may be used to removably couple the two adjacent horizontal frame members 6 to the adjacent vertical frame member 7. Although a single T-shaped joint 10 is shown in FIGS. 1 and 2, similar T-shaped joints 10 may be provided around the remaining perimeter of the frame pool 100. Each T-shaped joint 10 illustratively includes two horizontal joint portions 1 configured to couple to the horizontal frame members 6 and a vertical joint portion 2 configured to couple to the vertical frame member 7. To form the T-shape, the vertical joint portion 2 is centered between and perpendicular to the two horizontal joint portions 1. The orientation of the horizontal joint portions 1 determines the orientation of the adjacent horizontal frame members 6. In the illustrated embodiment of FIG. 1, for example, the horizontal joint portions 1 define an obtuse angle α therebetween, so the horizontal frame members 6 define the same angle α therebetween. In another embodiment, the horizontal joint portions 1 may be collinear with each other, so the horizontal frame members 6 would also be collinear with each other. In another embodiment, the horizontal joint portions 1 may be perpendicular to each other, so the horizontal frame members 6 would also be perpendicular to each other, such as along a corner of a rectangular frame pool 100.

[0016] Some or all components of the frame assembly, including the horizontal frame members 6, the vertical frame members 7, and/or the T-shaped joints 10, may be constructed of a polymer, specifically plastic, such as by injection molding. Compared to metallic components, the plastic components may be smooth and elastic to facilitate assembly and disassembly of the frame assembly. Also, the plastic components may be more resistant to galling and corrosion to promote extended use. With respect to the T-shaped joint 10, in particular, the horizontal joint portions 1 and the vertical joint portion 2 may be integrally formed as a single piece of plastic. Alternatively, the horizontal joint portions 1 and the vertical joint portion 2 may be formed as multiple pieces of plastic and then fixedly coupled (e.g., adhered, welded) together. The upper end of the T-shaped joint 10 may include a raised rim 22 (FIG. 3) to give the appearance that the vertical joint portion 2 wraps around the horizontal joint portions 1.

[0017] The illustrative frame pool 100 of FIG. 1 also includes a pool liner 8 supported by the frame members 6 and 7 to form an interior water cavity for swimming and/or bathing. The

pool liner 8 may be wrapped and secured around the horizontal frame member 6 to form a loop or fold 81. The fold 81 of the pool liner 8 may also define a gap or hole 82 to expose the T-shaped joint 10, as described further below.

[0018] The illustrative T-shaped joint 10 is described in more detail with reference to FIGS. 3 and 4.

[0019] The horizontal joint portions 1 of the illustrative T-shaped joint 10 are configured to couple with the adjacent horizontal frame members 6 (FIG. 2). The horizontal joint portions 1 may be configured to fit within the adjacent horizontal frame members 6 in a sleeved manner. Thus, the external cross-section of the horizontal joint portions 1 may match the internal cross-section of the horizontal frame members 6. In the illustrated embodiment of FIG. 3, the external cross-section of the horizontal joint portions 1 is generally triangular with rounded edges to resist rotation between the horizontal joint portions 1 and the horizontal frame members 6. It is also within the scope of the present disclosure for the external cross-section to be circular, rectangular, elliptical, or another suitable shape to match the internal cross-section of the horizontal frame members 6.

[0020] Each horizontal joint portion 1 of the T-shaped joint 10 includes a coupling assembly 3 for removable attachment to the adjacent horizontal frame member 6 (FIG. 2). As shown in FIGS. 3 and 4, each coupling assembly 3 includes a base 31 received in the horizontal joint portion 1, a helical spring 32 held in place by the base 31, and a pin 33 extending radially outward (e.g., downward) through a hole 35 in the horizontal joint portion 1. Each horizontal joint portion 1 may include an internal horizontal reinforcing rib 11 and/or an internal horizontal support member 5 to help support base 31 within the T-shaped joint 10. In an assembled or locked state, spring 32 may bias pin 33 radially outward through hole 35 to engage a corresponding recess or hole (not shown) of the horizontal frame member 6 (FIG. 2). In a disassembled or unlocked state, a user may press pin 33 radially inward to compress spring 32 and disengage the horizontal frame member 6 (FIG. 2).

[0021] The vertical joint portion 2 of the illustrative T-shaped joint 10 is configured to couple with the adjacent vertical frame member 7 (FIG. 2). The vertical joint portion 2 may be configured to fit within the adjacent vertical frame member 7 in a sleeved manner. Thus, the external cross-section of the vertical joint portion 2 may match the internal cross-section of the

vertical frame member 7. In the illustrated embodiment of FIG. 3, the external cross-section of the vertical joint portion 2 is generally triangular with rounded edges to resist rotation between the vertical joint portion 2 and the vertical frame member 7. It is also within the scope of the present disclosure for the external cross-section to be circular, rectangular, elliptical, or another suitable shape to match the internal cross-section of the vertical frame member 7.

[0022] The vertical joint portion 2 of the T-shaped joint 10 includes a coupling assembly 4 for removable attachment to the adjacent vertical frame member 7 (FIG. 2). As shown in FIGS. 3 and 4, each coupling assembly 4 includes a base 41 received in the vertical joint portion 2, a helical spring 42 held in place by the base 41, and a pin 43 extending radially outward (e.g., rearward) through a hole 45 in the vertical joint portion 2. The vertical joint portion 2 may include one or more internal vertical reinforcing ribs 21 to help support base 41 within the T-shaped joint 10, such as by compressing fingers 46 of base 41 together within the T-shaped joint 10. In an assembled or locked state, spring 42 may bias pin 43 radially outward through hole 45 to engage a corresponding recess or hole 71 of the vertical frame member 7 (FIG. 2). In a disassembled or unlocked state, a user may press pin 43 radially inward to compress spring 42 and disengage the hole 71 of the vertical frame member 7 (FIG. 2).

[0023] According to an exemplary embodiment of the present disclosure, and as shown in FIG. 4, the size of the T-shaped joint 10 may be minimized such that the size of the corresponding hole 82 in the pool liner 8 (shown in phantom) may also be minimized. The small hole 82 in the pool liner 8 may improve the appearance and water containment of the frame pool 100 (FIG. 1) while still leaving the coupling assemblies 3 and 4, specifically the pins 33 and 43 of the coupling assemblies 3 and 4, accessible for subsequent disassembly.

[0024] The width of the T-shaped joint 10 may be minimized such that the width of the corresponding hole 82 in the pool liner 8 may also be minimized. For example, the total width W_{J1} of the T-shaped joint 10 may be about 5 inches to about 7 inches, specifically about $5 \frac{3}{4}$ inches, the width W_{J2} between the pins 33 of the coupling assemblies 3 may be about 3 inches to about 5 inches, specifically about $3 \frac{13}{16}$ inches, and the width W_{J3} of the vertical joint portion 2 may be about 1 inches to about 3 inches, specifically about $2 \frac{3}{8}$ inches. In the illustrated embodiment of FIG. 4, the width W_L of the hole 82 in the pool liner 8 is greater than both the width W_{J3} of the vertical joint portion 2 and the width W_{J2} between the pins 33 to expose the pins

33 of the coupling assemblies 3 for subsequent disassembly while being less than the total width W_{J1} of the T-shaped joint 10. For example, the width W_L of the hole 82 in the pool liner 8 is about 3 inches to about 7 inches, specifically about 4 1/2 inches.

[0025] To help minimize the size of the T-shaped joint 10, the pins 33 of the coupling assemblies 3 may be positioned close to the vertical joint portion 2. Due to this close positioning, the width W_{J3} of the vertical joint portion 2 may account for a majority of the width W_{J2} between the pins 33 of the coupling assemblies 3. For example, the width W_{J3} of the vertical joint portion 2 may account for 50%, 60%, 70%, 80%, or more of the width W_{J2} between the pins 33 of the coupling assemblies 3. In the illustrated embodiment of FIG. 4, in particular, the width W_{J3} of the vertical joint portion 2 accounts for about 70% of the width W_{J2} between the pins 33 of the coupling assemblies 3. The width W_{J3} of the vertical joint portion 2 may also account for a significant portion of the total width W_{J1} of the T-shaped joint 10. For example, the width W_{J3} of the vertical joint portion 2 may account for 40%, 50%, 60%, 70%, or more of the total width W_{J1} of the T-shaped joint 10. In the illustrated embodiment of FIG. 4, in particular, the width W_{J3} of the vertical joint portion 2 accounts for about 50% of the of the total width W_{J1} of the T-shaped joint 10.

[0026] Additionally, the height of the T-shaped joint 10 may be minimized such that the height of the corresponding hole 82 in the pool liner 8 may be minimized. For example, the total height H_J of the T-shaped joint 10 may be about 3 inches to about 5 inches, specifically about 3 7/8 inches. Because the pin 43 of the coupling assembly 4 may be accessible in front of the pool liner 8 and behind the T-shaped joint 10, the hole 82 in the pool liner 8 need not extend downward beneath the pin 43. Thus, in the illustrated embodiment of FIG. 4, the height H_L of the hole 82 in the pool liner 8 is less than the total height H_J of the T-shaped joint 10 while still allowing access to the pin 33 of the coupling assembly 3 and the pin 43 of the coupling assembly 4 for subsequent disassembly.

[0027] While this invention has been described as having exemplary designs, the present invention can be further modified within the spirit and scope of this disclosure. This application is therefore intended to cover any variations, uses, or adaptations of the invention using its general principles. Further, this application is intended to cover such departures from the present

disclosure as come within known or customary practice in the art to which this invention pertains and which fall within the limits of the appended claims.

1/4

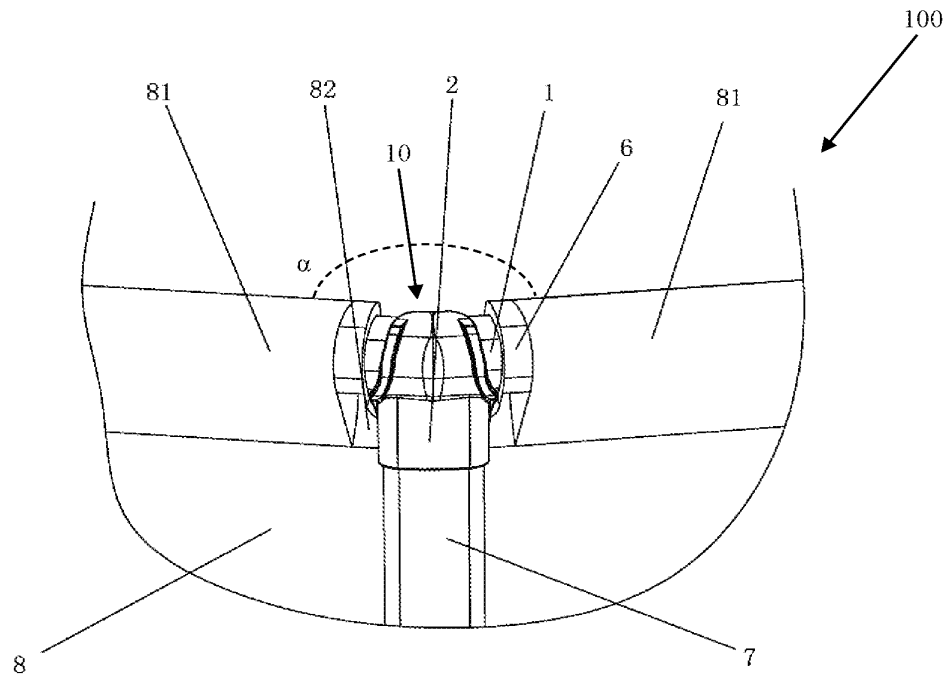


FIG. 1

2/4

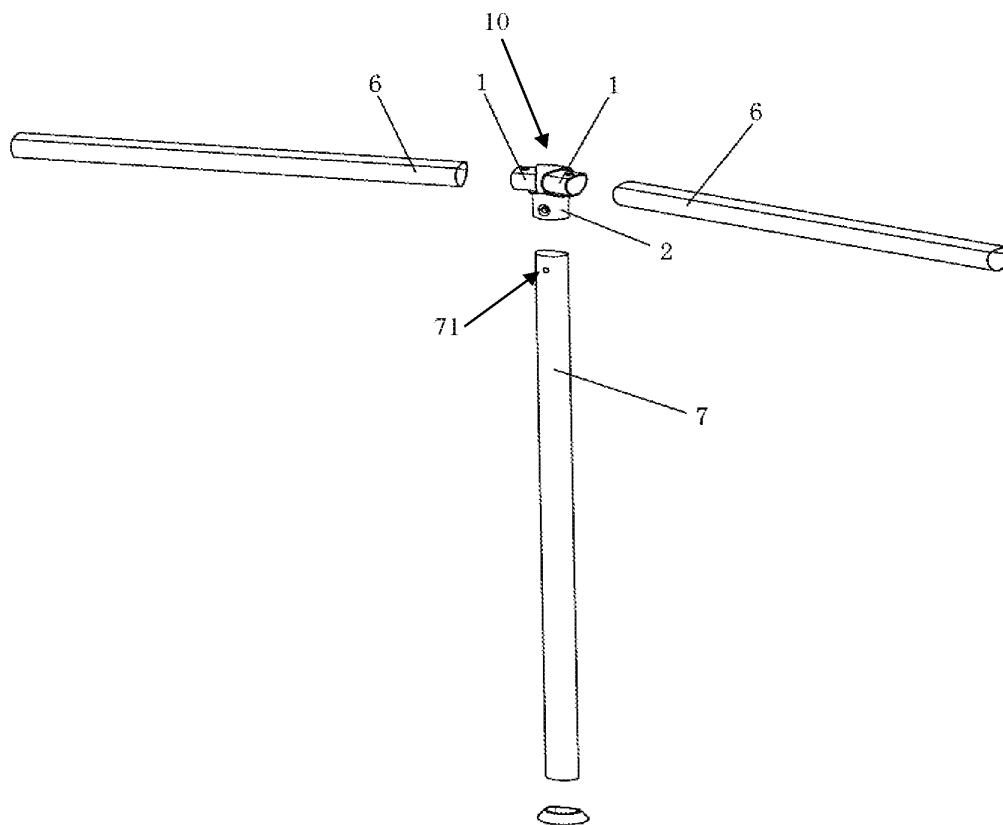


FIG. 2

3/4

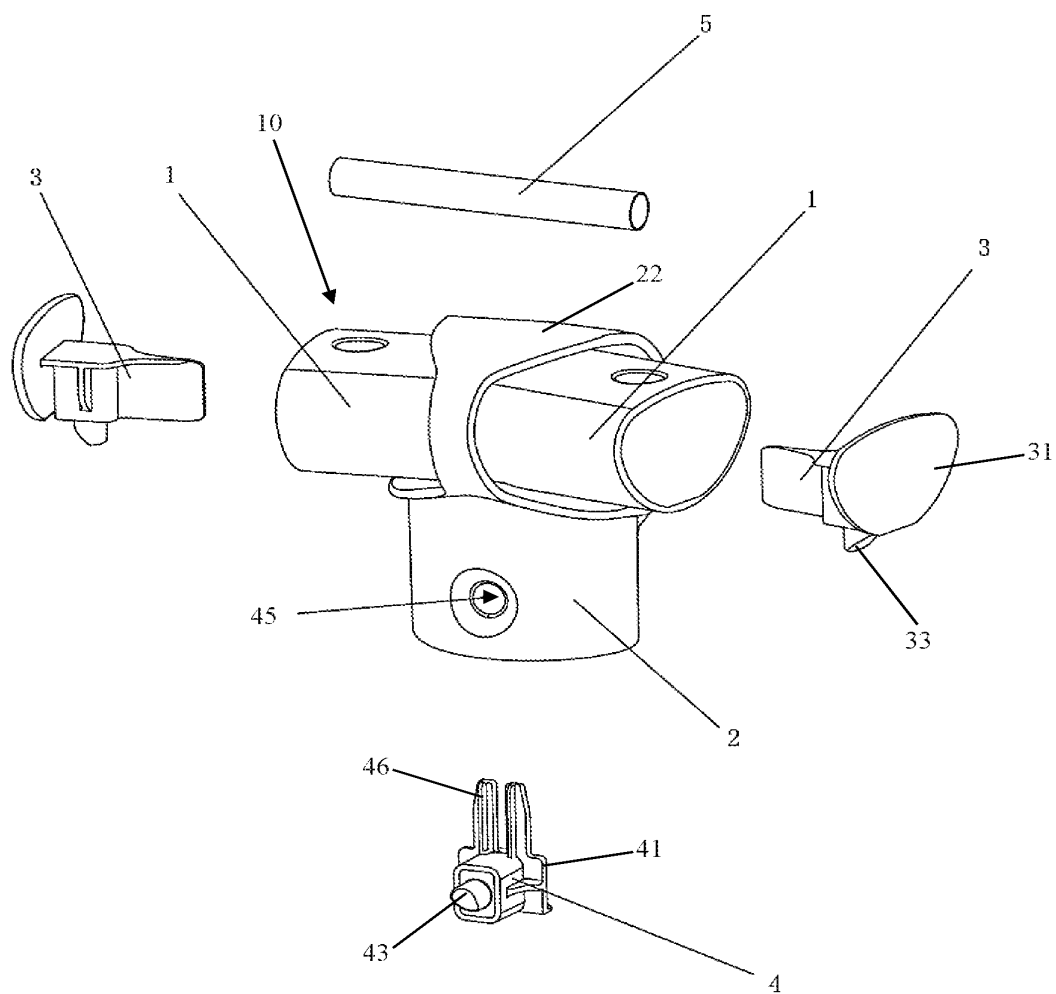


FIG. 3

4/4

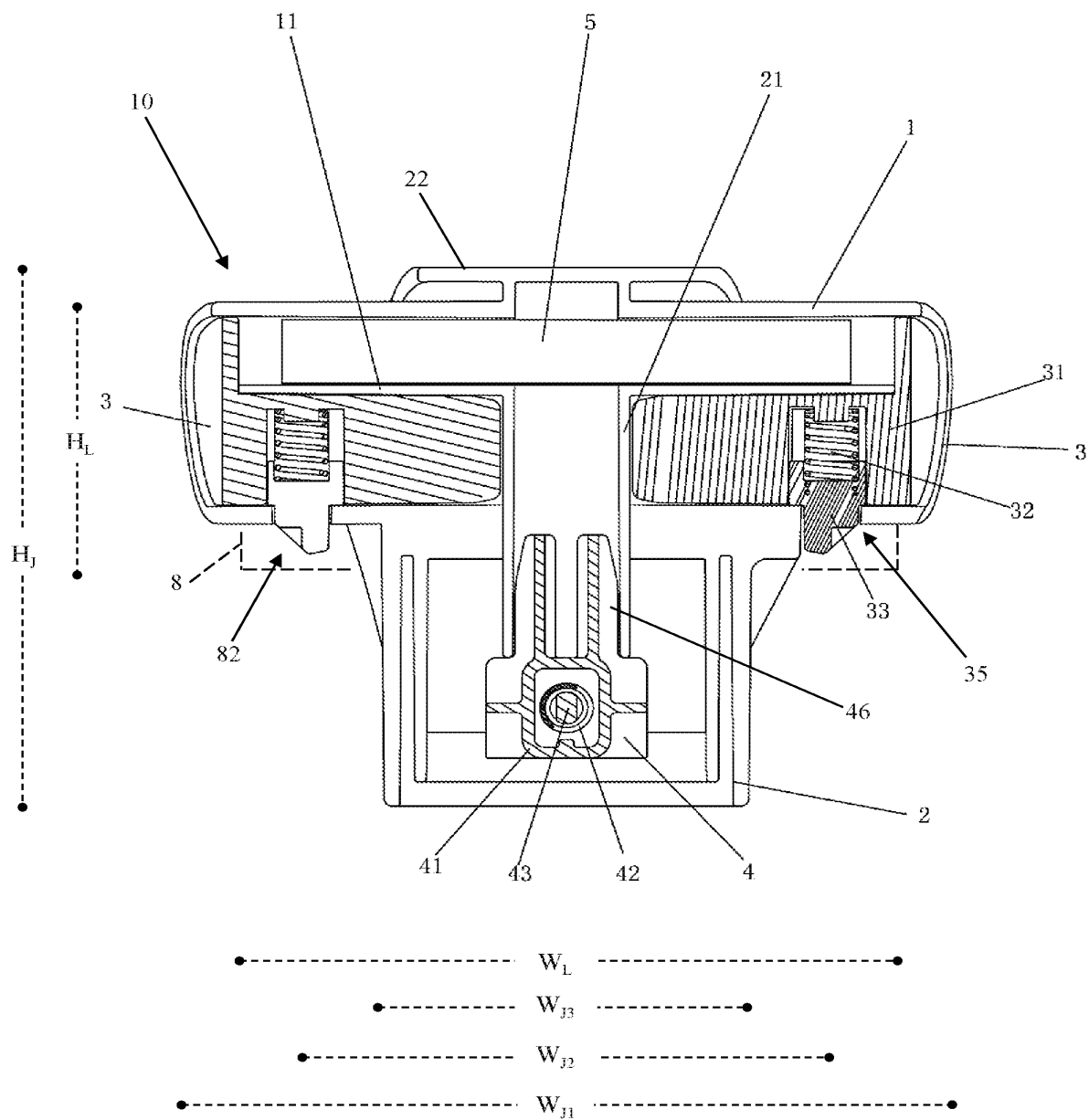


FIG. 4

CERTIFICATE OF AVAILABILITY OF A CERTIFIED INDUSTRIAL DESIGN DOCUMENT IN A DIGITAL LIBRARY

The International Bureau certifies that a copy of the industrial design application indicated below has been available to the WIPO Digital Access Service since the date of availability indicated, and that the industrial design application has been available to the indicated Office(s) as of the date specified following the relevant Office code:

Document details: Country/Office: CN

Filing date: 22 Jun 2016 (22.06.2016)

Application number: 2016302703590

Date of availability of document: 11 Jul 2017 (11.07.2017)

The following Offices can retrieve this document by using the access code:

JP, US, SE, NZ, KR, GB, AU, ES, IB, EE, CN, MA, FI

Date of issue of this certificate: 05 Aug 2017 (05.08.2017)



证 明

本证明之附件是向本局提交的下列专利申请文件副本。

申 请 号：201630270359.0

申 请 类 型：外观设计专利

发 明 创 造 名 称：管接头(T 型)

申 请 日：2016 年 06 月 22 日

申 请 人：明达实业（厦门）有限公司

发明人或设计人：林华乡、许耀元

局长

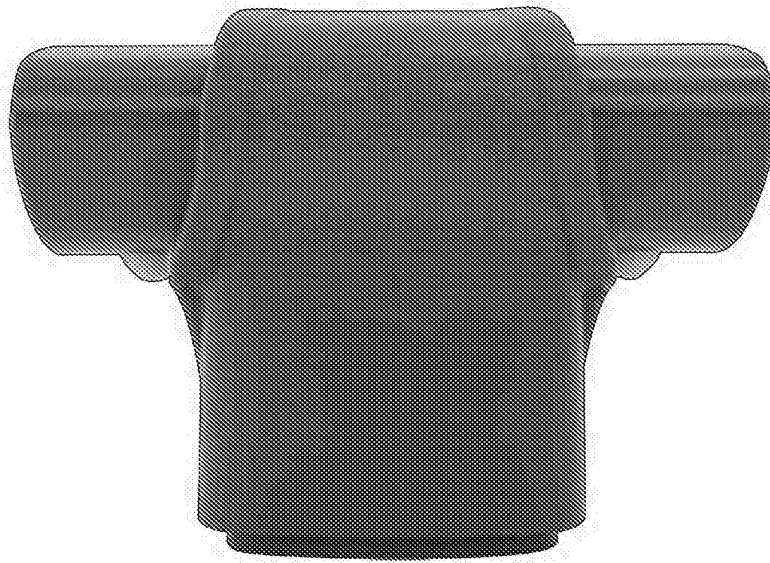
申长雨

2017 年 07 月 10 日

20160622



外观设计图片或照片

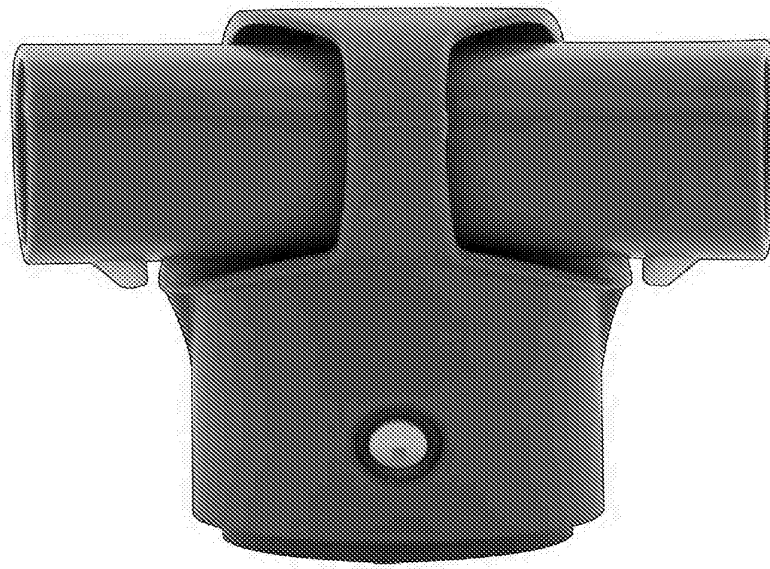


【视图名称】 主视图

20160622



外观设计图片或照片



【视图名称】 后视图

20160622



2016302703590

外观设计图片或照片



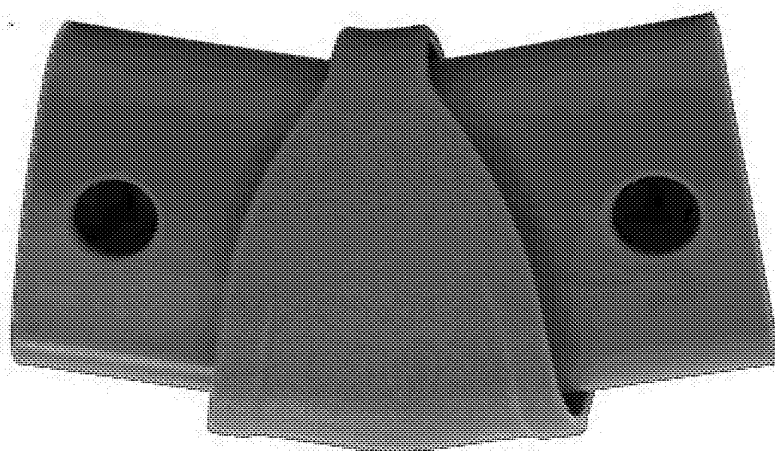
【视图名称】 左视图

20160622



2016302703590

外观设计图片或照片

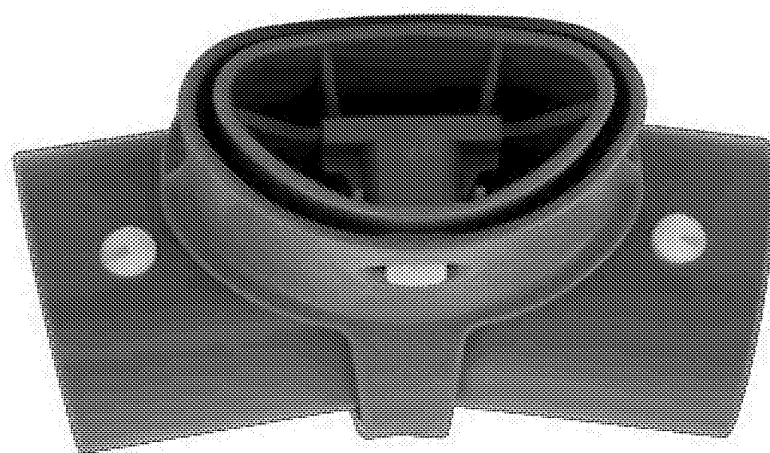


【视图名称】 俯视图

20160622



外观设计图片或照片

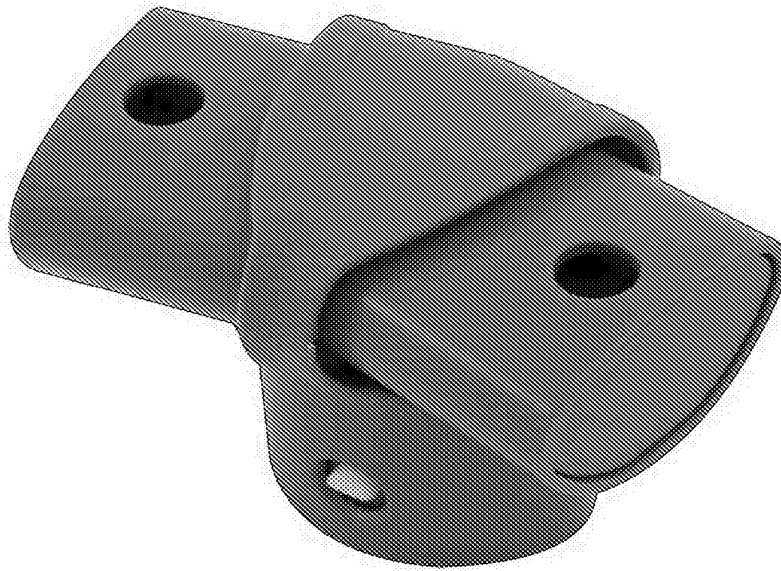


【视图名称】 仰视图

20160622



外观设计图片或照片



【视图名称】 立体图



外观设计简要说明

1. 本外观设计产品的名称：管接头(T 型)
2. 本外观设计产品的用途：本外观设计产品用于管道的连接。
3. 本外观设计产品的设计要点：产品的形状。
4. 最能表明本外观设计设计要点的图片或照片：立体图。
5. 省略视图：右视图与左视图对称，省略右视图。

**DOCUMENT MADE AVAILABLE UNDER THE
PATENT COOPERATION TREATY (PCT)**

International application number:	PCT/US2017/037892
International filing date:	16 June 2017 (16.06.2017)
Document type:	Certified copy of priority document
Document details:	Country/Office: CN
	Number: 201630270359.0
	Filing date: 22 June 2016 (22.06.2016)
Date of receipt at the International Bureau:	05 August 2017 (05.08.2017)

Remark: Priority document submitted or transmitted to the International Bureau in compliance with Rule 17.1(a),(b) or (b-bis)

CERTIFICATE OF AVAILABILITY OF A CERTIFIED UTILITY MODEL DOCUMENT IN A DIGITAL LIBRARY

The International Bureau certifies that a copy of the utility model application indicated below has been available to the WIPO Digital Access Service since the date of availability indicated, and that the utility model application has been available to the indicated Office(s) as of the date specified following the relevant Office code:

Document details: Country/Office: CN

Filing date: 17 Jun 2016 (17.06.2016)

Application number: 2016205984069

Date of availability of document: 11 Jul 2017 (11.07.2017)

The following Offices can retrieve this document by using the access code:

JP, US, SE, NZ, KR, GB, AU, ES, IB, EE, CN, MA, FI

Date of issue of this certificate: 17 Aug 2017 (17.08.2017)



证 明

本证明之附件是向本局提交的下列专利申请文件副本。

申 请 号：201620598406.9

申 请 类 型：实用新型专利

发 明 创 造 名 称：一种 T 形管接头

申 请 日：2016 年 06 月 17 日

申 请 人：明达实业（厦门）有限公司

发明人或设计人：林华乡、许耀元

局长

申长雨

2017 年 07 月 10 日



权 利 要 求 书

1、一种 T 形管接头，用于连接二个边管和一个脚管，其特征在于：包括二个边管接头和一个脚管接头，所述二个边管接头和一个脚管接头为注塑件，且一体成型，并构成 T 形管接头结构；

所述二个边管接头分别装接有边管弹销组，所述边管设有销孔，在该边管接头与边管套接配合时，该边管弹销组卡置于所述边管的销孔；所述脚管接头装接有脚管弹销组，所述脚管设有销孔，在该脚管接头与脚管套接配合时，该脚管弹销组卡置于所述脚管的销孔。

2、根据权利要求 1 所述的一种 T 形管接头，其特征在于：所述边管接头的截面为圆缺形状、圆形、椭圆形或矩形，相应的，所述边管的截面形状与所述边管接头的截面形状相同。

3、根据权利要求 1 所述的一种 T 形管接头，其特征在于：所述脚管接头的截面为圆缺形状、圆形、椭圆形或矩形，相应的，所述脚管的截面形状与所述脚管接头的截面形状相同。

4、根据权利要求 1 所述的一种 T 形管接头，其特征在于：还包括设置于所述脚管接头的纵向加强筋，所述脚管弹销组卡装于该纵向加强筋。

5、根据权利要求 1 所述的一种 T 形管接头，其特征在于：还包括横向加强筋，该横向加强筋贯通所述二个边管接头。

6、根据权利要求 5 所述的一种 T 形管接头，其特征在于：还包括补强管，所述补强管卡装与所述横向加强筋。

7、根据权利要求 1 所述的一种 T 形管接头，其特征在于：所述边管弹销组包括边管弹销座、边管弹簧和边管弹销，所述边管弹销座具有纵向的槽孔，所述边管弹销通过所述边管弹簧装接于所述边管弹销座。

8、根据权利要求 1 所述的一种 T 形管接头，其特征在于：所述脚管弹销组包括脚管弹销座、脚管弹簧和脚管弹销，所述脚管弹销座具有横向的槽孔，所述脚管弹销通过所述边管脚管装接于所述脚管弹销座。

9、根据权利要求 1 所述的一种 T 形管接头，其特征在于：所述二个边管接头的



权 利 要 求 书

轴线之间具有一定夹角。



说明书

一种 T 形管接头

技术领域

本实用新型涉及一种 T 形管接头，特别是涉及一种适用于管架水池的 T 形管接头。

背景技术

T 形管接头是一种常用的转接件。管架水池是以管体为支架搭建的水池结构。现有的管架水池通常由若干个金属管体围成，该若干个金属管体之间通过金属材质的 T 形管接头互相连接。这样结构的管架水池，一方面，管接头的尺寸较大，使水池胶布上的反折孔较大，外观较差；另一方面，由于管体与管接头均为金属材质，互相之间易产生摩擦，使表面镀层受到磨损，产生锈蚀。

实用新型内容

本实用新型的目的在于克服现有技术之不足，提供一种适用于管架水池的 T 形管接头，减少了管接头与管体间的摩擦，防止了管体的锈蚀，延长了产品的使用寿命，同时拆装方便，使用简单。

本实用新型解决其技术问题所采用的技术方案是：一种 T 形管接头，用于连接二个边管和一个脚管，其特征在于：包括二个边管接头和一个脚管接头，所述二个边管接头和一个脚管接头为注塑件，且一体成型，并构成 T 形管接头结构；

所述二个边管接头分别装接有边管弹销组，所述边管设有销孔，在该边管接头与边管套接配合时，该边管弹销组卡置于所述边管的销孔；所述脚管接头装接有脚管弹销组，所述脚管设有销孔，在该脚管接头与脚管套接配合时，该脚管弹销组卡置于所述脚管的销孔。

作为一种优选，所述边管接头的截面为圆缺形状、圆形、椭圆形或矩形，相应的，所述边管的截面形状与所述边管接头的截面形状相同。

作为一种优选，所述脚管接头的截面为圆缺形状、圆形、椭圆形或矩形，相应的，所述脚管的截面形状与所述脚管接头的截面形状相同。



说明书

作为一种优选，还包括设置于所述脚管接头的纵向加强筋，所述脚管弹销组卡装于该纵向加强筋。

作为一种优选，还包括横向加强筋，该横向加强筋贯通所述二个边管接头。

作为一种优选，还包括补强管，所述补强管卡装与所述横向加强筋。

作为一种优选，所述边管弹销组包括边管弹销座、边管弹簧和边管弹销，所述边管弹销座具有纵向的槽孔，所述边管弹销通过所述边管弹簧装接于所述边管弹销座。

作为一种优选，所述脚管弹销组包括脚管弹销座、脚管弹簧和脚管弹销，所述脚管弹销座具有横向的槽孔，所述脚管弹销通过所述边管脚管装接于所述脚管弹销座。

作为一种优选，所述二个边管接头的轴线之间具有一定夹角。即 T 形管接头所连接的二个边管具有一定夹角，当若干个边管通过 T 形管接头串联在一起后，可形成圆环形水池构架。

本实用新型的有益效果是：

1、本实用新型的 T 形管接头整体采用注塑成型，与边管和脚管装接在一起时，由于注塑件弹性较好，且质地比金属材质的边管和脚管更软，故不会磨伤边管或脚管的表面涂层，进而使边管和脚管不易发生锈蚀。延长了产品的使用寿命，改善了用户体验。

2、本实用新型的 T 形管接头通过弹销组与边管的销孔或脚管的销孔卡装配合，仅需按下弹销，即可实现边管或脚管的拆装，拆装方便，使用简单。

以下结合附图及实施例对本实用新型作进一步详细说明；但本实用新型的一种 T 形管接头不局限于实施例。

附图说明

图 1 是本实用新型的爆炸示意图；

图 2 是本实用新型的侧面剖视图；

图 3 是本实用新型的配合示意图。



说明书

具体实施方式

实施例

本实用新型的一种 T 形管接头，用于连接二个边管 6 和一个脚管 7，其特征在于：包括二个边管接头 1 和一个脚管接头 2，所述二个边管接头 1 和一个脚管接头 2 为注塑件，且一体成型，并构成 T 形管接头结构；

所述二个边管接头 1 分别装接有边管弹销组 3，所述边管 6 设有销孔，在该边管接头 1 与边管 6 套接配合时，该边管弹销组 3 卡置于所述边管 6 的销孔；所述脚管接头 2 装接有脚管弹销组 4，所述脚管 7 设有销孔，在该脚管接头 2 与脚管 7 套接配合时，该脚管弹销组 4 卡置于所述脚管 7 的销孔。

更进一步的，所述边管接头 1 的截面为圆缺形状、圆形、椭圆形或矩形，相应的，所述边管 6 的截面形状与所述边管接头 1 的截面形状相同。

更进一步的，所述脚管接头 2 的截面为圆缺形状、圆形、椭圆形或矩形，相应的，所述脚管 7 的截面形状与所述脚管接头 2 的截面形状相同。

更进一步的，还包括设置于所述脚管接头 2 的纵向加强筋 21，所述脚管弹销组 4 卡装于该纵向加强筋 21。

更进一步的，还包括横向加强筋 11，该横向加强筋 11 贯通所述二个边管接头 1。

更进一步的，还包括补强管 5，所述补强管 5 卡装与所述横向加强筋 11。

更进一步的，所述边管弹销组 3 包括边管弹销座 31、边管弹簧 32 和边管弹销 33，所述边管弹销座 31 具有纵向的槽孔，所述边管弹销 33 通过所述边管弹簧 32 装接于所述边管弹销座 31。当边管接头 1 与边管 6 相互卡装时，按压所述边管弹销 33，并将边管 6 套接于边管接头 1，直到边管弹销 33 卡置于边管 6 的销孔中。

更进一步的，所述脚管弹销组 4 包括脚管弹销座 41、脚管弹簧 42 和脚管弹销 43，所述脚管弹销座 41 具有横向的槽孔，所述脚管弹销 43 通过所述边管 6 脚管 7 装接于所述脚管弹销座 41。当脚管接头 2 与脚管 7 相互卡装时，按压所述脚管弹销 43，并将脚管 6 套接于脚管接头 2，直到脚管弹销 43 卡置于脚管 7 的销孔中。



说明书

更进一步的，所述二个边管接头 1 的轴线之间具有一定夹角。即 T 形管接头所连接的二个边管 6 具有一定夹角，当若干个边管 6 通过 T 形管接头串联在一起后，可形成圆环形水池构架。

上述实施例仅用来进一步说明本实用新型的一种 T 形管接头，但本实用新型并不局限于实施例，凡是依据本实用新型的技术实质对以上实施例所作的任何简单修改、等同变化与修饰，均落入本实用新型技术方案的保护范围内。



说明书附图

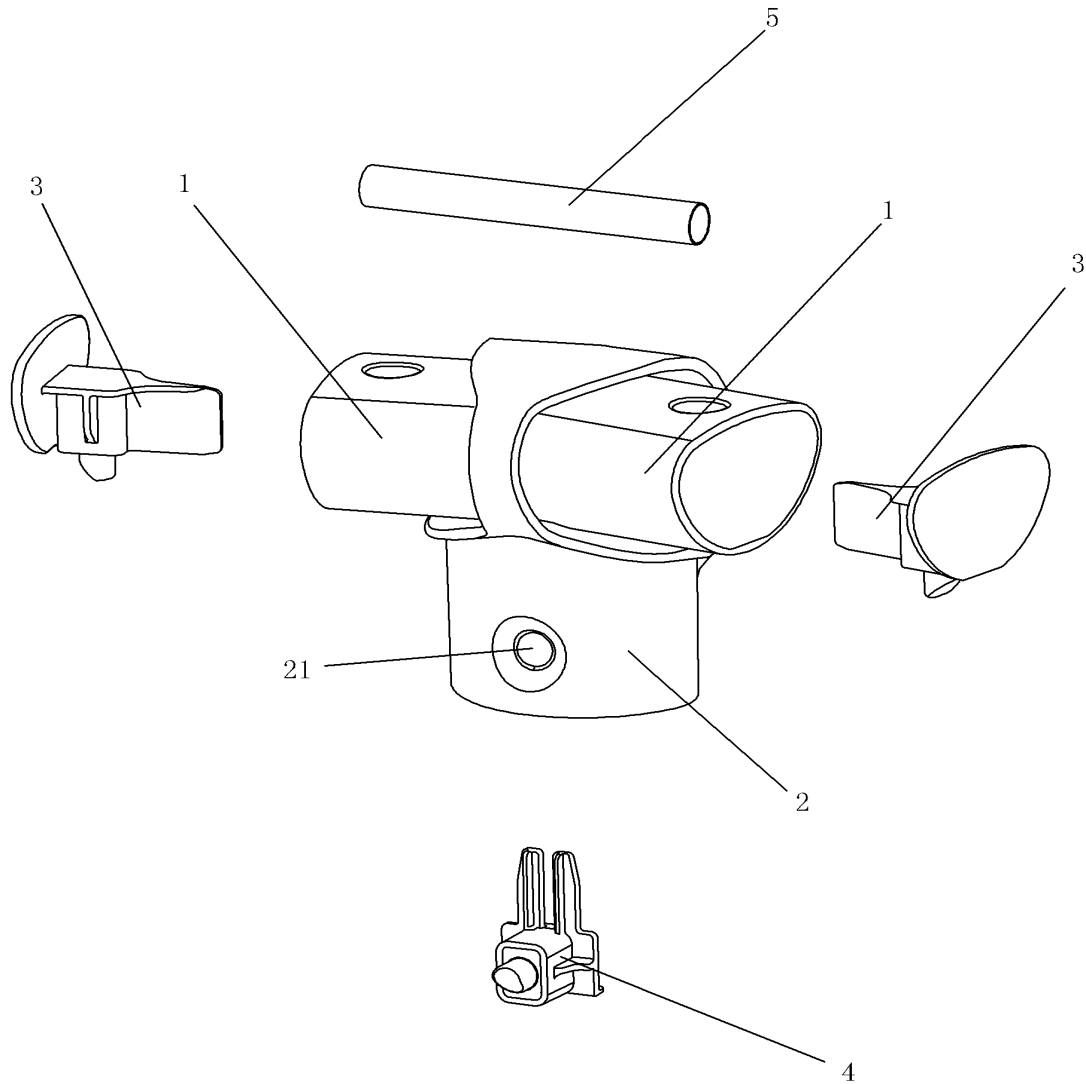


图 1



说明书附图

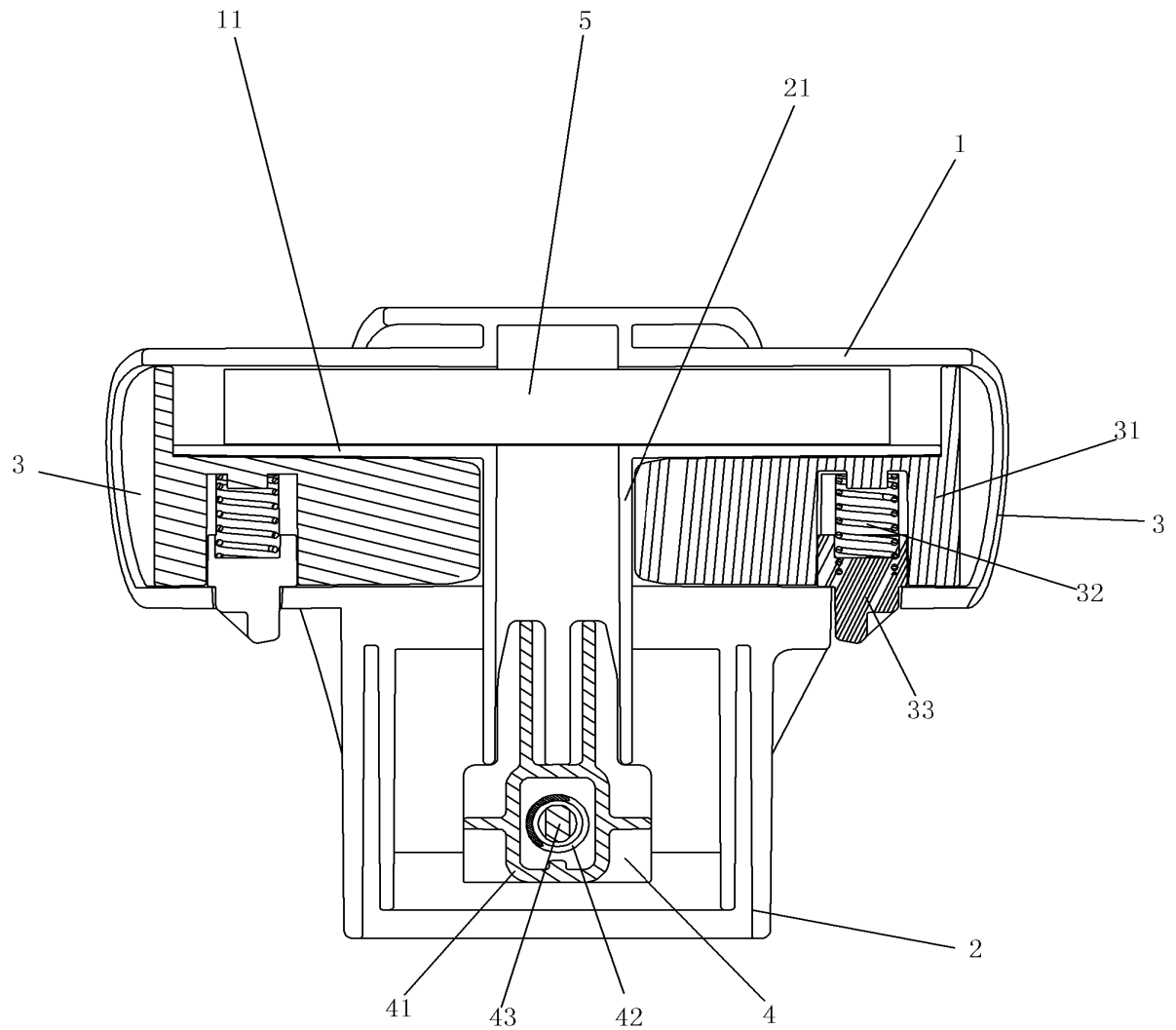


图 2



说明书附图

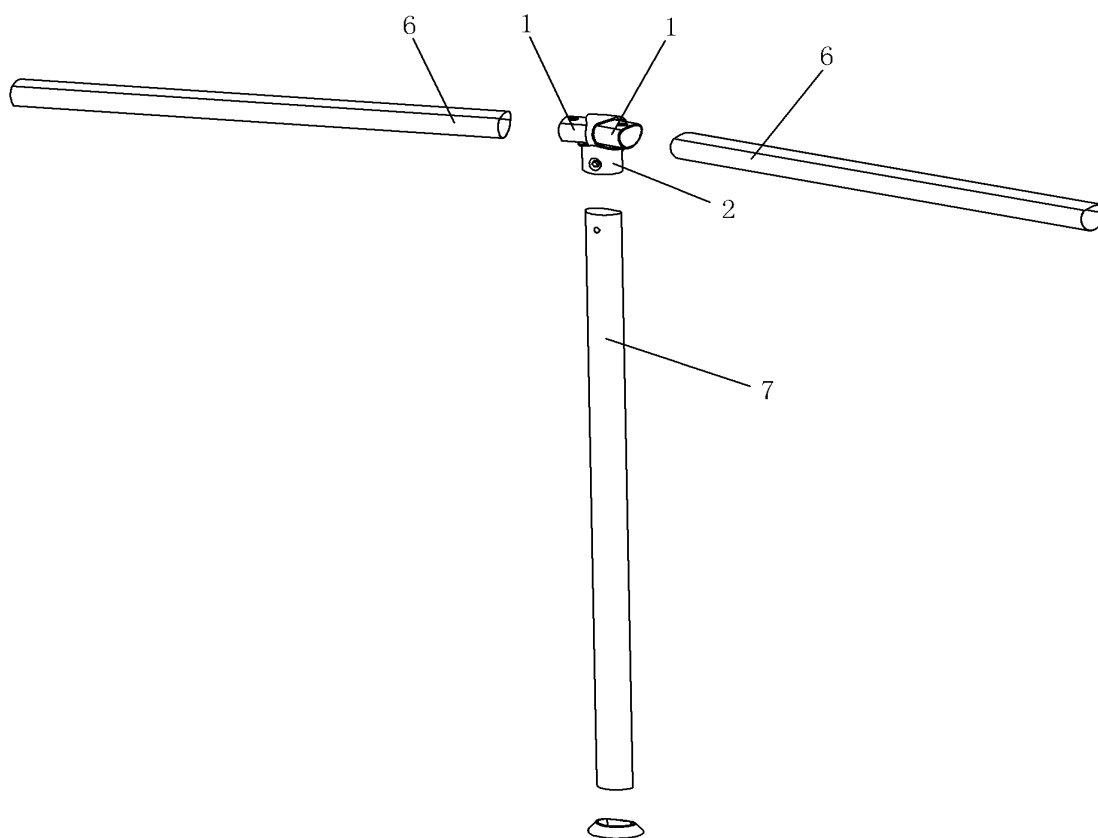


图 3

**DOCUMENT MADE AVAILABLE UNDER THE
PATENT COOPERATION TREATY (PCT)**

International application number:	PCT/US2017/037892
International filing date:	16 June 2017 (16.06.2017)
Document type:	Certified copy of priority document
Document details:	Country/Office: CN
	Number: 201620598406.9
	Filing date: 17 June 2016 (17.06.2016)
Date of receipt at the International Bureau:	05 August 2017 (05.08.2017)

Remark: Priority document submitted or transmitted to the International Bureau in compliance with Rule 17.1(a),(b) or (b-bis)

US17/37892



中华人民共和国国家知识产权局
STATE INTELLECTUAL PROPERTY OFFICE
OF THE PEOPLE'S REPUBLIC OF CHINA



证 明

本证明之附件是向本局提交的下列专利申请文件副本。

申 请 号： 201621039473.3

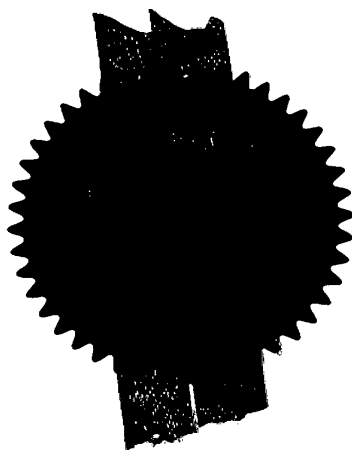
申 请 类 型： 实用新型专利

发 明 创 造 名 称： 一种T形管接头

申 请 日： 2016年09月06日

申 请 人： 明达实业(厦门)有限公司

发明人或设计人： 林华乡、许耀元



局长
申长雨

申长雨

2017 年 06 月 05 日



权利要求书

1、一种T形管接头，用于连接二个边管和一个脚管，其特征在于：包括二个边管接头和一个脚管接头，所述二个边管接头和一个脚管接头为注塑件，且一体成型，并构成T形管接头结构；所述二个边管接头的轴线之间具有一定的夹角。

2、根据权利要求1所述的一种T形管接头，其特征在于：所述二个边管接头分别装接有边管弹销组，所述边管设有销孔，在该边管接头与边管套接配合时，该边管弹销组卡置于所述边管的销孔；所述脚管接头装接有脚管弹销组，所述脚管设有销孔，在该脚管接头与脚管套接配合时，该脚管弹销组卡置于所述脚管的销孔。

3、根据权利要求1所述的一种T形管接头，其特征在于：所述边管接头的截面为圆缺形状、圆形、椭圆形或矩形，相应的，所述边管的截面形状与所述边管接头的截面形状相同。

4、根据权利要求1所述的一种T形管接头，其特征在于：所述脚管接头的截面为圆缺形状、圆形、椭圆形或矩形，相应的，所述脚管的截面形状与所述脚管接头的截面形状相同。

5、根据权利要求1所述的一种T形管接头，其特征在于：还包括设置于所述脚管接头的纵向加强筋，所述脚管弹销组卡装于该纵向加强筋。

6、根据权利要求1所述的一种T形管接头，其特征在于：还包括横向加强筋，该横向加强筋贯通所述二个边管接头。

7、根据权利要求5所述的一种T形管接头，其特征在于：还包括补强管，所述补强管卡装与所述横向加强筋。

8、根据权利要求1所述的一种T形管接头，其特征在于：所述边管弹销组包括边管弹销座、边管弹簧和边管弹销，所述边管弹销座具有纵向的槽孔，所述边管弹销通过所述边管弹簧装接于所述边管弹销座。

9、根据权利要求1所述的一种T形管接头，其特征在于：所述脚管弹销组包括脚管弹销座、脚管弹簧和脚管弹销，所述脚管弹销座具有横向的槽孔，所述脚管弹销通过所述边管脚管装接于所述脚管弹销座。





一种 T 形管接头

本实用新型涉及一种 T 形管接头，特别是涉及一种应用于管架水池的 T 形管接头。

管架水池是以管体为支架搭建的水池结构，通过若干个边管和脚管搭接构件水池的框架，而后再在水池的框架上固定装接水池布，以形成水池结构。其中，边管和脚管需要通过 T 形管接头进行固定套接。现有技术中的 T 形管接头包括一竖直设置的脚管接头和由一段铁质管体弯折形成的二个边管接头。一方面，T 形管接头、边管和脚管均为金属材质，装接和运输过程中易发生摩擦和挤压，使表面的镀层受到磨损，产生锈蚀；另一方面，T 形管接头的整体尺寸较大，由于水池布绕过边管反折固定时，T 形管接头的部分无法被水池布覆盖，形成了较大的反折孔，影响了水池的整体外观。

本实用新型的目的在于克服现有技术之不足，提供一种适用于管架水池的 T 形管接头，减少了管接头与管体间的摩擦，防止了管体的锈蚀，延长了产品的使用寿命，同时拆装方便，使用简单。

本实用新型解决其技术问题所采用的技术方案是：一种 T 形管接头，用于连接二个边管和一个脚管，其特征在于：包括二个边管接头和一个脚管接头，所述二个边管接头和一个脚管接头为注塑件，且一体成型，并构成 T 形管接头结构；所述二个边管接头的轴线之间具有一定的夹角。即 T 形管接头所连接的二个边管具有一定夹角，当若干个边管通过 T 形管接头串联在一起后，可形成圆环形水池构架。

作为一种优选，所述二个边管接头分别装接有边管弹销组，所述边管设有销孔，在该边管接头与边管套接配合时，该边管弹销组卡置于所述边管的销孔；所述脚管接头装接有脚管弹销组，所述脚管设有销孔，在该脚管接头与脚管套接配合时，该脚管弹销组卡置于所述



说明书

脚管的销孔。

作为一种优选，所述边管接头的截面为圆缺形状、圆形、椭圆形或矩形，相应的，所述边管的截面形状与所述边管接头的截面形状相同。

作为一种优选，所述脚管接头的截面为圆缺形状、圆形、椭圆形或矩形，相应的，所述脚管的截面形状与所述脚管接头的截面形状相同。

作为一种优选，还包括设置于所述脚管接头的纵向加强筋，所述脚管弹销组卡装于该纵向加强筋。

作为一种优选，还包括横向加强筋，该横向加强筋贯通所述二个边管接头。

作为一种优选，还包括补强管，所述补强管卡装与所述横向加强筋。

作为一种优选，所述边管弹销组包括边管弹销座、边管弹簧和边管弹销，所述边管弹销座具有纵向的槽孔，所述边管弹销通过所述边管弹簧装接于所述边管弹销座。

作为一种优选，所述脚管弹销组包括脚管弹销座、脚管弹簧和脚管弹销，所述脚管弹销座具有横向的槽孔，所述脚管弹销通过所述边管脚管装接于所述脚管弹销座。

本实用新型的有益效果是：

1、本实用新型的 T 形管接头整体采用注塑成型，与边管和脚管装接在一起时，由于注塑件弹性较好，且质地比金属材质的边管和脚管更软，故不会磨伤边管或脚管的表面涂层，进而使边管和脚管不易发生锈蚀。延长了产品的使用寿命，改善了用户体验。

2、本实用新型的 T 形管接头通过弹销组与边管的销孔或脚管的销孔卡装配合，仅需按下弹销，即可实现边管或脚管的拆装，拆装方便，使用简单。

3、本实用新型的 T 形管接头整体尺寸较小，即无法被水池布覆盖到的部分减小；当水池布绕过边管反折固定时，相邻反折片之间所形成的反折孔较小，使整体外观得到提升。

以下结合附图及实施例对本实用新型作进一步详细说明；但本实用新型的一种 T 形管接头不局限于实施例。

附图说明



说明书

图 1 是本实用新型的爆炸示意图;

图 2 是本实用新型的侧面剖视图;

图 3 是本实用新型的配合示意图;

图 4 是本实用新型的安装示意图。

具体实施方式

实施例:

参见图 1 至图 2 所示, 本实用新型的一种 T 形管接头, 用于连接二个边管 6 和一个脚管 7, 其特征在于: 包括二个边管接头 1 和一个脚管接头 2, 所述二个边管接头 1 和一个脚管接头 2 为注塑件, 且一体成型, 并构成 T 形管接头结构;

所述二个边管接头 1 分别装接有边管弹销组 3, 所述边管 6 设有销孔, 在该边管接头 1 与边管 6 套接配合时, 该边管弹销组 3 卡置于所述边管 6 的销孔; 所述脚管接头 2 装接有脚管弹销组 4, 所述脚管 7 设有销孔, 在该脚管接头 2 与脚管 7 套接配合时, 该脚管弹销组 4 卡置于所述脚管 7 的销孔。

所述边管接头 1 的截面为圆缺形状、圆形、椭圆形或矩形, 相应的, 所述边管 6 的截面形状与所述边管接头 1 的截面形状相同。

所述脚管接头 2 的截面为圆缺形状、圆形、椭圆形或矩形, 相应的, 所述脚管 7 的截面形状与所述脚管接头 2 的截面形状相同。

还包括设置于所述脚管接头 2 的纵向加强筋 21, 所述脚管弹销组 4 卡装于该纵向加强筋 21。

还包括横向加强筋 11, 该横向加强筋 11 贯通所述二个边管接头 1。

还包括补强管 5, 所述补强管 5 卡装与所述横向加强筋 11。

参见图 3 所示, 所述边管弹销组 3 包括边管弹销座 31、边管弹簧 32 和边管弹销 33, 所述边管弹销座 31 具有纵向的槽孔, 所述边管弹销 33 通过所述边管弹簧 32 装接于所述边管弹销座 31。当边管接头 1 与边管 6 相互卡装时, 按压所述边管弹销 33, 并将边管 6 套接



说明书

于边管接头 1, 直到边管弹销 33 卡置于边管 6 的销孔中。

所述脚管弹销组 4 包括脚管弹销座 41、脚管弹簧 42 和脚管弹销 43，所述脚管弹销座 41 具有横向的槽孔，所述脚管弹销 43 通过所述边管 6 脚管 7 装接于所述脚管弹销座 41。当脚管接头 2 与脚管 7 相互卡装时，按压所述脚管弹销 43，并将脚管 6 套接于脚管接头 2，直到脚管弹销 43 卡置于脚管 7 的销孔中。

所述二个边管接头 1 的轴线之间具有一定夹角。即 T 形管接头所连接的二个边管 6 具有一定夹角, 当若干个边管 6 通过 T 形管接头串联在一起后, 可形成圆环形水池构架。

参见图 4 所示, 边管接头 1 与边管 6 相套接, 底管接头 2 与底管 7 相套接; 通过将水池布 8 所设置的反折片 81 翻折固定在所述边管 6 上, 可构成管架水池结构。其中二个相邻的反折片 81 之间形成一反折孔 82。由于边管接头 1 的长度较短, 所以反折孔 82 尺寸也相应缩小, 使整体外观得到改善。

上述实施例仅用来进一步说明本实用新型的一种 T 形管接头，但本实用新型并不局限于实施例，凡是依据本实用新型的技术实质对以上实施例所作的任何简单修改、等同变化与修饰，均落入本实用新型技术方案的保护范围内。



说明书附图

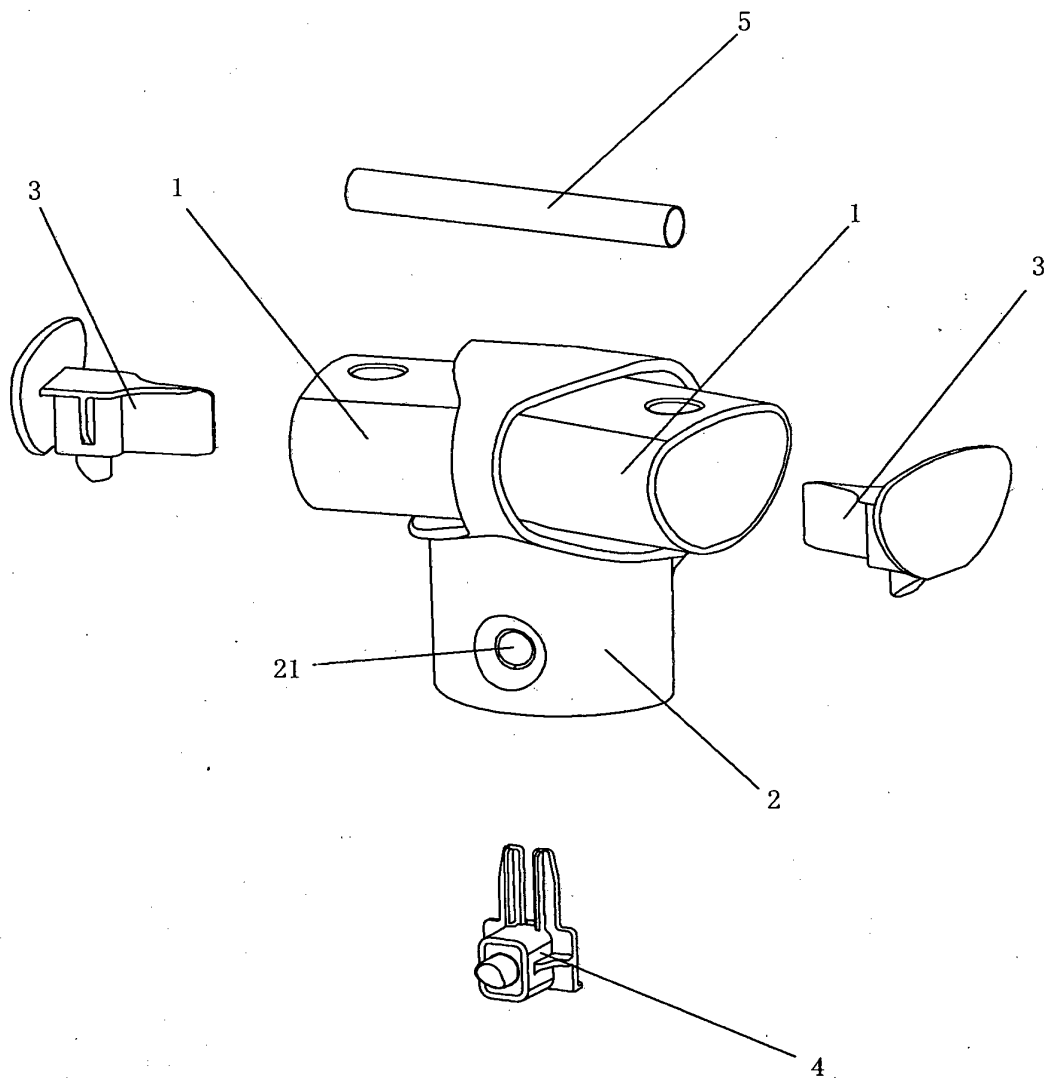


图 1

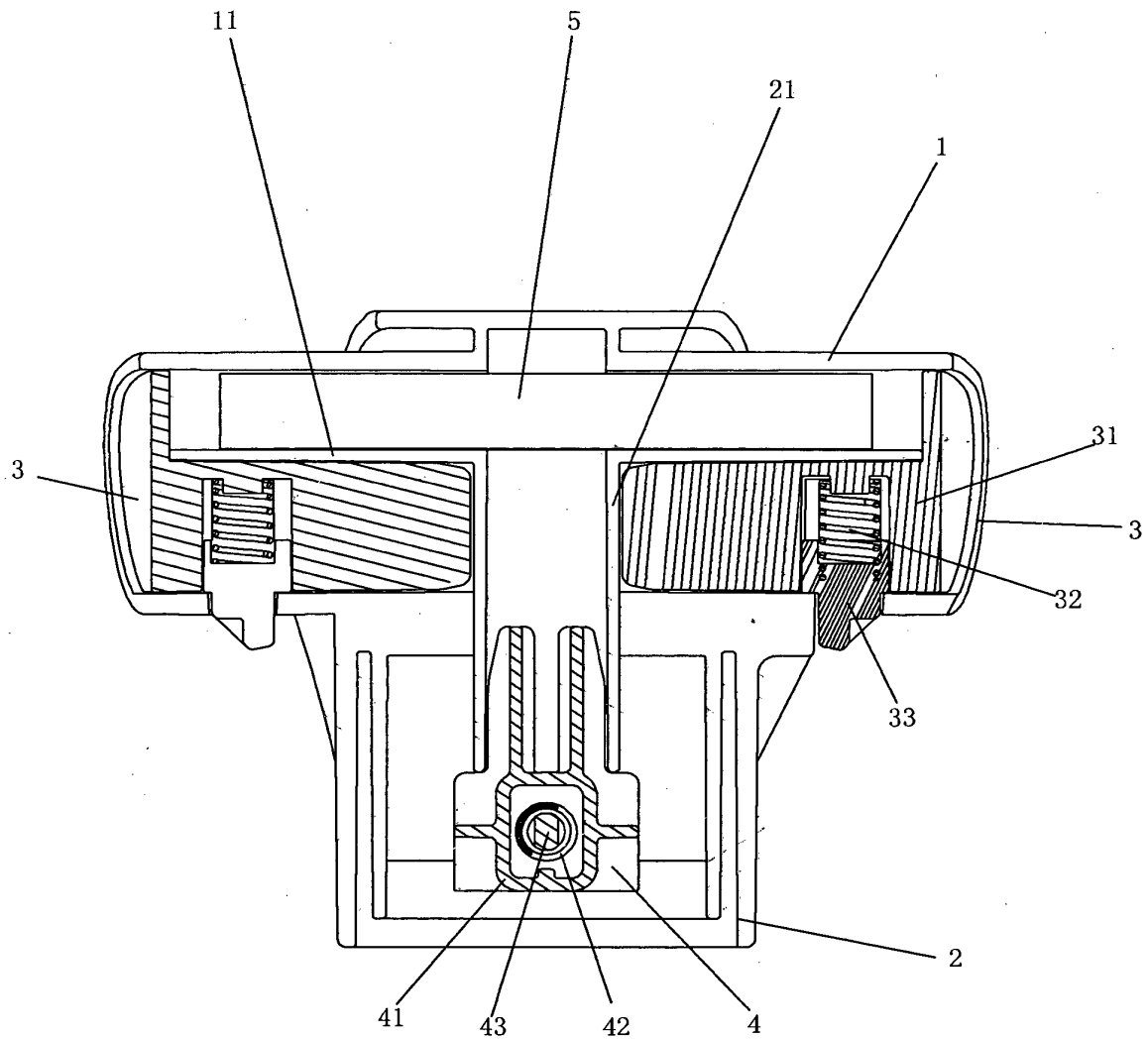


图 2



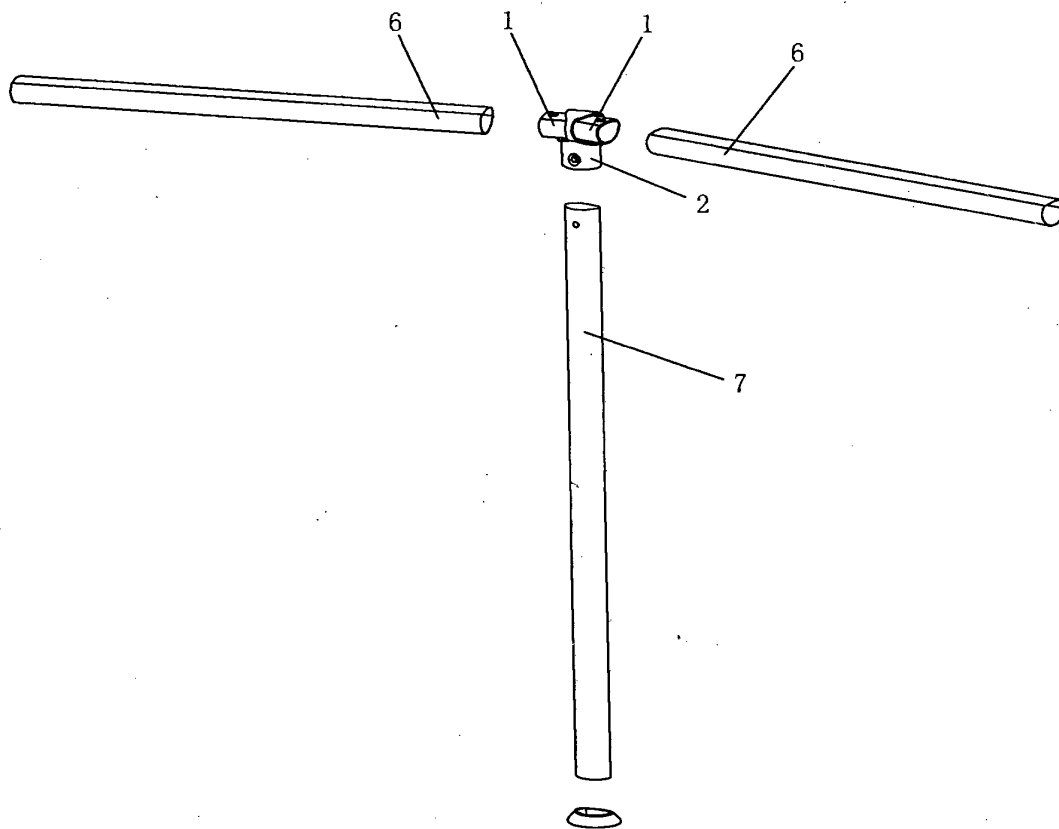


图 3



**DOCUMENT MADE AVAILABLE UNDER THE
PATENT COOPERATION TREATY (PCT)**

International application number:	PCT/US2017/037892
International filing date:	16 June 2017 (16.06.2017)
Document type:	Certified copy of priority document
Document details:	Country/Office: CN
	Number: 201621039473.3
	Filing date: 06 September 2016 (06.09.2016)
Date of receipt at the International Bureau:	09 August 2017 (09.08.2017)

Remark: Priority document submitted or transmitted to the International Bureau in compliance with Rule 17.1(a),(b) or (b-bis)

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A SUBMISSION UNDER 35 U.S.C. 371		Attorney Docket No. IRC-0042-02-US U.S. Application No. (if known, see 37 CFR 1.5)
International Application No. PCT/US2017/037892	International Filing Date June 16, 2017	Priority Date Claimed June 17, 2016
Title of Invention JOINT FOR ABOVE GROUND POOL FRAME		
First Named Inventor Hua Hsiang Lin		
<p>Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information.</p> <ol style="list-style-type: none"> 1. ☒ This is an express request to begin national examination procedures (35 U.S.C. 371(f)). NOTE: The express request under 35 U.S.C. 371(f) will not be effective unless the requirements under 35 U.S.C. 371(c)(1), (2), and (4) for payment of the basic national fee, copy of the International Application and English translation thereof (if required), and the oath or declaration of the inventor(s) have been received. 2. ☒ A copy of the International Application (35 U.S.C. 371(c)(2)) is attached hereto (not required if the International Application was previously communicated by the International Bureau or was filed in the United States Receiving Office (RO/US)). 3. An English language translation of the International Application (35 U.S.C. 371(c)(2)) <ol style="list-style-type: none"> a. ☐ is attached hereto. b. ☐ has been previously submitted under 35 U.S.C. 154(d)(4). 4. An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)) <ol style="list-style-type: none"> a. ☒ is attached. b. ☐ was previously filed in the international phase under PCT Rule 4.17(iv). <p>Items 5 to 8 below concern amendments made in the international phase.</p> <p><u>PCT Article 19 and 34 amendments</u></p> <ol style="list-style-type: none"> 5. ☐ Amendments to the claims under PCT Article 19 are attached (not required if communicated by the International Bureau) (35 U.S.C. 371(c)(3)). 6. ☐ English translation of the PCT Article 19 amendment is attached (35 U.S.C. 371(c)(3)). 7. ☐ English translation of annexes (Article 19 and/or 34 amendments only) of the International Preliminary Examination Report is attached (35 U.S.C. 371(c)(5)). <p><u>Cancellation of amendments made in the international phase</u></p> <ol style="list-style-type: none"> 8a. ☐ Do not enter the amendment made in the international phase under PCT Article 19. 8b. ☐ Do not enter the amendment made in the international phase under PCT Article 34. <p>NOTE: A proper amendment made in English under Article 19 or 34 will be entered in the U.S. national phase application absent a clear instruction from applicant not to enter the amendment(s).</p> <p>The following items 9 to 17 concern a document(s) or information included.</p> <ol style="list-style-type: none"> 9. ☒ An Information Disclosure Statement under 37 CFR 1.97 and 1.98. 10. ☒ A preliminary amendment. 11. ☒ An Application Data Sheet under 37 CFR 1.76. 12. ☐ A substitute specification. NOTE: A substitute specification cannot include claims. See 37 CFR 1.125(b). 13. ☒ A power of attorney and/or change of address letter. 14. ☐ A computer-readable form of the sequence listing in accordance with PCT Rule 13ter.3 and 37 CFR 1.821-1.825 (not required if sequence listing in text format was indicated on the PCT Request as part of the International Application and the sequence listing was published as part of the international application). 15. ☐ Assignment papers (cover sheet and document(s)). Name of Assignee: _____ 16. ☐ 37 CFR 3.73(c) Statement (when there is an Assignee). _____ 		

This collection of information is required by 37 CFR 1.414 and 1.491-1.492. The information is required to obtain or retain a benefit by the public, which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 15 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop PCT, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

U.S. APPLN. No. (if known – see 37 CFR 1.5)	INTERNATIONAL APPLICATION No.	ATTORNEY DOCKET No.		
17. ☐ Other items or information:				
The following fees have been submitted.		CALCULATIONS		
18. ☒ Basic national fee (37 CFR 1.492(a)) \$300		\$ 300.00		
19. ☒ Examination fee (37 CFR 1.492(c)) <ul style="list-style-type: none"> • If the written opinion prepared by ISA/US or the international preliminary examination report prepared by IPEA/US indicates all claims satisfy provisions of PCT Article 33(1)-(4)..... \$0 • All other situations \$760 		\$ 760.00		
20. ☒ Search fee (37 CFR 1.492(b)) <ul style="list-style-type: none"> • If the written opinion prepared by ISA/US or the international preliminary examination report prepared by IPEA/US indicates all claims satisfy provisions of PCT Article 33(1)-(4)..... \$0 • Search fee (37 CFR 1.445(a)(2)) has been paid on the international application to the USPTO as an International Searching Authority \$140 • International Search Report prepared by an ISA other than the US and provided to the Office or previously communicated to the US by the IB..... \$520 • All other situations \$660 		660.00 \$		
TOTAL OF 18, 19, and 20 =		\$ 1,720.00		
☐ Additional fee for specification and drawings filed in paper over 100 sheets (excluding sequence listing in compliance with 37 CFR 1.821(c) or (e) in an electronic medium or computer program listing in an electronic medium) (37 CFR 1.492(j)). Fee for each additional 50 sheets of paper or fraction thereof \$400		\$		
Total Sheets	Extra Sheets		Number of each additional 50 or fraction thereof (round up to a whole number)	RATE
- 100 =	/ 50 =			x \$400
Surcharge for furnishing any of the search fee, examination fee, or the oath or declaration after the date of commencement of the national stage (37 CFR 1.492(h))..... \$140		\$		
CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE	
Total claims	- 20 =		x \$100	\$
Independent claims	- 3 =		x \$460	\$
MULTIPLE DEPENDENT CLAIM(S) (if applicable)			+ \$820	\$
Fee for submission of Sequence Listing text file of 300 MB to 800 MB (37 CFR 1.21(o)(1))..... \$1,000		\$		
Fee for submission of Sequence Listing text file of more than 800 MB (37 CFR 1.21(o)(2))..... \$10,000		\$		
Processing fee for furnishing the English translation later than 30 months from the earliest claimed priority date (37 CFR 1.492(i))..... \$140 +		\$		
TOTAL OF ABOVE CALCULATIONS =		\$ 1,720.00		
☐ Applicant asserts small entity status. See 37 CFR 1.27. Fees above are reduced by ½.				
☐ Applicant certifies micro entity status. See 37 CFR 1.29. Fees above are reduced by ¾. Applicant must attach form PTO/SB/15A or B or equivalent.				
TOTAL NATIONAL FEE =		\$		
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31)..... \$50.00 per property +		\$		
TOTAL FEES ENCLOSED =		\$ 1,720.00		

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

- a. ☐ A check in the amount of \$_____ to cover the above fees is enclosed.
- b. ☐ Please charge my Deposit Account No. _____ in the amount of \$_____ to cover the above fees.
- c. ☒ The Director is hereby authorized to charge additional fees which may be required, or credit any overpayment, to Deposit Account No. 02-0390 _____ as follows:
- i. ☒ any required fee.
- ii. ☐ any required fee except for excess claims fees required under 37 CFR 1.492(d) and (e) and multiple dependent claim fee required under 37 CFR 1.492(f).
- d. ☒ Fees are to be charged to a credit card. **WARNING:** Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038. The PTO-2038 should only be mailed or faxed to the USPTO. However, when paying the basic national fee, the PTO-2038 may NOT be faxed to the USPTO.
- ADVISORY:** If filing by EFS-Web, do NOT attach the PTO-2038 form as a PDF along with your EFS-Web submission. Please be advised that this is **not** recommended and by doing so your **credit card information may be displayed via PAIR**. To protect your information, it is recommended to pay fees online by using the electronic payment method.

NOTE: Where an appropriate time limit under 37 CFR 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the International Application to pending status.

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

- ☐ This application (1) claims priority to or the benefit of an application filed before March 16, 2013, and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.

NOTE 1: By providing this statement under 37 CFR 1.55 or 1.78, **this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.**

NOTE 2: A U.S. national stage application may not claim priority to the international application of which it is the national phase. The filing date of a U.S. national stage application is the international filing date. See 35 U.S.C. 363.

Correspondence Address

- ☒ The address associated with Customer Number: 27268 OR ☐ Correspondence address below

Name					
Address					
City		State		Zip Code	
Country				Telephone	
Email					

Signature	/jamie m. drewry/	Date	2018-12-14
Name (Print/Type)	Jamie M. Drewry	Registration No. (Attorney/Agent)	61,320

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Patent Application Fee Transmittal				
Application Number:				
Filing Date:				
Title of Invention:		JOINT FOR ABOVE GROUND POOL FRAME		
First Named Inventor/Applicant Name:		Hua Hsiang Lin		
Filer:		Jamie Marie Drewry/Pam Reed		
Attorney Docket Number:		IRC-0042-02-US		
Filed as Large Entity				
Filing Fees for Utility under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
UTILITY APPLICATION FILING	1011	1	300	300
UTILITY SEARCH FEE	1111	1	660	660
UTILITY EXAMINATION FEE	1311	1	760	760
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				1720

Electronic Acknowledgement Receipt	
EFS ID:	34586790
Application Number:	16220484
International Application Number:	
Confirmation Number:	3890
Title of Invention:	JOINT FOR ABOVE GROUND POOL FRAME
First Named Inventor/Applicant Name:	Hua Hsiang Lin
Customer Number:	27268
Filer:	Jamie Marie Drewry/Pam Reed
Filer Authorized By:	Jamie Marie Drewry
Attorney Docket Number:	IRC-0042-02-US
Receipt Date:	14-DEC-2018
Filing Date:	
Time Stamp:	14:13:39
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	\$1720
RAM confirmation Number	121718INTEFSW14150201
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Specification	IRC-0042-02-US_Specification.pdf	110422	no	8
			535aa74e1cefb48cabb046bb381a8309b68d6715		
Warnings:					
Information:					
2	Claims	IRC-0042-02-US_Claims.pdf	57452	no	4
			678547019dad036131c3dd1a0220c59a1a29a756		
Warnings:					
Information:					
3	Abstract	IRC-0042-02-US_Abstract.pdf	35424	no	1
			0175efef59aaf2c28c9dd6614387c2a07ed8de4d6		
Warnings:					
Information:					
4	Drawings-only black and white line drawings	IRC-0042-02-US_Drawings.pdf	211222	no	4
			70786d23632f9a01955f30d2f9a95c01c7a58a0c		
Warnings:					
Information:					
5		IRC-0042-02-US_Preliminary_Amendment.pdf	125532	yes	3
			ec8f9fcb077a96ef274d91520f74ca84cb1cd83b		
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Applicant Arguments/Remarks Made in an Amendment		3	3	
	Specification		2	2	
	Preliminary Amendment		1	1	

Warnings:					
Information:					
6	Power of Attorney	IRC-0042-02-US_Power_of_Attorney.pdf	282648	no	2
			4e5ad2b8fcc9853627cdac28e442cea5ae061ff9		
Warnings:					
Information:					
7	Application Data Sheet	IRC_0042_02_ADS.pdf	1823100	no	9
			938e0312b6154bb12c642f290755690ecb0ee7ca		
Warnings:					
Information:					
8	Information Disclosure Statement (IDS) Form (SB08)	IRC_0042_02_IDS.pdf	1035571	no	7
			73ccf62113ff467bcd726fe367893391392da0ff		
Warnings:					
Information:					
9	Foreign Reference	CN204475914_english.pdf	1231053	no	26
			67ee2f8a55ab3d214d92629d3cbbdf9c950a025f		
Warnings:					
Information:					
10	Foreign Reference	CN200968073_english.pdf	567074	no	11
			670f4cd4a1ff361d03b87fe16a8da664b4987435		
Warnings:					
Information:					
11	Non Patent Literature	http_hardware-store-online-com.pdf	44089	no	1
			68026a0eb75207d12baba0939458315665c3c8f3		
Warnings:					
Information:					
12	Non Patent Literature	International_Search_Report_and_Written_Opinion_PCT_US2017_037892.pdf	581831	no	9
			eeba3d2b590401982db5bb67bed5e1cc40c28cd4		
Warnings:					
Information:					

13	Non Patent Literature	INTEX_Ultra_Frame_Pool_Owners_Manual_May_13_2015.pdf	8617113	no	17
			94fe6e54b551efd2a05b5af9d1f11e4421b33390		
Warnings:					
Information:					
14	Non Patent Literature	INTEX_2013_Above_Ground_Pools_Catalogue.pdf	4288702	no	13
			1022911b87f36c16d4ea293f147f3560099287fe		
Warnings:					
Information:					
15	Oath or Declaration filed	IRC-0042-02-US_Declarations.pdf	257296	no	3
			ac77430d46154d8b49c942675d93fcd3d713a76		
Warnings:					
Information:					
16	Transmittal of New Application	IRC_0042_02-US_Transmittal_Letter_371.pdf	251041	no	4
			3e2d466a8cd63356413c4f29c102eb6f5c2752ce		
Warnings:					
Information:					
17	Fee Worksheet (SB06)	fee-info.pdf	34764	no	2
			7c93bde7888d44fb0a0fe7eb41c15fed352e0d28		
Warnings:					
Information:					
Total Files Size (in bytes):			19554334		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

JOINT FOR ABOVE GROUND POOL FRAME**CROSS REFERENCE TO RELATED APPLICATIONS**

[0001] The present application claims priority to the following Chinese patent applications, the disclosures of which are hereby expressly incorporated by reference herein in their entirety:

Application Number	Filing Date
CN 201620598406.9	June 17, 2016
CN 201630270359.0	June 22, 2016
CN 201621039473.3	September 6, 2016

FIELD OF THE DISCLOSURE

[0002] The present disclosure relates to an above ground pool. More particularly, the present disclosure relates to a joint for an above ground pool, and to a method for using the same.

BACKGROUND OF THE DISCLOSURE

[0003] A frame pool may include a frame assembly and a pool liner supported by the frame assembly to form a water cavity of the pool. The frame assembly may include one or more horizontal frame members (e.g., horizontal pipes) that form an upper rim of the pool and one or more vertical frame members (e.g., vertical pipes) that extend downward from the horizontal frame members to the ground. To allow the frame assembly to be disassembled for storage and assembled for use, the horizontal frame members and the vertical frame members may be removably coupled together via a plurality of T-shaped joints. Existing T-shaped joints are formed of metal, which may be susceptible to galling and corrosion, especially as any protective coating on the metal becomes worn or damaged. Also, existing T-shaped joints are relatively wide, so existing pool liners may require wide holes or gaps to accommodate such T-shaped joints, which may impact the pool's appearance and ability to contain water.

SUMMARY

[0004] The present disclosure provides a frame pool including a frame assembly and a pool liner, the frame assembly including horizontal frame members and a vertical frame member coupled together via a T-shaped joint. The T-shaped joint may be constructed of plastic to facilitate attachment and detachment to the adjacent frame members and to resist galling and corrosion. The T-shaped joint may also be relatively small to improve the appearance and water containment of the frame pool.

[0005] According to an embodiment of the present disclosure, a frame joint is disclosed for an above ground pool frame having a first horizontal frame member, a second horizontal frame member, and a vertical frame member. The frame joint includes: a first horizontal joint portion including a first coupling assembly configured to couple with the first horizontal frame member; a second horizontal joint portion including a second coupling assembly configured to couple with the second horizontal frame member; and a vertical joint portion fixedly coupled to the first and second horizontal joint portions and configured to couple with the vertical frame member; wherein a width of the vertical joint portion accounts for at least 50% of a width between the first and second coupling assemblies of the first and second horizontal joint portions.

[0006] According to another embodiment of the present disclosure, a frame joint is disclosed for an above ground pool frame having a first horizontal frame member, a second horizontal frame member, and a vertical frame member. The frame joint includes: a first horizontal joint portion configured to couple with the first horizontal frame member, the first horizontal joint portion being constructed of plastic; a second horizontal joint portion configured to couple with the second horizontal frame member, the second horizontal joint portion being constructed of plastic; and a vertical joint portion fixedly coupled to the first and second horizontal joint portions and configured to couple with the vertical frame member, the vertical joint portion being constructed of plastic.

[0007] According to yet another embodiment of the present disclosure, a method is disclosed for assembling an above ground pool. The method includes: coupling a first horizontal joint portion of a frame joint to a first horizontal frame member with a first coupling assembly;

coupling a second horizontal joint portion of the frame joint to a second horizontal frame member with a second coupling assembly; and coupling a vertical joint portion of the frame joint to a vertical frame member, wherein a width of the vertical joint portion accounts for a majority of a width between the first and second coupling assemblies of the first and second horizontal joint portions.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008] The above-mentioned and other features and advantages of this disclosure, and the manner of attaining them, will become more apparent and will be better understood by reference to the following description of embodiments of the invention taken in conjunction with the accompanying drawings, wherein:

[0009] FIG. 1 is a partial perspective view of a frame pool including a frame assembly and a pool liner, the frame assembly including horizontal frame members and a vertical frame member coupled together via an exemplary T-shaped joint of the present disclosure;

[0010] FIG. 2 is an exploded perspective view of the frame assembly of FIG. 1;

[0011] FIG. 3 is an exploded perspective view of the T-shaped joint of FIG. 1; and

[0012] FIG. 4 is an assembled cross-sectional view of the T-shaped joint of FIG. 3.

[0013] Corresponding reference characters indicate corresponding parts throughout the several views. The exemplifications set out herein illustrate exemplary embodiments of the invention and such exemplifications are not to be construed as limiting the scope of the invention in any manner.

DETAILED DESCRIPTION

[0014] A portion of an exemplary frame pool 100 is shown in FIGS. 1 and 2. The illustrative portion of the frame pool 100 includes two adjacent horizontal frame members 6 (e.g., horizontal pipes) that cooperate to form an upper rim of the frame pool 100 and a vertical frame member 7 (e.g., vertical pipe) that extends downward from the horizontal frame members 6 to support the frame pool 100 on the ground. Although not shown in FIGS. 1 and 2, similar frame members 6 and 7 may be provided around the remaining perimeter of the frame pool 100.

The frame pool 100 may vary in size and shape. For example, the frame pool 100 may be rectangular, circular, elliptical, or other suitable shapes.

[0015] Referring still to FIGS. 1 and 2, a T-shaped joint 10 may be used to removably couple the two adjacent horizontal frame members 6 to the adjacent vertical frame member 7. Although a single T-shaped joint 10 is shown in FIGS. 1 and 2, similar T-shaped joints 10 may be provided around the remaining perimeter of the frame pool 100. Each T-shaped joint 10 illustratively includes two horizontal joint portions 1 configured to couple to the horizontal frame members 6 and a vertical joint portion 2 configured to couple to the vertical frame member 7. To form the T-shape, the vertical joint portion 2 is centered between and perpendicular to the two horizontal joint portions 1. The orientation of the horizontal joint portions 1 determines the orientation of the adjacent horizontal frame members 6. In the illustrated embodiment of FIG. 1, for example, the horizontal joint portions 1 define an obtuse angle α therebetween, so the horizontal frame members 6 define the same angle α therebetween. In another embodiment, the horizontal joint portions 1 may be collinear with each other, so the horizontal frame members 6 would also be collinear with each other. In another embodiment, the horizontal joint portions 1 may be perpendicular to each other, so the horizontal frame members 6 would also be perpendicular to each other, such as along a corner of a rectangular frame pool 100.

[0016] Some or all components of the frame assembly, including the horizontal frame members 6, the vertical frame members 7, and/or the T-shaped joints 10, may be constructed of a polymer, specifically plastic, such as by injection molding. Compared to metallic components, the plastic components may be smooth and elastic to facilitate assembly and disassembly of the frame assembly. Also, the plastic components may be more resistant to galling and corrosion to promote extended use. With respect to the T-shaped joint 10, in particular, the horizontal joint portions 1 and the vertical joint portion 2 may be integrally formed as a single piece of plastic. Alternatively, the horizontal joint portions 1 and the vertical joint portion 2 may be formed as multiple pieces of plastic and then fixedly coupled (e.g., adhered, welded) together. The upper end of the T-shaped joint 10 may include a raised rim 22 (FIG. 3) to give the appearance that the vertical joint portion 2 wraps around the horizontal joint portions 1.

[0017] The illustrative frame pool 100 of FIG. 1 also includes a pool liner 8 supported by the frame members 6 and 7 to form an interior water cavity for swimming and/or bathing. The

pool liner 8 may be wrapped and secured around the horizontal frame member 6 to form a loop or fold 81. The fold 81 of the pool liner 8 may also define a gap or hole 82 to expose the T-shaped joint 10, as described further below.

[0018] The illustrative T-shaped joint 10 is described in more detail with reference to FIGS. 3 and 4.

[0019] The horizontal joint portions 1 of the illustrative T-shaped joint 10 are configured to couple with the adjacent horizontal frame members 6 (FIG. 2). The horizontal joint portions 1 may be configured to fit within the adjacent horizontal frame members 6 in a sleeved manner. Thus, the external cross-section of the horizontal joint portions 1 may match the internal cross-section of the horizontal frame members 6. In the illustrated embodiment of FIG. 3, the external cross-section of the horizontal joint portions 1 is generally triangular with rounded edges to resist rotation between the horizontal joint portions 1 and the horizontal frame members 6. It is also within the scope of the present disclosure for the external cross-section to be circular, rectangular, elliptical, or another suitable shape to match the internal cross-section of the horizontal frame members 6.

[0020] Each horizontal joint portion 1 of the T-shaped joint 10 includes a coupling assembly 3 for removable attachment to the adjacent horizontal frame member 6 (FIG. 2). As shown in FIGS. 3 and 4, each coupling assembly 3 includes a base 31 received in the horizontal joint portion 1, a helical spring 32 held in place by the base 31, and a pin 33 extending radially outward (e.g., downward) through a hole 35 in the horizontal joint portion 1. Each horizontal joint portion 1 may include an internal horizontal reinforcing rib 11 and/or an internal horizontal support member 5 to help support base 31 within the T-shaped joint 10. In an assembled or locked state, spring 32 may bias pin 33 radially outward through hole 35 to engage a corresponding recess or hole (not shown) of the horizontal frame member 6 (FIG. 2). In a disassembled or unlocked state, a user may press pin 33 radially inward to compress spring 32 and disengage the horizontal frame member 6 (FIG. 2).

[0021] The vertical joint portion 2 of the illustrative T-shaped joint 10 is configured to couple with the adjacent vertical frame member 7 (FIG. 2). The vertical joint portion 2 may be configured to fit within the adjacent vertical frame member 7 in a sleeved manner. Thus, the external cross-section of the vertical joint portion 2 may match the internal cross-section of the

vertical frame member 7. In the illustrated embodiment of FIG. 3, the external cross-section of the vertical joint portion 2 is generally triangular with rounded edges to resist rotation between the vertical joint portion 2 and the vertical frame member 7. It is also within the scope of the present disclosure for the external cross-section to be circular, rectangular, elliptical, or another suitable shape to match the internal cross-section of the vertical frame member 7.

[0022] The vertical joint portion 2 of the T-shaped joint 10 includes a coupling assembly 4 for removable attachment to the adjacent vertical frame member 7 (FIG. 2). As shown in FIGS. 3 and 4, each coupling assembly 4 includes a base 41 received in the vertical joint portion 2, a helical spring 42 held in place by the base 41, and a pin 43 extending radially outward (e.g., rearward) through a hole 45 in the vertical joint portion 2. The vertical joint portion 2 may include one or more internal vertical reinforcing ribs 21 to help support base 41 within the T-shaped joint 10, such as by compressing fingers 46 of base 41 together within the T-shaped joint 10. In an assembled or locked state, spring 42 may bias pin 43 radially outward through hole 45 to engage a corresponding recess or hole 71 of the vertical frame member 7 (FIG. 2). In a disassembled or unlocked state, a user may press pin 43 radially inward to compress spring 42 and disengage the hole 71 of the vertical frame member 7 (FIG. 2).

[0023] According to an exemplary embodiment of the present disclosure, and as shown in FIG. 4, the size of the T-shaped joint 10 may be minimized such that the size of the corresponding hole 82 in the pool liner 8 (shown in phantom) may also be minimized. The small hole 82 in the pool liner 8 may improve the appearance and water containment of the frame pool 100 (FIG. 1) while still leaving the coupling assemblies 3 and 4, specifically the pins 33 and 43 of the coupling assemblies 3 and 4, accessible for subsequent disassembly.

[0024] The width of the T-shaped joint 10 may be minimized such that the width of the corresponding hole 82 in the pool liner 8 may also be minimized. For example, the total width W_{J1} of the T-shaped joint 10 may be about 5 inches to about 7 inches, specifically about 5 3/4 inches, the width W_{J2} between the pins 33 of the coupling assemblies 3 may be about 3 inches to about 5 inches, specifically about 3 13/16 inches, and the width W_{J3} of the vertical joint portion 2 may be about 1 inches to about 3 inches, specifically about 2 3/8 inches. In the illustrated embodiment of FIG. 4, the width W_L of the hole 82 in the pool liner 8 is greater than both the width W_{J3} of the vertical joint portion 2 and the width W_{J2} between the pins 33 to expose the pins

33 of the coupling assemblies 3 for subsequent disassembly while being less than the total width W_{J1} of the T-shaped joint 10. For example, the width W_L of the hole 82 in the pool liner 8 is about 3 inches to about 7 inches, specifically about 4 1/2 inches.

[0025] To help minimize the size of the T-shaped joint 10, the pins 33 of the coupling assemblies 3 may be positioned close to the vertical joint portion 2. Due to this close positioning, the width W_{J3} of the vertical joint portion 2 may account for a majority of the width W_{J2} between the pins 33 of the coupling assemblies 3. For example, the width W_{J3} of the vertical joint portion 2 may account for 50%, 60%, 70%, 80%, or more of the width W_{J2} between the pins 33 of the coupling assemblies 3. In the illustrated embodiment of FIG. 4, in particular, the width W_{J3} of the vertical joint portion 2 accounts for about 70% of the width W_{J2} between the pins 33 of the coupling assemblies 3. The width W_{J3} of the vertical joint portion 2 may also account for a significant portion of the total width W_{J1} of the T-shaped joint 10. For example, the width W_{J3} of the vertical joint portion 2 may account for 40%, 50%, 60%, 70%, or more of the total width W_{J1} of the T-shaped joint 10. In the illustrated embodiment of FIG. 4, in particular, the width W_{J3} of the vertical joint portion 2 accounts for about 50% of the of the total width W_{J1} of the T-shaped joint 10.

[0026] Additionally, the height of the T-shaped joint 10 may be minimized such that the height of the corresponding hole 82 in the pool liner 8 may be minimized. For example, the total height H_J of the T-shaped joint 10 may be about 3 inches to about 5 inches, specifically about 3 7/8 inches. Because the pin 43 of the coupling assembly 4 may be accessible in front of the pool liner 8 and behind the T-shaped joint 10, the hole 82 in the pool liner 8 need not extend downward beneath the pin 43. Thus, in the illustrated embodiment of FIG. 4, the height H_L of the hole 82 in the pool liner 8 is less than the total height H_J of the T-shaped joint 10 while still allowing access to the pin 33 of the coupling assembly 3 and the pin 43 of the coupling assembly 4 for subsequent disassembly.

[0027] While this invention has been described as having exemplary designs, the present invention can be further modified within the spirit and scope of this disclosure. This application is therefore intended to cover any variations, uses, or adaptations of the invention using its general principles. Further, this application is intended to cover such departures from the present

disclosure as come within known or customary practice in the art to which this invention pertains and which fall within the limits of the appended claims.

WHAT IS CLAIMED IS:

1. A frame joint for an above ground pool frame having a first horizontal frame member, a second horizontal frame member, and a vertical frame member, the frame joint comprising:
 - a first horizontal joint portion including a first coupling assembly configured to couple with the first horizontal frame member;
 - a second horizontal joint portion including a second coupling assembly configured to couple with the second horizontal frame member; and
 - a vertical joint portion fixedly coupled to the first and second horizontal joint portions and configured to couple with the vertical frame member;wherein a width of the vertical joint portion accounts for at least 50% of a width between the first and second coupling assemblies of the first and second horizontal joint portions.
2. The frame joint of claim 1, wherein the width of the vertical joint portion accounts for at least 40% of a total width of the frame joint.
3. The frame joint of claim 2, wherein the width of the vertical joint portion accounts for about 50% of the total width of the frame joint.
4. The frame joint of claim 1, wherein each of the first and second coupling assemblies comprises a base, a helical spring supported by the base, and a pin biased outward through a hole in the respective horizontal joint portion by the helical spring to engage a corresponding recess of the respective horizontal frame member.
5. The frame joint of claim 4, wherein the width of the vertical joint portion accounts for about 70% of a width between the pins of the first and second coupling assemblies.
6. The frame joint of claim 1, further comprising a liner wrapped around the first and second horizontal frame members, the liner defining a hole that is sized to expose the first and second coupling assemblies.

7. The frame joint of claim 6, wherein a width of the frame joint exceeds a width of the hole in the liner.
8. The frame joint of claim 6, wherein a height of the frame joint exceeds a height of the hole in the liner.
9. A frame joint for an above ground pool frame having a first horizontal frame member, a second horizontal frame member, and a vertical frame member, the frame joint comprising:
a first horizontal joint portion configured to couple with the first horizontal frame member, the first horizontal joint portion being constructed of plastic;
a second horizontal joint portion configured to couple with the second horizontal frame member, the second horizontal joint portion being constructed of plastic; and
a vertical joint portion fixedly coupled to the first and second horizontal joint portions and configured to couple with the vertical frame member, the vertical joint portion being constructed of plastic.
10. The frame joint of claim 9, wherein the vertical joint portion is centered between the first and second horizontal joint portions to form a T-shaped frame joint.
11. The frame joint of claim 9, wherein the first and second horizontal joint portions cooperate to form an obtuse angle that defines a water cavity.
12. The frame joint of claim 9, wherein the vertical joint portion is integrally formed with the first and second horizontal joint portions as a single piece.
13. The frame joint of claim 9, further comprising:
a first coupling assembly associated with the first horizontal joint portion; and
a second coupling assembly associated with the second horizontal joint portion;
wherein a width of the vertical joint portion accounts for a majority of a width between the first and second coupling assemblies.

14. A method of assembling an above ground pool, the method comprising:
coupling a first horizontal joint portion of a frame joint to a first horizontal frame member with a first coupling assembly;
coupling a second horizontal joint portion of the frame joint to a second horizontal frame member with a second coupling assembly; and
coupling a vertical joint portion of the frame joint to a vertical frame member;
wherein a width of the vertical joint portion accounts for a majority of a width between the first and second coupling assemblies of the first and second horizontal joint portions.
15. The method of claim 14, wherein:
an external cross-section of the first horizontal joint portion matches an internal cross-section of the first horizontal frame member;
an external cross-section of the second horizontal joint portion matches an internal cross-section of the second horizontal frame member; and
an external cross-section of the vertical joint portion matches an internal cross-section of the vertical frame member.
16. The method of claim 14, wherein the first horizontal joint portion, the second horizontal joint portion, and the vertical joint portion are constructed of plastic.
17. The method of claim 14, wherein:
coupling the first horizontal joint portion to the first horizontal frame member comprises depressing a first pin into the first horizontal joint portion and releasing the first pin into engagement with the first horizontal frame member; and
coupling the second horizontal joint portion to the second horizontal frame member comprises depressing a second pin into the second horizontal joint portion and releasing the second pin into engagement with the second horizontal frame member.
18. The method of claim 14, further comprising wrapping a liner around the first and second horizontal frame members with a hole exposing the first and second coupling assemblies.

19. The method of claim 18, wherein a width of the hole in the liner exceeds a width between the first and second coupling assemblies.

20. The method of claim 18, wherein the vertical joint portion of the frame joint is coupled to the vertical frame member with a third coupling assembly, and wherein a height of the hole in the liner is less than a distance between the first and third coupling assemblies.

ABSTRACT

A frame pool is disclosed including a frame assembly and a pool liner, the frame assembly including horizontal frame members and a vertical frame member coupled together via a T-shaped joint. The T-shaped joint may be constructed of plastic to facilitate attachment and detachment to the adjacent frame members and to resist galling and corrosion. The T-shaped joint may also be relatively small to improve the appearance and water containment of the frame pool.

1/4

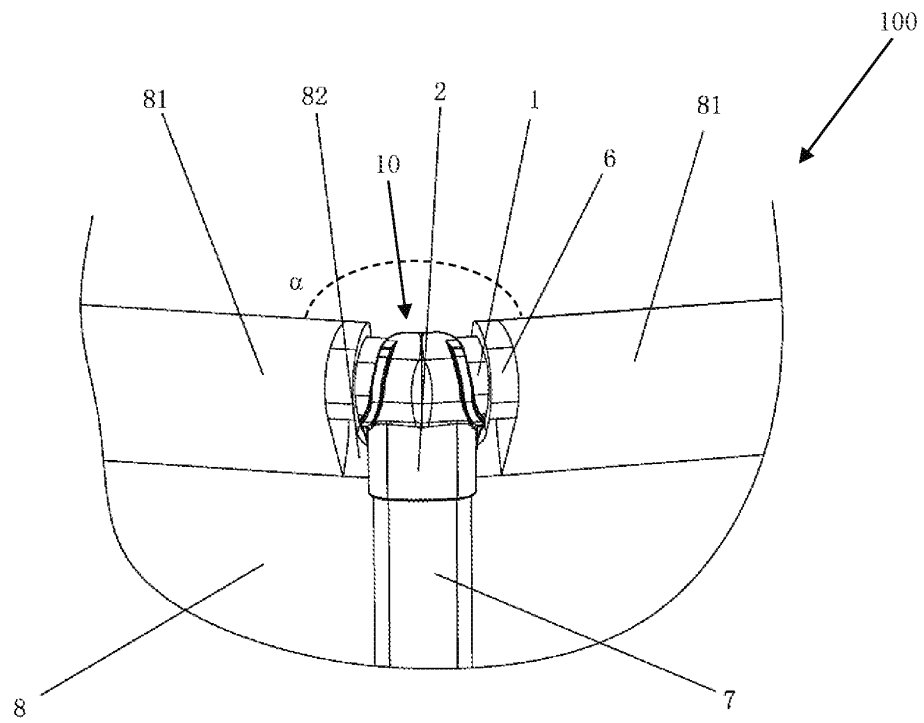


FIG. 1

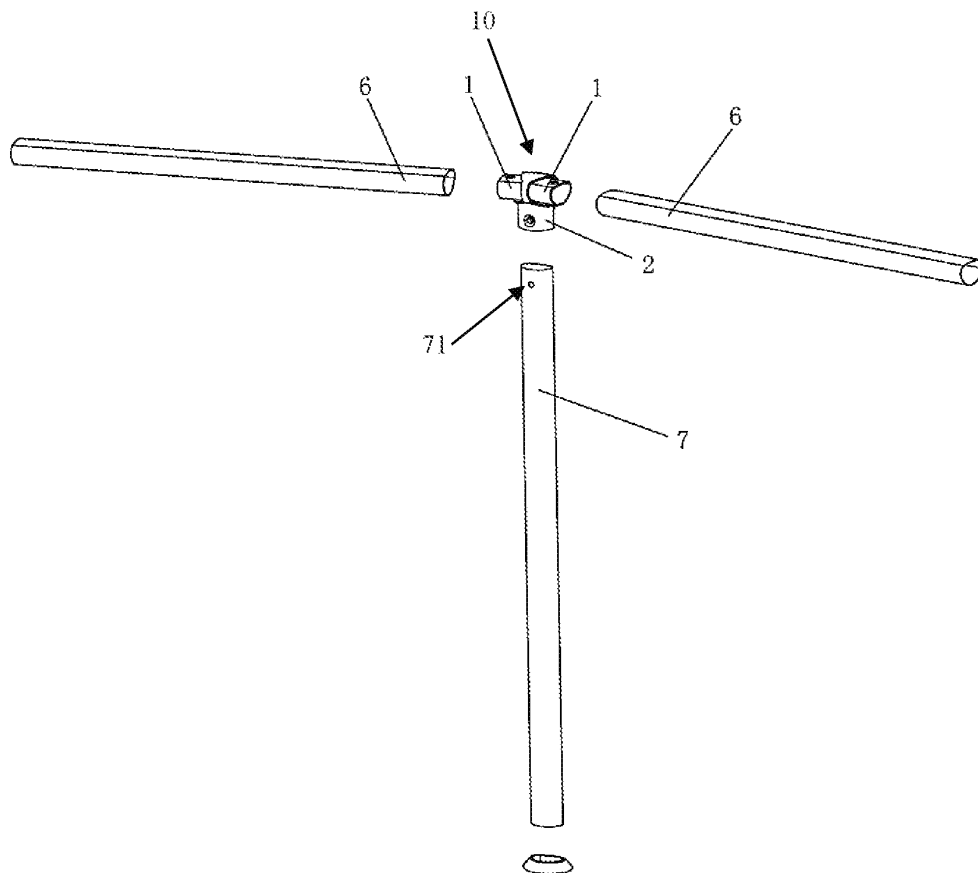


FIG. 2

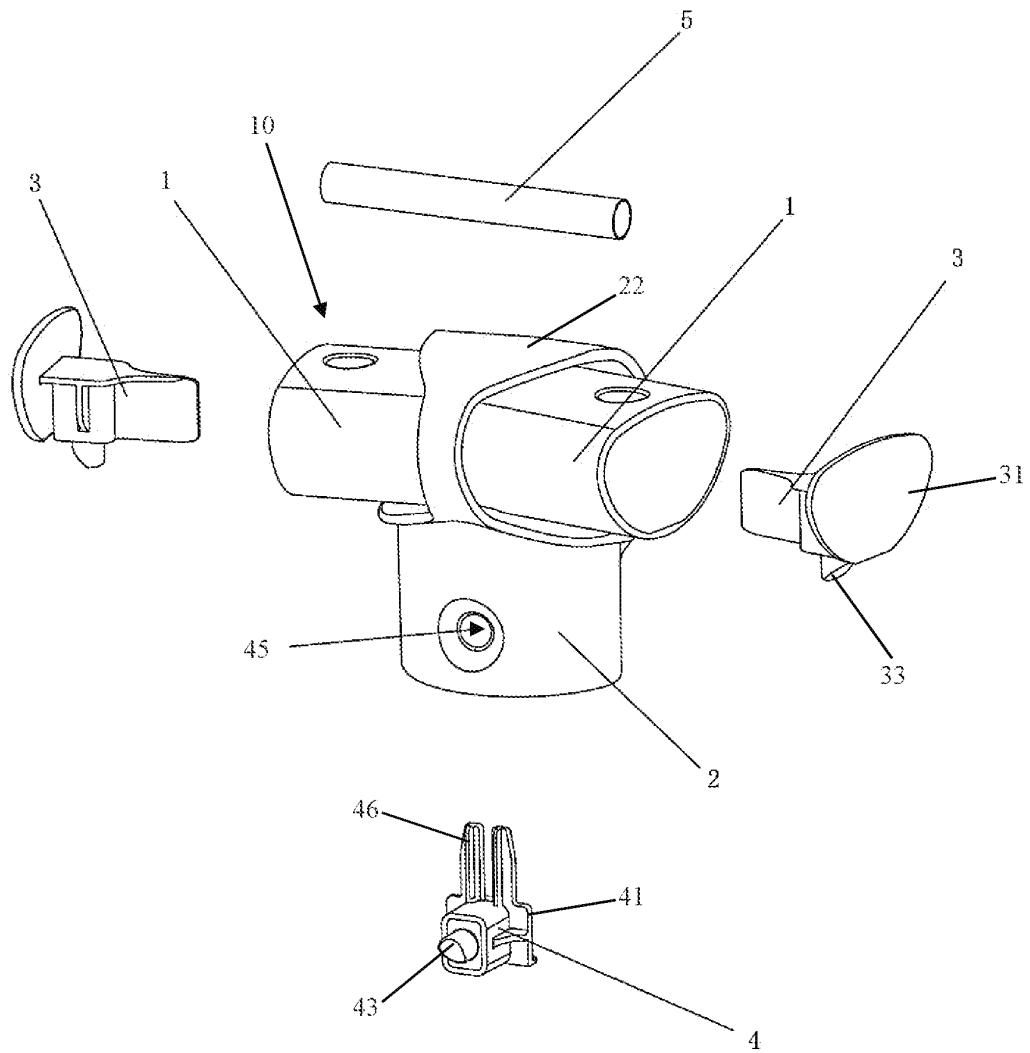


FIG. 3

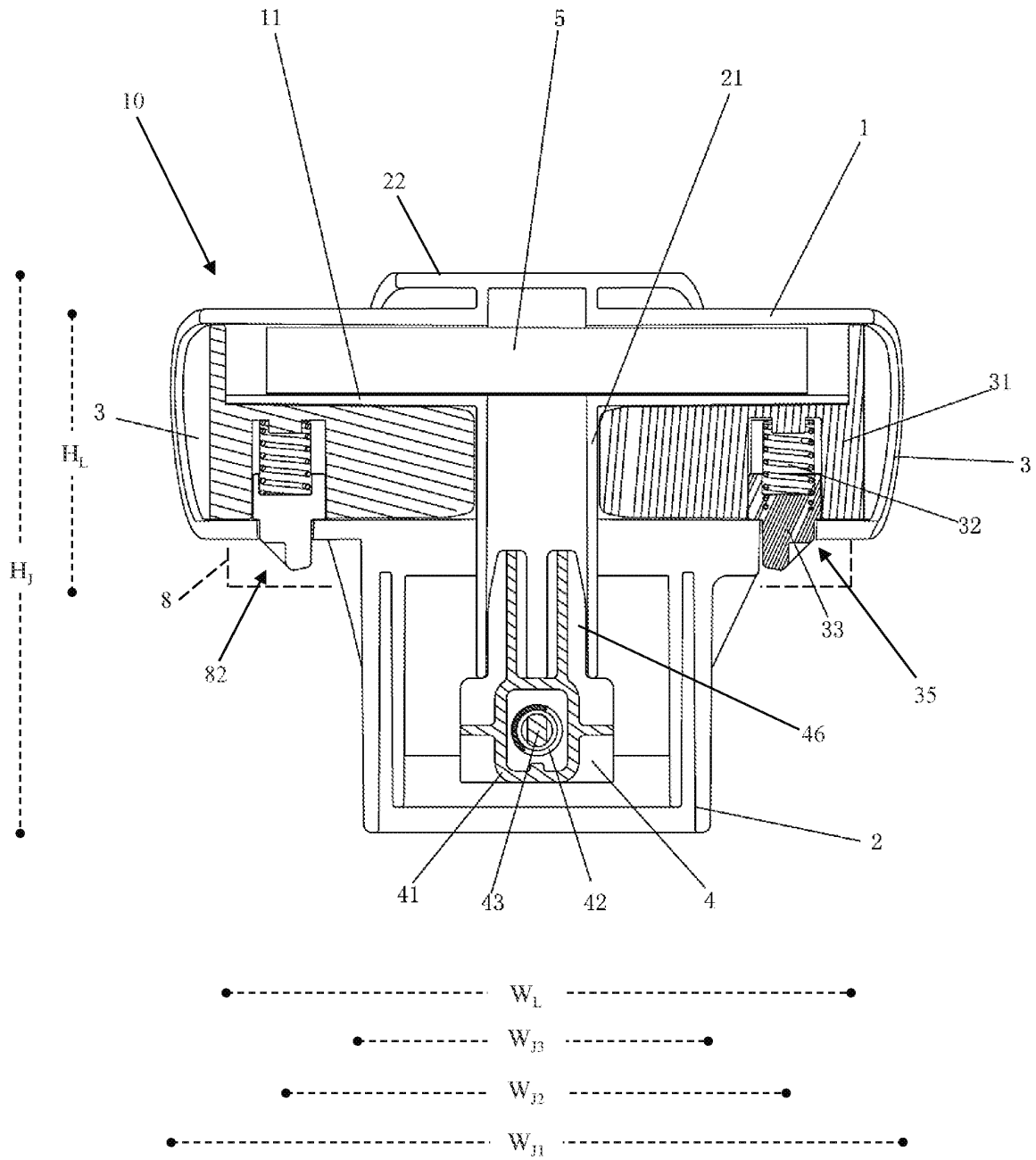


FIG. 4

REMARKS

Applicant respectfully requests that the above Preliminary Amendment be entered prior to the examination of the present application.

Respectfully submitted,

/jamie m. drewry/

Jamie M. Drewry, Reg. No. 61,320

Attorney for Applicant

FAEGRE BAKER DANIELS

300 North Meridian Street, Suite 2700

Indianapolis, IN 46204

Telephone: 317-237-0300

Date: December 14, 2018

AMENDMENTS TO THE SPECIFICATION

Please amend the specification as follows:

[0001] The present application is a national stage application based on International Patent Application No. PCT/US2017/037892, filed June 16, 2017, which claims priority to the following Chinese patent applications, the disclosures of which are hereby expressly incorporated by reference herein in their entirety:

Application No.	Filing Date
CN 201620598406.9	June 17, 2016
CN 201630270359.0	June 22, 2016
CN 201621039473.3	September 6, 2016

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

<i>Application No.:</i>	To be assigned	<i>Confirmation No.:</i>	To be assigned
<i>Inventor(s):</i>	Hua Hsiang Lin		
<i>Filed:</i>	Herewith		
<i>Title:</i>	JOINT FOR ABOVE GROUND POOL FRAME		
<i>Art Unit:</i>	To be assigned		
<i>Examiner:</i>	To be assigned		
<i>Atty. Docket No.:</i>	IRC-0042-02-US		
<i>Customer No.:</i>	27268		

PRELIMINARY AMENDMENT

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Commissioner:

Prior to the examination of the above-identified patent application, please amend the application as follows:

Amendments to the Specification beginning on page 2 of this paper; and

Remarks beginning on page 3 of this paper.

TRANSMITTAL FOR POWER OF ATTORNEY TO ONE OR MORE REGISTERED PRACTITIONERS

NOTE: This form is to be submitted with the Power of Attorney by Applicant form (PTO/AIA/82B) to identify the application to which the Power of Attorney is directed, in accordance with 37 CFR 1.5, unless the application number and filing date are identified in the Power of Attorney by Applicant form. If neither form PTO/AIA/82A nor form PTO/AIA/82B identifies the application to which the Power of Attorney is directed, the Power of Attorney will not be recognized in the application.

Application Number	To be assigned
Filing Date	December 14, 2018
First Named Inventor	Hua Hsiang Lin
Title	JOINT FOR ABOVE GROUND POOL FRAME
Art Unit	To be assigned
Examiner Name	To be assigned
Attorney Docket Number	IRC-0042-02-US

SIGNATURE of Applicant or Patent Practitioner

Signature	/jamie m. drewry/	Date (Optional)	12/14/2018
Name	Jamie M. Drewry	Registration Number	61,320
Title (if Applicant is a juristic entity)			
Applicant Name (if Applicant is a juristic entity)			

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. If more than one applicant, use multiple forms.



*Total of 1 forms are submitted.

This collection of information is required by 37 CFR 1.131, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

POWER OF ATTORNEY BY APPLICANT

I hereby revoke all previous powers of attorney given in the application identified in either the attached transmittal letter or the boxes below.

Application Number

Filing Date

(Note: The boxes above may be left blank if information is provided on form PTO/AIA/82A.)



I hereby appoint the Patent Practitioner(s) associated with the following Customer Number as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above:

27268

OR



I hereby appoint Practitioner(s) named in the attached list (form PTO/AIA/82C) as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the patent application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above. (Note: Complete form PTO/AIA/82C.)

Please recognize or change the correspondence address for the application identified in the attached transmittal letter or the boxes above to:



The address associated with the above-mentioned Customer Number

OR



The address associated with Customer Number:

OR



Firm or
Individual Name

Address

City

State

Zip

Country

Telephone

Email

I am the Applicant (if the Applicant is a juristic entity, list the Applicant name in the box):

Intex Marketing Ltd.



Inventor or Joint Inventor (title not required below)



Legal Representative of a Deceased or Legally Incapacitated Inventor (title not required below)



Assignee or Person to Whom the Inventor is Under an Obligation to Assign (provide signer's title if applicant is a juristic entity)



Person Who Otherwise Shows Sufficient Proprietary Interest (e.g., a petition under 37 CFR 1.46(b)(2) was granted in the application or is concurrently being filed with this document) (provide signer's title if applicant is a juristic entity)

SIGNATURE of Applicant for Patent

The undersigned (whose title is supplied below) is authorized to act on behalf of the applicant (e.g., where the applicant is a juristic entity).

Signature

Date (Optional)

Name

William G. Smith

Title

Attorney in Fact

NOTE: Signature - This form must be signed by the applicant in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. If more than one applicant, use multiple forms.



Total of 1 forms are submitted.

This collection of information is required by 37 CFR 1.131, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	IRC-0042-02-US
		Application Number	
Title of Invention	JOINT FOR ABOVE GROUND POOL FRAME		
<p>The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76.</p> <p>This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.</p>			

Secrecy Order 37 CFR 5.2:

☐ Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

Inventor Information:

Inventor	1				Remove	
Legal Name						
Prefix	Given Name	Middle Name	Family Name	Suffix		
	Hua	Hsiang	Lin, deceased			
Residence Information (Select One) US Residency • Non US Residency Active US Military Service						
City	Fujian	Country of Residence ⁱ		CN		
Mailing Address of Inventor:						
Address 1		No. 858 Wengjiao Road				
Address 2		Xinyang Industrial Zone, Haicang, Xiamen				
City	Fujian	State/Province				
Postal Code		Country ⁱ	CN			
Inventor	2				Remove	
Legal Name						
Prefix	Given Name	Middle Name	Family Name	Suffix		
	Yaw	Yuan	Hsu			
Residence Information (Select One) US Residency • Non US Residency Active US Military Service						
City	Fujian	Country of Residence ⁱ		CN		
Mailing Address of Inventor:						
Address 1		No. 858 Wengjiao Road				
Address 2		Xinyang Industrial Zone, Haicang, Xiamen				
City	Fujian	State/Province				
Postal Code		Country ⁱ	CN			
All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the Add button.						
Add						

Correspondence Information:

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	IRC-0042-02-US
		Application Number	
Title of Invention	JOINT FOR ABOVE GROUND POOL FRAME		

Enter either Customer Number or complete the Correspondence Information section below.
For further information see 37 CFR 1.33(a).

☐ An Address is being provided for the correspondence information of this application.

Customer Number	27268		
Email Address	intear@faegrebd.com	Add Email	Remove Email

Application Information:

Title of the Invention	JOINT FOR ABOVE GROUND POOL FRAME		
Attorney Docket Number	IRC-0042-02-US	Small Entity Status Claimed	☐
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	7	Suggested Figure for Publication (if any)	

Filing By Reference:

Only complete this section when filing an application by reference under 35 U.S.C. 111(c) and 37 CFR 1.57(a). Do not complete this section if application papers including a specification and any drawings are being filed. Any domestic benefit or foreign priority information must be provided in the appropriate section(s) below (i.e., "Domestic Benefit/National Stage Information" and "Foreign Priority Information").

For the purposes of a filing date under 37 CFR 1.53(b), the description and any drawings of the present application are replaced by this reference to the previously filed application, subject to conditions and requirements of 37 CFR 1.57(a).

Application number of the previously filed application	Filing date (YYYY-MM-DD)	Intellectual Property Authority or Country

Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)

☐ **Request Not to Publish.** I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application **has not and will not** be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32). Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.

Please Select One:	☒ Customer Number	US Patent Practitioner	☐ Limited Recognition (37 CFR 11.9)
Customer Number	27268		

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	IRC-0042-02-US
		Application Number	
Title of Invention	JOINT FOR ABOVE GROUND POOL FRAME		

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, 365(c), or 386(c) or indicate National Stage entry from a PCT application. Providing benefit claim information in the Application Data Sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.

When referring to the current application, please leave the "Application Number" field blank.

Prior Application Status	<input type="text"/>	<input type="button" value="Remove"/>	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
<input type="text"/>	a 371 of international	PCT/US2017/037892	2017-06-16
Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the Add button.			<input type="button" value="Add"/>

Foreign Priority Information:

This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55. When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX)ⁱ the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(i)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

Application Number	Country ⁱ	Filing Date (YYYY-MM-DD)	Access Code ⁱ (if applicable)	<input type="button" value="Remove"/>
201620598406.9	CN	2016-06-17		
Application Number	Country ⁱ	Filing Date (YYYY-MM-DD)	Access Code ⁱ (if applicable)	<input type="button" value="Remove"/>
201630270359.0	CN	2016-06-22		
Application Number	Country ⁱ	Filing Date (YYYY-MM-DD)	Access Code ⁱ (if applicable)	<input type="button" value="Remove"/>
201621039473.3	CN	2016-09-06		
Additional Foreign Priority Data may be generated within this form by selecting the Add button.				<input type="button" value="Add"/>

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	IRC-0042-02-US
		Application Number	
Title of Invention	JOINT FOR ABOVE GROUND POOL FRAME		

☐	<p>This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.</p> <p>NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.</p>
--------------------------	---

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	IRC-0042-02-US
		Application Number	
Title of Invention	JOINT FOR ABOVE GROUND POOL FRAME		

Authorization or Opt-Out of Authorization to Permit Access:

When this Application Data Sheet is properly signed and filed with the application, applicant has provided written authority to permit a participating foreign intellectual property (IP) office access to the instant application-as-filed (see paragraph A in subsection 1 below) and the European Patent Office (EPO) access to any search results from the instant application (see paragraph B in subsection 1 below).

Should applicant choose not to provide an authorization identified in subsection 1 below, applicant **must opt-out** of the authorization by checking the corresponding box A or B or both in subsection 2 below.

NOTE: This section of the Application Data Sheet is **ONLY** reviewed and processed with the **INITIAL** filing of an application. After the initial filing of an application, an Application Data Sheet cannot be used to provide or rescind authorization for access by a foreign IP office(s). Instead, Form PTO/SB/39 or PTO/SB/69 must be used as appropriate.

1. Authorization to Permit Access by a Foreign Intellectual Property Office(s)

A. Priority Document Exchange (PDX) - Unless box A in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the State Intellectual Property Office of the People's Republic of China (SIPO), the World Intellectual Property Organization (WIPO), and any other foreign intellectual property office participating with the USPTO in a bilateral or multilateral priority document exchange agreement in which a foreign application claiming priority to the instant patent application is filed, access to: (1) the instant patent application-as-filed and its related bibliographic data, (2) any foreign or domestic application to which priority or benefit is claimed by the instant application and its related bibliographic data, and (3) the date of filing of this Authorization. See 37 CFR 1.14(h)(1).

B. Search Results from U.S. Application to EPO - Unless box B in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the EPO access to the bibliographic data and search results from the instant patent application when a European patent application claiming priority to the instant patent application is filed. See 37 CFR 1.14(h)(2).

The applicant is reminded that the EPO's Rule 141(1) EPC (European Patent Convention) requires applicants to submit a copy of search results from the instant application without delay in a European patent application that claims priority to the instant application.

2. Opt-Out of Authorizations to Permit Access by a Foreign Intellectual Property Office(s)

☐ A. Applicant **DOES NOT** authorize the USPTO to permit a participating foreign IP office access to the instant application-as-filed. If this box is checked, the USPTO will not be providing a participating foreign IP office with any documents and information identified in subsection 1A above.

☐ B. Applicant **DOES NOT** authorize the USPTO to transmit to the EPO any search results from the instant patent application. If this box is checked, the USPTO will not be providing the EPO with search results from the instant application.

NOTE: Once the application has published or is otherwise publicly available, the USPTO may provide access to the application in accordance with 37 CFR 1.14.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	IRC-0042-02-US
		Application Number	
Title of Invention	JOINT FOR ABOVE GROUND POOL FRAME		

Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.			
Applicant	1	<input type="button" value="Remove"/>	
If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section.			
		<input type="button" value="Clear"/>	
Assignee	Legal Representative under 35 U.S.C. 117		Joint Inventor
☐ Person to whom the inventor is obligated to assign.		☐ Person who shows sufficient proprietary interest	
If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:			
<div></div>			
Name of the Deceased or Legally Incapacitated Inventor: <div></div>			
If the Applicant is an Organization check here. ☒			
Organization Name	Intex Marketing Ltd.		
Mailing Address Information For Applicant:			
Address 1	Wickham's Cay, P.O. Box 662		
Address 2	Road Town		
City	Tortola	State/Province	
Country	VG	Postal Code	VG1110
Phone Number		Fax Number	
Email Address			
Additional Applicant Data may be generated within this form by selecting the Add button. <input type="button" value="Add"/>			

Assignee Information including Non-Applicant Assignee Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	IRC-0042-02-US
		Application Number	
Title of Invention	JOINT FOR ABOVE GROUND POOL FRAME		

Assignee 1				
Complete this section if assignee information, including non-applicant assignee information, is desired to be included on the patent application publication. An assignee-applicant identified in the "Applicant Information" section will appear on the patent application publication as an applicant. For an assignee-applicant, complete this section only if identification as an assignee is also desired on the patent application publication.				
<input type="button" value="Remove"/>				
If the Assignee or Non-Applicant Assignee is an Organization check here. ☐				
Prefix	Given Name	Middle Name	Family Name	Suffix
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Mailing Address Information For Assignee including Non-Applicant Assignee:				
Address 1		<input type="text"/>		
Address 2		<input type="text"/>		
City	<input type="text"/>	State/Province	<input type="text"/>	
Country i	<input type="text"/>	Postal Code	<input type="text"/>	
Phone Number	<input type="text"/>	Fax Number	<input type="text"/>	
Email Address	<input type="text"/>			
Additional Assignee or Non-Applicant Assignee Data may be generated within this form by selecting the Add button. <input type="button" value="Add"/>				

Signature:

NOTE: This Application Data Sheet must be signed in accordance with 37 CFR 1.33(b). **However, if this Application Data Sheet is submitted with the INITIAL filing of the application and either box A or B is not checked in subsection 2 of the "Authorization or Opt-Out of Authorization to Permit Access" section, then this form must also be signed in accordance with 37 CFR 1.14(c).**

This Application Data Sheet **must** be signed by a patent practitioner if one or more of the applicants is a **juristic entity** (e.g., corporation or association). If the applicant is two or more joint inventors, this form must be signed by a patent practitioner, **all** joint inventors who are the applicant, or one or more joint inventor-applicants who have been given power of attorney (e.g., see USPTO Form PTO/AIA/81) on behalf of **all** joint inventor-applicants.

See 37 CFR 1.4(d) for the manner of making signatures and certifications.

Signature	/jamie m. drewry/		Date (YYYY-MM-DD)	2018-12-14	
First Name	Jamie M.	Last Name	Drewry	Registration Number	61,320
Additional Signature may be generated within this form by selecting the Add button. <input type="button" value="Add"/>					

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	IRC-0042-02-US
		Application Number	
Title of Invention	JOINT FOR ABOVE GROUND POOL FRAME		

This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Doc code: IDS

Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (02-18)

Approved for use through 11/30/2020. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	
	Filing Date	2018-12-17
	First Named Inventor	Hua Hsiang Lin
	Art Unit	
	Examiner Name	
	Attorney Docket Number	IRC-0042-02-US

U.S.PATENTS						Remove
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	D174950		1955-06-14	Fishberg	
	2	3225362		1965-12-28	Barrera	
	3	3654640		1972-04-11	Katzman	
	4	4323319		1982-04-06	Adams	
	5	5054135		1991-10-08	Dallaire et al.	
	6	5143476		1992-09-01	Pruis	
	7	D361847		1995-08-29	Cetrulo	
	8	D417918		1999-12-21	Mussa	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		
	Filing Date		2018-12-17
	First Named Inventor	Hua Hsiang Lin	
	Art Unit		
	Examiner Name		
	Attorney Docket Number		IRC-0042-02-US

	9	D420145		2000-02-01	Mussa	
	10	D420146		2000-02-01	Mussa	
	11	6079894		2000-06-27	Obitts	
	12	6272696		2001-08-14	Sobel et al.	
	13	D472648		2003-04-01	Linsley	
	14	6604250		2003-08-12	Lee	
	15	D495434		2004-08-31	Cooper	
	16	6803007		2004-10-12	Meggiolan	
	17	D504523		2005-04-26	Gimpel	
	18	D567394		2008-04-22	Pena	
	19	D626405		2010-11-02	Goad	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number			
	Filing Date		2018-12-17	
	First Named Inventor	Hua Hsiang Lin		
	Art Unit			
	Examiner Name			
	Attorney Docket Number	IRC-0042-02-US		

	20	D654353		2012-02-21	Tabler	
	21	D707366		2014-06-17	Rowland	
	22	D759889		2016-06-21	Seehof	
	23	D760425		2016-06-28	Seehof	

If you wish to add additional U.S. Patent citation information please click the Add button.

Add

U.S.PATENT APPLICATION PUBLICATIONS

Remove

Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear
	1	20020042948		2002-04-18	Lee	
	2	20040118844		2004-06-24	Bennett et al.	
	3	20090205121		2009-08-20	Cheng	
	4	20100083437		2010-04-08	Hui	
	5	20140325751		2014-11-06	Hake	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		
	Filing Date		2018-12-17
	First Named Inventor	Hua Hsiang Lin	
	Art Unit		
	Examiner Name		
	Attorney Docket Number	IRC-0042-02-US	

	6	20160201348		2016-07-14	Liu	
	7	20160222686		2016-08-04	Liu	

If you wish to add additional U.S. Published Application citation information please click the Add button.

FOREIGN PATENT DOCUMENTS								<input type="button" value="Remove"/>
Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ² i	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	T ⁵
	1	200968073	CN		2007-10-31	Intex Industries (Xiamen) Co. Ltd.		
	2	204475914	CN		2015-07-15	Shanghai Bestway		

If you wish to add additional Foreign Patent Document citation information please click the Add button

NON-PATENT LITERATURE DOCUMENTS								<input type="button" value="Remove"/>
Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.						T ⁵
	1	International Search Report and Written Opinion dated August 24, 2017 in corresponding international Application No. PCT/US2017/037892.						
	2	Intex, Ultra Frame Pool Owner's Manual, May 13, 2015, 17 pages.						
	3	Intex, 2013 Above Ground Pools Catalogue, Copyright 2012, 13 pages.						

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		
	Filing Date		2018-12-17
	First Named Inventor	Hua Hsiang Lin	
	Art Unit		
	Examiner Name		
	Attorney Docket Number		IRC-0042-02-US

	4	http://hardware-store-online.com/berater/intex-ultra-frame-pool-horizontal-beam#more-infos Retrieved 7/31/2017.	
--	---	--	--

If you wish to add additional non-patent literature document citation information please click the Add button

EXAMINER SIGNATURE

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		
	Filing Date		2018-12-17
	First Named Inventor	Hua Hsiang Lin	
	Art Unit		
	Examiner Name		
	Attorney Docket Number	IRC-0042-02-US	

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/jamie m. drewry/	Date (YYYY-MM-DD)	2018-12-14
Name/Print	Jamie M. Drewry	Registration Number	61,320

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.



Espacenet

Bibliographic data: CN204475914 (U) — 2015-07-15

Oval support pool

Inventor(s): LIU FENG ± (LIU FENG)

Applicant(s): SHANGHAI BESTWAY INFLATABLES & MATERIAL CORP ±
(SHANGHAI BESTWAY INFLATABLES & MATERIAL CORP)

Classification: - **international:** E04H4/04
- **cooperative:**

Application number: CN20152057049U 20150127

Priority number (s): CN20152057049U 20150127

Abstract of CN204475914 (U)

The utility model provides an oval support pool comprising a supporting frame and a soft film pool liner which is used for accommodating water. The supporting frame comprises a horizontal oval upper frame and a plurality of vertical and oblique supporting pins supporting the upper frame. Two ends of the long axis of the oval upper frame are provided with two arc frames in opposite positions, the arc frames are connected through two parallel and isometric straight frames respectively, and the enclosure upper frame is obtained through the arc frames and the straight frames. The oval support pool is simple in structure, convenient to assemble, solid and stable, high in safety, attractive in shape and high in space utilization rate.

(19) 中华人民共和国国家知识产权局



(12) 实用新型专利

(10) 授权公告号 CN 204475914 U

(45) 授权公告日 2015. 07. 15

(21) 申请号 201520057049. 0

(22) 申请日 2015. 01. 27

(73) 专利权人 上海荣威塑胶工业有限公司

地址 201812 上海市嘉定区曹安路 3065 号

(72) 发明人 刘峰

(74) 专利代理机构 上海专利商标事务所有限公
司 31100

代理人 徐洁晶

(51) Int. Cl.

E04H 4/04(2006. 01)

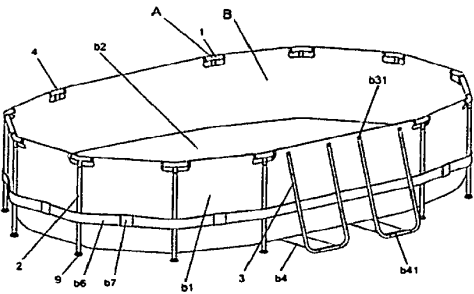
权利要求书1页 说明书5页 附图8页

(54) 实用新型名称

椭圆形支架泳池

(57) 摘要

本实用新型提供一种椭圆形支架泳池, 包括一个支撑框架和一个由支撑框架支撑的用于容纳水体的柔性薄膜水池内衬; 支撑框架包括一个水平的、整体呈椭圆形的上框架、支撑上框架的若干垂直支撑脚管和斜支撑脚管; 上框架的椭圆形长轴方向的两端为两段位置相对的弧形框架, 两段弧形框架之间由两段相互平行且长度相等的直框架分别连接, 弧形框架和直框架构成闭合的上框架。本实用新型的支架泳池结构简单、安装方便、牢固稳定、安全性高、外形美观以及空间利用率高。



CN 204475914 U

1. 一种椭圆形支架泳池, 其特征在于, 包括一个支撑框架 (A) 和一个由所述支撑框架 (A) 支撑的用于容纳水体的柔性薄膜水池内衬 (B);

所述支撑框架 (A) 包括一个水平的、整体呈椭圆形的上框架 (1)、支撑所述上框架 (1) 的若干垂直支撑脚管 (2) 和斜支撑脚管 (3); 所述上框架 (1) 的椭圆形长轴方向的两端为两段位置相对的弧形框架 (11), 两段所述弧形框架 (11) 之间由两段相互平行且长度相等的直框架 (12) 分别连接, 所述弧形框架 (11) 和所述直框架 (12) 构成闭合的所述上框架 (1)。

2. 根据权利要求 1 所述的椭圆形支架泳池, 其特征在于, 每段所述弧形框架 (11) 由至少两根第一水平支撑管 (111) 相互连接而成; 每段所述直框架 (12) 由至少一根第二水平支撑管 (121) 构成。

3. 根据权利要求 2 所述的椭圆形支架泳池, 其特征在于, 每段所述直框架 (12) 包括至少两根第二水平支撑管 (121), 所述第二水平支撑管 (121) 之间相互对插并通过弹销结构固定连接。

4. 根据权利要求 3 所述的椭圆形支架泳池, 其特征在于, 两根所述第一水平支撑管 (111) 与一根所述垂直支撑脚管 (2) 之间以及一根所述第一水平支撑管 (111)、一根所述第二水平支撑管 (121) 与一根所述垂直支撑脚管 (2) 之间均是通过 T 形接头 (4) 辅以弹销结构相互连接的。

5. 根据权利要求 2 或 3 所述的椭圆形支架泳池, 其特征在于, 所述第二水平支撑管 (121) 的下表面具有至少一对或者至少一个直径大于所述斜支撑脚管 (3) 外径的斜支撑开孔 (1211)。

6. 根据权利要求 5 所述的椭圆形支架泳池, 其特征在于, 所述斜支撑脚管 (3) 为 U 形管, 其两端分别插入一对所述斜支撑开孔 (1211) 内, 以支撑所述直框架 (12)。

7. 根据权利要求 5 所述的椭圆形支架泳池, 其特征在于, 所述斜支撑脚管 (3) 为倒 T 形管, 其上端插入一个所述斜支撑开孔 (1211) 内, 以支撑所述直框架 (12)。

8. 根据权利要求 1 所述的椭圆形支架泳池, 其特征在于, 所述柔性薄膜水池内衬 (B) 由夹设有网布的柔性增强 PVC 胶布或者 PU 胶布制成。

9. 根据权利要求 8 所述的椭圆形支架泳池, 其特征在于, 所述柔性薄膜水池内衬 (B) 的包括池壁 (b1) 和椭圆形的池底 (b2), 所述池壁 (b1) 的上边缘设有穿套所述上框架 (1) 的所述第一水平支撑管 (111) 和所述第二水平支撑管 (121) 的多个第一套管 (b11), 将所述柔性薄膜水池内衬 (B) 与所述上框架 (1) 之间固定。

10. 根据权利要求 9 所述的椭圆形支架泳池, 其特征在于, 所述柔性薄膜水池内衬 (B) 的所述池底 (b2) 与所述斜支撑脚管 (3) 的底端之间设有斜支撑管拉带 (b4); 所述斜支撑管拉带 (b4) 的一端与所述池底 (b2) 固定连接, 另一端设有第二套管 (b41), 所述斜支撑脚管 (3) 的底端穿套于所述第二套管 (b41) 中, 位置受所述斜支撑管拉带 (b4) 的限制。

椭圆形支架泳池

技术领域

[0001] 本实用新型涉及可以在家庭的庭院、花园等地方使用的便携式家用地上泳池技术领域,具体来说,本实用新型涉及一种包含支撑框架和柔性薄膜水池内衬的椭圆形支架泳池。

背景技术

[0002] 便携式家用地上泳池是放在家庭的庭院、花园、草坪或其它空地上供成人和儿童使用的,它具有拆装方便,易于收藏等优点。地上泳池有很多种不同的结构,主要分为有金属(或塑胶)支架的支架泳池和没有金属(或塑胶)支架的无支架泳池。地上泳池的形式多样,种类繁多。但是,现有技术中的支架泳池主要存在以下缺陷:

[0003] 1、相对于其它圆形支架泳池和椭圆形支架泳池,矩形支架泳池支架部分采用的钢管数量要多,材料成本缺乏优势,而且造成整套泳池的重量较大,不易搬运。其次,由于矩形支架泳池的四边都采用斜支架,使得泳池的占地面积较大,在一些较为狭窄的场地会限制泳池的安装和使用。再次,矩形支架泳池的上框架四条边框的钢管是通过形直角钢管以非固定方式连接的,用户使用时容易被相邻两边的上框架钢管夹伤,故存在一定的安全隐患。

[0004] 2、圆形支架泳池由于是圆形设计,因此泳池的长度是比较有限的,会影响到用户的使用。

[0005] 3、现有技术的椭圆形支架泳池,只在泳池的两侧设有支撑钢管,其它部位没有任何的支撑框架或钢管,使得整个泳池的结构不太稳固。用户在泳池中使用时,泳池会随着水的晃动而产生一定的晃动。另外,在没有支架支撑的部分,泳池的池壁受到向下重压时,水会从池壁被压低的部位流出来。

实用新型内容

[0006] 本实用新型所要解决的技术问题是针对现有技术中存在的缺陷,提供一种便携式椭圆形支架泳池,其结构简单、安装方便、牢固稳定、安全性高、外形美观以及空间利用率高。

[0007] 为解决上述技术问题,本实用新型提供一种椭圆形支架泳池,包括一个支撑框架和一个由所述支撑框架支撑的用于容纳水体的柔性薄膜水池内衬;

[0008] 所述支撑框架包括一个水平的、整体呈椭圆形的上框架、支撑所述上框架的若干垂直支撑脚管和斜支撑脚管;所述上框架的椭圆形长轴方向的两端为两段位置相对的弧形框架,两段所述弧形框架之间由两段相互平行且长度相等的直框架分别连接,所述弧形框架和所述直框架构成闭合的所述上框架。

[0009] 可选地,每段所述弧形框架由至少两根第一水平支撑管相互连接而成;每段所述直框架由至少一根第二水平支撑管构成。

[0010] 可选地,每段所述直框架包括至少两根第二水平支撑管,所述第二水平支撑管之间相互对插并通过弹销结构固定连接。

[0011] 可选地,两根所述第一水平支撑管与一根所述垂直支撑脚管之间以及一根所述第一水平支撑管、一根所述第二水平支撑管与一根所述垂直支撑脚管之间均是通过 T 形接头辅以弹销结构相互连接的。

[0012] 可选地,所述第二水平支撑管的下表面具有至少一对或者至少一个直径大于所述斜支撑脚管外径的斜支撑开孔。

[0013] 可选地,所述斜支撑脚管为 U 形管,其两端分别插入一对所述斜支撑开孔内,以支撑所述直框架。

[0014] 可选地,所述斜支撑脚管为倒 T 形管,其上端插入一个所述斜支撑开孔内,以支撑所述直框架。

[0015] 可选地,所述柔性薄膜水池内衬由夹设有网布的柔性增强 PVC 胶布或者 PU 胶布制成。

[0016] 可选地,所述柔性薄膜水池内衬的包括池壁和椭圆形的池底,所述池壁的上边缘设有穿套所述上框架的所述第一水平支撑管和所述第二水平支撑管的多个第一套管,将所述柔性薄膜水池内衬与所述上框架之间固定。

[0017] 可选地,所述柔性薄膜水池内衬的所述池底与所述斜支撑脚管的底端之间设有斜支撑管拉带;所述斜支撑管拉带的一端与所述池底固定连接,另一端设有第二套管,所述斜支撑脚管的底端穿套于所述第二套管中,位置受所述斜支撑管拉带的限制。

[0018] 与现有技术相比,本实用新型具有以下优点:

[0019] 本实用新型具有结构简单、安装方便、结构牢固稳定、安全性高、外形美观以及空间利用率高(占地面积小)等一系列优点。

附图说明

[0020] 本实用新型的上述的以及其他的特征、性质和优势将通过下面结合附图和实施例的描述而变得更加明显,其中:

[0021] 图 1 为本实用新型实施例一的椭圆形支架泳池的立体结构示意图;

[0022] 图 2 为图 1 所示实施例一的椭圆形支架泳池中支撑框架的立体结构示意图;

[0023] 图 3 为图 2 所示实施例一的椭圆形支架泳池中支撑框架的俯视结构图;

[0024] 图 4 为图 2 所示实施例一的椭圆形支架泳池中支撑框架的正视结构图;

[0025] 图 5 为图 2 所示实施例一的椭圆形支架泳池中支撑框架的侧视结构图;

[0026] 图 6 为本实用新型实施例一的椭圆形支架泳池中弧形框架的两根第一水平支撑管、一根垂直支撑脚管和 T 形接头的组装前的爆炸示意图;

[0027] 图 7 为图 6 所示实施例一的椭圆形支架泳池中弧形框架的两根第一水平支撑管、一根垂直支撑脚管、T 形接头和柔性薄膜水池内衬的组装后的局部示意图;

[0028] 图 8 为本实用新型实施例一的椭圆形支架泳池中弧形框架的一根第一水平支撑管、直框架的一根第二水平支撑管、一根垂直支撑脚管和 T 形接头的组装前的爆炸示意图;

[0029] 图 9 为图 8 所示实施例一的椭圆形支架泳池中弧形框架的一根第一水平支撑管、直框架的一根第二水平支撑管、一根垂直支撑脚管、T 形接头和柔性薄膜水池内衬的组装后的局部示意图;

[0030] 图 10 为本实用新型实施例一的椭圆形支架泳池中直框架的第二水平支撑管和斜

支撑脚管的组装示意图；

[0031] 图 11 为本实用新型实施例一的椭圆形支架泳池中直框架的第二水平支撑管、斜支撑脚管以及柔性薄膜水池内衬的组装后的立体结构图；

[0032] 图 12 为图 11 所示实施例一的椭圆形支架泳池中直框架的第二水平支撑管、斜支撑脚管以及柔性薄膜水池内衬的组装后的侧视结构图；

[0033] 图 13 为本实用新型实施例二的椭圆形支架泳池的两段弧形框架的第一水平支撑管为弧形的俯视结构图。

[0034] 附图标记集中说明：

[0035]	A : 支撑框架	B : 柔性薄膜水池内衬	1 : 上框架
[0036]	11 : 弧形框架	111 : 第一水平支撑管	12 : 直框架
[0037]	121 : 第二水平支撑管	1211 : 斜支撑开孔	2 : 垂直支撑脚管
[0038]	3 : 斜支撑脚管	4 : T 形接头	5 : 第一弹销
[0039]	6 : 第二弹销	7 : 第三弹销	8 : 护套
[0040]	9 : 脚垫	b1 : 池壁	b11 : 第一套管
[0041]	b2 : 池底	b31 : 斜支撑开口	b4 : 斜支撑管拉带
[0042]	b41 : 第二套管	b6 : 增强带	b7 : 贴片。

具体实施方式

[0043] 下面结合具体实施例和附图对本实用新型作进一步说明，在以下的描述中阐述了、更多的细节以便于充分理解本实用新型，但是本实用新型显然能够以多种不同于此描述的其它方式来实施，本领域技术人员可以在不违背本实用新型内涵的情况下根据实际应用情况作类似推广、演绎，因此不应以此具体实施例的内容限制本实用新型的保护范围。

[0044] 图 1 为本实用新型实施例一的椭圆形支架泳池的立体结构示意图；图 2 为图 1 所示实施例一的椭圆形支架泳池中支撑框架的立体结构示意图；图 3 为图 2 所示实施例一的椭圆形支架泳池中支撑框架的俯视结构图；图 4 为图 2 所示实施例一的椭圆形支架泳池中支撑框架的正视结构图；图 5 为图 2 所示实施例一的椭圆形支架泳池中支撑框架的侧视结构图。需要注意的是，这些以及后续其他的附图均仅作为示例，其并非是按照等比例的条件绘制的，并且不应该以此作为对本实用新型实际要求的保护范围构成限制。

[0045] 结合图 1 至图 5 所示，本实用新型实施例一的椭圆形支架泳池主要包括一个支撑框架 A 和一个由支撑框架 A 支撑的用于容纳水体的柔性薄膜水池内衬 B。其中，支撑框架 A 由多根钢管通过钢管接头连接构成，柔性薄膜水池内衬 B 由夹设有网布的柔性增强 PVC 胶布或者 PU 胶布制成。下面会对支撑框架 A 和柔性薄膜水池内衬 B 进行详细描述。

[0046] 支撑框架 A 包括一个水平的、整体呈椭圆形的上框架 1、支撑上框架 1 的若干垂直支撑脚管 2 和斜支撑脚管 3。上框架 1 的椭圆形长轴方向的两端为两段位置相对的弧形框架 11，两段弧形框架 11 之间由两段相互平行且长度相等的直框架 12 分别连接，弧形框架 11 和直框架 12 构成闭合的上框架 1。在每一段弧形框架 11 中，其可以由至少两根第一水平支撑管 111 相互连接而成，而每根该第一水平支撑管 111 可以为直形管。在每一段直框架 12 中，其可以由至少一根第二水平支撑管 121 构成。

[0047] 图 6 为本实用新型实施例一的椭圆形支架泳池中弧形框架的两根第一水平支撑

管、一根垂直支撑脚管和 T 形接头的组装前的爆炸示意图；而图 7 为图 6 所示实施例一的椭圆形支架泳池中弧形框架的两根第一水平支撑管、一根垂直支撑脚管、T 形接头和柔性薄膜水池内衬的组装后的局部示意图；图 8 为本实用新型实施例一的椭圆形支架泳池中弧形框架的一根第一水平支撑管、直框架的一根第二水平支撑管、一根垂直支撑脚管和 T 形接头的组装前的爆炸示意图；而图 9 为图 8 所示实施例一的椭圆形支架泳池中弧形框架的一根第一水平支撑管、直框架的一根第二水平支撑管、一根垂直支撑脚管、T 形接头和柔性薄膜水池内衬的组装后的局部示意图。

[0048] 结合图 1 至图 9 所示，弧形框架 11 中相邻的两根第一水平支撑管 111 与一根垂直支撑脚管 2 之间，以及弧形框架 11 中的一根第一水平支撑管 111、直框架 12 中的一根第二水平支撑管 121 与一根垂直支撑脚管 2 之间都是通过弯曲的 T 形接头 4 辅以弹销结构相互固定连接的。

[0049] 结合图 6 和图 7 所示，弧形框架 11 中相邻的两根第一水平支撑管 111、一根垂直支撑脚管 2 和 T 形接头 4 之间相互固定连接的具体方式是：第一水平支撑管 111 末端和 T 形接头 4 的末端相互对插，并以第一弹销 5 穿过第一水平支撑管 111 末端和 T 形接头 4 的末端的圆孔以固定连接；垂直支撑脚管 2 的上端与 T 形接头 4 的下端对插，并通过垂直支撑脚管 2 内的第二弹销 6 穿过垂直支撑脚管 2 的上端与 T 形接头 4 的下端的圆孔进行固定连接。

[0050] 结合图 8 和图 9 所示，弧形框架 11 中的一根水平支撑管 111、直框架 12 中的一根水平支撑管 121、一根垂直支撑脚管 2 和 T 形接头 4 之间相互固定连接的具体方式是：弧形框架 11 的第一水平支撑管 111、直框架 12 的第二水平支撑管 121 的末端和 T 形接头 4 的左右两个末端相互对插，并以第一弹销 5 穿过第一水平支撑管 111 末端、第二水平支撑管 121 末端和 T 形接头 4 的末端的圆孔以固定连接；垂直支撑脚管 2 的上端与 T 形接头 4 的下端对插，并通过垂直支撑脚管 2 内的第二弹销 6 穿过垂直支撑脚管 2 的上端与 T 形接头 4 的下端的圆孔进行固定连接。垂直支撑脚管 2 的下端设有脚垫 9。

[0051] 结合图 2 至图 5 所示，直框架 12 两侧的第二水平支撑管 121 的下方都设置了底部平直的、整体呈 U 形的斜支撑脚管 3 对第二水平支撑管 121 进行向上和向内方向的支撑，以防止泳池充满水以后直框架 12 向泳池外侧弯曲变形。当然，该斜支撑脚管 3 的整体形状并不仅限于 U 形，还可以例如为倒 T 形状（未图示），其与第二水平支撑管 121 之间的安装方式与 U 形的斜支撑脚管 3 类似。

[0052] 图 10 为本实用新型实施例一的椭圆形支架泳池中直框架的第二水平支撑管和斜支撑脚管的组装示意图。如图 10 所示，首先，每一段直框架 12 也可以包括至少两根第二水平支撑管 121，两根第二水平支撑管 121 之间相互对插，并通过第一弹销 5 固定连接。其次，直框架 12 的第二水平支撑管 121 与斜支撑脚管 3 的固定连接方式可以是：每根第二水平支撑管 121 的下表面设有至少一对或者至少一个直径略大于斜支撑脚管 3 外径的斜支撑开孔 1211（图 10 中示出的是一对方案）。U 形的斜支撑脚管 3 两端均设有塑胶护套 8 和第三弹销 7，斜支撑脚管 3 的两端分别插入直框架 12 的第二水平支撑管 121 的下方的一对斜支撑开孔 1211 内，利用斜支撑脚管 3 的第三弹销 7 卡在第二水平支撑管 121 的内壁，以此与直框架 12 的第二水平支撑管 121 进行连接固定，以支撑直框架 12。当然，若该斜支撑脚管不是 U 形管，而是倒 T 形管，则该斜支撑脚管的上端也可设有塑胶护套和第三弹销，然后其

上端插入第二水平支撑管 121 的下方的一个斜支撑开孔 1211 内,用以支撑直框架 12。

[0053] 图 11 为本实用新型实施例一的椭圆形支架泳池中直框架的第二水平支撑管、斜支撑脚管以及柔性薄膜水池内衬的组装后的立体结构图。请结合图 1、图 7、图 9 和图 11 所示,该柔性薄膜水池内衬 B 置于支撑框架 A 的内侧,其包括池壁 b1 和椭圆形的池底 b2。池壁 b1 的下边缘与池底 b2 的边缘相互连接,形成一个可以容纳水体的敞开容器。池壁 b1 的上边缘设有穿套上框架 1 的第一水平支撑管 111 和第二水平支撑管 121 的多个第一套管 b11,将柔性薄膜水池内衬 B 与上框架 1 之间固定。第二水平支撑管 121 位置处的每个第一套管 b11 上设有与第二水平支撑管 121 的下表面的斜支撑开孔 1211 对应的一对或者一个斜支撑开口 b31,用于使斜支撑脚管 3 的两端或者上端透过其与里面的斜支撑开孔 1211 连接。

[0054] 另外,在池壁 b1 上从下往上四分之一至二分之一高度(例如三分之一高度)的位置处设有环绕四周的增强带 b6,该增强带 b6 可通过池壁 b1 上的多个贴片 b7 附在池壁 b1 上。垂直支撑脚管 2 置于池壁 b1 和增强带 b6 之间,这样的结构设计可以很好地限定柔性薄膜水池内衬 B 的形状和垂直支撑脚管 2 的位置,防止柔性薄膜水池内衬 B 充满水之后池壁 b1 向外鼓出以及垂直支撑脚管 2 发生位移。

[0055] 图 12 为图 11 所示实施例一的椭圆形支架泳池中直框架的第二水平支撑管、斜支撑脚管以及柔性薄膜水池内衬的组装后的侧视结构图。结合图 11 和图 12 所示,柔性薄膜水池内衬 B 的池底 b2 与斜支撑脚管 3 的底端之间设有多个斜支撑管拉带 b4。斜支撑管拉带 b4 的一端与池底 b2 固定连接,另一端设有第二套管 b41。斜支撑脚管 3 的底端穿套于斜支撑管拉带 b4 的第二套管 b41 中,使斜支撑脚管 3 的位置受斜支撑管拉带 b4 的限制。当水池内衬 B 充满水之后,防止斜支撑脚管 3 向外侧滑动。

[0056] 图 13 为本实用新型实施例二的椭圆形支架泳池的两段弧形框架的第一水平支撑管为弧形的俯视结构图。本实施例二沿用前述实施例一的元件标号与绝大部分内容,其中采用相同的标号来表示相同或近似的元件,并且选择性地省略了相同技术内容的说明。关于省略部分的说明可参照前述实施例,本实施例不再重复赘述。

[0057] 在本实施例二中,两段弧形框架 11 的第一水平支撑管 111 均可以为弧形管,使得支架泳池的支撑框架 A 的椭圆形外形更加圆润,其它结构与实施例一相同即可。

[0058] 综上所述,本实用新型具有结构简单、安装方便、结构牢固稳定、安全性高、外形美观以及空间利用率高(占地面积小)等一系列优点。

[0059] 本实用新型虽然以较佳实施例公开如上,但其并不是用来限定本实用新型,任何本领域技术人员在不脱离本实用新型的精神和范围内,都可以做出可能的变动和修改。因此,凡是未脱离本实用新型技术方案的内容,依据本实用新型的技术实质对以上实施例所作的任何修改、等同变化及修饰,均落入本实用新型权利要求所界定的保护范围之内。

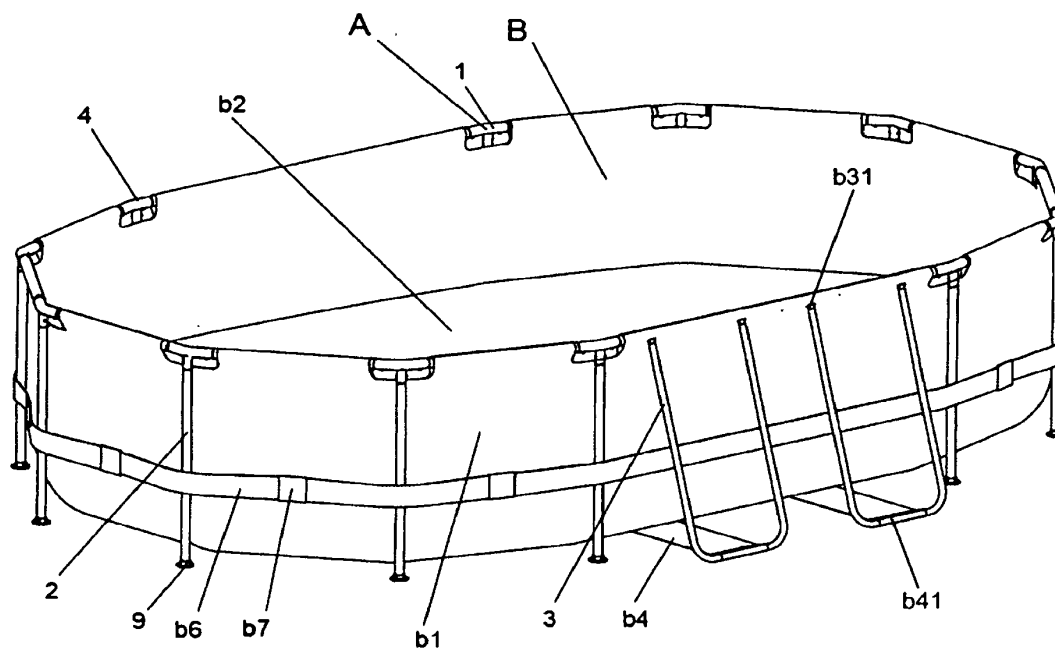


图 1

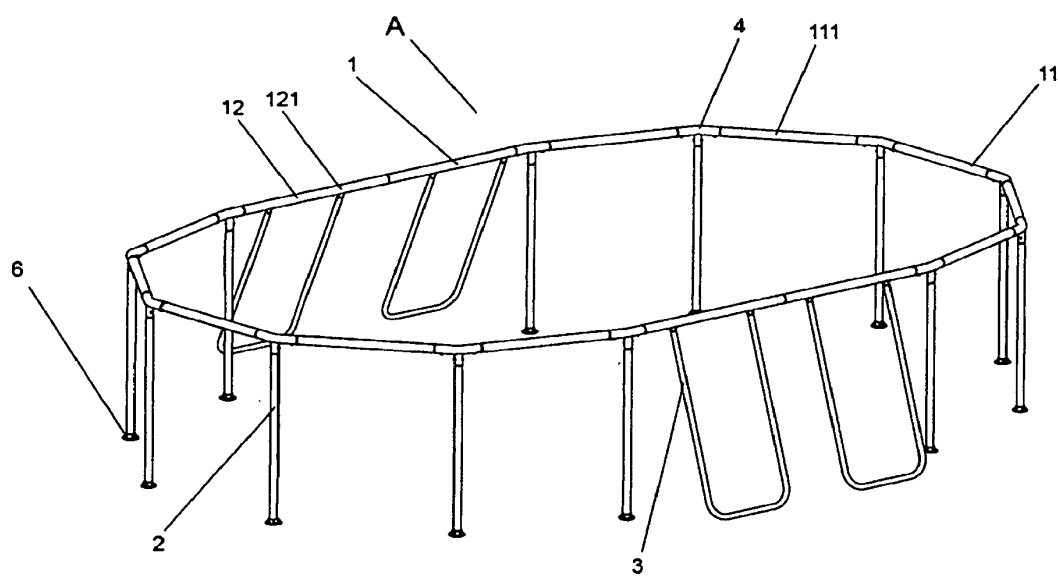


图 2

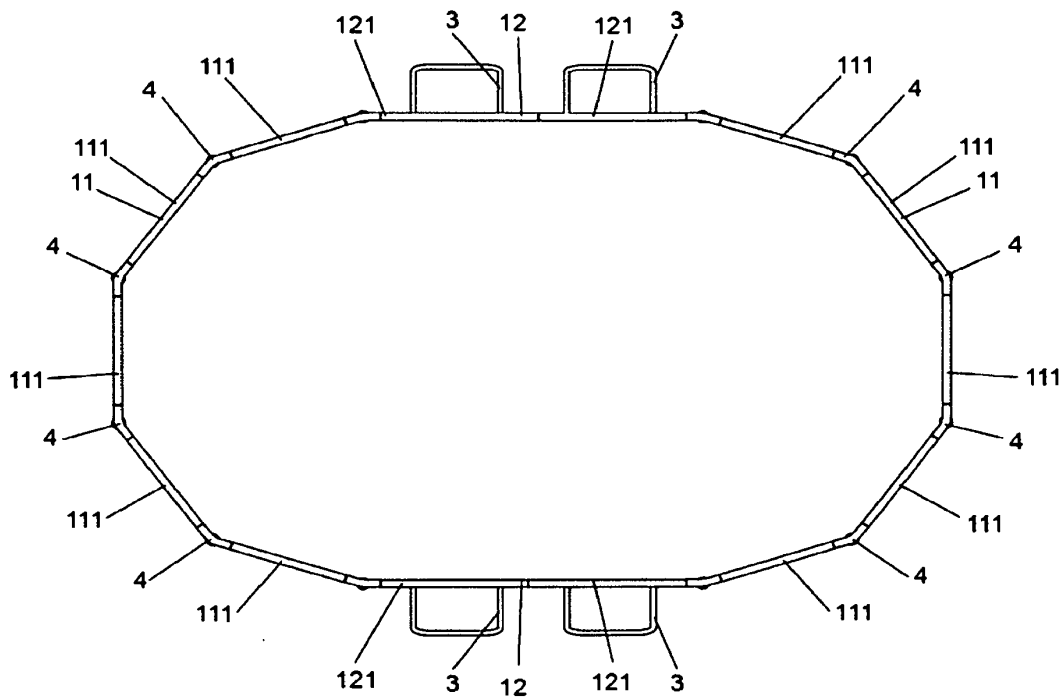


图 3

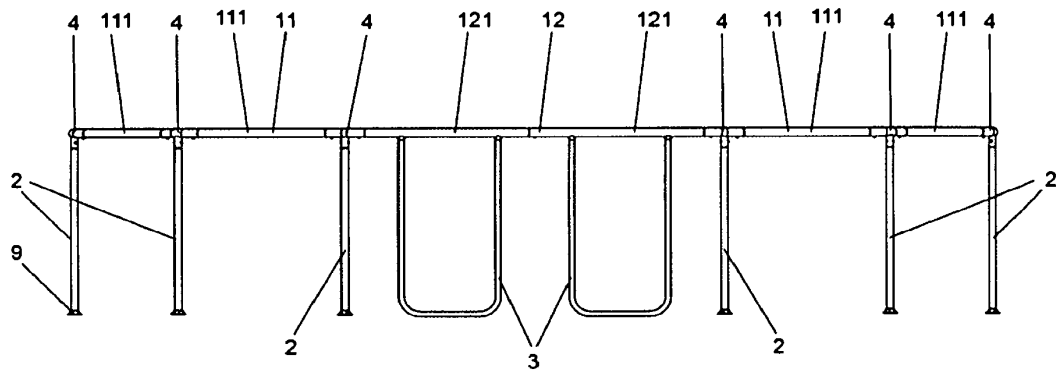


图 4

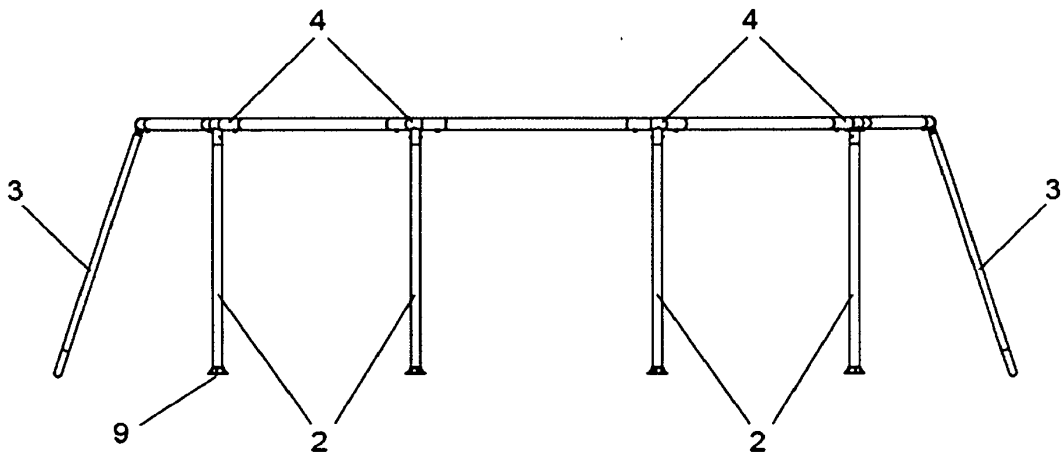


图 5

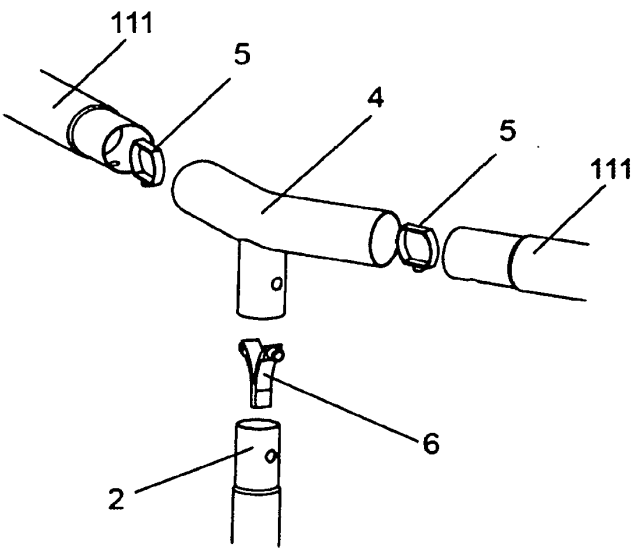


图 6

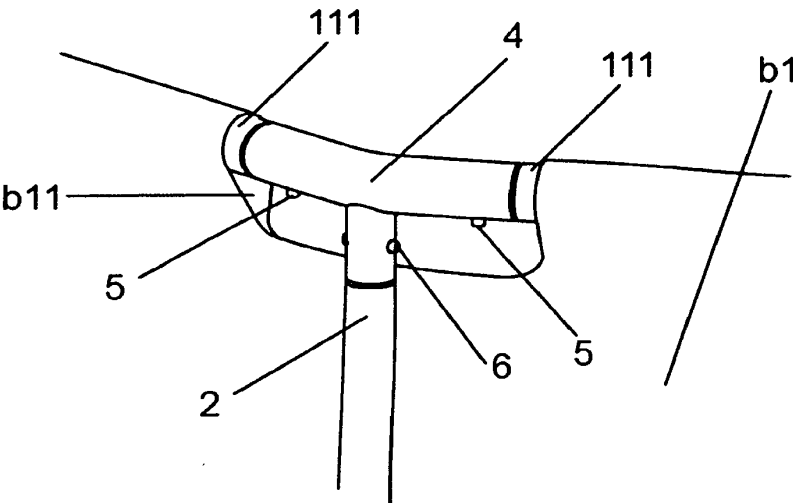


图 7

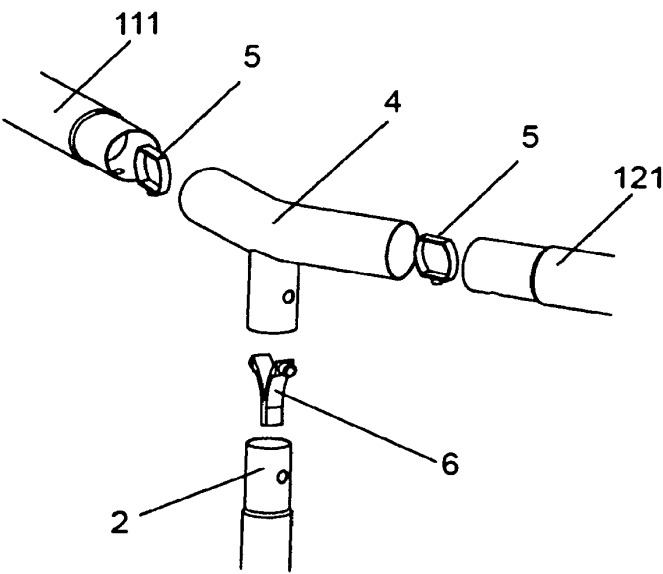


图 8

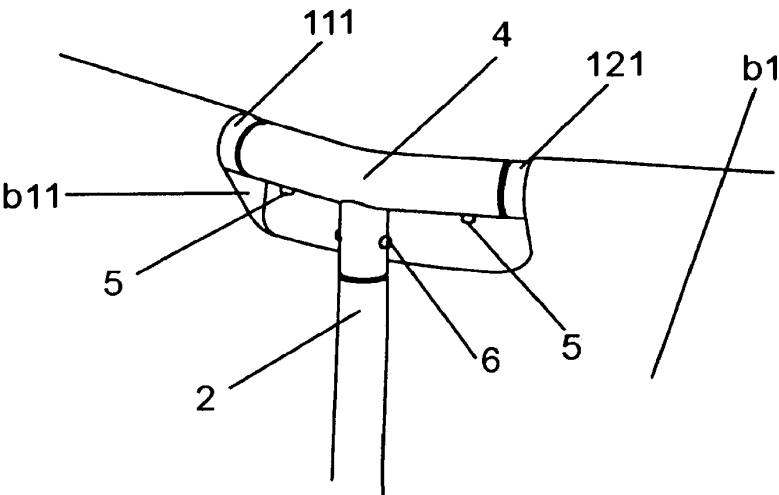


图 9

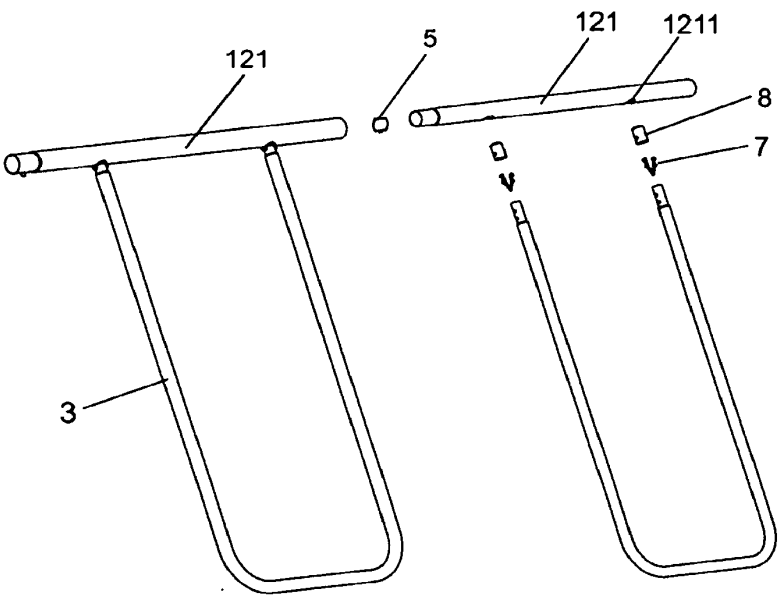


图 10

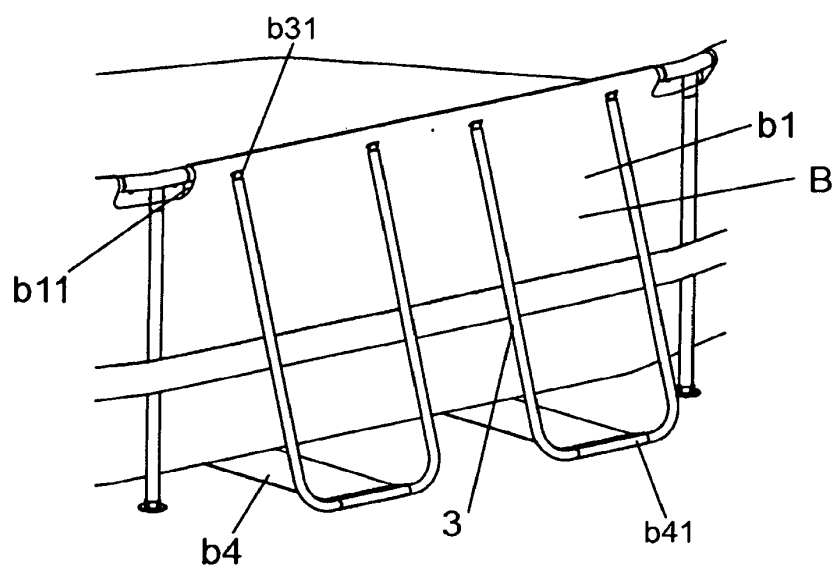


图 11

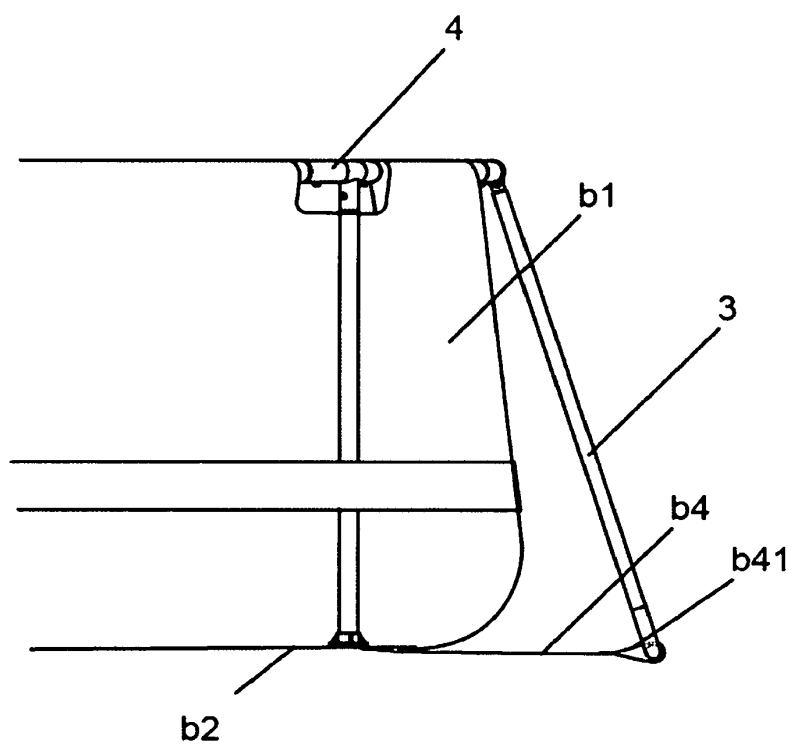


图 12

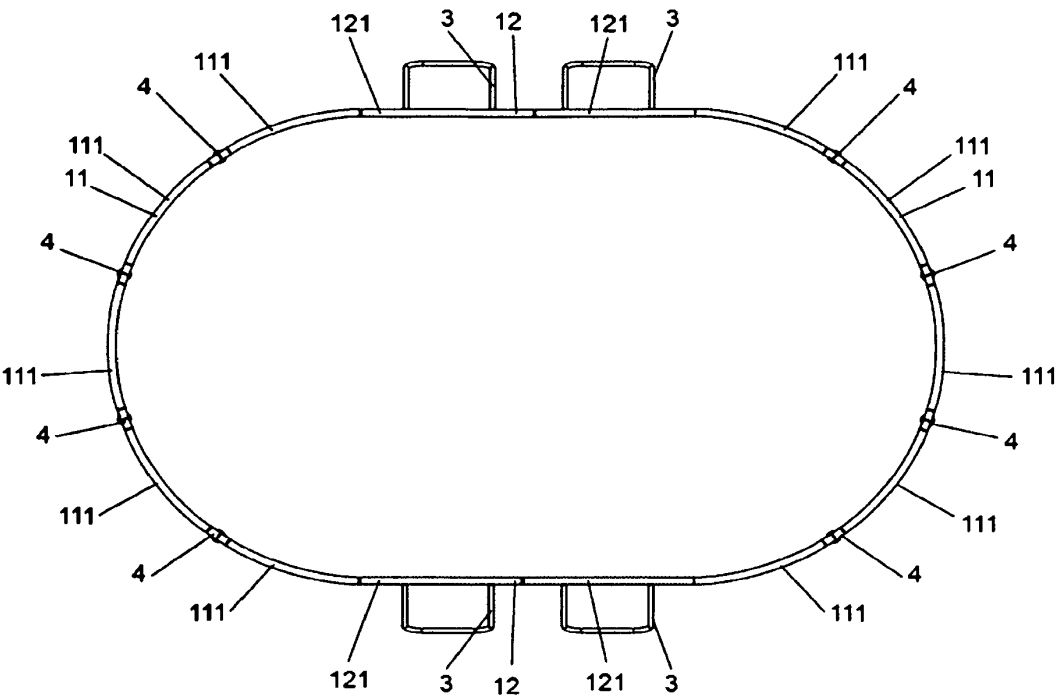


图 13

Patents



Oval support pool

Abstract

The utility model provides an oval support pool comprising a supporting frame and a soft film pool liner which is used for accommodating water. The supporting frame comprises a horizontal oval upper frame and a plurality of vertical and oblique supporting pins supporting the upper frame. Two ends of the long axis of the oval upper frame are provided with two arc frames in opposite positions, the arc frames are connected through two parallel and isometric straight frames respectively, and the enclosure upper frame is obtained through the arc frames and the straight frames. The oval support pool is simple in structure, convenient to assemble, solid and stable, high in safety, attractive in shape and high in space utilization rate.

CN204475914U

CN Grant

[Download PDF](#)[Find Prior Art](#)

Application number: CN 201520057049

Other languages: Chinese

Inventor: 刘峰

Original Assignee: 上海荣威塑胶工业有限公司

Priority date: 2015-01-27

Filing date: 2015-01-27

Publication date: 2015-07-15

Grant date: 2015-07-15

Info: Legal events, Similar documents

External links: Espacenet, Global Dossier, Discuss

Claims (10)

translated from Chinese

An oval-shaped bracket pool, characterized by comprising a supporting frame (A) and for supporting a flexible film liner tank (B) receiving water from the support frame (A); the support frame (a) comprises a level of the whole is oval frame (I), supporting the upper frame (I) the number of vertical support leg (2) and oblique supporting leg (3); the upper frame (ends I) of the ellipse major axis direction relative to the position of the two arcuate frame (11), consists of two mutually parallel and equal length of straight frame (11) between the two arcuate frame (12) They are connected to the arcuate frame (11) and the straight frame (12) of the upper frame form a closed (1).

2. The stent according to claim oval pool 1, characterized in that each of said arcuate frame (11) consists of at least two of the first horizontal support pipe (111) connected in each other; each said straight the frame (12) consists of at least a second horizontal support tube (121) form.

3. The stent according to claim oval pool 2, characterized in that each of the straight frame (12) comprises at least two second horizontal support tube (121), said second horizontal support tube (121) interposed between each other and fixedly connected by elastic pin configuration.
4. A bracket according to claim oval pool 3, characterized in that, between the two first horizontal support tube (111) with a perpendicular to the support leg (2) and the first one are (4) supported by elastic structures connected by a pin to each other between a T-fitting horizontal support tube (111), a second horizontal support tube (121) with a perpendicular to the support leg (2) of.
5. The oval pool bracket 2 or claim 3, characterized in that said second lower horizontal surface of the supporting tube (121) having at least one pair, or at least a larger diameter than said support leg inclined tube (3) diameter sway brace opening (1211).
6. A bracket according to claim oval pool 5, characterized in that said oblique support leg (3) is U-shaped tube with its ends inserted into a pair of said oblique support opening (1211), respectively, within, in the linear support frame (12).
7. The oval pool bracket according to claim 5, characterized in that said oblique support leg (3) in an inverted T-shaped pipe, the upper end of the oblique insertion of a support opening (1211), the support to the straight frame (12).
8. A bracket according to claim oval pool 1, characterized in that said flexible film liner pools (B) sandwiched by a flexible reinforcing mesh with PVC tape or tape made I3U.
9. A bracket according to claim oval pool 8, characterized in that said flexible film pool liner (B) comprises a wall (BL) and the elliptical bottom (B2), said wall (on the edge of bl) is provided with openings through which the upper frame (I) of the first plurality of horizontal support tube (111) and said second horizontal support tube (121) of the first sleeve (b11), will the flexible film pool liner (B) is fixed between the frame (I) and the upper.
10. The bottom end of the elliptical bracket according to claim 9 wherein the pool, characterized in that the bottom of the flexible tank liner film (B), (b2) and the inclined supporting leg (3) Room with drawstring oblique support tube (b4); and the bottom end of the support tube ramp drawstring (b4) of (b2) fixedly connected to the other end with a second sleeve (b41), said oblique the bottom end of the supporting leg (3) of the wear sleeve to the second sleeve (b41), the position of the swash limited support tube drawstring of (b4).

Description

translated from Chinese

Oval-shaped bracket pool

TECHNICAL FIELD

Portable home ground pool Technical Field [0001] The utility model relates to use in the family courtyard, gardens and other places, particularly, the present utility model relates to an oval pool bracket support frame and a flexible pond liner film.

Background technique

[0002] portable home above ground pool is on the family courtyard, garden, lawn or other open spaces altar adults and children, it has easy accessibility, easy collection and so on. Above ground pool, there are many different structures, divided into metal (or plastic) bracket bracket pool and no metal (or plastic) stent stentless pool. Above ground pool in the form of diverse variety. However, the prior art bracket pool following major shortcomings:

[0003] 1, relative to the other round and oval-shaped bracket pool, the number of steel rectangular bracket pool part to be more, the lack of material cost advantages, but also result in a larger pool of the entire weight, easy handling. Secondly, since the four sides of the rectangular bracket pool are used oblique bracket such a large pool area, some of the more narrow space will limit the installation and use of the pool. Again, on the border of frame four rectangular steel bracket pool is rectangular-shaped pipe by a non-fixed manner connected easily to the frame adjacent to both sides of the pipe when users pinch, so there is a certain security risk.

[0004] 2, round bracket pool because it is a circular design, the length of the pool is relatively limited, it will affect the user's use.

[0005] 3, oval swimming stent prior art, on only two sides of the pool with a support pipe, without any other parts or steel support frame, so that the whole structure is not very stable pool. When the user in the pool, the pool will be shaking with water and have some sway. In addition, part of the pool wall bracket not supported by the weight down, the water will flow out from the wall of the depressed portion.

Utility Model Content

[0006] The utility model technical problem to be solved is for the deficiencies in the prior art, a portable elliptical bracket pool, its structure is simple, easy to install, solid and stable, safe, beautiful shape and space utilization still O

[0007] In order to solve the above problems, the present utility model provides a oval-shaped bracket pools, including a support frame and a supported by the support frame for receiving water pool lined with a flexible film;

[0008] the support frame comprises a level of the whole is oval frame, a plurality of vertical support leg and diagonal bracing leg supporting the upper frame; both ends of the long axis of the ellipse on the frame the relative position of two arcuate frame, between the two arcuate frame consists of two parallel and equal in length to each other are connected to a straight frame, the curved frame and the frame form a closed straight on the frame .

[0009] Alternatively, each of the arc-shaped frame is made of at least two first horizontal support tube interconnected together; each of the straight frame from at least one second horizontal support tube.

[0010] Alternatively, each said frame comprises at least two straight second horizontal support tube, said second horizontal to each other interposed between the support tube and is fixedly connected by elastic pin configuration. [0011] Alternatively, the first between the two horizontal support tube and a vertical support leg and said one of said first horizontal support tube, a second tube with a horizontal support pin connector shells are complemented by T-shaped structure between the vertical support leg connected to each other.

[0012] Alternatively, the lower horizontal surface of the second support tube having at least one pair, or at least a larger diameter than the tube outer diameter of the support leg inclined obliquely support openings.

[0013] Alternatively, the support leg is inclined U-tube with its ends inserted into one pair of said openings, respectively, oblique support to support the straight frame.

[0014] Alternatively, the oblique supporting legs in an inverted T-shaped pipe; its upper end is inserted into a support opening of the ramp, to support the straight frame.

[0015] Alternatively, the flexible film clip provided by the pool lined with mesh of flexible reinforced PVC tape or tape made.

[0016] Alternatively, the flexible film includes a pool lined oval bottom wall and the upper edge of the wall is provided with openings through which the upper frame tube and the first level of support said second plurality of first horizontal support casing tube, said flexible film is fixed between the upper frame and the pool liner.

[0017] Alternatively, an inclined belt between the bottom end of the support tube to pull the bottom of the pond lining flexible film with the slant of the supporting leg; the end of the ramp and the support tube drawstring said bottom is fixed and the other end with a second sleeve, the bottom end of the supporting leg oblique wear sleeve to the second sleeve, the position of the swash limited support tube drawstring.

[0018] Compared with the prior art, the utility model has the following advantages:

[0019] The utility model has a simple structure, easy installation, firm structure, stable, safe, beautiful appearance and high utilization of space (small footprint) and a series of advantages.

BRIEF DESCRIPTION

[0020] The utility model has the above-mentioned and other features, properties and advantages will become more apparent from the following drawings and description of the embodiments in conjunction, in which:

[0021] FIG. 1 is a schematic view of the new three-dimensional structure practical embodiment of an oval pool of the stent;

[0022] Figure 2 is a perspective schematic structural view shown in oval pool bracket support frame in an embodiment of the embodiment;

[0023] FIG. 3 is shown in FIG. 2 pools elliptical bracket support frame in case of a configuration diagram illustrating a plan view;

[0024] FIG. 4 is shown oval in Figure 2 an embodiment of the stent in the pool of the front support frame structure of embodiment;

[0025] FIG. 5 is a side view of the structure shown in FIG. 2 FIG oval pool bracket support frame in an embodiment of the embodiment;

[0026] FIG. 6 is a practical embodiment of the new oval-shaped bracket pool level two first arcuate frame support tube, explosion schematic vertical support leg assembly and the T-joint front of one;

[0027] FIG. 7 is shown in the Figure 6 embodiment of an oval-shaped bracket pool two arcuate frame supporting a first horizontal tubes, a vertical support leg, after the T-fitting and the flexible film pool liner assembly partial schematic;

[0028] FIG. 8 embodiment of the present utility model oval swimming pool in a stent in a curved frame of the first horizontal support tube, a straight second horizontal support tube frame, a vertical tube and a T-shaped support legs mounting bracket before the explosion schematic;

[0029] FIG. 9 is shown in FIG. 8 embodiment an oval pool bracket arcuate frame in a first horizontal support tube embodiment, a second horizontal straight frame support tube, a vertical support legs, T partially assembled shaped joint and a flexible film after the pool liner is not intended;

[0030] FIG. 10 embodiment of the present utility model oval shaped bracket pool in a second horizontal straight pipe framework supporting the assembly diagrams and oblique support leg tube;

[0031] FIG. 11 oriented practical bracket oval pool in the new embodiment of a second horizontal straight frame support tube, three-dimensional structure of oblique supporting leg and a flexible pond liner film after

assembly;

[0032] FIG. 12 is shown in Figure 11 embodiment an elliptical bracket of the second embodiment pool straight horizontal frame supporting tube, the supporting side structure of FIG inclined leg and a flexible tank liner film after assembly;

[0033] FIG. 13 is the first level of the utility model Example II oval swimming two arcuate frame bracket support tube arcuate plan view diagram.

[0034] Reference numeral concentrates on:

[0035] A: a support frame B: pond lined with a flexible film 1: Framework

[0036] 11: arcuate frame 111: a first horizontal support tube 12: straight frame

[0037] 121: The second horizontal support pipe 1211: oblique supporting hole 2: vertical support legs

[0038] 3: oblique supporting leg 4: T-joints 5: The first bomb pin

[0039] 6: a second bomb pin 7: The third bomb pin 8: Jacket

[0040] 9: Feet bl: wall bl: the first sleeve

[0041] b2: bottom b31: oblique support opening b4: oblique support tube drawstring

[0042] b41: second sleeve b6: reinforcing tape b7: patches.

detailed description

[0043] The following examples and with reference to specific drawings of the utility model is further described, explained in more detail in the following description in order to fully understand the utility model, but the utility model can be more clearly differs from this description other ways to implement, skilled in the art can make similar promotion depending on the application without departing from the meaning of the utility model, the interpretation of the specific content and therefore should not be used to limit the embodiment of the utility model protection.

[0044] Figure 1 is a schematic view of a new practical embodiment of an oval swimming pool of the stent; FIG. 2 is shown in Figure 1 shows a schematic view oval pool bracket support frame in an embodiment of the embodiment; FIG. 3 is 2 oval swimming stent embodiment in a plan view of the structure shown in FIG embodiment the support frame; a front view showing the structure of an oval pool bracket support frame 4 is shown in FIG. 2 embodiment; FIG. 5 is the embodiment shown in FIG. 2 oval-shaped bracket pool a block diagram of a side of the supporting frame. It should be noted that these and other subsequent drawings are only an example, which is not drawn according to the proportional conditions, and should not serve as the scope of protection of the utility model is actually required to be limiting.

[0045] Figures 1 to 5 in combination, the stent oval swimming embodiment of the present utility model comprises a main support frame A and a supported by a support frame for receiving water A flexible film liner pool B. Wherein the support frame by a plurality of A steel pipe header constituted by the flexible film clip provided by the B pool lined with mesh reinforced PVC tape or a flexible tape made of PU. The following would be the support frame and the flexible film A pool liner B described in detail.

[0046] A support frame includes a level of the whole is oval frame 1, the support frame I support a number of vertical and diagonal bracing leg 2 leg 3. I ends of the upper frame of the elliptical major axis direction into two arcuate position relative to the frame 11, between the two arcuate frame 11 consists of two mutually parallel

and equal length of straight connector frame 12, respectively, arcuate frame 11 and straight on the frame 12 to form a closed frame I. In each section of the arcuate frame 11, which may be made of at least two of the first horizontal support pipe 111 are connected together, and each of the first horizontal support tube 111 may be a straight tube. In each section of the straight frame 12, which may be composed of at least a second horizontal support tube 121.

[0047] FIG. 6 is a practical embodiment of the new oval-shaped bracket pool two arcuate frame of the first horizontal support tube explosion schematic vertical support legs and T-joints before assembling one; and Figure 7 Fig; two oval-shaped bracket pool example a curved frame in a first horizontal support tube, a vertical support legs, partial schematic view of a T-joint and a flexible pond liner film after assembly of the sixth embodiment shown in FIG. 8 is an embodiment of the utility model oval a bracket pool arcuate frame of the first horizontal support tube, a straight second horizontal support tube frame, a vertical support leg and the T-shaped connector assembly before explosion schematic view; and Figure 9 is shown an embodiment of the oval arcuate frame bracket pool a first embodiment of the horizontal support tube 8, a second horizontal straight frame support tube, a vertical support leg, T-joints and partial schematic view of a flexible pond liner film after assembly.

[0048] Figures 1 to binding, arcuate frame 11 between the adjacent two first horizontal support tube 111 and a vertical support leg 2, and the arcuate frame 11 shown in the first one 9 horizontal support tube 111, until a frame 12 supporting a second horizontal and a vertical support tube 121 between the two legs are bent by the T-joint structure 4 supported by elastic pin fixedly connected to each other.

[0049] Figures 6 and 7 in combination, the two arcuate frame 11 adjacent the first horizontal support tube 111, a vertical support leg specific way T-fitting between 2 and 4 fixedly connected to each other is : the end of the first horizontal support tube 111 and the T-shaped connector terminal 4 of each other on the plug, and the first bomb pin 5 through the first end of the horizontal support tube 111 and the T-shaped fitting hole 4 to the end of the fixed connection; vertical the upper end of the support leg 2 and the lower end of the T-shaped joint 4 on the plug, and through the second vertical support legs bomb within 2 pin 6 through the upper end of the vertical support leg 2 and the lower end of the T-shaped fitting hole 4 is performed fixed connection.

[0050] Figures 8 and 9 in conjunction, the arcuate frame 11 of a horizontal support tube 111, the frame 12 supports a straight horizontal pipe 121, a vertical support legs 2 and 4 of the T-fitting specific ways is fixedly connected to each other: a first arcuate frame horizontal support tube 111 11, the end of the support tube 121 of the second horizontal straight frame 12 and the left and right ends of the T-shaped joint 4 of each other on the plug, and the first an elastic pin 5 through the first end of the horizontal support tube 111, the second end of the horizontal support tube 121 and the end of the T-joint 4 fixedly connected to the hole; an upper end of the vertical support legs 2 and the lower end of the T-joint 4 of inserted through the second bomb vertical support leg 2 through the upper end of the inner pin 6 foot vertical support tube 2 and the lower end of the T-shaped fitting hole 4 of the fixed connection. Lower end of the vertical support leg 2 is provided with mats 9.

[0051] in conjunction with FIG. 2 to 5, the frame 12 below the straight side of the second horizontal support tube 121 are provided at the bottom of the flat, the overall U-shaped support legs oblique tube 3 for the second horizontal support tube support 121 upward and inward direction, after the pool filled with water in order to prevent the frame 12 to the outside of the pool straight bending deformation. Of course, the overall shape of the inclined support leg 3 is not limited to a U-shape, for example, it may be an inverted T-shape (not shown), with the second horizontal mounting support tube 121 between the ramp and the U-shaped support legs tube 3 is similar.

[0052] FIG. 10 is oval-shaped bracket practical embodiment of a new swimming pool in the second horizontal straight frame assembly support tube and a schematic oblique supporting foot tube. As shown in Figure 10, first, each section straight frame 12 may also include at least two second horizontal support tube 121, between

the two second horizontal support tube 121 to each other on the plug, and pin 5 is fixed by the first elastic connection. Secondly, the second horizontal straight frame support tube 12 and the inclined support legs 121 fixed connection tube 3 may be: each of the lower surface of the second horizontal support tube 121 is provided with at least one pair or at least slightly greater than a diameter of the support leg swash 3 pipe diameter sway brace opening 1211 (shown in FIG. 10 is a pair of programs). U-shaped oblique supporting leg 3 ends are equipped with plastic sheath 8 and the third bomb pin 7, both ends of the support legs oblique tube 3 are inserted into the frame 12 of the second straight pipe below the horizontal support 121 of a pair of oblique inner support opening 1211, the use of oblique supporting leg 3 third bomb inside wall 7 pin stuck in second horizontal support tube 121, as the second horizontal straight frame 12 of the support tube 121 is connected and fixed to the support frame straight 12. Of course, if the oblique supporting leg is not a U-shaped tube, but inverted T-shaped pipe, the upper end of the ramp support legs can also be provided with plastic sheathing and the third bomb pin, which is then inserted into the second level of the upper end of the support tube a ramp support below the opening 1211121 for supporting frame 12 straight.

[0053] FIG. 11 is a schematic utility model oval pool bracket embodiment in a second horizontal straight frame support tube, three-dimensional structure of oblique supporting leg and a flexible pond liner film after assembly. Please conjunction with Figure 1, Figures 7, 9 and 11, the flexible film is placed inside the basin liner B A support frame comprising oval wall and bottom bl b2. Connected to the lower edge of the wall bl and b2 the bottom edge of each other to form a body of water can hold an open container. The upper edge of the wall is provided with a plurality of through put bl framework I first horizontal support tube 111 and second horizontal support tube 121 of the first sleeve bl1, fixed between the flexible film and the upper frame pool liner B I. The second tube is provided with a horizontal support 121 of the lower surface of the ramp support opening 1211 or a corresponding pair of oblique support opening b31, for causing the ramp on each of the first sleeve bl1 second horizontal support tube 121 at a location both ends of the support legs 3, or through its upper end and the inside of the sway brace connection openings 1211.

[0054] Further, the upper wall bl from bottom to top a quarter to one-half the height (for example, one-third height) is provided at a position surrounded by the reinforcing tape b6, b6 by the reinforcing band a plurality of patches on the wall bl b7 attached to the wall bl. Vertical support leg 2 is placed between the reinforcing tape and the wall bl b6, such a design can be well defined position of the shape of the flexible film liner pool B and vertical support leg 2, to prevent the flexible film liner Pool B after the wall is filled with water bl bulge and vertical support leg 2 is displaced.

[0055] FIG. 12 is shown in Figure 11 embodiment an elliptical bracket of the second embodiment pool straight horizontal frame supporting tube, the supporting side structure of inclined legs, and a flexible film liner assembled tank. As shown in FIG combination, it is provided between the bottom of the pond bottom b2 flexible membrane liner B and oblique supporting leg 3 of 11 Figure 12 a plurality of diagonal support tube drawstring b4. Inclined support tube at one end and pull the bottom band b4 b2 fixed and the other end with a second sleeve b41. The bottom of the ramp support leg 3 is set to obliquely through the support tube drawstring second sleeve b41 b4, the position of the swash supporting leg support tube 3 by the oblique pull with the limits b4. When the pool is filled with water lining B, to prevent sliding oblique supporting leg 3 to the outside.

[0056] FIG. 13 is the first level of the utility model Example II oval swimming two arcuate frame bracket support tube arcuate plan view diagram. The present embodiment follows the two preceding embodiments reference an element with most of the content, wherein the same reference numerals refer to the same or similar elements, and selectively omitting the description of the same technical content. On part of the explanation may be omitted reference to the foregoing embodiment, the present embodiment will not be repeated repeat them.

[0057] In the present embodiment, two, two arcuate frame 11 of the first horizontal support tube 111 can be curved tube that makes the pool bracket support frame A more rounded oval shape, other embodiments of a structure the same can.

[0058] In summary, the utility model has a simple structure, easy installation, firm structure, stable, safe, beautiful appearance and high utilization of space (small footprint) and a series of advantages.

[0059] The utility model change Although the preferred embodiments disclosed above, but it is not intended to limit the utility model, any person skilled in the art without departing from the spirit and the utility model range, can be made possible and modifications. Therefore, all without departing from the content of the utility model technology program, according to the utility model, any modification of the substance of the above embodiments technology made an example of, and changes equivalent modifications are intended to fall within the scope of the utility model as defined by the claims.

Similar Documents

Publication	Publication Date	Title
US2964759A	1960-12-20	Frame for swimming pool cover
US6848461B2	2005-02-01	Tent structure
US6418577B1	2002-07-16	Portable hammock
US3039478A	1962-06-19	Building structures
US7037220B1	2006-05-02	Sports play pool
US6929569B1	2005-08-16	Foldable basketball game assembly
US20100252083A1	2010-10-07	Suspendable tent
JP2006081916A	2006-03-30	Folding chair to which beach umbrella can be attached
CN1506134A	2004-06-23	Complete set of equipment of tennis net and tennis net tensioning device
CN2757720Y	2006-02-15	Portable moving toilet
US4494558A	1985-01-22	Enclosure and frame therefor
CN201815045U	2011-05-04	All-around landscape exerciser
CN2375348Y	2000-04-26	Portable tennis table
CN202706008U	2013-01-30	Portable combination type windbreak
US20110211174A1	2011-09-01	Portable Shadow Screen Kit
RU28429U1	2003-03-27	Tourist furniture (options) and a structural element of the furniture for its production (options)

8/1/2017

CN204475914U - Google Patents

CN203329309U	2013-12-11	Folding portable badminton net frame
CN201433963Y	2010-03-31	Simple connecting structure
CN201595474U	2010-10-06	Dual ladder chair furniture
CN2837488Y	2006-11-15	Retractable folding portable ladder
CN204158992U	2015-02-18	Hand-cranked wall-mounted folding type basketball stand
CN201209337Y	2009-03-18	Tent with outer cover and positioning device thereof
CN202376696U	2012-08-15	Portable movable badminton frame
KR200429594Y1	2006-10-24	Shower booth
KR101535604B1	2015-07-09	Folding tent with mat

Legal Events

Date	Code	Title	Description
2015-07-15	C14	Grant of patent or utility model	

[About](#) [Send Feedback](#) [Terms](#) [Privacy Policy](#)

**Espacenet****Bibliographic data: CN204475914 (U) — 2015-07-15****Oval support pool****Inventor(s):** LIU FENG ± (LIU FENG)**Applicant(s):** SHANGHAI BESTWAY INFLATABLES & MATERIAL CORP ±
(SHANGHAI BESTWAY INFLATABLES & MATERIAL CORP)**Classification:** - international: **E04H4/04**
- cooperative:**Application number:** CN2015257049U 20150127**Priority number(s):** CN2015257049U 20150127**Abstract of CN204475914 (U)**

The utility model provides an oval support pool comprising a supporting frame and a soft film pool liner which is used for accommodating water. The supporting frame comprises a horizontal oval upper frame and a plurality of vertical and oblique supporting pins supporting the upper frame. Two ends of the long axis of the oval upper frame are provided with two arc frames in opposite positions, the arc frames are connected through two parallel and isometric straight frames respectively, and the enclosure upper frame is obtained through the arc frames and the straight frames. The oval support pool is simple in structure, convenient to assemble, solid and stable, high in safety, attractive in shape and high in space utilization rate.



Espacenet

Bibliographic data: CN200968073 (Y) — 2007-10-31

Improvement of pipe structural on side of pipe support swimming pools

Inventor(s): LIN HUAXIANG LI [CN] ± (HUAXIANG,LI LIN)

Applicant(s): INTEX IND XIAMEN CO LTD [CN] ± (INTEX INDUSTRIES (XIAMEN) CO., LTD)

Classification: - **international:** *E04H4/00; E04H4/14*
- **cooperative:**

Application number: CN2006287313U 20060724

Priority number (s): CN2006287313U 20060724

Abstract of CN200968073 (Y)

The utility model discloses an improvement of boundary tube of a pipe frame swimming pool. The pipe frame includes a circular pipe frame as well as a swimming pool arranged in the circular pipe frame. The circular pipe frame includes a plurality of steel boundary tubes, the steel boundary tubes are interconnected in series or interconnected through a coupling head into an endless belt, and the top surface of the boundary tube is flat. The beneficial effects of the technic proposal are that the top surface of the boundary tube is flat, not only increasing the steel supporting strength of the tube frame, but also with easy usage and attractive appearance.

[19] 中华人民共和国国家知识产权局



[12] 实用新型专利说明书

专利号 ZL 200620087313.6

[51] Int. Cl.

E04H 4/00 (2006.01)

E04H 4/14 (2006.01)

[45] 授权公告日 2007 年 10 月 31 日

[11] 授权公告号 CN 200968073Y

[22] 申请日 2006.7.24

[21] 申请号 200620087313.6

[73] 专利权人 明达实业(厦门)有限公司

地址 361022 福建省厦门市海沧新阳工业区
翁角路 858 号

[72] 设计人 林华乡 李 蓝

[74] 专利代理机构 厦门市首创君合专利事务所有限
公司

代理人 李雁翔

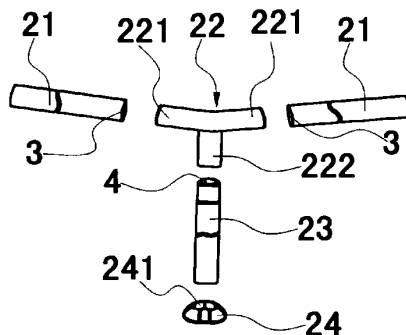
权利要求书 1 页 说明书 5 页 附图 3 页

[54] 实用新型名称

一种管架游泳池边管结构的改进

[57] 摘要

本实用新型公开了一种管架游泳池边管结构的改进，管架游泳池包括一环形管架及一设于环形管架内的游泳池，该环形管架包括若干根钢性边管，若干边管之间串接成或通过联接头串接成环行带，所述的边管顶面为平面。本技术方案的有益效果是：边管顶面为平面，则不但增加管架钢性支撑强度，而且使用方便、美观。



1. 一种管架游泳池边管结构的改进，管架游泳池包括一环形管架及一设于环形管架内的游泳池，该环形管架包括若干根钢性边管，若干边管之间串接成或通过联接头串接成环行带，其特征是：所述的边管顶面为平面。

2. 根据权利要求 1 所述的一种管架游泳池边管结构的改进，其特征是：所述的边管横截面为侧 D 字型，而且 D 字型的平面朝上。

3. 根据权利要求 2 所述的一种管架游泳池边管结构的改进，其特征是：所述的环形管架还包括若干个脚架，脚架顶端可装拆地支撑环行带。

4. 根据权利要求 3 所述的一种管架游泳池边管结构的改进，其特征是：所述的游泳池外侧周面设有若干个袖套；边管套接于对应的袖套内。

5. 根据权利要求 3 所述的一种管架游泳池边管结构的改进，其特征是：所述的边管第一端设成后插接部、第二端设成前被插接部，边管的第一端的后插接部可装拆地插接于相邻边管的第二端的前被插接部，另匹配有一可锁接后插接部和前被插接部的或松开该锁接的第三锁接装置。

6. 根据权利要求 3 或 5 所述的一种管架游泳池边管结构的改进，其特征是：所述的联接头具有两个水平被插接部；边管端部可装拆地插接于联接头的水平被插接部，另匹配有一设在边管端部和水平被插接部之间的可锁接边管端部和水平被插接部或松开该锁接的第一锁接装置；其中，联接头顶面为齐平于边管顶面的平面。

7. 根据权利要求 6 所述的一种管架游泳池边管结构的改进，其特征是：所述的水平被插接部横截面为匹配于边管横截面侧 D 字型。

8. 根据权利要求 6 所述的一种管架游泳池边管结构的改进，其特征是：所述的联接头具有下被插接部；脚管底端可支撑定位于地面，脚管顶端可装拆地插接于下被插接部；另匹配有设在脚管顶端和下被插接部之间的可锁接脚管顶端和下被插接部或松开该锁接的第二锁接装置。

9. 根据权利要求 5 所述的一种管架游泳池边管结构的改进，其特征是：所述的边管底面设有下被插接槽；脚管底端可支撑定位于地面，脚管顶端可装拆地插接于下被插接槽；另匹配有设在边管和下被插接槽之间的可锁接脚管顶端和下被插接槽或松开该锁接的第四锁接装置。

10. 根据权利要求 9 所述的一种管架游泳池边管结构的改进，其特征是：所述的每一脚管还匹配有一拉带，拉带一端固接于脚管底端，另一端固接于游泳池，脚架倾斜支撑游泳池。

一种管架游泳池边管结构的改进

所属技术领域

本实用新型涉及一种游泳池，特别是涉及一种管架游泳池边管结构的改进。

背景技术

现有管架游泳池包括一环形管架及一设于环形管架内的游泳池：该环形管架包括若干根钢性边管、若干个脚架，若干边管之间串接成或通过联接头串接成环行带，脚架顶端可装拆地支撑环行带；该游泳池包括一块联接于环形管架的环行带内的不透水布；环形管架和不透水布配合形成游泳池基体。现有的边管横截面都采用圆形，则必然就存在有如下的缺点：顶面为圆弧面，用户使用不方便、不美观。

实用新型内容

为了克服现有管架游泳池所存在的使用不方便、不美观的不足，本实用新型提供一种管架游泳池边管结构的改进，其不但增加管架钢性支撑强度，而且使用方便、美观。

本实用新型解决其技术问题所采用的技术方案是：一种管架游泳池边管结构的改进，管架游泳池包括一环形管架及一设于环形管架内的游泳池，该环形管架包括若干根钢性边管，若干边管之间串接成或通过联接头串接成环行带，所述的边管顶面为平面。本技术方案的有益效果是：边管顶面为平面，则不但增加管架钢性支撑强度，而且使用方便、美观。

所述的边管横截面为侧D字型，而且D字型的平面朝上。本技术特征的有益效果是：边管横截面为侧D字型，则不但边管顶面光滑美观，而且增强管架联接承受力。

所述的环形管架还包括若干个脚架，脚架顶端可装拆地支撑环行带。本技术特征的有益效果是：环行带由若干个脚架支撑，支撑牢固；环行带和地面之间的距离等于脚架。

所述的管架游泳池外侧周面设有若干个袖套；边管套接于对应的袖套内。本技术特征的有益效果是：不但可以定位好边管，而且便于装拆。

所述的边管两端均伸出袖套。本技术特征的有益效果是：便于装拆。

所述的边管第一端设成后插接部、第二端设成前被插接部，边管的第一端的后插接部可装拆地插接于相邻边管的第二端的前被插接部，另匹配有一可锁接后插接部和前被插接部的或松开该锁接的第三锁接装置。

所述的联接头具有两个水平被插接部；边管端部可装拆地插接于联接头的水平被插接部，另匹配有一设在边管端部和水平被插接部之间的可锁接边管端部和水平被插接部或松开该锁接的第一锁接装置；其中，联接头顶面为齐平于边管顶面的平面。本技术特征的有益效果是：其一，联接头和边管之间的联接为可装拆插接，联接牢固，便于装拆；其二，设有第一锁接装置，锁接方便快捷、便于装拆；联接头顶面为齐平于边管顶面的平面，美观。

所述的水平被插接部横截面为匹配于边管横截面侧D字型。本技术特征的有益效果是：管架顶面光滑美观。

所述的联接头具有下被插接部；脚管底端可支撑定位于地面，脚管顶端可装拆地插接于下被插接部；另匹配有设在脚管顶端和下被插接部之间的可锁接脚管顶端和下被插接部或松开该锁接的第二锁接装置。本技术特征的有益效果是：脚管和联接头之间可装拆，拆卸后占用空间小；装拆方便。

所述的边管底面设有下被插接槽；脚管底端可支撑定位于地面，脚管顶端可装拆地插接于下被插接槽；另匹配有设在边管和下被插接槽之间的可锁接脚管顶端和下被插接槽或松开该锁接的第四锁接装置。

所述的每一脚管还匹配有一拉带，拉带一端固接于脚管底端，另一端固接于游泳池，脚架倾斜支撑游泳池。本技术特征的有益效果是：可牢固定位脚管，牢固支撑游泳池。

所述的第一锁接装置包括一固接于边管端部内的第一固接座、一开设于水平被插接部的第一通孔、一开设于边管端部的第一让位孔，第一固接座内设有一在弹力作用下可伸露出第一固接座外，穿过第一让位孔并插接于第一通孔的第一弹销。本技术特征的有益效果是：按下第一弹销即可松开锁接，使用方便，装拆方便快捷。

所述的第二锁接装置包括一固接于脚管顶端内的第二固接座、一开设于下被插接部的第二通孔、一开设于脚管顶端的第二让位孔，第二固接座内设有一在弹力作用下可伸露出第二固接座外，穿过第二让位孔并插接于第二通孔的第二弹销。本技术特征的有益效果是：按下第二弹销即可松开锁接，使用方便，装拆方便快捷。

所述的第三锁接装置包括一固接于后插接部内的弹簧销、一开设于前被插接部的第三通孔、一开设于后插接部的第三让位孔，弹簧销上设有在弹力作用下可穿过第三让位孔并插接于第三通孔的第三弹销。

本技术方案的有益效果是：边管顶面为平面，则不但增加管架钢性支撑强度，而且使用方便、美观。

附图说明

下面结合附图和实施例对本实用新型进一步说明。

图 1 是本实用新型的实施例一的管架游泳池的立体示意图。

图 2 是本实用新型的实施例一的管架游泳池的边管和联接头之间的立体分解示意图。

图 3 是本实用新型的实施例一的管架游泳池的联接头、第一锁接装置的立体分解示意图。

图 4 是本实用新型的实施例一的管架游泳池的边管套接于袖套的立体示意图。

图 5 是本实用新型的实施例二的管架游泳池的立体示意图。

具体实施方式

实施例一

一种管架游泳池边管结构的改进，如图 1 所示，管架游泳池包括一环形管架 2 及一设于环形管架 2 内的游泳池 1，该环形管架 2 包括若干刚性边管 21、可串次装接若干边管 21 的联接头 22 及若干个脚管 23。本实施例中，游泳池 1 为类圆柱形；游泳池 1 设有进水嘴和放水嘴；另匹配有过滤器 5，过滤器具有进水管及放水管，其分别可装拆地密封联接进水嘴和放水嘴以对游泳池 1 的水过滤，该技术为现有技术在此不做进一步描述。

如图 4 所示，游泳池 1 外侧周面上外周缘设有若干个袖套 11，袖套 11 的个数和边管 21 的个数相同。边管 21 套接于对应的袖套 11 内，而且边管 21 两端均伸出袖套 11。

如图 2、3 所示，边管 21 为刚性弧形杆，边管 21 横截面为侧 D 字型，而且 D 字型的平面朝上，弧面朝下。边管 21 两端部内均固设有第一锁接装置 3，边管 21 两端部均开设有第一让位孔。第一锁接装置 3 包括一固接于边管 21 端部内的第一固接座 31、一开设于第一固接座 31 内的腹大口小的第一容置槽、一设于第一容置槽内的成上大小阶梯状的第一弹销 32、一设于第一容置槽内的第一弹簧 33，第一弹簧 33 套接第一弹销 32 的细杆并抵介第一弹销 32 阶梯面和第一容置槽内侧面之间，第一弹销 32 细杆在第一弹簧 33 弹力作用下伸出第一容置槽的开口、边管 21 的第一让位孔。根据需要第一弹销 32 端部设置成锥形。

如图 2、3 所示，联接头 22 具有两个对称设置的水平被插接部 221、一个下被插接部 222，联接头 22 顶面为齐平于边管顶面的平面，水平被插接部 221 横截面为匹配于边管横截面的侧 D 字形。。水平被插接部 221 上开设有第一通孔 2211，边

管 21 端部插接于水平被插接部 221, 而且在第一弹簧 33 弹力作用下第一弹销 32 细杆插接于第一通孔 2211, 以锁接边管 21 端部和联接头 22。由于第一弹销 32 端部设置成锥形, 则将边管 21 端部直接插接于水平被插接部 221 内即可自动锁接, 便于装配。若干个边管 21 和若干个联接头 22 配合形成刚性的环形带。

若干个脚管 23 可装拆地支撑环形带。脚管 23 顶端可装拆地插接于下被插接部 222。

脚管 23 顶端内固设有第二锁接装置 4, 脚管 23 顶端开设有第二让位孔。第二锁接装置 4 包括一固接于脚管 23 顶端的第二固接座 41、一开设于第二固接座 41 内的腹大口小的第二容置槽、一设于第二容置槽内的成上大下小阶梯状的第二弹销 42、一设于第二容置槽内的第二弹簧 43, 第二弹簧 43 套接第二弹销 42 细杆并抵介第二弹销 42 阶梯面和第二容置槽内侧面之间, 第二弹销 42 细杆在第二弹簧 43 弹力作用下伸出第二容置槽的开口、脚管 23 的第二让位孔。根据需要第二弹销 42 端部设置成锥形。

下被插接部 222 上开设有第二通孔 2221, 脚管 23 顶端插接于下被插接部 222, 而且在第二弹簧 43 弹力作用下第二弹销 42 细杆插接于第二通孔 2221, 以锁接脚管 23 和联接头 22。由于第二弹销 42 端部设置成锥形, 则将脚管 23 顶端直接插接于下被插接部 222 内即可自动锁接, 便于装配。

每个脚管 23 底端都固设有一脚座 24。脚座 24 上设有一匹配于脚管 23 底端的上被插接部 241, 脚管 23 底端可装拆地插接于脚座 24 的上被插接部 241 内, 脚座 24 抵靠于地面。

本实施例中管架游泳池的装配过程包括: 1、打开管架游泳池; 2、将边管 21 套接于袖套 11 内, 并使边管 21 两端均伸出袖套 11; 3、装配并锁接边管 21 和联接头 22 的水平被插接部 221; 4、装配脚座 224 和脚管 223; 5、装配并锁接脚管 223 和联接头 22 的下被插接部 222; 6、注水。

实施例二

一种管架游泳池边管结构的改进, 如图 5 所示, 管架游泳池包括一环形管架 2 及一设于环形管架 2 内的游泳池 1, 该环形管架 2 包括若干刚性边管 21、可串次装接若干边管 21 的联接头 22 及若干个脚管 23。本实施例中, 游泳池 1 为类长方体形; 游泳池 1 设有进水嘴和放水嘴; 另匹配有过滤器 5, 过滤器具有进水管及放水管, 其分别可装拆地密封联接进水嘴和放水嘴以对游泳池 1 的水过滤, 该技术为现有技术在此不做进一步描述。

游泳池 1 外侧周面上外周缘设有若干个袖套，袖套的个数和边管的个数相同。边管套接于对应的袖套内，而且边管两端均伸露出袖套。

边管均为刚性直管，边管横截面为侧 D 字型，而且 D 字型的平面朝上，弧面朝下。边管分成前长边管、中长边管、后长边管、左短边管、中短边管及右短边管。

前长边管前端固设有一套环，前长边管后端设成后插接部；后长边管后端固设有一套环，后长边管前端设成前被插接部。左短边管左端也固设有一套环，左短边管右端设成右被插接部；右短边管右端也固设有一套环，右短边管左端设成左插接部。

中长边管的前端设成前被插接部，后端设成后插接部，另匹配有一可锁接后插接部和前被插接部的或松开该锁接的第三锁接装置，其包括一固接于后插接部内的弹簧销、一开设于前被插接部的第三通孔、一开设于后插接部的第三让位孔，弹簧销上设有在弹力作用下可穿过第三让位孔并插接于第三通孔的第三弹销，通过第三锁接装置锁接前被插接部和后插接部，进而固定前长边管、中长边管和后长边管。

中短边管的左端设成左插接部，右端设成右被插接部，另匹配有一可锁接左插接部和右被插接部的或松开该锁接的第五锁接装置，其结构和第三锁接装置结构相同，通过第五锁接装置锁接右被插接部和左插接部，进而固定前左短边管、中短边管及右短边管。

四个联接头 22，每个联接头 22 都包括一成直角的角接头、两固设于角接头端部的导滑塞。后长边管、左短边管、中短边管及右短边管：成直角布置的两边管之间联接有联接头 22。角接头的导滑塞可装拆地插接固接于套环。使得前长边管、中长边管、后长边管、左短边管、中短边管、右短边管及联接头构成矩形环形带。

边管底下开设有两个被插接槽，每个边管底下都匹配有一个 U 形脚架 6。U 形脚架 6 两顶端可装拆插接固接于边管底下的两个被插接槽。U 形脚架 6 顶端和被插接槽之间设置有可锁接 U 形脚架 6 顶端和被插接槽的或松开该锁接的第四锁接装置。每个 U 形脚架 6 上均包括有一拉带 7，拉带一端固接于 U 形脚架 6 底杆，另一端固接于游泳池 1，从而固定 U 形脚架 6 并使 U 形脚架 6 倾斜支撑游泳池 1。

以上所述，仅为本实用新型较佳实施例而已，故不能以此限定本实用新型实施的范围，即依本实用新型申请专利范围及说明书内容所作的等效变化与修饰，皆应仍属本实用新型专利涵盖的范围内。

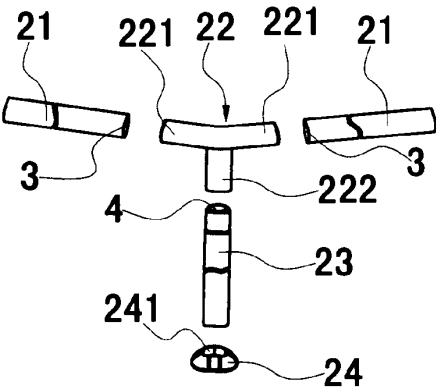


图2

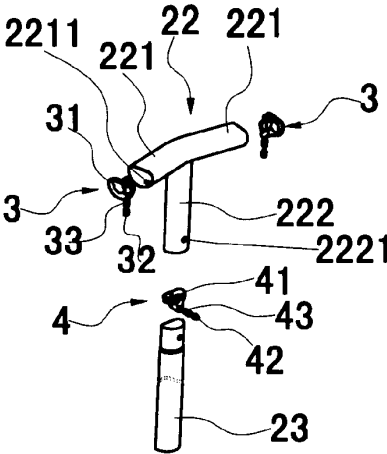


图3

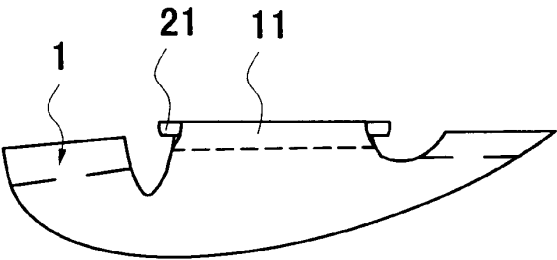


图4

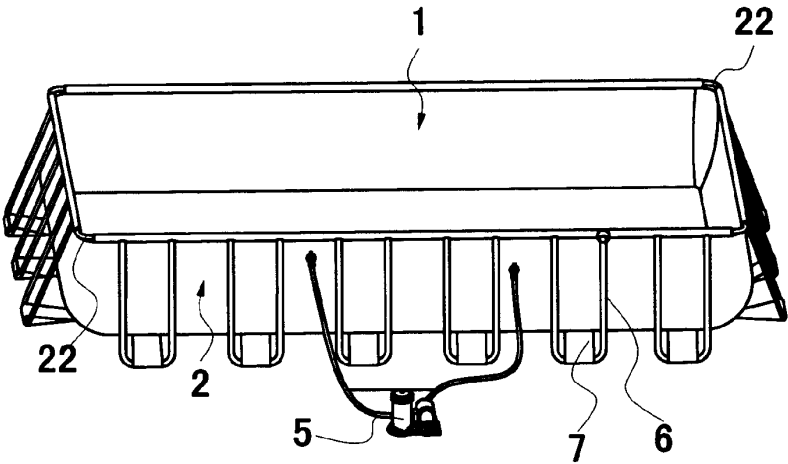


图5

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference IRC004202WO	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/US2017/037892	International filing date (day/month/year) 16 June 2017	(Earliest) Priority Date (day/month/year) 17 June 2016
Applicant INTEX RECREATION CORP.		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 2 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the **language**, the international search was carried out on the basis of:

- ☒ the international application in the language in which it was filed.
☐ a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

b. ☐ This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6bis(a)).

c. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (see Box No. II).

3. ☐ **Unity of invention is lacking** (see Box No. III).

4. With regard to the **title**,

- ☒ the text is approved as submitted by the applicant.
☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

- ☒ the text is approved as submitted by the applicant.
☐ the text has been established, according to Rule 38.2, by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the **drawings**,

- a. the figure of the **drawings** to be published with the abstract is Figure No. 1
☒ as suggested by the applicant.
☐ as selected by this Authority, because the applicant failed to suggest a figure.
☐ as selected by this Authority, because this figure better characterizes the invention.
b. ☐ none of the figures is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2017/037892

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - E04H 4/00; A47B 9/14; E04H 4/02; E04H 4/04; E04H 4/14; F16B 7/10; F16B 7/14 (2017.01)

CPC - E04H 4/0056; E04B 2/766; E04H 2004/146 (2017.08)

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

See Search History document

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

See Search History document

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

See Search History document

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2014/0325751 A1 (HAKE) 06 November 2014 (06.11.2014) entire document	9, 10, 12
X	US 2002/0042948 A1 (LEE) 18 April 2002 (18.04.2002) entire document	1-3, 14, 15, 17
---		---
Y		4-9, 11, 13, 16, 18-20
Y	US 6,079,894 A (OBITTS) 27 June 2000 (27.06.2000) entire document	4, 5
Y	CN 204475914 U (SHANGHAI BESTWAY INFLATABLES & MATERIAL CORP) 15 July 2015 (15.07.2015) see machine translation	6-8, 18-20
Y	US 5,143,476 A (PRUIS) 01 September 1992 (01.09.1992) entire document	9, 11, 13, 16
A	US 4,323,319 A (ADAMS) 06 April 1982 (06.04.1982) entire document	1-20
A	US 2004/0118844 A1 (BENNETT et al) 24 June 2004 (24.06.2004) entire document	1-20
A	CN 200968073 Y (INTEX INDUSTRIES (XIAMEN) CO., LTD) 31 October 2007 (31.10.2007) see machine translation	1-20

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"I" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

04 August 2017

Date of mailing of the international search report

24 AUG 2017

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US, Commissioner for Patents

P.O. Box 1450, Alexandria, VA 22313-1450

Facsimile No. 571-273-8300

Authorized officer

Blaine R. Copenheaver

PCT Helpdesk: 571-272-4300

PCT OSP: 571-272-7774

Form PCT/ISA/210 (second sheet) (January 2015)

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To: JAMIE M. DREWRY
300 N. MERIDIAN STREET
SUITE 2700
INDIANAPOLIS, IN 46204

Date of mailing
(day/month/year)

24 AUG 2017

Applicant's or agent's file reference
IRC004202WO

FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/US2017/037892

International filing date (day/month/year)

16 June 2017

Priority date (day/month/year)

17 June 2016

International Patent Classification (IPC) or both national classification and IPC

IPC(8) - E04H 4/00; A47B 9/14; E04H 4/02; E04H 4/04; E04H 4/14; F16B 7/10; F16B 7/14 (2017.01)

CPC - E04H 4/0056; E04B 2/766; E04H 2004/146 (2017.08)

Applicant **INTEX RECREATION CORP.**

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

Name and mailing address of the ISA/US
Mail Stop PCT, Attn: ISA/US
Commissioner for Patents
P.O. Box 1450, Alexandria, VA 22313-1450
Facsimile No. 571-273-8300

Date of completion of this opinion

04 August 2017

Authorized officer

Blaine R. Copenheaver

PCT Helpdesk: 571-272-4300
PCT OSP: 571-272-7774

Form PCT/ISA/237 (cover sheet) (January 2015)

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/US2017/037892

Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of:
 - ☒ the international application in the language in which it was filed.
 - ☐ a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).
2. ☐ This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43*bis*.1(a)).
3. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of a sequence listing:
 - a. ☐ forming part of the international application as filed:
 - ☐ in the form of an Annex C/ST.25 text file.
 - ☐ on paper or in the form of an image file.
 - b. ☐ furnished together with the international application under PCT Rule 13*ter*.1(a) for the purposes of international search only in the form of an Annex C/ST.25 text file.
 - c. ☐ furnished subsequent to the international filing date for the purposes of international search only:
 - ☐ in the form of an Annex C/ST.25 text file (Rule 13*ter*.1(a)).
 - ☐ on paper or in the form of an image file (Rule 13*ter*.1(b) and Administrative Instructions, Section 713).
4. ☐ In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that forming part of the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
5. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/US2017/037892

Box No. V	Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement			
1. Statement				
Novelty (N)	Claims	1-8, 11, 13-20	YES	
	Claims	9, 10, 12	NO	
Inventive step (IS)	Claims	None	YES	
	Claims	1-20	NO	
Industrial applicability (IA)	Claims	1-20	YES	
	Claims	None	NO	
2. Citations and explanations:				
<p>Claims 9, 10, and 12 lack novelty under PCT Article 33(2) as being anticipated by Hake.</p> <p>Regarding claims 9, 10, 12, Hake discloses [Cl. 9] a frame joint ((11); fig. 4) for an above ground pool frame (intended use; figs. 7-8) having a first horizontal frame member (14), a second horizontal frame member (14), and a vertical frame member (18), the frame joint (11) comprising: a first horizontal joint portion (left side of (11); fig. 4) configured to couple with the first horizontal frame member (14), the first horizontal joint portion (left side of (11); fig. 4) being constructed of plastic ([0057], lines 1-5), a second horizontal joint portion (right side of (11); fig. 4) configured to couple with the second horizontal frame member (14), the second horizontal joint portion (right side of (11); fig. 4) being constructed of plastic ([0057], lines 1-5), and a vertical joint portion (vertical portion of (11); fig. 4) fixedly coupled to the first and second horizontal joint portions (left and right portions of (11); fig. 4) and configured to couple with the vertical frame member (18), the vertical joint portion (vertical portion of (11); fig. 4) being constructed of plastic ([0057], lines 1-5); [Cl. 10] wherein the vertical joint portion (vertical portion of (11); fig. 4) is centered between the first and second horizontal joint portions (left and right portions of (11); fig. 4) to form a T-shaped frame joint (figs. 4, 7-8); and [Cl. 12]; wherein the vertical joint portion (vertical portion of (11); fig. 4) is integrally formed with the first and second horizontal joint portions (left and right portions of (11); fig. 4) as a single piece (figs. 4, 7-8; [0057], lines 1-5).</p> <p>Claims 1-3, 14, 15, and 17 lack an inventive step under PCT Article 33(3) as being obvious over Lee.</p> <p>Regarding claims 1-3, Lee discloses [Cl. 1] a frame joint (130) for an above ground pool frame (100) having a first horizontal frame member (left side (120)), a second horizontal frame member (right side (120)), and a vertical frame member (110), the frame joint (130) comprising: a first horizontal joint portion (left side (132)) including a first coupling assembly (134, 135) configured to couple with the first horizontal frame member (left side (120)), a second horizontal joint portion (right side (132)) including a second coupling assembly (134, 135) configured to couple with the second horizontal frame member (right side (120)), and a vertical joint portion (vertical portion (131)) fixedly coupled to (figs. 3-4) the first and second horizontal joint portions (left and right sides (132)) and configured to couple with the vertical frame member (110).</p> <p>Lee fails to specifically disclose that [Cl. 1] a width of the vertical joint portion accounts for at least 50% of a width between the first and second coupling assemblies of the first and second horizontal joint portions; [Cl. 2] wherein the width of the vertical joint portion accounts for at least 40% of a total width of the frame joint; and [Cl. 3] wherein the width of the vertical joint portion accounts for about 50% of the total width of the frame joint.</p> <p>However, modifications regarding dimensions and relative dimensions are generally considered to be modifications that are obvious to and well within the purview of one with ordinary skill in the art. Further, it is known that in the course of ordinary research and discovery a skilled artisan will attempt to design a device comprised of elements having dimensions and relative dimensions that will allow the device to operate in an optimal manner in its intended environment and/or application.</p> <p>Therefore, it would have been obvious to one with ordinary skill in this art at the time of the invention to modify the joint of Lee by forming the joint such that a width of the vertical joint portion accounts for at least 50% of a width between the first and second coupling assemblies of the first and second horizontal joint portions, wherein the width of the vertical joint portion accounts for at least 40% of a total width of the frame joint, and wherein the width of the vertical joint portion accounts for about 50% of the total width of the frame joint, as a matter of preference based on the intended application, e.g. material of the joint, size of the frame, etc., for the purpose of improving the strength a stability of the joint, and thus the strength and stability of the pool frame.</p>				

Form PCT/ISA/237 (Box No. V) (January 2015)

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US2017/037892

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

Claim 11 is objected to under PCT Rule 66.2(a)(v) as lacking clarity under PCT Article 6, because claim 16 is indefinite for the following reason(s):

In claim 11, the recitation "to form an obtuse angle that defines a water cavity" is vague and lacking in clarity. In this regard, the specification provides no support for this recitation, and it is unclear as to what this recitation is referring or how the obtuse angle formed by the first and second horizontal joint portions "defines a water cavity".

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/US2017/037892

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of:

Regarding claims 14, 15, 17, Lee discloses [Cl. 14] a method of assembling an above ground pool (abstract; figs. 1-9), the method comprising: coupling a first horizontal joint portion (left side (132)) of a frame joint (130) to a first horizontal frame member (left side (120)) with a first coupling assembly (134, 135), coupling a second horizontal joint portion (right side (132)) of the frame joint (130) to a second horizontal frame member (right side (120)) with a second coupling assembly (134, 135), and coupling a vertical joint portion (vertical portion (131)) of the frame joint (130) to a vertical frame member (110); [Cl. 15] wherein, an external cross-section (figs. 4, 5, 6) of the first horizontal joint portion (left side (132)) matches an internal cross-section (figs. 4, 5, 6) of the first horizontal frame member (left side (120)), an external cross-section (figs. 4, 5, 6) of the second horizontal joint portion (right side (132)) matches an internal cross-section (figs. 4, 5, 6) of the second horizontal frame member (right side (120)), and an external cross-section (fig. 4) of the vertical joint portion (vertical portion (131)) matches an internal cross-section (fig. 4) of the vertical frame member (110); and [Cl. 17] wherein: coupling the first horizontal joint portion (left side (132)) to the first horizontal frame member (left side (120)) comprises depressing a first pin (134) into the first horizontal joint portion (left side (132)) and releasing the first pin (134) into engagement with (via (121)) the first horizontal frame member (left side (120)), and coupling the second horizontal joint portion (right side (132)) to the second horizontal frame member (right side (120)) comprises depressing a second pin (134) into the second horizontal joint portion (right side (132)) and releasing the second pin (134) into engagement (via (121)) with the second horizontal frame member (right side (120)).

Lee fails to disclose [Cl. 14] that a width of the vertical joint portion accounts for a majority of a width between the first and second coupling assemblies of the first and second horizontal joint portions.

However, modifications regarding dimensions and relative dimensions are generally considered to be modifications that are obvious to and well within the purview of one with ordinary skill in the art. Further, it is known that in the course of ordinary research and discovery a skilled artisan will attempt to design a device comprised of elements having dimensions and relative dimensions that will allow the device to operate in an optimal manner in its intended environment and/or application.

Therefore, it would have been obvious to one with ordinary skill in this art at the time of the invention to modify the method of Lee by forming the joint such that a width of the vertical joint portion accounts for a majority of a width between the first and second coupling assemblies of the first and second horizontal joint portions, as a matter of preference based on the intended application, e.g. material of the joint, size of the frame, etc., for the purpose of improving the strength a stability of the joint, and thus the strength and stability of the pool frame.

Claims 4 and 5 lack an inventive step under PCT Article 33(3) as being obvious over Lee in view of Obitts.

Regarding claim 4, the modified Lee discloses the joint of claim 1, including that [Cl. 4] each of the first and second coupling assemblies (134, 135) comprises a spring (135), which may be a helical spring ((135); [0067], lines 1-2), and a pin (134) biased outward through a hole (unreferenced; fig. 7) in the respective horizontal joint portion (left and right sides (132)) by the helical spring ((135); [0067], lines 1-2) to engage a corresponding recess (121) of the respective horizontal frame member (left and right sides (120)).

The modified Lee fails to disclose that [Cl. 4] each of the first and second coupling assemblies comprises a base, with the helical spring supported by the base.

However, Obitts discloses a similar coupling assembly (figs. 6-7) for telescoping tubular members (12, 24), wherein the coupling assembly (figs. 6-7) includes a base (158), a helical spring (170) supported by the base (158), and a pin (144) biased outward through a hole (44) in the an inner tube (24) by the helical spring (170) to engage a corresponding recess (14) of an outer tube (12).

Therefore, it would have been obvious to one with ordinary skill in this art at the time of the invention to modify the joint of Lee by providing each of the first and second coupling assemblies with a base, with the helical spring supported by the base, as taught by Obitts, for the purpose of making the coupling assemblies self-contained, as well as making them easier to place and to have the springs remain properly in place within the frame joint.

Regarding claim 5, the modified Lee discloses the joint of claim 4, but fails to specifically disclose that [Cl. 5] the width of the vertical joint portion accounts for about 70% of a width between the pins of the first and second coupling assemblies.

However, modifications regarding dimensions and relative dimensions are generally considered to be modifications that are obvious to and well within the purview of one with ordinary skill in the art. Further, it is known that in the course of ordinary research and discovery a skilled artisan will attempt to design a device comprised of elements having dimensions and relative dimensions that will allow the device to operate in an optimal manner in its intended environment and/or application.

Therefore, it would have been obvious to one with ordinary skill in this art at the time of the invention to modify the joint of Lee by forming the joint such that the width of the vertical joint portion accounts for about 70% of a width between the pins of the first and second coupling assemblies, as a matter of preference based on the intended application, e.g. material of the joint, size of the frame, etc., for the purpose of improving the strength a stability of the joint, and thus the strength and stability of the pool frame.

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US2017/037892

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of:

Claims 6-8 and 18-20 lack an inventive step under PCT Article 33(3) as being obvious over Lee in view of Shanghai Bestway Inflatables & Material Corp (hereinafter Shanghai Bestway).

Regarding claims 6, 8, the modified Lee discloses the joint of claim 1, including [Cl. 6] a liner (220, 221) wrapped around (via (221)) the first and second horizontal frame members (left and right side (120)), the liner defining a hole (222); and [Cl. 8] wherein a height of the frame joint (130) exceeds a height of the hole (222) in the liner (220, 221) (figs. 2, 9).

Lee fails to specifically disclose that [Cl. 6] the hole is sized to expose the first and second coupling assemblies. Initially, it is noted that modifications regarding dimensions and relative dimensions are generally considered to be modifications that are obvious to and well within the purview of one with ordinary skill in the art. Further, it is known that in the course of ordinary research and discovery a skilled artisan will attempt to design a device have dimensions and relative dimensions that will allow the device to operate in an optimal manner in its intended environment and/or application. In addition, Shanghai Bestway discloses a similar frame joint ((4); figs. 7-9) and pool liner (B), wherein the liner (B) is wrapped around (fig. 7; (b11)) first and second horizontal frame members (left and right (111, 121)), the liner (B) defining a hole (unreferenced; figs. 1, 7, 9), wherein a height of the frame joint (4) exceeds a height of the hole (unreferenced; figs. 1, 7, 9) in the liner (B), and wherein the hole (unreferenced; figs. 1, 7, 9) is sized to expose (figs. 1, 7, 9) first and second coupling assemblies (5).

Therefore, it would have been obvious to one with ordinary skill in this art at the time of the invention to modify the joint of Lee by making the hole in the liner sized to expose the first and second coupling assemblies by making the hole wider than the distance between the coupling assemblies, in view of Shanghai Bestway, as a matter of preference based on the application and for the purpose of making it easier to assemble and disassemble the frame and frame joints by leaving the coupling assemblies exposed for easy access.

Regarding claim 7, the modified Lee discloses the joint of claim 6, but fails to specifically disclose that [Cl. 7] a width of the frame joint exceeds a width of the hole in the liner.

Initially, it is again noted that modifications regarding dimensions and relative dimensions are generally considered to be modifications that are obvious to and well within the purview of one with ordinary skill in the art. Further, it is known that in the course of ordinary research and discovery a skilled artisan will attempt to design a device have dimensions and relative dimensions that will allow the device to operate in an optimal manner in its intended environment and/or application. It is also noted that Lee discloses a frame joint (130) that exceeds a width of the hole (222) in the liner (220, 221), but that does not expose the coupling assemblies (134, 135), and that Shanghai Bestway discloses a hole (figs. 1, 7, 9) in the liner (B) that exposes coupling assemblies (5), but exceeds a width of the frame joint (4).

It would have been obvious to and well within the purview of one with ordinary skill in this art at the time of the invention to merely modify the liner hole and frame joint dimensions of Lee such that the liner hole exposes the coupling assemblies, but does not exceed the width of the frame joint, as a matter of preference based on the application for the purpose of helping to prevent water from entering the frame joint at the seam between the frame joint and the horizontal members.

Regarding claims 18-19, the modified Lee discloses the method of claim 14, including [Cl. 18] wrapping (via. (221) a liner (220, 221) around the first and second horizontal frame members (left and right (120)) with a hole (222).

Lee fails to disclose [Cl. 18] that the liner hole exposes the first and second coupling assemblies; [Cl. 19] wherein a width of the hole in the liner exceeds a width between the first and second coupling assemblies.

Initially, it is noted that modifications regarding dimensions and relative dimensions are generally considered to be modifications that are obvious to and well within the purview of one with ordinary skill in the art. Further, it is known that in the course of ordinary research and discovery a skilled artisan will attempt to design a device have dimensions and relative dimensions that will allow the device to operate in an optimal manner in its intended environment and/or application. In addition, Shanghai Bestway discloses a similar frame joint ((4); figs. 7-9) and pool liner (B), wherein the liner (B) is wrapped around (fig. 7; (b11)) first and second horizontal frame members (left and right (111, 121)), the liner (B) defining a hole (unreferenced; figs. 1, 7, 9), wherein a width of the hole (unreferenced; figs. 1, 7, 9) in the liner (B) exceeds a width (figs. 1, 7, 9) between first and second coupling assemblies (left and right (5)), and wherein the hole (unreferenced; figs. 1, 7, 9) is sized to expose (figs. 1, 7, 9) the first and second coupling assemblies (5).

Therefore, it would have been obvious to one with ordinary skill in this art at the time of the invention to modify the method of Lee by making the hole in the liner sized to expose the first and second coupling assemblies by making the hole wider than the distance between the coupling assemblies, in view of Shanghai Bestway, as a matter of preference based on the application and for the purpose of making it easier to assemble and disassemble the frame and frame joints by leaving the coupling assemblies exposed for easy access.

Regarding claim 20, the modified Lee discloses the method of claim 18, but fails to specifically disclose [Cl. 20] the vertical joint portion of the frame joint is coupled to the vertical frame member with a third coupling assembly, and wherein a height of the hole in the liner is less than a distance between the first and third coupling assemblies.

However, Shanghai Bestway discloses a similar method of assembling an above ground pool (abstract; figs. 1-9) that includes a frame joint (4) having a vertical portion (figs. 6-9) that is coupled to a vertical frame member (2) with a third coupling assembly (6).

It would have been obvious to one with ordinary skill in this art at the time of the invention to modify the method of Lee by provide a third coupling assembly that couples the vertical portion of the frame joint to the vertical frame member, as taught by Shanghai Bestway, for the purpose of making sure that the vertical frame members do not disengage accidentally from the vertical portions of the frame joints. Regarding the limitation that a height of the hole in the liner is less than a distance between the first and third coupling assemblies, it is noted that the height of the hole (222) in the liner (220, 221) of Lee would be less than a distance between the first and third coupling assemblies.

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/US2017/037892

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of:

Claims 9, 11, 13, and 16 lack an inventive step under PCT Article 33(3) as being obvious over Lee in view of Pruis.

Regarding claims 9, 11, Lee discloses [Cl. 9] a frame joint (130) for an above ground pool frame (100) having a first horizontal frame member (left side (120)), a second horizontal frame member (right side (120)), and a vertical frame member (110), the frame joint (130) comprising: a first horizontal joint portion (left side (132)) configured to couple with the first horizontal frame member (left side (120)), a second horizontal joint portion (right side (132)) configured to couple with the second horizontal frame member (right side (120)), and a vertical joint portion (vertical portion (131)) fixedly coupled to the first and second horizontal joint portions (left and right sides (132)) and configured to couple with the vertical frame member (110); [Cl. 11] wherein the first and second horizontal joint portions (left and right side (132)) cooperate to form an obtuse angle (figs. 1, 2, 8, 9) that defines a water cavity (Lee's obtuse angle forms "a water cavity" to the extent that the obtuse angle of applicant's invention defines "a water cavity").

Lee fails to disclose [Cl. 9] the first horizontal joint portion being constructed of plastic, the second horizontal joint portion being constructed of plastic, and the vertical joint portion being constructed of plastic.

Initially, it is noted that modifications regarding materials are generally considered to be modifications that are obvious to and well within the purview of one with ordinary skill in the art. Further, it is known that in the course of ordinary research and discovery a skilled artisan will attempt to design a device using materials that will allow the device to operate in an optimal manner in its intended environment and/or application. And, Pruis discloses a similar joint ((10); figs. 1-2) that may be used as a frame joint having a first horizontal joint portion ((18) left side) being constructed of plastic (col. 3, lines 26-28), a second horizontal joint portion ((18) right side) constructed of plastic (col. 3, lines 26-28) and a vertical joint portion ((18) vertical portion) constructed of plastic (col. 3, lines 26-28).

Therefore, it would have been obvious to one with ordinary skill in this art at the time of the invention to modify the joint of Lee by forming the first, second and vertical joint portions of plastic, as a matter of preference and in view of the teachings of Pruis, for the purpose of making the joint more light weight, as well as easier and cheaper to manufacture.

Regarding claim 13, the modified Lee discloses the joint of claim 9, including [Cl. 13] a first coupling assembly (134, 135) associated with the first horizontal joint portion (left side (132)), and a second coupling assembly (134, 135) associated with the second horizontal joint portion (right side (132)), but fails to disclose that [Cl. 13] a width of the vertical joint portion accounts for a majority of a width between the first and second coupling assemblies.

However, modifications regarding dimensions and relative dimensions are generally considered to be modifications that are obvious to and well within the purview of one with ordinary skill in the art. Further, it is known that in the course of ordinary research and discovery a skilled artisan will attempt to design a device having dimensions and relative dimensions that will allow the device to operate in an optimal manner in its intended environment and/or application.

Therefore, it would have been obvious to one with ordinary skill in this art at the time of the invention to modify the joint of Lee by forming the joint such that the vertical joint portion accounts for a majority of a width between the first and second coupling assemblies, as a matter of preference based on the application and for the purpose of increasing the strength and stability of the vertical joint portion and the vertical frame member.

Regarding claim 16, the modified Lee discloses the method of claim 14, but fails to specifically disclose that [Cl. 16] the first horizontal joint portion, the second horizontal joint portion, and the vertical joint portion are constructed of plastic.

Initially, it is noted that modifications regarding materials are generally considered to be modifications that are obvious to and well within the purview of one with ordinary skill in the art. Further, it is known that in the course of ordinary research and discovery a skilled artisan will attempt to design a device using materials that will allow the device to operate in an optimal manner in its intended environment and/or application. And, Pruis discloses a similar joint ((10); figs. 1-2) that may be used as a frame joint having a first horizontal joint portion ((18) left side) being constructed of plastic (col. 3, lines 26-28), a second horizontal joint portion ((18) right side) constructed of plastic (col. 3, lines 26-28) and a vertical joint portion ((18) vertical portion) constructed of plastic (col. 3, lines 26-28).

Therefore, it would have been obvious to one with ordinary skill in this art at the time of the invention to modify the joint of Lee by forming the first, second and vertical joint portions of plastic, as a matter of preference and in view of the teachings of Pruis, for the purpose of making the joint more light weight, as well as easier and cheaper to manufacture.

Claims 1-20 meet the criteria set out in PCT Article 33(4), and thus have industrial applicability because the subject matter claimed can be made or used in industry.

**SUBSTITUTE STATEMENT IN LIEU OF AN OATH OR DECLARATION FOR UTILITY
OR DESIGN PATENT APPLICATION (35 U.S.C. 115(d) AND 37 CFR 1.64)**

Title of Invention	JOINT FOR ABOVE GROUND POOL FRAME		
This statement is directed to:			
☒ The attached application,			
OR			
☐ United States application or PCT international application number _____ filed on _____			
LEGAL NAME of inventor to whom this substitute statement applies:			
(E.g., Given Name (first and middle (if any)) and Family Name or Surname)			
Hua Hsiang Lin			
Residence (except for a deceased or legally incapacitated inventor):			
City	State	Country	
Mailing Address (except for a deceased or legally incapacitated inventor):			
City	State	Zip	Country
I believe the above-named inventor or joint inventor to be the original inventor or an original joint inventor of a claimed invention in the application.			
The above-identified application was made or authorized to be made by me.			
I hereby acknowledge that any willful false statement made in this statement is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.			
Relationship to the inventor to whom this substitute statement applies:			
☐ Legal Representative (for deceased or legally incapacitated inventor only),			
☒ Assignee,			
☐ Person to whom the inventor is under an obligation to assign,			
☐ Person who otherwise shows a sufficient proprietary interest in the matter (petition under 37 CFR 1.46 is required), or			
☐ Joint Inventor.			

[Page 1 of 2]

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

SUBSTITUTE STATEMENT

Circumstances permitting execution of this substitute statement:

- ☒ Inventor is deceased,
☐ Inventor is under legal incapacity,
☐ Inventor cannot be found or reached after diligent effort, or
☐ Inventor has refused to execute the oath or declaration under 37 CFR 1.63.

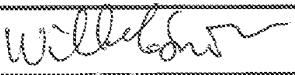
If there are joint inventors, please check the appropriate box below:

- ☒ An application data sheet under 37 CFR 1.76 (PTO/AIA/14 or equivalent) naming the entire inventive entity has been or is currently submitted.
OR
☐ An application data sheet under 37 CFR 1.76 (PTO/AIA/14 or equivalent) has not been submitted. Thus, a Substitute Statement Supplemental Sheet (PTO/AIA/11 or equivalent) naming the entire inventive entity and providing inventor information is attached. See 37 CFR 1.64(b).

WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

PERSON EXECUTING THIS SUBSTITUTE STATEMENT:

Name: **William G. Smith** Date (Optional):
Signature: 

APPLICANT NAME AND TITLE OF PERSON EXECUTING THIS SUBSTITUTE STATEMENT:

If the applicant is a juristic entity, list the applicant name and the title of the signer:

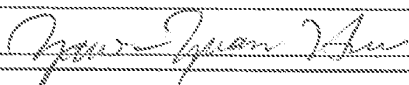
Applicant Name: **Intex Marketing Ltd.**
Title of Person Executing This Substitute Statement: **Attorney in Fact**
The signer, whose title is supplied above, is authorized to act on behalf of the applicant.

Residence of the signer (unless provided in an application data sheet, PTO/AIA/14 or equivalent):

City: _____ State: _____ Country: _____
Mailing Address of the signer (unless provided in an application data sheet, PTO/AIA/14 or equivalent):
Wickham's Cay, P.O. Box 662
Road Town
City: **Tortola** State: _____ Zip: **VG1110** Country: **VG**

Note: Use an additional PTO/AIA/02 form for each inventor who is deceased, legally incapacitated, cannot be found or reached after diligent effort, or has refused to execute the oath or declaration under 37 CFR 1.63.

**DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN
APPLICATION DATA SHEET (37 CFR 1.76)**

Title of Invention	JOINT FOR ABOVE GROUND POOL FRAME
As the below named inventor, I hereby declare that:	
This declaration is directed to: ☒ The attached application, or	
☐ United States application or PCT International application number _____ filed on _____	
The above-identified application was made or authorized to be made by me.	
I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.	
I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.	
WARNING: Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.	
LEGAL NAME OF INVENTOR	
Inventor:	Yaw Yuan Hsu
Signature:	
Date (Optional):	_____
Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/S1 form for each additional inventor.	

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.60. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-5198 and select option 2.

Electronic Acknowledgement Receipt	
EFS ID:	34586790
Application Number:	16220484
International Application Number:	
Confirmation Number:	3890
Title of Invention:	JOINT FOR ABOVE GROUND POOL FRAME
First Named Inventor/Applicant Name:	Hua Hsiang Lin
Customer Number:	27268
Filer:	Jamie Marie Drewry/Pam Reed
Filer Authorized By:	Jamie Marie Drewry
Attorney Docket Number:	IRC-0042-02-US
Receipt Date:	14-DEC-2018
Filing Date:	
Time Stamp:	14:13:39
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	\$1720
RAM confirmation Number	121718INTEFSW14150201
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

United States Patent and Trademark Office

- Sales Receipt -

02/25/2019 SDIRETA1 00000014 16220484

01 FC:1631	300.00 OP
------------	-----------

02 FC:1632	660.00 OP
------------	-----------

03 FC:1633	760.00 OP
------------	-----------

United States Patent and Trademark Office

- Sales Receipt -

Adjustment date: 02/25/2019 SDIRETA1

12/17/2018 INTEFSW 00000444 16220484

01 FC:1011	-300.00 OP
------------	------------

02 FC:1111	-660.00 OP
------------	------------

03 FC:1311	-760.00 OP
------------	------------

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875						Application or Docket Number 16/220,484				
APPLICATION AS FILED - PART I										
(Column 1)		(Column 2)		SMALL ENTITY		OR OTHER THAN SMALL ENTITY				
FOR	NUMBER FILED	NUMBER EXTRA	RATE(\$)	FEE(\$)		RATE(\$)	FEE(\$)			
BASIC FEE <small>(37 CFR 1.16(a), (b), or (c))</small>	N/A	N/A	N/A			N/A	300			
SEARCH FEE <small>(37 CFR 1.16(k), (l), or (m))</small>	N/A	N/A	N/A			N/A	520			
EXAMINATION FEE <small>(37 CFR 1.16(o), (p), or (q))</small>	N/A	N/A	N/A			N/A	760			
TOTAL CLAIMS <small>(37 CFR 1.16(j))</small>	20	minus 20 = *				x 100 =	0.00			
INDEPENDENT CLAIMS <small>(37 CFR 1.16(h))</small>	3	minus 3 = *				x 460 =	0.00			
APPLICATION SIZE FEE <small>(37 CFR 1.16(s))</small>	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						0.00			
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							0.00			
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	1580			
APPLICATION AS AMENDED - PART II										
(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY		OR OTHER THAN SMALL ENTITY		
AMENDMENT A		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)	ADDITIONAL FEE(\$)
	Total <small>(37 CFR 1.16(i))</small>	*	Minus	**	=	x	=		x	=
	Independent <small>(37 CFR 1.16(h))</small>	*	Minus	***	=	x	=		x	=
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))									
					TOTAL ADD'L FEE				TOTAL ADD'L FEE	
AMENDMENT B		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)	ADDITIONAL FEE(\$)
	Total <small>(37 CFR 1.16(i))</small>	*	Minus	**	=	x	=		x	=
	Independent <small>(37 CFR 1.16(h))</small>	*	Minus	***	=	x	=		x	=
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))									
					TOTAL ADD'L FEE				TOTAL ADD'L FEE	
<div style="font-size: x-small;"> * If the entry in column 1 is less than the entry in column 2, write "0" in column 3. ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20". *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3". The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1. </div>										

MULTIPLE DEPENDENT CLAIM FEE CALCULATION SHEET Substitute for Form PTO-1360 (For use with Form PTO/SB/06)							Application Number 16220484		Filing Date		
							Applicant(s) Hua Lin, deceased				
							* May be used for additional claims or amendments				
CLAIMS	AS FILED		AFTER FIRST AMENDMENT		AFTER SECOND AMENDMENT			*	*	*	
	Indep	Depend	Indep	Depend	Indep	Depend		Indep	Depend	Indep	Depend
1	1						51				
2		1					52				
3		1					53				
4		1					54				
5		1					55				
6		1					56				
7		1					57				
8		1					58				
9	1						59				
10		1					60				
11		1					61				
12		1					62				
13		1					63				
14	1						64				
15		1					65				
16		1					66				
17		1					67				
18		1					68				
19		1					69				
20		1					70				
21							71				
22							72				
23							73				
24							74				
25							75				
26							76				
27							77				
28							78				
29							79				
30							80				
31							81				
32							82				
33							83				
34							84				
35							85				
36							86				
37							87				
38							88				
39							89				
40							90				
41							91				
42							92				
43							93				
44							94				
45							95				
46							96				
47							97				
48							98				
49							99				
50							100				
Total Indep	3		0		0						
Total Depend	17		0		0						
Total Claims	20		0		0						



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

U.S. APPLICATION NUMBER NO.	FIRST NAMED INVENTOR	ATTY. DOCKET NO.
16/220,484	Hua Hsiang Lin, deceased	IRC-0042-02-US
27268 Faegre Baker Daniels LLP 300 NORTH MERIDIAN STREET SUITE 2700 INDIANAPOLIS, IN 46204		INTERNATIONAL APPLICATION NO. PCT/US2017/037892
		I.A. FILING DATE 06/16/2017
		PRIORITY DATE 06/17/2016

CONFIRMATION NO. 3890
371 ACCEPTANCE LETTER



Date Mailed: 03/08/2019

NOTICE OF ACCEPTANCE OF APPLICATION UNDER 35 U.S.C 371 AND 37 CFR 1.495

The applicant is hereby advised that the United States Patent and Trademark Office, in its capacity as a Designated / Elected Office (37 CFR 1.495), has ACCEPTED the above identified international application for national patentability examination in the United States Patent and Trademark Office.

The United States Application Number assigned to the application is shown above. A Filing Receipt will be issued for the present application in due course. **THE DATE APPEARING ON THE FILING RECEIPT AS THE "FILING DATE or 371(c) DATE" IS THE DATE ON WHICH THE LAST OF THE 35 U.S.C. 371 (c)(1) and (c)(2) REQUIREMENTS HAS BEEN RECEIVED IN THE OFFICE. THIS DATE IS SHOWN BELOW.** The filing date of the above identified application is the international filing date of the international application (Article 11(3) and 35 U.S.C. 363)

12/14/2018
DATE OF RECEIPT OF 35 U.S.C.
371(c)(1) and (c)(2) REQUIREMENTS

The following items have been received:

- Copy of the International Application filed on 12/14/2018
- Copy of the International Search Report filed on 12/14/2018
- Preliminary Amendments filed on 12/14/2018
- Information Disclosure Statements filed on 12/14/2018
- Inventor's Oath or Declaration filed on 12/14/2018
- Request for Immediate Examination filed on 12/14/2018
- U.S. Basic National Fees filed on 12/14/2018
- Authorize Access to Search Results filed on 12/14/2018
- Priority Documents filed on 12/14/2018
- Power of Attorney filed on 12/14/2018
- Authorization to Permit Access filed on 12/14/2018
- Application Data Sheet (37 CFR 1.76) filed on 12/14/2018

Applicant is reminded that any communications to the United States Patent and Trademark Office must be mailed to the address given in the heading and include the U.S. application no. shown above (37 CFR 1.5)

JACQUELINE A WHITFIELD

Telephone: (703) 756-1132



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO.	TOT CLAIMS	IND CLAIMS
16/220,484	12/14/2018	3633	1720	IRC-0042-02-US	20	3

CONFIRMATION NO. 3890

FILING RECEIPT



0000000106396727

27268
Faegre Baker Daniels LLP
300 NORTH MERIDIAN STREET
SUITE 2700
INDIANAPOLIS, IN 46204

Date Mailed: 03/08/2019

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

Inventor(s)

Hua Hsiang Lin, deceased, Fujian, CHINA, Deceased;
Yaw Yuan Hsu, Fujian, CHINA;

Applicant(s)

Intex Marketing Ltd., Tortola, VIRGIN ISLANDS, BRITISH

Power of Attorney: The patent practitioners associated with Customer Number 27268

Domestic Priority data as claimed by applicant

This application is a 371 of PCT/US2017/037892 06/16/2017

Foreign Applications (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see <http://www.uspto.gov> for more information.)

CHINA 201620598406.9 06/17/2016

CHINA 201630270359.0 06/22/2016

CHINA 201621039473.3 09/06/2016

Permission to Access Application via Priority Document Exchange: Yes

Permission to Access Search Results: Yes

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

If Required, Foreign Filing License Granted: 03/06/2019

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 16/220,484**

Projected Publication Date: 06/13/2019

Non-Publication Request: No

Early Publication Request: No
Title

JOINT FOR ABOVE GROUND POOL FRAME

Preliminary Class

052

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at <http://www.uspto.gov/web/offices/pac/doc/general/index.html>.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, <http://www.stopfakes.gov>. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

LICENSE FOR FOREIGN FILING UNDER
Title 35, United States Code, Section 184
Title 37, Code of Federal Regulations, 5.11 & 5.15

GRANTED

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign Assets Control, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

SelectUSA

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The U.S. offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to promote and facilitate business investment. SelectUSA provides information assistance to the international investor community; serves as an ombudsman for existing and potential investors; advocates on behalf of U.S. cities, states, and regions competing for global investment; and counsels U.S. economic development organizations on investment attraction best practices. To learn more about why the United States is the best country in the world to develop technology, manufacture products, deliver services, and grow your business, visit <http://www.SelectUSA.gov> or call +1-202-482-6800.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
16/220,484	12/14/2018	Hua Hsiang Lin, deceased	IRC-0042-02-US

CONFIRMATION NO. 3890

27268
Faegre Baker Daniels
300 NORTH MERIDIAN STREET
SUITE 2700
INDIANAPOLIS, IN 46204

PUBLICATION NOTICE



Title:JOINT FOR ABOVE GROUND POOL FRAME

Publication No.US-2019-0178275-A1

Publication Date:06/13/2019

NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

The publication may be accessed through the USPTO's publically available Searchable Databases via the Internet at www.uspto.gov. The direct link to access the publication is currently <http://www.uspto.gov/patft/>.

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Public Records Division. The Public Records Division can be reached by telephone at (571) 272-3150 or (800) 972-6382, by facsimile at (571) 273-3250, by mail addressed to the United States Patent and Trademark Office, Public Records Division, Alexandria, VA 22313-1450 or via the Internet.

In addition, information on the status of the application, including the mailing date of Office actions and the dates of receipt of correspondence filed in the Office, may also be accessed via the Internet through the Patent Electronic Business Center at www.uspto.gov using the public side of the Patent Application Information and Retrieval (PAIR) system. The direct link to access this status information is currently <https://portal.uspto.gov/pair/PublicPair>. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of PAIR.

Further assistance in electronically accessing the publication, or about PAIR, is available by calling the Patent Electronic Business Center at 1-866-217-9197.

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/220,484	12/14/2018	Hua Hsiang Lin, deceased	IRC-0042-02-US	3890
27268 7590 04/17/2020 FAEGRE DRINKER BIDDLE & REATH LLP 300 NORTH MERIDIAN STREET SUITE 2500 INDIANAPOLIS, IN 46204			EXAMINER CRANE, LAUREN ASHLEY	
			ART UNIT 3754	PAPER NUMBER
			NOTIFICATION DATE 04/17/2020	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

intear@faegredrinker.com

Notice of Pre-AIA or AIA Status

1. The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

Claim Rejections - 35 USC § 112

1. The following is a quotation of 35 U.S.C. 112(b):
(b) CONCLUSION.—The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor regards as the invention.

The following is a quotation of 35 U.S.C. 112 (pre-AIA), second paragraph:
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 11 is rejected under 35 U.S.C. 112(b) or 35 U.S.C. 112 (pre-AIA), second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the inventor or a joint inventor, or for pre-AIA the applicant regards as the invention.
2. Claim 11 recites the limitation "The first and second horizontal joint portions cooperate to form an obtuse angle that defines a water cavity". It's unclear how the joint portion form an obtuse angle that defines a water cavity.

Claim Rejections - 35 USC § 102

1. In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

(a)(1) the claimed invention was patented, described in a printed publication, or in public use, on sale or otherwise available to the public before the effective filing date of the claimed invention.

3. Claim(s) 14 and 17-19 is/are rejected under 35 U.S.C. 102(a)(1) as being anticipated by Lee (US Patent 20020042948).
4. Regarding Claim 14, Lee shows a method of assembling an above ground pool, the method comprising: coupling a first horizontal joint portion (132) of a frame joint to a first horizontal frame member (120) with a first coupling assembly (134); coupling a second horizontal joint portion (120) of the frame joint to a second horizontal frame member (120) with a second coupling assembly (134); and coupling a vertical joint portion (131) of the frame joint to a vertical frame member (110); wherein a width of the vertical joint portion accounts for a majority of a width between the first and second coupling assemblies of the first and second horizontal joint portions, Fig.3.
5. Regarding Claim 15, Lee shows the method of claim 14, wherein: an external cross-section of the first horizontal joint portion matches an internal cross-section of the first horizontal frame member which are both circular; an external cross-section of the second horizontal joint portion matches an internal cross-section of the second horizontal frame member which are both circular; and an external cross-section of the vertical joint portion matches an internal cross-section of the vertical frame member which are both circular, Fig.3.
6. Regarding Claim 17, Lee shows the method of claim 14, wherein: coupling the first horizontal joint portion to the first horizontal frame member comprises depressing a first pin into the first horizontal joint portion and releasing the first pin into engagement with the first horizontal frame member; and coupling the second horizontal joint portion to the second horizontal frame member comprises depressing a second pin into the

second horizontal joint portion and releasing the second pin into engagement with the second horizontal frame member, Fig.7.

7. Regarding Claim 18, Lee shows the method of claim 14, further comprising wrapping (221) a liner around the first and second horizontal frame members (120) with a hole exposing the first and second coupling assemblies (132), Fig.9.

8. Regarding Claim 19, Lee shows the method of claim 18, wherein a width of the hole in the liner exceeds a width between the first and second coupling assemblies, Fig.9.

Claim Rejections - 35 USC § 103

9. In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

10. The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 1-3, 5, 6-8 is/are rejected under 35 U.S.C. 103 as being unpatentable over Lee (US Patent 20020042948).

12. Regarding claim 1, Lee shows A frame joint for an above ground pool frame having a first horizontal frame member (120), a second horizontal frame member (120),

and a vertical frame member (110), the frame joint comprising: a first horizontal joint portion (132) including a first coupling assembly (134) configured to couple with the first horizontal frame member; a second horizontal joint portion (132) including a second coupling assembly (134) configured to couple with the second horizontal frame member; and a vertical joint portion (131) fixedly coupled to the first and second horizontal joint portions and configured to couple with the vertical frame member (11);

Lee is silent regarding the percentage the width of the vertical joint portion accounts for the width between the first and second coupling assemblies of the first and second horizontal joint portions. Instead, Lee discloses that the vertical joint portion does account for a portion of the width between the first and second coupling assemblies of the first and second horizontal joint portions. Applicant has not disclosed that having the width of the vertical joint portion accounting for a portion of the width between the first and second coupling assemblies solves any stated problem or is for any particular purpose. Moreover, it appears that the width of the vertical joint portion of Lee, or applicant's invention, would perform equally well with the width of the first and second coupling assemblies. Accordingly, it would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to have modified Lee such that wherein a width of the vertical joint portion accounts for at least 50% of a width between the first and second coupling assemblies of the first and second horizontal joint portions because such a modification would have been considered a mere design consideration which fails to patentably distinguish over Lee.

13. Regarding Claims 2 and 3, Lee shows the frame joint of claim 1, but is silent regarding the percentage of the width of the vertical joint portion accounts for a portion

of the total width of the frame joint. Instead, Lee discloses that the vertical joint portion does account for a portion of total width of the frame joint. Applicant has not disclosed that having the width of the vertical joint portion accounting for a portion of the total width of the frame joint solves any stated problem or is for any particular purpose. Moreover, it appears that the width of the vertical joint portion of Lee, or applicant's invention, would perform equally well with the width of the frame joint. Accordingly, it would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to have modified Lee such that wherein the width of the vertical joint portion accounts for at least 40% or 50% of a total width of the frame joint because such a modification would have been considered a mere design consideration which fails to patentably distinguish over Lee.

14. Regarding Claim 5, Lee shows the frame joint of claim 4, but is silent regarding the percentage the width of the vertical joint portion accounts for the width between the pins of the first and second coupling assemblies. Instead, Lee discloses that the vertical joint portion does account for a portion of the width between the pins of the first and second coupling assemblies. Applicant has not disclosed that having the width of the vertical joint portion accounting for a portion of the width between the pins of the first and second coupling assemblies solves any stated problem or is for any particular purpose. Moreover, it appears that the width of the vertical joint portion of Lee, or applicant's invention, would perform equally well with the width between the pins of the first and second coupling assemblies. Accordingly, it would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to have modified Lee such that wherein the width of the vertical joint portion accounts for about

70% of a width between the pins of the first and second coupling assemblies because such a modification would have been considered a mere design consideration which fails to patentably distinguish over Lee.

15. Regarding Claims 6-8, Lee shows the frame joint of claim 1, further comprising a liner (220) wrapped (221) around the first and second horizontal frame members, the liner defining a hole that is sized to expose the first and second coupling assemblies, Fig.1. A width of the frame joint exceeds a width of the hole in the liner, Fig.9. A height of the frame joint exceeds a height of the hole in the liner, Fig.9.

16. Claim 9-13 and 16 is/are rejected under 35 U.S.C. 103 as being unpatentable over Lee (US Patent Publication 2002/0042948) in view of Hake (US Patent 2014/0325751).

17. Regarding Claim 9, Lee shows a frame joint for an above ground pool frame having a first horizontal frame member (120), a second horizontal frame member (120), and a vertical frame member (110), the frame joint comprising: a first horizontal joint portion (132) configured to couple with the first horizontal frame member. A second horizontal joint portion (132) configured to couple with the second horizontal frame member and a vertical joint portion (131) fixedly coupled to the first and second horizontal joint portions and configured to couple with the vertical frame member. Lee fails to show the first horizontal joint portion, the second horizontal joint portion and the vertical joint portion being constructed of plastic. Hake teaches a container. The container is constructed is plastic (paragraph 22). It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to a frame constructed of plastic in order to prevent the frame from deteriorating.

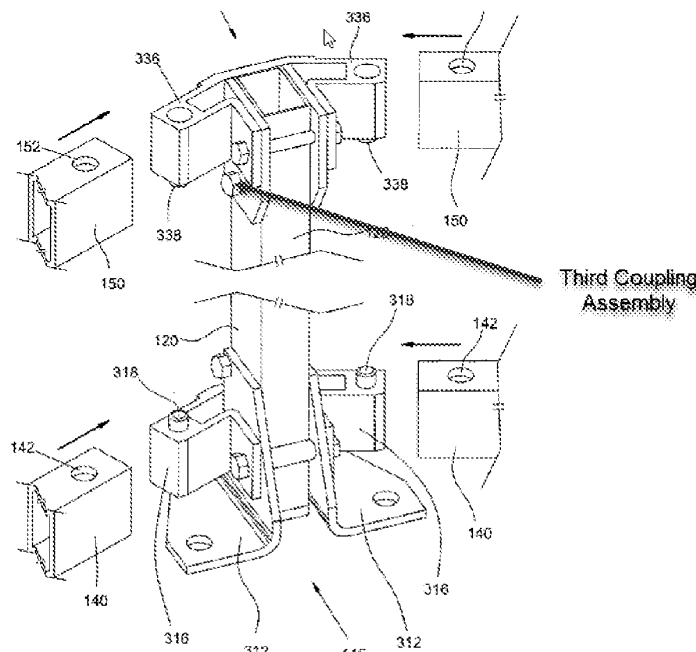
18. Regarding Claims 10-13, Lee shows the frame joint of claim 9, wherein the vertical joint portion is centered between the first and second horizontal joint portions to form a T-shaped frame joint, Fig.3. The first and second horizontal joint portions cooperate to form an obtuse angle that defines a water cavity, Fig.3. The vertical joint portion is integrally formed with the first and second horizontal joint portions as a single piece, Fig.3. A first coupling assembly (134) associated with the first horizontal joint portion; and a second coupling assembly (134) associated with the second horizontal joint portion; wherein a width of the vertical joint portion (131) accounts for a majority of a width between the first and second coupling assemblies, Figs. 2 & 3.

19. Regarding Claim 16, Lee shows the method of claim 14, but fails to show the first horizontal joint portion, the second horizontal joint portion, and the vertical joint portion are constructed of plastic. Hake teaches a container. The container is constructed is plastic (paragraph 22). It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to a frame constructed of plastic in order to prevent the frame from deteriorating.

20. Claim 4 is/are rejected under 35 U.S.C. 103 as being unpatentable over Lee (US Patent Publication 2002/0042948) in view of Obitts (US Patent 6079894). Lee shows the frame joint of claim 1, but fails to show a helical spring. Obitts teaches a snap button. The device includes wherein each of the first and second coupling assemblies(12,24) comprises a base (158), a helical spring (170) supported by the base (144), and a pin biased outward through a hole (14) in the respective horizontal joint portion by the helical spring to engage a corresponding recess of the respective horizontal frame member. It would have been obvious to one having ordinary skill in the

art before the effective filing date of the claimed invention to a helical spring in order to ensure the two pieces were securely attached together.

21. Claim 20 is/are rejected under 35 U.S.C. 103 as being unpatentable over Lee (US Patent Publication 2002/0042948) in view of Bennett et al (US Patent Publication 2004/0118844 herein after Bennett). Lee shows the method of claim 18, and further shows wherein the vertical joint portion (131) of the frame joint is coupled to the vertical frame member (110), and wherein a height of the hole in the liner is less than a distance between the first and third coupling assemblies, Fig.2. Lee fails to show a third coupling assembly. Bennett teaches a fluid storage tank. The device includes a frame having a vertical frame member (120) with a third coupling assembly. It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to a third coupling assembly in order to ensure the vertical frame member was securely attached to the frame.



Conclusion

2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAUREN ASHLEY CRANE whose telephone number is (571)270-5198. The examiner can normally be reached on 8am -5pm EST.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at <http://www.uspto.gov/interviewpractice>.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Angwin can be reached on 571-270-3735. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <https://ppair-my.uspto.gov/pair/PrivatePair>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Application/Control Number:16/220,484
Art Unit:3754

Page11

23. /LAUREN A CRANE/
Primary Examiner, Art Unit 3754

Notice of References Cited	Application/Control No. 16/220,484	Applicant(s)/Patent Under Reexamination Lin, deceased et al.	
	Examiner LAUREN A CRANE	Art Unit 3754	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-20020042948-A1	04-2002	Lee, Jae Hyong	E04H4/0056	4/506
*	B	US-20140325751-A1	11-2014	Hake; Delia	A47K3/06	4/585
*	C	US-6079894-A	06-2000	Obitts; Shane	A61H3/02	135/75
*	D	US-20040118844-A1	06-2004	Bennett, Paul D.	B65D90/205	220/4.12
	E					
	F					
	G					
	H					
	I					
	J					
	K					
	L					
	M					

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

<i>Search Notes</i> 	Application/Control No. 16/220,484	Applicant(s)/Patent Under Reexamination Lin, deceased et al.
	Examiner LAUREN A CRANE	Art Unit 3754

CPC - Searched*		
Symbol	Date	Examiner
F16B7/17	04/14/2020	LC

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner
4	654	04/14/2020	LC

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner

/LAUREN A CRANE/ Primary Examiner, Art Unit 3754	
---	--

Receipt date: 12/14/2018

Doc code: IDS

Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (02-18)

Approved for use through 11/30/2020. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	
	Filing Date	2018-12-17
	First Named Inventor	Hua Hsiang Lin
	Art Unit	
	Examiner Name	
	Attorney Docket Number	IRC-0042-02-US

U.S.PATENTS						Remove
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear
	1	D174950		1955-06-14	Fishberg	
	2	3225362		1965-12-28	Barrera	
	3	3654640		1972-04-11	Katzman	
	4	4323319		1982-04-06	Adams	
	5	5054135		1991-10-08	Dallaire et al.	
	6	5143476		1992-09-01	Pruis	
	7	D361847		1995-08-29	Cetrulo	
	8	D417918		1999-12-21	Mussa	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

Receipt date: 12/14/2018

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		
	Filing Date		2018-12-17
	First Named Inventor	Hua Hsiang Lin	
	Art Unit		
	Examiner Name		
	Attorney Docket Number		IRC-0042-02-US

	9	D420145		2000-02-01	Mussa	
	10	D420146		2000-02-01	Mussa	
	11	6079894		2000-06-27	Obitts	
	12	6272696		2001-08-14	Sobel et al.	
	13	D472648		2003-04-01	Linsley	
	14	6604250		2003-08-12	Lee	
	15	D495434		2004-08-31	Cooper	
	16	6803007		2004-10-12	Meggiolan	
	17	D504523		2005-04-26	Gimpel	
	18	D567394		2008-04-22	Pena	
	19	D626405		2010-11-02	Goad	

Receipt date: 12/14/2018

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		
	Filing Date		2018-12-17
	First Named Inventor	Hua Hsiang Lin	
	Art Unit		
	Examiner Name		
	Attorney Docket Number		IRC-0042-02-US

	20	D654353		2012-02-21	Tabler	
	21	D707366		2014-06-17	Rowland	
	22	D759889		2016-06-21	Seehof	
	23	D760425		2016-06-28	Seehof	

If you wish to add additional U.S. Patent citation information please click the Add button.

Add

U.S.PATENT APPLICATION PUBLICATIONS

Remove

Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear
	1	20020042948		2002-04-18	Lee	
	2	20040118844		2004-06-24	Bennett et al.	
	3	20090205121		2009-08-20	Cheng	
	4	20100083437		2010-04-08	Hui	
	5	20140325751		2014-11-06	Hake	

Receipt date: 12/14/2018

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**
(Not for submission under 37 CFR 1.99)

Application Number	
Filing Date	2018-12-17
First Named Inventor	Hua Hsiang Lin
Art Unit	
Examiner Name	
Attorney Docket Number	IRC-0042-02-US

6	20160201348	2016-07-14	Liu
7	20160222686	2016-08-04	Liu

If you wish to add additional U.S. Published Application citation information please click the Add button.

FOREIGN PATENT DOCUMENTS

Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ² i	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	T ⁵
	1	200968073	CN		2007-10-31	Intex Industries (Xiamen) Co. Ltd.		
	2	204475914	CN		2015-07-15	Shanghai Bestway		

If you wish to add additional Foreign Patent Document citation information please click the Add button

NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T ⁵
	1	International Search Report and Written Opinion dated August 24, 2017 in corresponding international Application No. PCT/US2017/037892.	
	2	Intex, Ultra Frame Pool Owner's Manual, May 13, 2015, 17 pages.	
	3	Intex, 2013 Above Ground Pools Catalogue, Copyright 2012, 13 pages.	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

Receipt date: 12/14/2018

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		
	Filing Date		2018-12-17
	First Named Inventor	Hua Hsiang Lin	
	Art Unit		
	Examiner Name		
	Attorney Docket Number		IRC-0042-02-US

	4	http://hardware-store-online.com/berater/intex-ultra-frame-pool-horizontal-beam#more-infos Retrieved 7/31/2017.	
--	---	--	--

If you wish to add additional non-patent literature document citation information please click the Add button

EXAMINER SIGNATURE

Examiner Signature	/LAUREN A CRANE/	Date Considered	04/13/2020
--------------------	------------------	-----------------	------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

Receipt date: 12/14/2018

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		
	Filing Date		2018-12-17
	First Named Inventor	Hua Hsiang Lin	
	Art Unit		
	Examiner Name		
	Attorney Docket Number		IRC-0042-02-US

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/jamie m. drewry/	Date (YYYY-MM-DD)	2018-12-14
Name/Print	Jamie M. Drewry	Registration Number	61,320

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

EAST Search History**EAST Search History (Prior Art)**

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L2	1207	(F16B7/14).cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	ON	2020/04/14 12:32
S1	515	(4/246.1).CCLS.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2020/01/22 15:52
S2	136	(4/246.3).CCLS.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2020/01/22 15:53
S3	1	("6995344").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2020/01/23 10:39
S4	0	("gb-1037127-\$.did.").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2020/01/23 10:48
S5	2	("6477721").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2020/01/23 10:49

S6	38	"1037127"	US- PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	ON	2020/01/23 10:50
S7	5	((("6513195") or ("5761849"))).PN.	US- PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2020/01/23 15:40
S8	110	Klicpera.IN.	US- PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	ON	2020/01/23 16:22
S9	8	("2011/0186154").URPN.	USPAT	OR	ON	2020/01/23 16:26
S10	3	((("20160378322") or ("9061307") or ("20110186154"))).PN.	US- PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2020/01/23 16:29
S11	10	("20060064815" "20060137090" "20080001104" "20080060707" "20080148476" "20080294019" "6556142" "6997064" "7124452").PN. OR ("9061307").URPN.	US- PGPUB; USPAT; USOCR	OR	ON	2020/01/23 16:33
S12	30	("20020042948" "20040118844" "20090205121" "20100083437" "20140325751" "20160201348" "20160222686" "3225362" "3654640" "4323319" "5054135" "5143476" "6079894" "6272696" "6604250" "6803007" "D174950" "D361847" "D417918" "D420145" "D420146" "D472648" "D495434" "D504523" "D567394" "D626405" "D654353" "D707366" "D759889" "D760425").PN.	US- PGPUB; USPAT	OR	ON	2020/04/13 08:50

S13	238	(4/654).CCLS.	US- PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2020/04/13 10:03
S14	3	("6446280").PN.	US- PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2020/04/13 10:13
S15	1	("20190178275").PN.	US- PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2020/04/13 14:42

EAST Search History (Interference)

<This search history is empty>

4/14/2020 12:33:09 PM

C:\Users\lheitzer\Documents\EAST\Workspaces\16220484.wsp

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.: 16/220,484

Confirmation No.: 3890

Inventor(s) Lin et al.

Filed: December 14, 2018

Title: JOINT FOR ABOVE GROUND
POOL FRAME

Art Unit: 3754

Examiner: Lauren Ashley Crane

Atty. Docket No.: IRC-0042-02-US

Customer No. 27268

AMENDMENT

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Commissioner:

In response to the Non-Final Office Action of April 17, 2020 (hereinafter the “Office Action”), please amend the above-identified application as follows:

Amendments to the Claims are reflected in the Listing of Claims which begins on page 2 of this paper.

Remarks begin on page 6 of this paper.

Electronic Patent Application Fee Transmittal				
Application Number:		16220484		
Filing Date:		14-Dec-2018		
Title of Invention:		JOINT FOR ABOVE GROUND POOL FRAME		
First Named Inventor/Applicant Name:		Hua Hsiang Lin, deceased		
Filer:		Jamie Marie Drewry		
Attorney Docket Number:		IRC-0042-02-US		
Filed as Large Entity				
Filing Fees for U.S. National Stage under 35 USC 371				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
CLAIMS IN EXCESS OF 20	1615	2	100	200
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension-of-Time:				
Miscellaneous:				
SUBMISSION- INFORMATION DISCLOSURE STMT	1806	1	240	240
Total in USD (\$)				440

Electronic Acknowledgement Receipt	
EFS ID:	40307238
Application Number:	16220484
International Application Number:	
Confirmation Number:	3890
Title of Invention:	JOINT FOR ABOVE GROUND POOL FRAME
First Named Inventor/Applicant Name:	Hua Hsiang Lin, deceased
Customer Number:	27268
Filer:	Jamie Marie Drewry
Filer Authorized By:	
Attorney Docket Number:	IRC-0042-02-US
Receipt Date:	17-AUG-2020
Filing Date:	14-DEC-2018
Time Stamp:	18:39:56
Application Type:	U.S. National Stage under 35 USC 371

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	\$440
RAM confirmation Number	E20208GI40570844
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	IDS_16220484_1.pdf	1043575	no	4
			23ea8a3de3a0de00f100b1e4f65c56ffd979627f		
Warnings:					
Information:					
2	Foreign Reference	1_DE9104915U1_977653.pdf	2830464	no	21
			d751a4fcd5823e98885e39875af4e080e5599088		
Warnings:					
Information:					
3		IRC-0042-02-US-Amendment.pdf	183814	yes	9
			7dc2186ab268bb48ba890816205025758175d641		
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Applicant Arguments/Remarks Made in an Amendment		6	9	
	Claims		2	5	
	Amendment/Req. Reconsideration-After Non-Final Reject		1	1	
Warnings:					
Information:					
4	Fee Worksheet (SB06)	fee-info.pdf	31985	no	2
			f5f3a3972e91cf53eb9d0aa897eda913610cf014		
Warnings:					
Information:					
Total Files Size (in bytes):			4089838		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16220484
	Filing Date	2018-12-14
	First Named Inventor	Hua Hsiang Lin
	Art Unit	3754
	Examiner Name	CRANE, LAUREN ASHLEY
	Attorney Docket Number	IRC-0042-02-US

U.S. PATENTS							Remove	
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1							
If you wish to add additional U.S. Patent citation information please click the Add button.							Add	
U.S. PATENT APPLICATION PUBLICATIONS							Remove	
Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1							
If you wish to add additional U.S. Published Application citation information please click the Add button.							Add	
FOREIGN PATENT DOCUMENTS							Remove	
Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²ⁱ	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	T ⁵
	1	9104915	DE	U1	1991-08-22	CHIOU, SIMON, TAICHUNG, TW		×
If you wish to add additional Foreign Patent Document citation information please click the Add button.							Add	
NON-PATENT LITERATURE DOCUMENTS							Remove	
Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.						T ⁵

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		16220484
	Filing Date		2018-12-14
	First Named Inventor	Hua Hsiang Lin	
	Art Unit	3754	
	Examiner Name	CRANE, LAUREN ASHLEY	
	Attorney Docket Number	IRC-0042-02-US	

	1		
If you wish to add additional non-patent literature document citation information please click the Add button <input type="button" value="Add"/>			
EXAMINER SIGNATURE			
Examiner Signature			Date Considered
*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.			
<small> ¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached. </small>			

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16220484
	Filing Date	2018-12-14
	First Named Inventor	Hua Hsiang Lin
	Art Unit	3754
	Examiner Name	CRANE, LAUREN ASHLEY
	Attorney Docket Number	IRC-0042-02-US

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

☒ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/jamie m. drewry/	Date (YYYY-MM-DD)	2020-08-17
Name/Print	Jamie M. Drewry	Registration Number	61,320

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Publication Number: DE 9104915 U1

Publication Date: Aug 22, 1991



Espacenet

Bibliographic data: DE9104915 (U1) — 1991-08-22

No title available

Inventor(s):

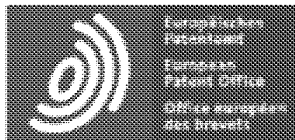
Applicant(s): CHIOU, SIMON, TAICHUNG, TW

Classification:
- **international:** E04H4/00; (IPC1-7): E04H4/04
- **cooperative:** E04H4/0056 (EP)

Application number: DE19910004915U 19910422

Priority number(s): DE19910004915U 19910422

Abstract not available for DE9104915 (U1)



Patent Translate

Powered by EPO and Google

Notice

This translation is machine-generated. It cannot be guaranteed that it is intelligible, accurate, complete, reliable or fit for specific purposes. Critical decisions, such as commercially relevant or financial decisions, should not be based on machine-translation output.

DESCRIPTION DE9104915

Swimming pool that can be assembled using the modular principle

[0001]

The present invention relates to a modular swimming pool and in particular to a modular swimming pool which has connections and can be easily and quickly disassembled and assembled without the use of tools.

[0002]

The modular pool systems currently available on the market can be divided into inflatable swimming pools, mountable swimming pools and non-assembled swimming pools, which are described in more detail below.

[0003]

An inflatable swimming pool is a relatively expensive outdoor recreation facility due to its high manufacturing cost.

Because of its size, it can be transported quite cumbersome.

An air pump is also essential for this pool. When in use, it can collapse suddenly relatively easily when the swimmer leans against the side wall of the pool.

[0004]

The mountable swimming pool is limited to a rectangular or square shape. It is also a tiring task to disassemble or assemble the mountable swimming pool, which requires a lot of screws. The welded joints are susceptible to rust, which weakens the structure of the pool. The joints formed by plastic extrusion often have sharp edges that are dangerous for the swimmers.

[0005]

The edge portion of this swimming pool is formed by a rigid and foldable circular body, whereas the wall of the pool is made of a waterproof plastic material. This swimming pool as such has an unstable structure, the water can be easily poured out of the pool.

[0006]

The basic object of the present invention is to create a swimming pool which can be assembled on a modular basis, which supports or has support bracket (hereinafter referred to as brackets) which engage in connections on which connecting grooves are arranged with different clamping angles. An insert groove is arranged in a position near the open end of the connection

groove, which is used to receive the flange of the crossbar, both ends of which are received in the connection grooves of the connections. This arrangement described above can easily be carried out without the use of tools.

[0007]

It is a further object of the present invention to provide a modular swimming pool which has connections on which connecting grooves are arranged with different clamping angles, so that a polygonal construction of the swimming pool without sharp edges is possible, which affect the safety of the swimmer could.

[0008]

These tasks are solved by a swimming pool that can be assembled in a modular principle according to protection claim 1.

[0009]

The attached drawings show:

[0010]

Figure 1 is an exploded view of part of the preferred embodiment of the present invention;

[0011]

Figure 2 is an exploded view of part of another preferred embodiment of the present invention;

[0012]

Figure 3 is a plan view of Figure 1; Figure 4 is a plan view of Figure 2;

[0013]

Figure 5 is a top view of the preferred embodiment constructed with the elements shown in Figure 1;

[0014]

Figure 6 is a top plan view of the preferred embodiment constructed with the elements shown in Figure 2;

[0015]

FIG. 7: a top view of a further preferred embodiment which is constructed with the elements shown in FIG. 2 and

[0016]

Figure 8 is a three dimensional view of the preferred embodiment of this invention.

[0017]

The embodiment of the present invention shown in FIG. 1 comprises a connection 10, a holder 16 and a cross bar 18.

The connection 10 has a vertical T-shaped connection groove 24, which is arranged in its upper section.

Two corresponding insert grooves 26 are arranged at the opening of the connecting groove 24.

The connecting groove 24 of the connection 10 serves to receive the end section of the cross bar 18, the corresponding flanges 28, which are arranged at both ends, are firmly received in the corresponding insertion grooves of the connecting groove 24, as shown in FIG. 3.

For aesthetic reasons and to protect against finger injuries from the cross bar 18, a filling or

Cover 30 arranged.

The connection 10 has a connection hole 22, which is arranged at the lower, narrower end, it serves to insert one end of the holder 16, while the other end of the holder 16 engages in the bore 20 of the support disk 14, on which ribs 32 are arranged to improve their strength and stability.

[0018]

Reference is now made to Figures 3 and 5 which show this embodiment of the present invention.

The cross bars 18 are received in the connecting grooves 24 of the connection 10, which is coupled to the holder 16.

The corresponding

[0019]

The corresponding flanges 28 of the cross bars 18 engage in the corresponding insert grooves 26 of the connecting groove 24, thus ensuring that the cross bar 18 does not slip out of the connecting groove 24.

Since the connecting groove 24 of the connection 10 has a T-shaped vertical structure, a square swimming pool can be constructed by the end of the cross bars 18 engaging in the connecting groove 24.

If a curved or rectangular swimming pool is desired, an additional cross bar 18 must be added to each of the corresponding sides or a certain number of brackets 16. The cross bars 18 must be connected linearly one after the other so that a large square or rectangular swimming pool is formed, as shown in FIG.

[0020]

Figure 2 shows a further embodiment of the present invention, the connection 12 shown comprises a concave Y-shaped connecting groove 24 which has corresponding insert grooves 26 which are arranged in the vicinity of their opening. The assembly method of this embodiment is the same as that previously described.

[0021]

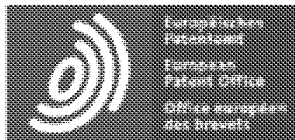
Figures 4, 6 and 7 show a further embodiment of the invention, the connection 12 shown comprises a connecting groove 24 with a Y-shaped structure. Each end of the cross bar 18 engages in the connecting groove 24 of the connection 12 in the same manner as described above, so that an angle A is formed which has 120° , so that the formation of a hexagonal structure is possible, as is shown in FIG. 6 is shown. When each end of the cross bar 18 engages the connecting groove 24 of the connector 12 to form an angle B having 135° , an octagonal swimming pool is formed, as shown in FIG.

[0022]

It has to be emphasized here that the connecting groove 24 with a T-shaped and Y-shaped structure arranged on the connections 10 and 12 can be arranged interchangeably. If the connecting groove 24 of the connection 10 has a T-shaped

[0023]

a square or rectangular swimming pool can be built. If the connecting groove 24 of the connection 12 has a Y-shaped structure and the angles formed 120° or 135° , a hexagonal or an octagonal swimming pool can be built. If the two angles formed by the Y-shaped connecting groove 24 of the connection 12 have different sizes, two different types of polygonal swimming pools can be produced. In other words, the shape of the swimming pool that is built depends on the change in the angles formed by the connecting grooves 24 of the connections 10 and 12. Thus, the swimming pools embodied by the present invention can be easily constructed with different shapes according to the personal imagination and the size of the place where the swimming pool is to be located.



Patent Translate

Powered by EPO and Google

Notice

This translation is machine-generated. It cannot be guaranteed that it is intelligible, accurate, complete, reliable or fit for specific purposes. Critical decisions, such as commercially relevant or financial decisions, should not be based on machine-translation output.

CLAIMS DE9104915

Protection claims

1.

Swimming pool that can be assembled using the modular principle, characterized by a connection (10), on which connection grooves (24) are arranged with different clamping angles, the connection being connected to a holder (16) which comprises connection groove (24) insert grooves (26), which are arranged near their opening and are adapted to the flanges (28) which are arranged at the ends of the crossbars (18).

2.

Swimming pool which can be assembled according to the modular principle according to claim 1, characterized in that a plurality of cross bars (18) and connections (10) are arranged on the corresponding sides of the swimming pool.



12

Gebrauchsmuster

U 1

(11) Rollennummer G 91 04 915.6

(51) Hauptklasse E04H 4/04

(22) Anmeldetag 22.04.91

(47) Eintragungstag 22.08.91

(43) Bekanntmachung
im Patentblatt 02.10.91

(54) Bezeichnung des Gegenstandes
Im Baukastenprinzip zusammensetzbarer Swimming
Pool

(71) Name und Wohnsitz des Inhabers
Chiou, Simon, Taichung, TW

(74) Name und Wohnsitz des Vertreters
Kador, U., Dipl.-Chem. Dr.rer.nat., Pat.-Anw.,
8000 München

Im Baukastenprinzip zusammensetzbarer Swimming Pool

Die vorliegende Erfindung bezieht sich auf einen im Baukastenprinzip zusammensetzbaren Swimming Pool und insbesondere auf einen im Baukastenprinzip zusammensetzbaren Swimming Pool, der Verbindungen aufweist und einfach und schnell, ohne Verwendung von Werkzeug auseinander- und zusammengebaut werden kann.

Die gegenwärtig auf dem Markt erhältlichen im Baukastenprinzip zusammensetzbaren Swimming Pools können in aufblasbare Swimming Pools, montierbare Swimming Pools und nicht zusammenbaubare Swimming Pools unterteilt werden, die nachfolgend ausführlicher beschrieben werden.

Ein aufblasbarer Swimming Pool ist aufgrund seiner hohen Herstellungskosten eine relativ teure Einrichtung zur Erholung im Freien. Aufgrund seiner Größe läßt er sich ziemlich umständlich transportieren. Außerdem ist für diesen Pool unbedingt eine Luftpumpe erforderlich. Bei Verwendung kann er relativ leicht plötzlich zusammenklappen, wenn sich der Schwimmer gegen die Seitenwand des Pools lehnt.

Der montierbare Swimming Pool ist auf eine rechteckige oder quadratische Form begrenzt. Es ist außerdem eine ermüdende Aufgabe, den montierbaren Swimming Pool, der eine Menge Schrauben benötigt, auseinander- oder zusammenzubauen. Die Schweißverbindungen sind rostanfällig, dies schwächt die Struktur des Pools. Die durch Kunststoffextrusion gebildeten Verbindungen weisen oft scharfe Kanten auf, die für die Schwimmer gefährlich sind.

Der Randabschnitt dieses Swimming Pools wird von einem starren und faltbaren kreisförmigen Körper gebildet, wohingegen die Wand des Pools aus einem wasserdichten Kunststoffmaterial besteht. Dieser Swimming Pool als solcher weist eine instabile Struktur auf, das Wasser kann leicht aus dem Pool ausgeschüttet werden.



Die grundlegende Aufgabe der vorliegenden Erfindung besteht in der Schaffung eines im Baukastenprinzip zusammensetzbaren Swimming Pools, der Halterungen bzw. Stützträger (nachfolgend als Halterungen bezeichnet) aufweist, die in Verbindungen eingreifen, auf denen Verbindungsnuten mit unterschiedlichen Klemmwinkeln angeordnet sind. Eine Einsatznut ist in einer Position in der Nähe des offenen Endes der Verbindungsnut angeordnet, die zur Aufnahme des Flansches des Querstabs dient, dessen beide Enden in den Verbindungsnuten der Verbindungen aufgenommen werden. Diese oben beschriebene Anordnung kann leicht, ohne Zuhilfenahme von Werkzeug, vorgenommen werden.

Es ist weiterhin Aufgabe der vorliegenden Erfindung, einen im Baukastenprinzip zusammensetzbaren Swimming Pool zu schaffen, der Verbindungen aufweist, auf denen Verbindungsnuten mit unterschiedlichen Klemmwinkeln angeordnet sind, so daß ein polygonaler Aufbau des Swimming Pools ohne scharfe Kanten möglich wird, die die Sicherheit des Schwimmers beeinträchtigen könnten.

Diese Aufgaben werden durch einen im Baukastenprinzip zusammensetzbaren Swimming Pool gemäß dem Schutzanspruch 1 gelöst.

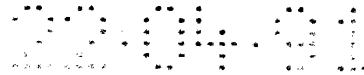
Die beigefügten Zeichnungen zeigen:

Figur 1: eine auseinandergezogene Darstellung eines Teils der bevorzugten Ausführungsform der vorliegenden Erfindung;

Figur 2: eine auseinandergezogene Darstellung eines Teils einer weiteren bevorzugten Ausführungsform der vorliegenden Erfindung;

Figur 3: eine Draufsicht von Figur 1;

Figur 4: eine Draufsicht von Figur 2;



3

Figur 5: eine Draufsicht der bevorzugten Ausführungsform, die mit den in Figur 1 gezeigten Elementen aufgebaut ist;

Figur 6: eine Draufsicht der bevorzugten Ausführungsform, die mit den in Figur 2 gezeigten Elementen aufgebaut ist;

Figur 7: eine Draufsicht einer weiteren bevorzugten Ausführungsform die mit den in Figur 2 gezeigten Elementen aufgebaut ist und

Figur 8: eine dreidimensionale Ansicht der bevorzugten Ausführungsform dieser Erfindung.

Die in Figur 1 gezeigte Ausführungsform der vorliegenden Erfindung umfaßt eine Verbindung 10, eine Halterung 16 und einen Querstab 18. Die Verbindung 10 weist eine senkrechte T-förmige Verbindungsnut 24 auf, die in ihrem oberen Abschnitt angeordnet ist. An der Öffnung der Verbindungsnut 24 sind zwei entsprechende Einsatznuten 26 angeordnet. Die Verbindungsnut 24 der Verbindung 10 dient der Aufnahme des Endabschnittes des Querstabes 18, dessen entsprechende Flansche 28, die an beiden Enden angeordnet sind, fest in den entsprechenden Einsatznuten 26 der Verbindungsnut 24 aufgenommen werden, wie es in Figur 3 gezeigt ist. Aus ästhetischen Gründen und zum Schutz vor Fingerverletzungen durch den Querstab 18 ist an einem Ende des Querstabes 18 eine Füllung bzw. Abdeckung 30 angeordnet. Die Verbindung 10 weist ein Verbindungsloch 22 auf, das am unteren schmaleren Ende angeordnet ist, es dient dem Einsetzen von einem Ende der Halterung 16, während das andere Ende der Halterung 16 in die Bohrung 20 der Stützscheibe 14 eingreift, auf der Rippen 32 angeordnet sind, um deren Festigkeit und Stabilität zu verbessern.

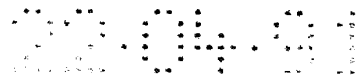
Es wird nun auf die Figuren 3 und 5 Bezug genommen, die diese Ausführungsform der vorliegenden Erfindung zeigen. Die Querstäbe 18 sind in den Verbindungsnuten 24 der Verbindung 10 aufgenommen, die mit der Halterung 16 gekoppelt ist. Die entspre-

chenden Flansche 28 der Querstäbe 18 greifen in die entsprechenden Einsatznuten 26 der Verbindungsnut 24 ein, somit wird gesichert, daß der Querstab 18 nicht aus der Verbindungsnut 24 herausrutscht. Da die Verbindungsnut 24 der Verbindung 10 einen T-förmigen senkrechten Aufbau aufweist, kann ein quadratischer Swimming Pool aufgebaut werden, indem das Ende der Querstäbe 18 in die Verbindungsnut 24 eingreift. Wenn ein kurvenförmiger oder rechtwinkliger Swimming Pool gewünscht wird, muß ein zusätzlicher Querstab 18 an jede der entsprechenden Seiten oder eine bestimmte Anzahl von Halterungen 16 angefügt werden. Die Querstäbe 18 müssen hintereinander linear verbunden werden, so daß ein großer quadratischer oder rechtwinkliger Swimming Pool entsteht, wie es in Figur 8 gezeigt ist.

Figur 2 zeigt eine weitere Ausführungsform der vorliegenden Erfindung, dabei umfaßt die gezeigte Verbindung 12 eine konkave Y-förmige Verbindungsnut 24, die entsprechende Einsatznuten 26 aufweist, die in der Nähe ihrer Öffnung angeordnet sind. Das Zusammenbauverfahren dieser Ausführungsform ist das gleiche wie bei der vorher beschriebenen.

Figuren 4, 6 und 7 zeigen eine weitere Ausführungsform der Erfindung, die gezeigte Verbindung 12 umfaßt eine Verbindungsnut 24 mit Y-förmigem Aufbau. Jedes Ende des Querstabes 18 greift in die Verbindungsnut 24 der Verbindung 12 in der gleichen Weise wie oben beschrieben ein, so daß ein Winkel A gebildet wird, der 120° aufweist, so daß die Ausbildung eines hexagonalen Aufbaus ermöglicht wird, wie es in Figur 6 gezeigt ist. Wenn jedes Ende des Querstabes 18 in die Verbindungsnut 24 der Verbindung 12 eingreift, so daß ein Winkel B gebildet wird, der 135° aufweist, wird ein oktagonaler Swimming Pool gebildet, wie es in Figur 7 gezeigt ist.

Es muß hier hervorgehoben werden, daß die auf den Verbindungen 10 bzw. 12 angeordnete Verbindungsnut 24 mit T-förmigem und Y-förmigem Aufbau untereinander austauschbar angeordnet werden kann. Wenn die Verbindungsnut 24 der Verbindung 10 einen T-för-



migen Aufbau aufweist, kann ein quadratischer oder rechtwinkliger Swimming Pool aufgebaut werden. Wenn die Verbindungsnut 24 der Verbindung 12 einen Y-förmigen Aufbau aufweist und die gebildeten Winkel 120° bzw. 135° aufweisen, kann ein hexagonaler oder ein oktagonaler Swimming Pool gebaut werden. Wenn die beiden Winkel, die durch die Y-förmige Verbindungsnut 24 der Verbindung 12 gebildet werden, unterschiedliche Größen aufweisen, können zwei unterschiedliche Arten polygonaler Swimming Pools gefertigt werden. Mit anderen Worten: Die Form des aufgebauten Swimming Pools hängt von der Veränderung der Winkel ab, die durch die Verbindungsnoten 24 der Verbindungen 10 und 12 gebildet werden. Somit können die durch die vorliegende Erfindung verkörperten Swimming Pools entsprechend der persönlichen Vorstellung und der Größe des Platzes, wo der Swimming Pool angeordnet werden soll, leicht mit unterschiedlichen Formen aufgebaut werden.



Schutzansprüche

1. Im Baukastenprinzip zusammensetzbarer Swimming Pool, g e -
k e n n z e i c h n e t durch eine Verbindung (10), auf
der Verbindungsnuten (24) mit unterschiedlichen Klemmwinkeln
angeordnet sind, wobei die Verbindung mit einer Halterung
(16) verbunden ist, die Verbindungsnut (24) Einsatznuten
(26) umfaßt, die in der Nähe ihrer Öffnung angeordnet sind
und den Flanschen (28) angepaßt sind, die an den Enden der
Querstäbe (18) angeordnet sind.
2. Im Baukastenprinzip zusammensetzbarer Swimming Pool nach
Anspruch 1, dadurch g e k e n n z e i c h n e t , daß
auf den entsprechenden Seiten des Swimming Pools eine Viel-
zahl von Querstäben (18) und Verbindungen (10) angeordnet
sind.

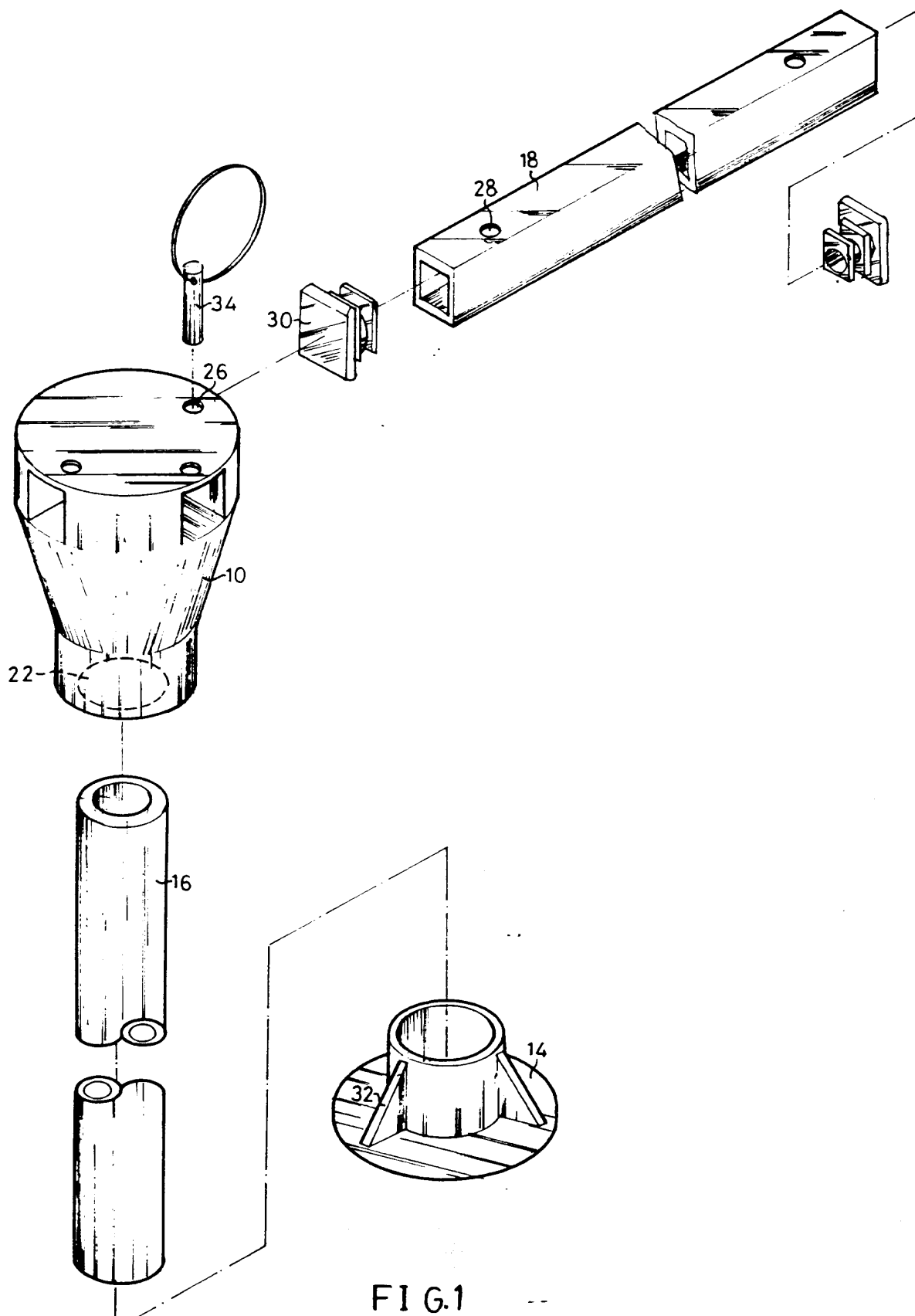


FIG. 1

2024-01

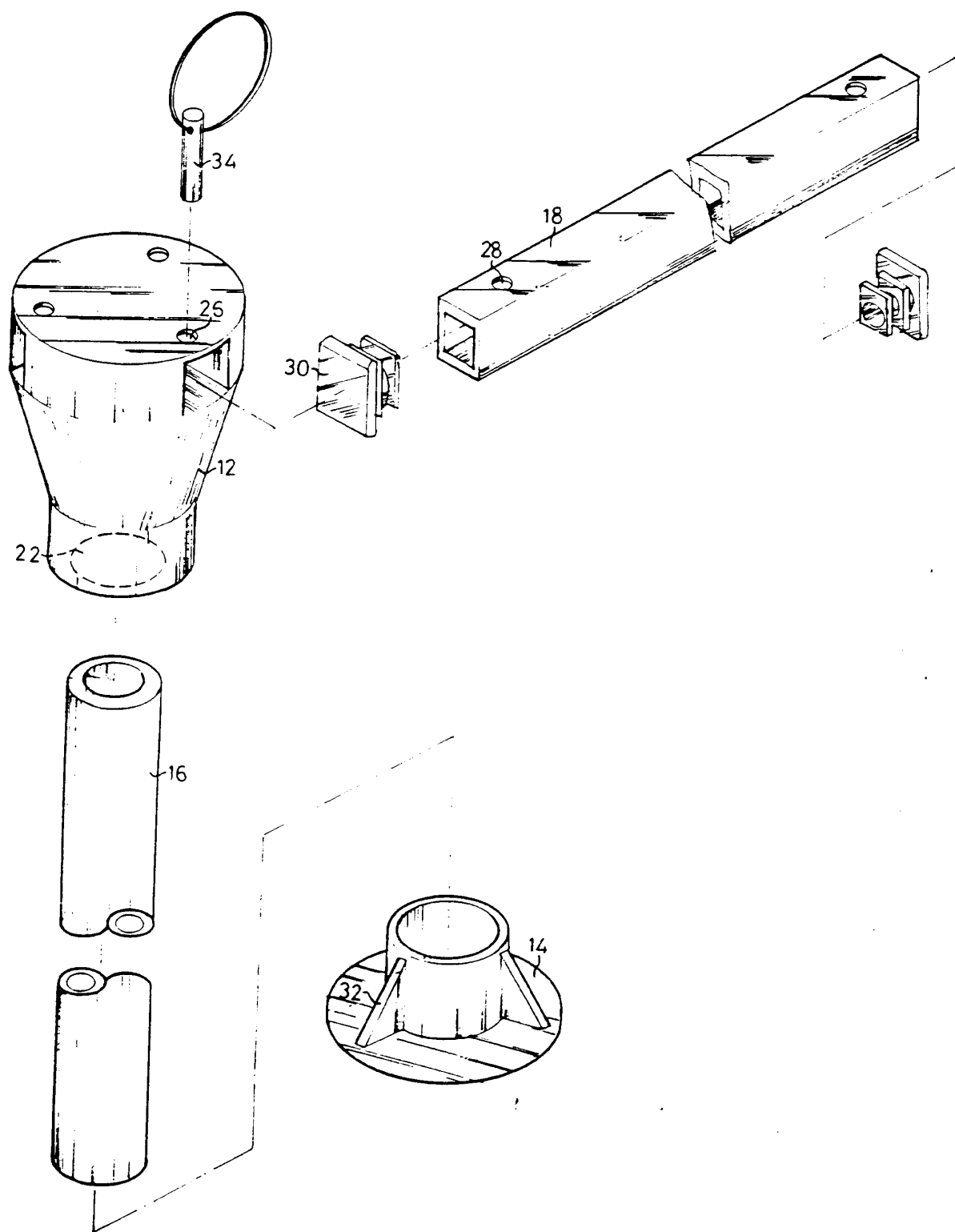


FIG. 2

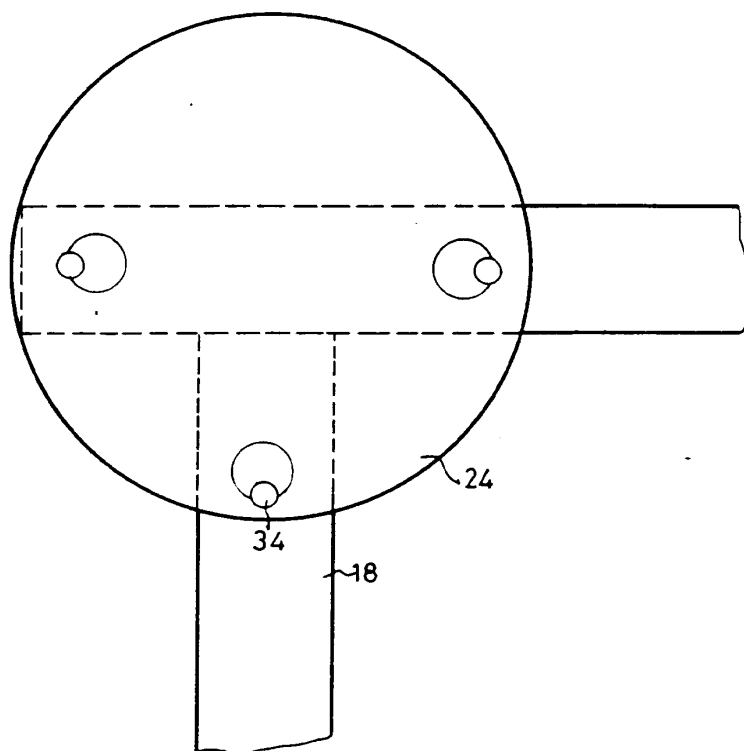


FIG. 3

2004-91

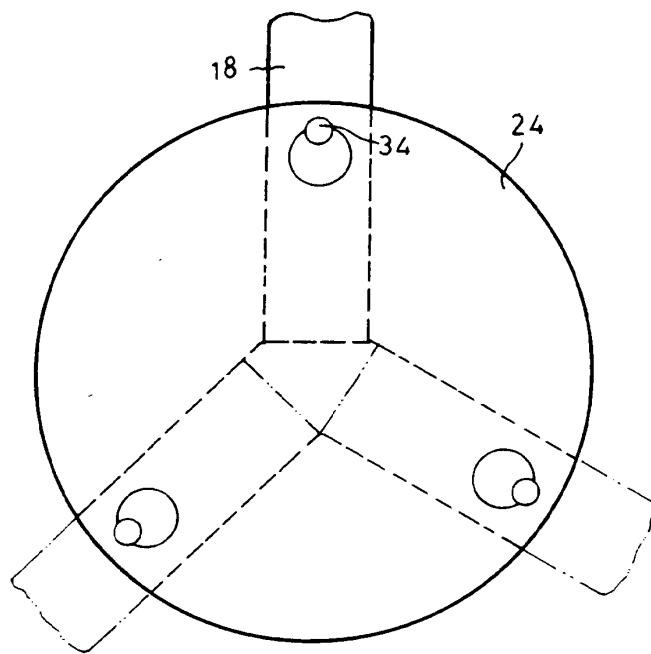


FIG. 4

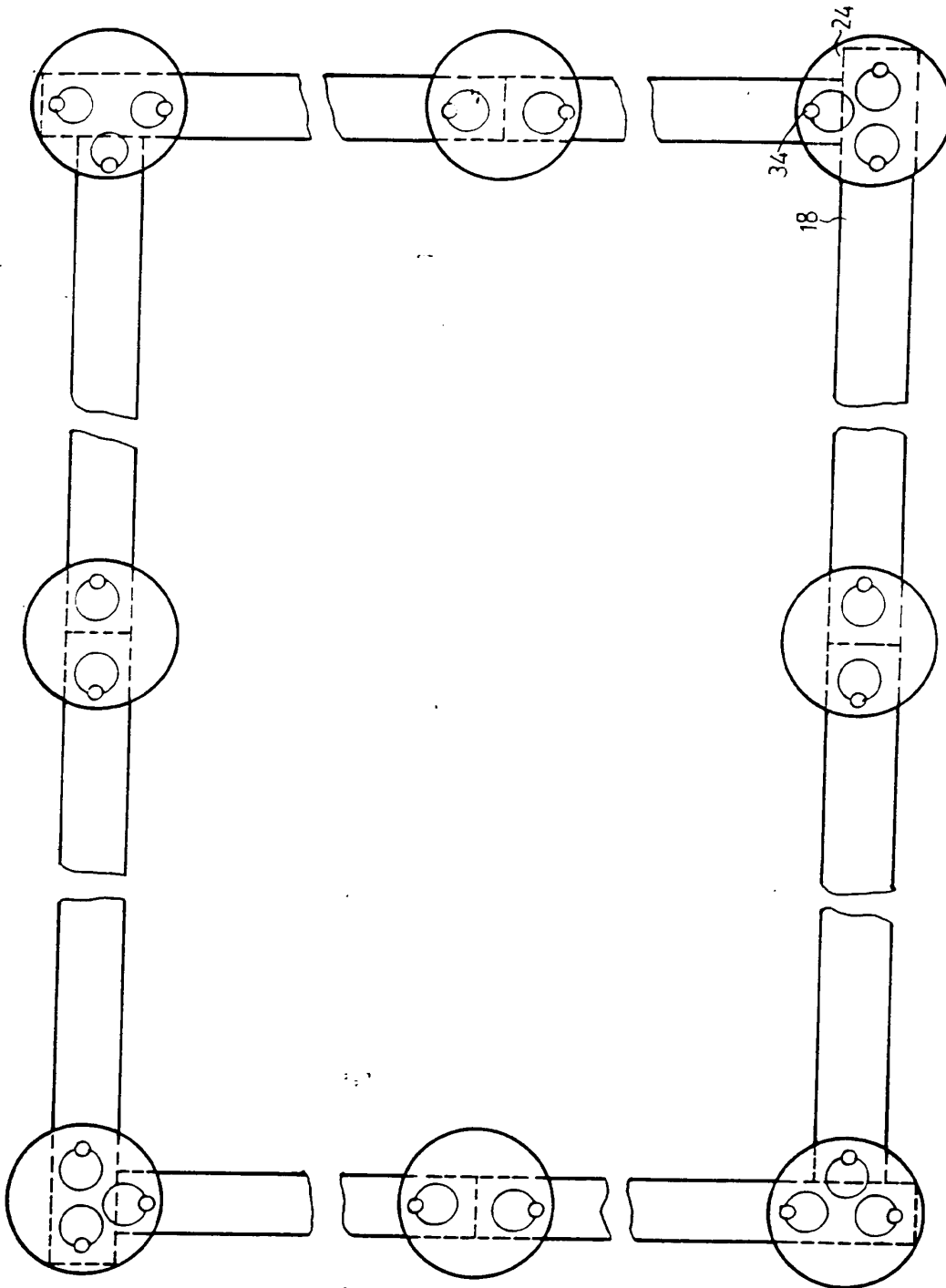


FIG. 5

20491

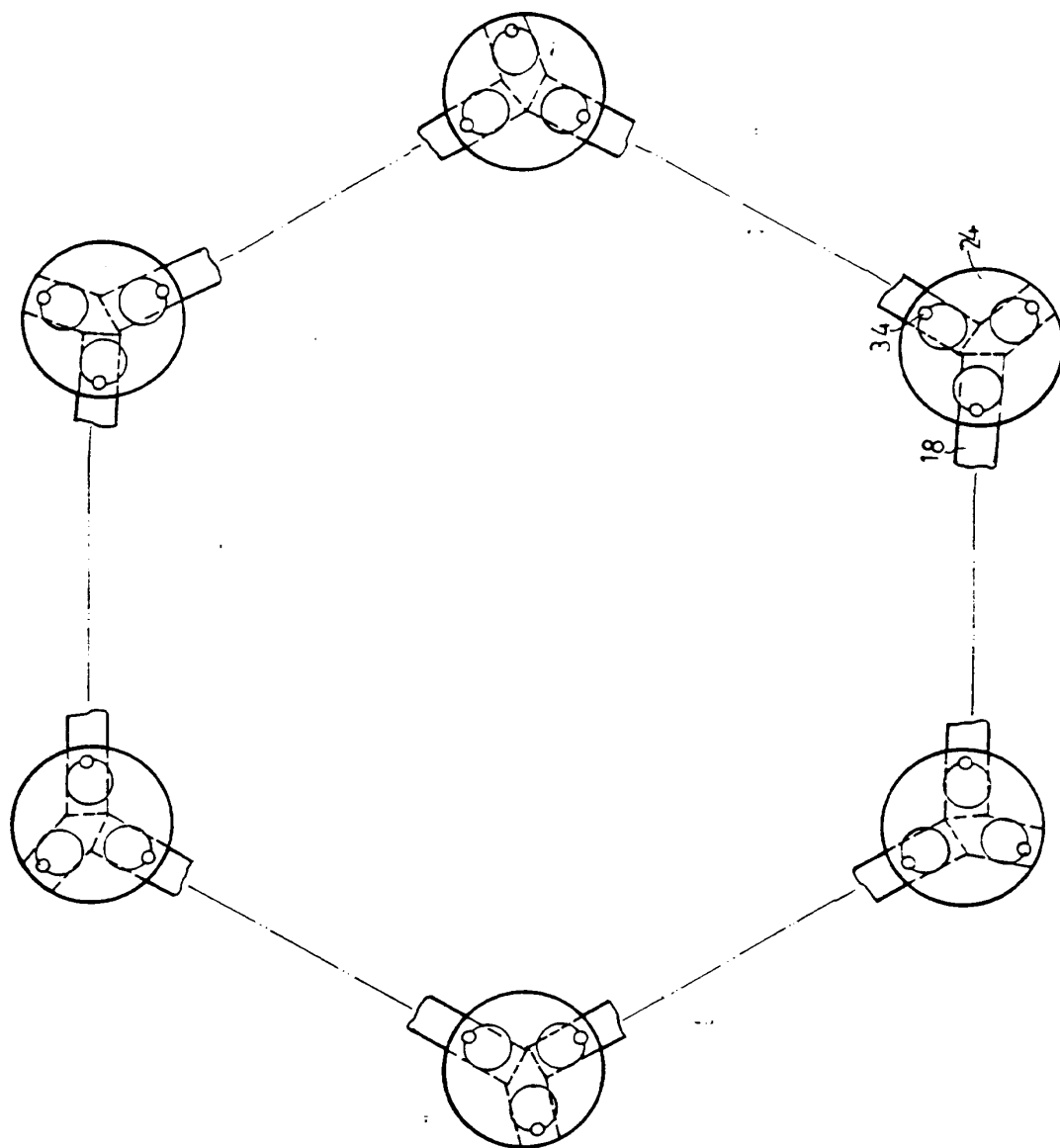


FIG.6

22-04-91

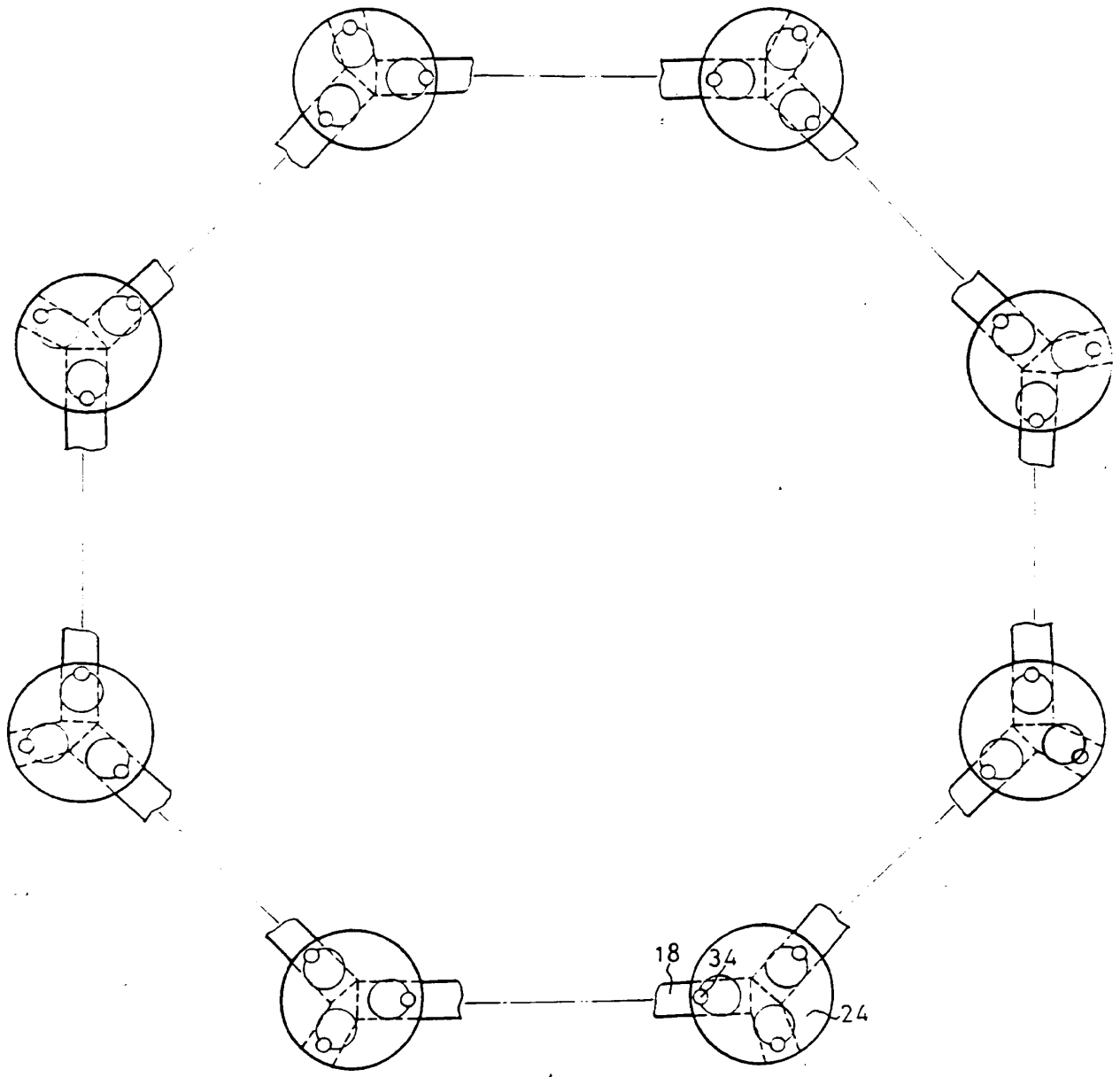


FIG.7

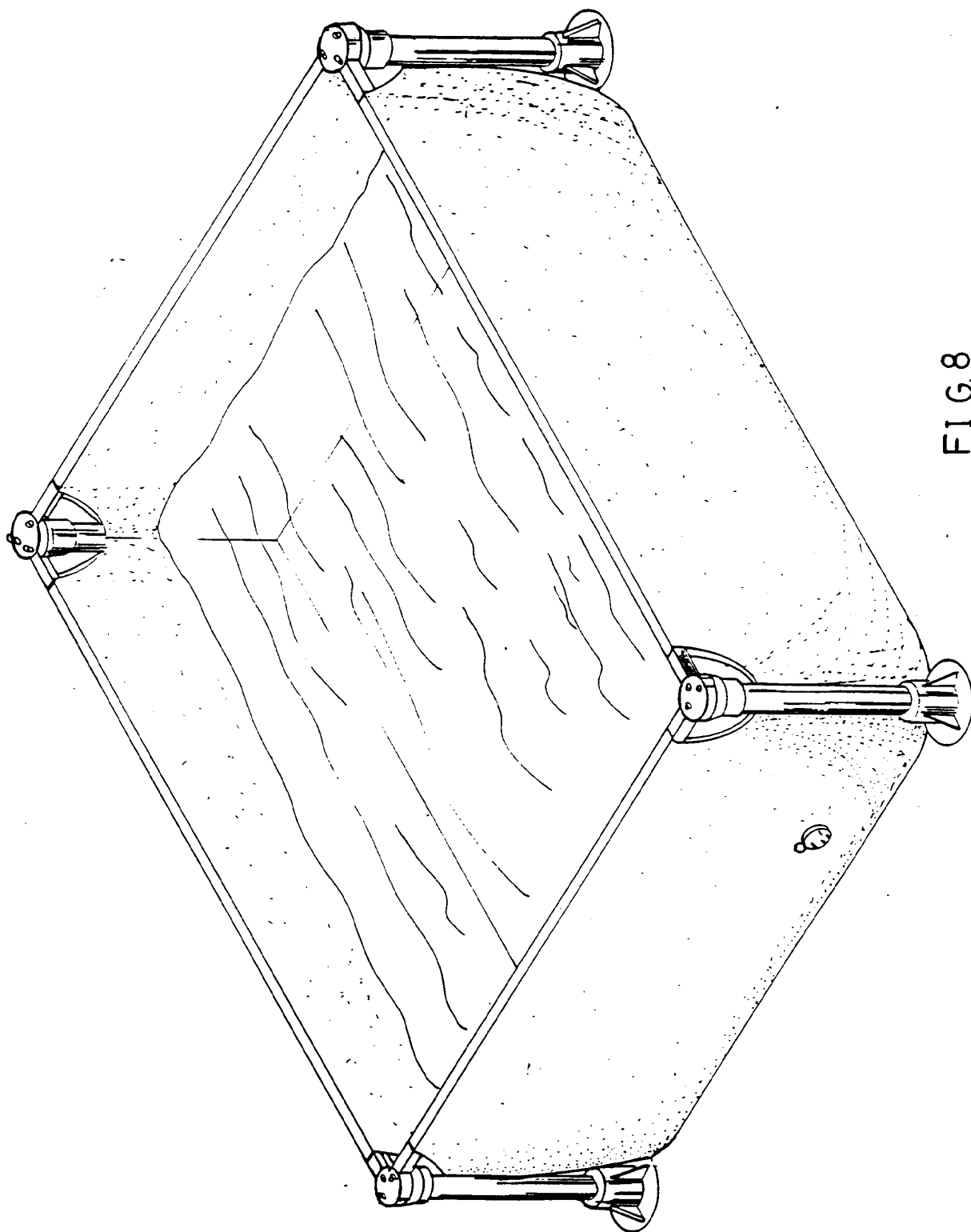


FIG. 8

REMARKS

Claims 1-12 and 14-23 are pending in the application, including new claims 21-23. Claims 1 and 14 are presented in independent form. Claims 1-20 stand rejected.

Information Disclosure Statement

Applicant submits herewith a Supplemental Information Disclosure Statement and respectfully requests consideration of the references cited therein.

Claim Rejections – 35 U.S.C. § 112

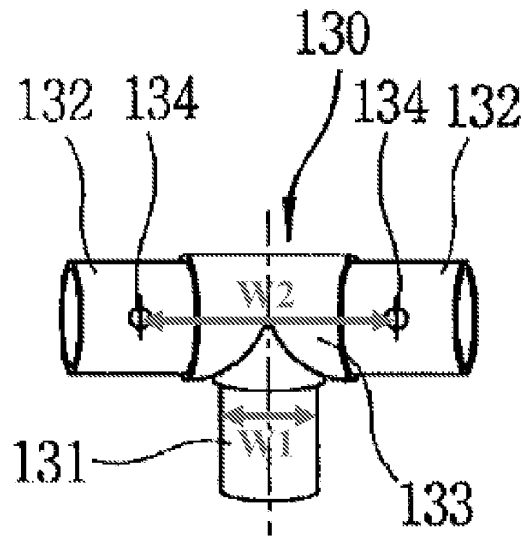
Claim 11 stands rejected under 35 U.S.C. § 112 as being indefinite. Although Applicant respectfully disagrees with this rejection, Applicant has amended claim 11 to remove reference to the water cavity. Explicit support for the horizontal joint portions (1) cooperating to form an obtuse angle (α) is found in published paragraphs [0015]-[0017] and FIGS. 1 and 3, for example. Thus, Applicant respectfully requests withdrawal of the clarity rejection of claim 11.

Claim Rejections – 35 U.S.C. § 102 and § 103

Independent Claims 1 and 14

Claims 14 and 17-19 stand rejected under 35 U.S.C. § 102(a)(1) as being anticipated by US Patent Publication No. 2002/042948 to Lee (“*Lee*”), and claims 1-3, 5, and 6-8 stand rejected under 35 U.S.C. § 103 as being obvious over *Lee*.

In rejecting independent claim 1, the Office Action recognized that *Lee* fails to explicitly disclose that “a width of the vertical joint portion accounts for **at least 50%** of a width between the first and second coupling assemblies of the first and second horizontal joint portions”, as claimed (Office Action, page 5). In fact, based on *Lee*’s FIG. 4 (which is reproduced and annotated below), the width of *Lee*’s vertical joint portion (W1) is **less than 40%** of the width between *Lee*’s first and second coupling assemblies (W2). Thus, *Lee* fails to disclose or suggest that “a width of the vertical joint portion accounts for **at least 50%** of a width between the first and second coupling assemblies of the first and second horizontal joint portions”, as claimed.



Annotated Version of *Lee's* FIG. 4

In rejecting independent claim 14, the Office Action pointed to *Lee's* FIG. 3 and asserted that “a width of the vertical joint portion accounts for **a majority** of a width between the first and second coupling assemblies of the first and second horizontal joint portions”, as claimed (Office Action, page 3). However, *Lee's* FIG. 3 from the Office Action is a perspective view, whereas *Lee's* FIG. 4 (which is reproduced and annotated above) is an elevational view that more accurately depicts the claimed widths. Also, as explained above with respect to independent claim 1, the width of *Lee's* vertical joint portion (W1) accounts for **less than a majority** (in this case, less than 40%) of the width between *Lee's* first and second coupling assemblies (W2). Thus, *Lee* fails to disclose or suggest that “a width of the vertical joint portion accounts for **a majority** of a width between the first and second coupling assemblies of the first and second horizontal joint portions”, as claimed.

The Office Action also asserts that the claimed width relationships fail to solve any problem or serve any purpose and constitute a mere design choice (Office Action, page 5). Applicant respectfully disagrees with this assertion. As explained in published paragraphs [0023]-[0024] of the present application, the claimed width relationships allow the adjacent hole 82 in the pool liner 8 to be “minimized” to reduce water leakage from the pool, especially when waves form in the pool and cause the water line to rise above the holes 82 at the sidewalls. At the same time, the hole 82 is large enough to expose and provide “access to the pin 33 of the

coupling assembly 3 and the pin 43 of the coupling assembly 4 for subsequent disassembly”. In *Lee*’s FIG. 2, by contrast, the distant fixing hole 121/fixing protrusion 134 are concealed by the pockets 221 of the pool body 200. Thus, *Lee* fails to provide “minimized” liner holes and easy “access” for disassembly.

Because *Lee* does not disclose or suggest each and every limitation of independent claims 1 and 14, Applicant respectfully requests withdrawal of the 35 U.S.C. § 102(a)(1) and § 103 rejections of independent claims 1 and 14 and their dependent claims.

Independent Claim 9

Claims 9-13 and 16 stand rejected under 35 U.S.C. § 103 as being obvious over *Lee* in view of US Patent Publication No. 2014/325751 to Hake (“*Hake*”). Applicant has amended independent claim 9 to depend from independent claim 1 and respectfully submits that claim 9 is patentable for at least the reasons discussed above.

New Claims

Applicant has added new dependent claims 21-23 to recite certain internal features of the frame joint of claim 1, specifically at least one internal vertical reinforcing rib (claim 21), an internal horizontal reinforcing rib (claim 22), and an internal horizontal support member (claim 23). Support for these new claims is found in published paragraphs [0020] and [0022] of the present application, so no new matter is added.

Final Remarks

Applicant respectfully submits that claims 1-23 are in condition for allowance. Such action is earnestly solicited.

In the event Applicant has overlooked the need for an extension of time or payment of fee, Applicant hereby petitions therefor and authorizes that any charges be made to Deposit Account No. 02-0390, Faegre Drinker Biddle & Reath LLP.

If any questions concerning this application should arise, the Examiner is encouraged to telephone the undersigned at 317-237-1130.

Application No. 16/220,484

Respectfully submitted,

/jamie m. drewry/

Jamie M. Drewry
Registration No. 61,320

Attorney for Applicant

Faegre Drinker Biddle & Reath LLP
300 North Meridian Street, Suite 2500
Indianapolis, Indiana 46204
Telephone: 317-237-1130
Facsimile: 317-237-1000

Date: August 17, 2020

AMENDMENTS TO THE CLAIMS

Please amend the claims as set forth below. This Listing of Claims will replace all prior versions and listings of claims in the application.

Listing of Claims

1. (Original) A frame joint for an above ground pool frame having a first horizontal frame member, a second horizontal frame member, and a vertical frame member, the frame joint comprising:
 - a first horizontal joint portion including a first coupling assembly configured to couple with the first horizontal frame member;
 - a second horizontal joint portion including a second coupling assembly configured to couple with the second horizontal frame member; and
 - a vertical joint portion fixedly coupled to the first and second horizontal joint portions and configured to couple with the vertical frame member;wherein a width of the vertical joint portion accounts for at least 50% of a width between the first and second coupling assemblies of the first and second horizontal joint portions.
2. (Original) The frame joint of claim 1, wherein the width of the vertical joint portion accounts for at least 40% of a total width of the frame joint.
3. (Original) The frame joint of claim 2, wherein the width of the vertical joint portion accounts for about 50% of the total width of the frame joint.
4. (Original) The frame joint of claim 1, wherein each of the first and second coupling assemblies comprises a base, a helical spring supported by the base, and a pin biased outward through a hole in the respective horizontal joint portion by the helical spring to engage a corresponding recess of the respective horizontal frame member.
5. (Original) The frame joint of claim 4, wherein the width of the vertical joint portion accounts for about 70% of a width between the pins of the first and second coupling assemblies.

6. (Original) The frame joint of claim 1, further comprising a liner wrapped around the first and second horizontal frame members, the liner defining a hole that is sized to expose the first and second coupling assemblies.

7. (Original) The frame joint of claim 6, wherein a width of the frame joint exceeds a width of the hole in the liner.

8. (Original) The frame joint of claim 6, wherein a height of the frame joint exceeds a height of the hole in the liner.

9. (Currently Amended) ~~[[A]]The frame joint of claim 1, wherein for an above ground pool frame having a first horizontal frame member, a second horizontal frame member, and a vertical frame member, the frame joint comprising:~~

~~[[a]]the first horizontal joint portion is configured to couple with the first horizontal frame member, the first horizontal joint portion being constructed of plastic;~~

~~[[a]]the second horizontal joint portion is configured to couple with the second horizontal frame member, the second horizontal joint portion being constructed of plastic; and~~

~~[[a]]the vertical joint portion is fixedly coupled to the first and second horizontal joint portions and configured to couple with the vertical frame member, the vertical joint portion being constructed of plastic.~~

10. (Currently Amended) The frame joint of claim 1~~[[9]]~~, wherein the vertical joint portion is centered between the first and second horizontal joint portions to form a T-shaped frame joint.

11. (Currently Amended) The frame joint of claim 1~~[[9]]~~, wherein the first and second horizontal joint portions cooperate to form an obtuse angle ~~that defines a water cavity~~.

12. (Currently Amended) The frame joint of claim 1~~[[9]]~~, wherein the vertical joint portion is integrally formed with the first and second horizontal joint portions as a single piece.

13. (Canceled)
14. (Original) A method of assembling an above ground pool the method comprising:
coupling a first horizontal joint portion of a frame joint to a first horizontal frame member with a first coupling assembly;
coupling a second horizontal joint portion of the frame joint to a second horizontal frame member with a second coupling assembly; and
coupling a vertical joint portion of the frame joint to a vertical frame member;
wherein a width of the vertical joint portion accounts for a majority of a width between the first and second coupling assemblies of the first and second horizontal joint portions.
15. (Original) The method of claim 14, wherein:
an external cross-section of the first horizontal joint portion matches an internal cross-section of the first horizontal frame member;
an external cross-section of the second horizontal joint portion matches an internal cross-section of the second horizontal frame member; and
an external cross-section of the vertical joint portion matches an internal cross-section of the vertical frame member.
16. (Original) The method of claim 14, wherein the first horizontal joint portion, the second horizontal joint portion, and the vertical joint portion are constructed of plastic.
17. (Original) The method of claim 14, wherein:
coupling the first horizontal joint portion to the first horizontal frame member comprises depressing a first pin into the first horizontal joint portion and releasing the first pin into engagement with the first horizontal frame member; and
coupling the second horizontal joint portion to the second horizontal frame member comprises depressing a second pin into the second horizontal joint portion and releasing the second pin into engagement with the second horizontal frame member.

18. (Original) The method of claim 14, further comprising wrapping a liner around the first and second horizontal frame members with a hole exposing the first and second coupling assemblies.

19. (Original) The method of claim 18, wherein a width of the hole in the liner exceeds a width between the first and second coupling assemblies.

20. (Original) The method of claim 18, wherein the vertical joint portion of the frame joint is coupled to the vertical frame member with a third coupling assembly, and wherein a height of the hole in the liner is less than a distance between the first and third coupling assemblies.

21. (New) The frame joint of claim 1, wherein the vertical joint portion includes at least one internal vertical reinforcing rib.

22. (New) The frame joint of claim 1, wherein at least one of the first horizontal joint portion and the second horizontal joint portion includes an internal horizontal reinforcing rib.

23. (New) The frame joint of claim 1, wherein at least one of the first horizontal joint portion and the second horizontal joint portion includes an internal horizontal support member.

Electronic Patent Application Fee Transmittal				
Application Number:		16220484		
Filing Date:		14-Dec-2018		
Title of Invention:		JOINT FOR ABOVE GROUND POOL FRAME		
First Named Inventor/Applicant Name:		Hua Hsiang Lin, deceased		
Filer:		Jamie Marie Drewry		
Attorney Docket Number:		IRC-0042-02-US		
Filed as Large Entity				
Filing Fees for U.S. National Stage under 35 USC 371				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension - 1 month with \$0 paid	1251	1	200	200
Miscellaneous:				
Total in USD (\$)				200

Electronic Acknowledgement Receipt	
EFS ID:	40307439
Application Number:	16220484
International Application Number:	
Confirmation Number:	3890
Title of Invention:	JOINT FOR ABOVE GROUND POOL FRAME
First Named Inventor/Applicant Name:	Hua Hsiang Lin, deceased
Customer Number:	27268
Filer:	Jamie Marie Drewry
Filer Authorized By:	
Attorney Docket Number:	IRC-0042-02-US
Receipt Date:	17-AUG-2020
Filing Date:	14-DEC-2018
Time Stamp:	18:45:49
Application Type:	U.S. National Stage under 35 USC 371

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	\$200
RAM confirmation Number	E20208GI46180912
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Fee Worksheet (SB06)	fee-info.pdf	30761	no	2
			97937d2d384a0b6d0bda071956af9bceec4dc187		
Warnings:					
Information:					
Total Files Size (in bytes):			30761		
<p>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</p> <p><u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p>					

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875				Application or Docket Number 16/220,484		Filing Date 12/14/2018		☐ To be Mailed		
ENTITY: ☒ LARGE ☐ SMALL ☐ MICRO										
APPLICATION AS FILED - PART I										
		(Column 1)	(Column 2)							
FOR		NUMBER FILED	NUMBER EXTRA		RATE (\$)		FEE (\$)			
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))		N/A	N/A		N/A					
☐ SEARCH FEE (37 CFR 1.16(k), (l), or (m))		N/A	N/A		N/A					
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))		N/A	N/A		N/A					
TOTAL CLAIMS (37 CFR 1.16(j))		minus 20 =	*		x \$100 =					
INDEPENDENT CLAIMS (37 CFR 1.16(h))		minus 3 =	*		x \$460 =					
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))		If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).								
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))										
* If the difference in column 1 is less than zero, enter "0" in column 2.					TOTAL					
APPLICATION AS AMENDED - PART II										
		(Column 1)	(Column 2)		(Column 3)					
AMENDMENT	08/17/2020	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)			
	Total (37 CFR 1.16(i))	* 22	Minus	** 20	= 2	x \$ 100 =	200			
	Independent (37 CFR 1.16(h))	* 2	Minus	*** 3	= 0	x \$ 460 =	0			
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))									
						TOTAL ADD'L FEE	200			
AMENDMENT	08/17/2020	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)			
	Total (37 CFR 1.16(i))	* 22	Minus	** 20	= 2	x \$ 100 =	200			
	Independent (37 CFR 1.16(h))	* 2	Minus	*** 3	= 0	x \$ 460 =	0			
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))									
						TOTAL ADD'L FEE	200			
* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.						LIE				
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".						/GLORIA J NORRIS/				
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".										
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.										

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/220,484	12/14/2018	Hua Hsiang Lin, deceased	IRC-0042-02-US	3890
27268 7590 11/06/2020 FAEGRE DRINKER BIDDLE & REATH LLP 300 NORTH MERIDIAN STREET SUITE 2500 INDIANAPOLIS, IN 46204			EXAMINER CRANE, LAUREN ASHLEY	
			ART UNIT 3754	PAPER NUMBER
			NOTIFICATION DATE 11/06/2020	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

intear@faegredrinker.com

Office Action Summary	Application No. 16/220,484	Applicant(s) Lin, deceased et al.	
	Examiner LAUREN A CRANE	Art Unit 3754	AIA (FITF) Status Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

- 5) ☒ Claim(s) 1-12 and 14-23 is/are pending in the application.
- 5a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 6) ☐ Claim(s) ____ is/are allowed.
- 7) ☒ Claim(s) 1-12 and 14-23 is/are rejected.
- 8) ☐ Claim(s) ____ is/are objected to.
- 9) ☐ Claim(s) ____ are subject to restriction and/or election requirement

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- Certified copies:**
- a) ☐ All b) ☐ Some** c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) ☒ Notice of References Cited (PTO-892) | 3) ☐ Interview Summary (PTO-413) |
| | Paper No(s)/Mail Date ____. |
| 2) ☒ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) | 4) ☐ Other: ____. |
| Paper No(s)/Mail Date ____. | |

U.S. Patent and Trademark Office

PTOL-326 (Rev. 11-13)

Office Action Summary

Part of Paper No./Mail Date 20201026

Notice of Pre-AIA or AIA Status

1. The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

Claim Rejections - 35 USC § 102

1. In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

(a)(1) the claimed invention was patented, described in a printed publication, or in public use, on sale or otherwise available to the public before the effective filing date of the claimed invention.

1. Claim(s) 14 and 17-19 is/are rejected under 35 U.S.C. 102(a)(1) as being anticipated by Lee (US Patent 20020042948).

2. Regarding Claim 14, Lee shows a method of assembling an above ground pool, the method comprising: coupling a first horizontal joint portion (132) of a frame joint to a first horizontal frame member (120) with a first coupling assembly (134); coupling a second horizontal joint portion (120) of the frame joint to a second horizontal frame member (120) with a second coupling assembly (134); and coupling a vertical joint portion (131) of the frame joint to a vertical frame member (110); wherein a width of the vertical joint portion accounts for a majority of a width between the first and second coupling assemblies of the first and second horizontal joint portions, Fig.3.

3. Regarding Claim 15, Lee shows the method of claim 14, wherein: an external cross-section of the first horizontal joint portion matches an internal cross- section of the

first horizontal frame member which are both circular; an external cross-section of the second horizontal joint portion matches an internal cross-section of the second horizontal frame member which are both circular; and an external cross-section of the vertical joint portion matches an internal cross-section of the vertical frame member which are both circular, Fig.3.

4. Regarding Claim 17, Lee shows the method of claim 14, wherein: coupling the first horizontal joint portion to the first horizontal frame member comprises depressing a first pin into the first horizontal joint portion and releasing the first pin into engagement with the first horizontal frame member; and coupling the second horizontal joint portion to the second horizontal frame member comprises depressing a second pin into the second horizontal joint portion and releasing the second pin into engagement with the second horizontal frame member, Fig.7.

5. Regarding Claim 18, Lee shows the method of claim 14, further comprising wrapping (221) a liner around the first and second horizontal frame members (120) with a hole exposing the first and second coupling assemblies (132), Fig.9.

6. Regarding Claim 19, Lee shows the method of claim 18, wherein a width of the hole in the liner exceeds a width between the first and second coupling assemblies, Fig.9.

Claim Rejections - 35 USC § 103

7. In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of

rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

8. The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-3, 5, 6-8 is/are rejected under 35 U.S.C. 103 as being unpatentable over Lee (US Patent 20020042948).

10. Regarding claim 1, Lee shows A frame joint for an above ground pool frame having a first horizontal frame member (120), a second horizontal frame member (120), and a vertical frame member (110), the frame joint comprising: a first horizontal joint portion (132) including a first coupling assembly (134) configured to couple with the first horizontal frame member; a second horizontal joint portion (132) including a second coupling assembly (134) configured to couple with the second horizontal frame member; and a vertical joint portion (131) fixedly coupled to the first and second horizontal joint portions and configured to couple with the vertical frame member (11); Lee is silent regarding the percentage the width of the vertical joint portion accounts for the width between the first and second coupling assemblies of the first and second horizontal joint portions. Instead, Lee discloses that the vertical joint portion does account for a portion of the width between the first and second coupling assemblies of the first and second horizontal joint portions. Applicant has not disclosed that having the width of the vertical joint portion accounting for a portion of the width between the

first and second coupling assemblies solves any stated problem or is for any particular purpose. Moreover, it appears that the width of the vertical joint portion of Lee, or applicant's invention, would perform equally well with the width of the first and second coupling assemblies. Accordingly, it would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to have modified Lee such that wherein a width of the vertical joint portion accounts for at least 50% of a width between the first and second coupling assemblies of the first and second horizontal joint portions because such a modification would have been considered a mere design consideration which fails to patentably distinguish over Lee.

11. Regarding Claim 2, Lee shows the frame joint of claim 1, but is silent regarding the percentage of the width of the vertical joint portion accounts for a portion of the total width of the frame joint. Instead, Lee discloses that the vertical joint portion does account for a portion of total width of the frame joint. Applicant has not disclosed that having the width of the vertical joint portion accounting for a portion of the total width of the frame joint solves any stated problem or is for any particular purpose. Moreover, it appears that the width of the vertical joint portion of Lee, or applicant's invention, would perform equally well with the width of the frame joint. Accordingly, it would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to have modified Lee such that wherein the width of the vertical joint portion accounts for at least 40% of a total width of the frame joint because such a modification would have been considered a mere design consideration which fails to patentably distinguish over Lee.

12. Regarding Claim 3, Lee shows the frame joint of claim 1, but is silent regarding the percentage of the width of the vertical joint portion accounts for a portion of the total width of the frame joint. Instead, Lee discloses that the vertical joint portion does account for a portion of total width of the frame joint. Applicant has not disclosed that having the width of the vertical joint portion accounting for a portion of the total width of the frame joint solves any stated problem or is for any particular purpose. Moreover, it appears that the width of the vertical joint portion of Lee, or applicant's invention, would perform equally well with the width of the frame joint. Accordingly, it would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to have modified Lee such that wherein the width of the vertical joint portion accounts for about 50% of a total width of the frame joint because such a modification would have been considered a mere design consideration which fails to patentably distinguish over Lee.

13. Regarding Claim 5, Lee shows the frame joint of claim 4, but is silent regarding the percentage the width of the vertical joint portion accounts for the width between the pins of the first and second coupling assemblies. Instead, Lee discloses that the vertical joint portion does account for a portion of the width between the pins of the first and second coupling assemblies. Applicant has not disclosed that having the width of the vertical joint portion accounting for a portion of the width between the pins of the first and second coupling assemblies solves any stated problem or is for any particular purpose. Moreover, it appears that the width of the vertical joint portion of Lee, or applicant's invention, would perform equally well with the width between the pins of the first and second coupling assemblies. Accordingly, it would have been prima facie

obvious to one of ordinary skill in the art at the time the invention was made to have modified Lee such that wherein the width of the vertical joint portion accounts for about 70% of a width between the pins of the first and second coupling assemblies because such a modification would have been considered a mere design consideration which fails to patentably distinguish over Lee.

14. Regarding Claims 6, Lee shows the frame joint of claim 1, further comprising a liner (220) wrapped (221) around the first and second horizontal frame members, the liner defining a hole that is sized to expose the first and second coupling assemblies, Fig.1.

15. Regarding Claims 7, Lee shows the frame joint of claim 6, A width of the frame joint exceeds a width of the hole in the liner, Fig.9.

16. Regarding Claims 8, Lee shows the frame joint of claim 6, A height of the frame joint exceeds a height of the hole in the liner, Fig.9.

17. Claim 9-13 and 16 is/are rejected under 35 U.S.C. 103 as being unpatentable over Lee (US Patent Publication 2002/0042948) in view of Hake (US Patent 2014/0325751).

18. Regarding Claim 9, Lee shows the frame joint of claim , but fails to show the first horizontal joint portion, the second horizontal joint portion and the vertical joint portion being constructed of plastic. Hake teaches a container. The container is constructed is plastic (paragraph 22). It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to a frame constructed of plastic in order to prevent the frame from deteriorating.

19. Regarding Claims 10, Lee shows the frame joint of claim 9, wherein the vertical joint portion is centered between the first and second horizontal joint portions to form a T-shaped frame joint, Fig.3.

20. Regarding Claims 11, Lee shows the frame joint of claim 9, The first and second horizontal joint portions cooperate to form an obtuse angle, Fig.3.

21. Regarding Claims 12, Lee shows the frame joint of claim 9, The vertical joint portion is integrally formed with the first and second horizontal joint portions as a single piece, Fig.3.

22. Regarding Claim 16, Lee shows the method of claim 14, but fails to show the first horizontal joint portion, the second horizontal joint portion, and the vertical joint portion are constructed of plastic. Hake teaches a container. The container is constructed is plastic (paragraph 22). It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to a frame constructed of plastic in order to prevent the frame from deteriorating.

23. Claim 4 is/are rejected under 35 U.S.C. 103 as being unpatentable over Lee (US Patent Publication 2002/0042948) in view of Obitts (US Patent 6079894). Lee shows the frame joint of claim 1, but fails to show a helical spring. Obitts teaches a snap button. The device includes wherein each of the first and second coupling assemblies(12,24) comprises a base (158), a helical spring (170) supported by the base (144), and a pin biased outward through a hole (14) in the respective horizontal joint portion by the helical spring to engage a corresponding recess of the respective horizontal frame member. It would have been obvious to one having ordinary skill in the

art before the effective filing date of the claimed invention to a helical spring in order to ensure the two pieces were securely attached together.

24. Claim 20 is/are rejected under 35 U.S.C. 103 as being unpatentable over Lee (US Patent Publication 2002/0042948) in view of Bennett et al (US Patent Publication 2004/0118844 herein after Bennett). Lee shows the method of claim 18, and further shows wherein the vertical joint portion (131) of the frame joint is coupled to the vertical frame member (110), and wherein a height of the hole in the liner is less than a distance between the first and third coupling assemblies, Fig.2. Lee fails to show a third coupling assembly. Bennett teaches a fluid storage tank. The device includes a frame having a vertical frame member (120) with a third coupling assembly. It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to a third coupling assembly in order to ensure the vertical frame member was securely attached to the frame.

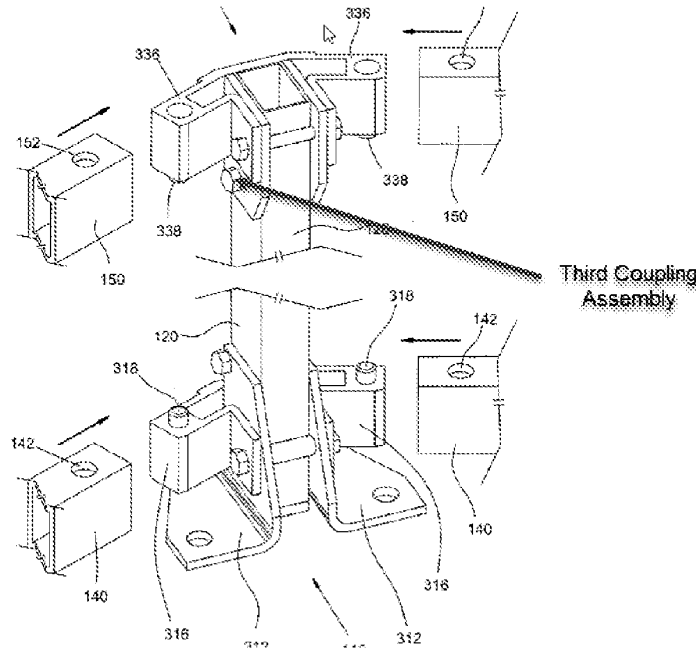
25. Claims 21-22 is/are rejected under 35 U.S.C. 103 as being unpatentable over Lee (US Patent 20020042948) in view of Huang (US Patent 20170356206).

26. Regarding Claim 21, Lee shows the frame joint of claim 1, but fails to show wherein the vertical joint portion (32) includes at least one internal vertical reinforcing rib. Huang teaches a pool frame. A vertical joint portion (32) includes at least one internal vertical reinforcing rib (50). It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to an internal vertical reinforcing rib in order to add structural support to the joint.

27. Regarding Claim 22, Lee shows the frame joint of claim 1, but fails to show at least one of the first horizontal joint portion and the second horizontal joint portion

includes an internal horizontal reinforcing rib. Huang teaches a pool frame. At least one of the first horizontal joint portion (31) and the second horizontal joint portion (31) includes an internal horizontal reinforcing rib (50). It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to include an internal horizontal reinforcing rib in order to add structural support to the joint.

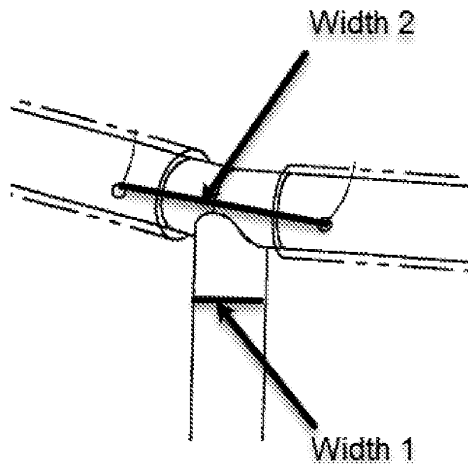
28. Claims 23 is/are rejected under 35 U.S.C. 103 as being unpatentable over Lee (US Patent 20020042948) in view of Pruis (US Patent 5,143,476). Lee shows the frame joint of claim 1, but fails to show wherein at least one of the first horizontal joint portion and the second horizontal joint portion includes an internal horizontal support member. Pruis teaches a pool frame. The frame includes at least one of the first horizontal joint portion (18) and the second horizontal joint portion includes an internal horizontal support member (26). It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to include an internal horizontal support member in order to add structural support to the joint.



Response to Arguments

1. Applicant's arguments filed 8/17/2020 have been fully considered but they are not persuasive.
2. Applicant argues that Lee fails to show a width of the vertical joint portion account for at least 50%, at least 40%, or about 50% of a width between first and second coupling assemblies. The examiner disagrees. Lee doesn't explicitly state the ratio of widths between the coupling assemblies but does shows a width of the vertical joint portion account for at least 50%, at least 40%, or about 50% of a width between first and second coupling assemblies, see annotated figure below.
3. Applicant argues that Lee fails to show a width of the vertical joint portion account for the majority of a width between first and second coupling assemblies. The examiner disagrees. Lee shows a width of the vertical joint portion account for the

majority of a width between first and second coupling assemblies, see annotated figure below.



Conclusion

1. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following reference shows significant but unclaimed features.
2. Liu (US Patent Publication 2016/0215513) shows the pool liner including a fold, Fig.7.
3. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAUREN ASHLEY CRANE whose telephone number is (571)270-5198. The examiner can normally be reached on Mondays & Tuesdays 8 am - 4pm.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at <http://www.uspto.gov/interviewpractice>.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Angwin can be reached on 571-270-3735. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <https://ppair-my.uspto.gov/pair/PrivatePair>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

5. /LAUREN A CRANE/
Primary Examiner, Art Unit 3754

Notice of References Cited	Application/Control No. 16/220,484		Applicant(s)/Patent Under Reexamination Lin, deceased et al.	
	Examiner LAUREN A CRANE		Art Unit 3754	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-20160215513-A1	07-2016	LIU; Feng	E04H4/0056	1/1
*	B	US-5143476-A	09-1992	Pruis; Harry	F16B7/042	403/108
	C					
	D					
	E					
	F					
	G					
	H					
	I					
	J					
	K					
	L					
	M					

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

<i>Search Notes</i> 	Application/Control No. 16/220,484	Applicant(s)/Patent Under Reexamination Lin, deceased et al.
	Examiner LAUREN A CRANE	Art Unit 3754

CPC - Searched*		
Symbol	Date	Examiner
F16B7/17	04/14/2020	LC
E04H4/0056	11/03/2020	LC

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner
4	654	04/14/2020	LC
4	506	11/03/2020	

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner
Text search of F16B7/14	11/03/2020	LC
Forward backward search of tagged art	11/03/2020	LC

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner

/LAUREN A CRANE/ Primary Examiner, Art Unit 3754	
---	--

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S17	2	("20020042948").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2020/11/02 13:32
S18	706	(4/506).CCLS.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2020/11/02 13:37
S20	17	("1786613" "20020042949" "20090144892" "20090205121" "3595180" "3864048" "3874132" "4356933" "5083327" "5592702" "5884347" "6389616" "6477721" "6571405" "6595713" "6643858").PN. OR ("10683674").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2020/11/02 15:13
S19	39	("1664887" "2378159" "3225362" "3443263" "4356933" "4890343" "4989751").PN. OR ("5083327").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2020/11/02 15:13
S21	1	("20160215513").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2020/11/02 16:35
S22	1	("20170356206").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2020/11/02 16:44
S23	16	("2752218" "2932047" "3090329" "3603628" "3712652" "4711595").PN. OR ("5143476").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2020/11/02 16:59
S24	50	("1664887" "2378159" "3191190" "3225362" "3443263" "3660853" "4356933" "4597113" "4890343" "4989751" "5083327").PN. OR ("5592702").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2020/11/02 17:01
S27	13	S25 and S26	US-PGPUB; USPAT; USOCR;	OR	ON	2020/11/03 07:32

			FPRS; EPO; JPO			
S26	723,870	pool	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	ON	2020/11/03 07:32
S25	1,247	(F16B7/14).cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	ON	2020/11/03 07:32
S28	39	("1664887" "2378159" "3225362" "3443263" "4356933" "4890343" "4989751").PN. OR ("5083327").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2020/11/03 07:36
S29	331	(E04H4/0056).cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	ON	2020/11/03 07:44
S30	39	("1664887" "2378159" "3225362" "3443263" "4356933" "4890343" "4989751").PN. OR ("5083327").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2020/11/03 07:55
L2	2	("20020042948").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2020/11/03 13:18
L1	1	("2002042948").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2020/11/03 13:18

EAST Search History (Interference)

<This search history is empty>

11/3/2020 1:39:59 PM

C:\Users\lheitzer\Documents\EAST\Workspaces\16220484.wsp

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16220484
	Filing Date	2018-12-14
	First Named Inventor	Hua Hsiang Lin
	Art Unit	3754
	Examiner Name	CRANE, LAUREN ASHLEY
	Attorney Docket Number	IRC-0042-02-US

U.S. PATENTS							Remove	
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1							
If you wish to add additional U.S. Patent citation information please click the Add button.							Add	
U.S. PATENT APPLICATION PUBLICATIONS							Remove	
Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1							
If you wish to add additional U.S. Published Application citation information please click the Add button.							Add	
FOREIGN PATENT DOCUMENTS							Remove	
Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²ⁱ	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	T ⁵
	1	9104915	DE	U1	1991-08-22	CHIOU, SIMON, TAICHUNG, TW		×
If you wish to add additional Foreign Patent Document citation information please click the Add button.							Add	
NON-PATENT LITERATURE DOCUMENTS							Remove	
Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.						T ⁵

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		16220484
	Filing Date		2018-12-14
	First Named Inventor	Hua Hsiang Lin	
	Art Unit	3754	
	Examiner Name	CRANE, LAUREN ASHLEY	
	Attorney Docket Number	IRC-0042-02-US	

	1	
--	---	--

If you wish to add additional non-patent literature document citation information please click the Add button

EXAMINER SIGNATURE

Examiner Signature	LAUREN A CRANE/	Date Considered	11/02/2020
--------------------	-----------------	-----------------	------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		16220484
	Filing Date		2018-12-14
	First Named Inventor	Hua Hsiang Lin	
	Art Unit	3754	
	Examiner Name	CRANE, LAUREN ASHLEY	
	Attorney Docket Number	IRC-0042-02-US	

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

☒ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/jamie m. drewry/	Date (YYYY-MM-DD)	2020-08-17
Name/Print	Jamie M. Drewry	Registration Number	61,320

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875				Application or Docket Number 16/220,484		Filing Date 12/14/2018		☐ To be Mailed	
ENTITY: ☒ LARGE ☐ SMALL ☐ MICRO									
APPLICATION AS FILED - PART I									
	(Column 1)	(Column 2)							
FOR	NUMBER FILED	NUMBER EXTRA			RATE (\$)			FEE (\$)	
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A			N/A				
☐ SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A			N/A				
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A			N/A				
TOTAL CLAIMS (37 CFR 1.16(j))	minus 20 =	*			x \$100 =				
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*			x \$460 =				
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).								
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))									
* If the difference in column 1 is less than zero, enter "0" in column 2.					TOTAL				
APPLICATION AS AMENDED - PART II									
	(Column 1)	(Column 2)	(Column 3)						
AMENDMENT	03/08/2021	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE (\$)		ADDITIONAL FEE (\$)	
	Total (37 CFR 1.16(j))	* 20	Minus	** 20	= 0	x \$100 =		0	
	Independent (37 CFR 1.16(h))	* 2	Minus	*** 3	= 0	x \$480 =		0	
	☐ Application Size Fee (37 CFR 1.16(s))								
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))								
						TOTAL ADD'L FEE		0	
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE (\$)		ADDITIONAL FEE (\$)	
	Total (37 CFR 1.16(j))	*	Minus	**	=	x \$0 =			
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x \$0 =			
	☐ Application Size Fee (37 CFR 1.16(s))								
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))								
						TOTAL ADD'L FEE			
* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.						LIE			
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".						/ERNEST A MARFO/			
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".									
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.									

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Doc code: RCEX

Doc description: Request for Continued Examination (RCE)

PTO/SB/30EFS (02-18)

Approved for use through 11/30/2020. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

REQUEST FOR CONTINUED EXAMINATION(RCE)TRANSMITTAL **(Submitted Only via EFS-Web)**

Application Number	16220484	Filing Date	2018-12-14	Docket Number (if applicable)	IRC-0042-02-US	Art Unit	3754
First Named Inventor	Hua Hsiang Lin			Examiner Name	Lauren Ashley Crane		

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.

Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. The Instruction Sheet for this form is located at WWW.USPTO.GOV

SUBMISSION REQUIRED UNDER 37 CFR 1.114

Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.

☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____

☐ Other _____

☒ Enclosed

☒ Amendment/Reply

☒ Information Disclosure Statement (IDS)

☐ Affidavit(s)/ Declaration(s)

☐ Other _____

MISCELLANEOUS

☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of months _____
 (Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)

☐ Other _____

FEES

The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.

☒ The Director is hereby authorized to charge any underpayment of fees, or credit any overpayments, to Deposit Account No 020390

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

☒ Patent Practitioner Signature

Applicant Signature

Doc code: RCEX

Doc description: Request for Continued Examination (RCE)

PTO/SB/30EFS (02-18)

Approved for use through 11/30/2020. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Signature of Registered U.S. Patent Practitioner			
Signature	Alyssa R. Eckerley/	Date (YYYY-MM-DD)	2021-03-08
Name	Alyssa R. Eckerley	Registration Number	74511

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

PETITION FOR EXTENSION OF TIME UNDER 37 CFR 1.136(a)		Docket Number (Optional) IRC-0042-02-US																																		
Application Number 16220484	Filed December 14, 2018																																			
For JOINT FOR ABOVE GROUND POOL FRAME																																				
Art Unit 3754	Examiner Lauren Ashley Crane																																			
<p>This is a request under the provisions of 37 CFR 1.136(a) to extend the period for filing a reply in the above-identified application.</p> <p>The requested extension and fee are as follows (check time period desired and enter the appropriate fee below):</p> <table style="width: 100%; border-collapse: collapse;"><thead><tr><th></th><th style="text-align: center;"><u>Fee</u></th><th style="text-align: center;"><u>Small Entity Fee</u></th><th style="text-align: center;"><u>Micro Entity Fee</u></th><th></th></tr></thead><tbody><tr><td>☒ One month (37 CFR 1.17(a)(1))</td><td style="text-align: right;">\$220</td><td style="text-align: right;">\$110</td><td style="text-align: right;">\$55</td><td style="text-align: right;">\$ <u>220</u></td></tr><tr><td>☐ Two months (37 CFR 1.17(a)(2))</td><td style="text-align: right;">\$640</td><td style="text-align: right;">\$320</td><td style="text-align: right;">\$160</td><td style="text-align: right;">\$ _____</td></tr><tr><td>☐ Three months (37 CFR 1.17(a)(3))</td><td style="text-align: right;">\$1,480</td><td style="text-align: right;">\$740</td><td style="text-align: right;">\$370</td><td style="text-align: right;">\$ _____</td></tr><tr><td>☐ Four months (37 CFR 1.17(a)(4))</td><td style="text-align: right;">\$2,320</td><td style="text-align: right;">\$1,160</td><td style="text-align: right;">\$580</td><td style="text-align: right;">\$ _____</td></tr><tr><td>☐ Five months (37 CFR 1.17(a)(5))</td><td style="text-align: right;">\$3,160</td><td style="text-align: right;">\$1,580</td><td style="text-align: right;">\$790</td><td style="text-align: right;">\$ _____</td></tr></tbody></table> <p>☐ Applicant asserts small entity status. See 37 CFR 1.27.</p> <p>☐ Applicant certifies micro entity status. See 37 CFR 1.29. Form PTO/SB/15A or B or equivalent must either be enclosed or have been submitted previously.</p> <p>☐ A check in the amount of the fee is enclosed.</p> <p>☒ Payment by credit card. Form PTO-2038 is attached.</p> <p>☐ The Director has already been authorized to charge fees in this application to a Deposit Account.</p> <p>☒ The Director is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account Number <u>020390</u>.</p> <p>☒ Payment made via EFS-Web.</p> <p>WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.</p> <p>I am the</p> <p>☐ applicant.</p> <p>☒ attorney or agent of record. Registration number <u>74,511</u>.</p> <p>☐ attorney or agent acting under 37 CFR 1.34. Registration number _____.</p> <table style="width: 100%; border-collapse: collapse;"><tr><td style="width: 50%; padding: 5px;"><u>/Alyssa R. Eckerley/</u> Signature</td><td style="width: 50%; padding: 5px;"><u>March 8, 2021</u> Date</td></tr><tr><td style="padding: 5px;"><u>Alyssa R. Eckerley</u> Typed or printed name</td><td style="padding: 5px;"><u>317-237-0300</u> Telephone Number</td></tr></table> <p>NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. Submit multiple forms if more than one signature is required, see below*.</p>				<u>Fee</u>	<u>Small Entity Fee</u>	<u>Micro Entity Fee</u>		☒ One month (37 CFR 1.17(a)(1))	\$220	\$110	\$55	\$ <u>220</u>	☐ Two months (37 CFR 1.17(a)(2))	\$640	\$320	\$160	\$ _____	☐ Three months (37 CFR 1.17(a)(3))	\$1,480	\$740	\$370	\$ _____	☐ Four months (37 CFR 1.17(a)(4))	\$2,320	\$1,160	\$580	\$ _____	☐ Five months (37 CFR 1.17(a)(5))	\$3,160	\$1,580	\$790	\$ _____	<u>/Alyssa R. Eckerley/</u> Signature	<u>March 8, 2021</u> Date	<u>Alyssa R. Eckerley</u> Typed or printed name	<u>317-237-0300</u> Telephone Number
	<u>Fee</u>	<u>Small Entity Fee</u>	<u>Micro Entity Fee</u>																																	
☒ One month (37 CFR 1.17(a)(1))	\$220	\$110	\$55	\$ <u>220</u>																																
☐ Two months (37 CFR 1.17(a)(2))	\$640	\$320	\$160	\$ _____																																
☐ Three months (37 CFR 1.17(a)(3))	\$1,480	\$740	\$370	\$ _____																																
☐ Four months (37 CFR 1.17(a)(4))	\$2,320	\$1,160	\$580	\$ _____																																
☐ Five months (37 CFR 1.17(a)(5))	\$3,160	\$1,580	\$790	\$ _____																																
<u>/Alyssa R. Eckerley/</u> Signature	<u>March 8, 2021</u> Date																																			
<u>Alyssa R. Eckerley</u> Typed or printed name	<u>317-237-0300</u> Telephone Number																																			

☒ * Total of 1 forms are submitted.

This collection of information is required by 37 CFR 1.136(a). The information is required to obtain or retain a benefit by the public, which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 6 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop PCT, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16220484
	Filing Date	2018-12-14
	First Named Inventor	Hua Hsiang Lin
	Art Unit	3754
	Examiner Name	CRANE, LAUREN ASHLEY
	Attorney Docket Number	IRC-0042-02-US

U.S. PATENTS							Remove	
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1							
If you wish to add additional U.S. Patent citation information please click the Add button.							Add	
U.S. PATENT APPLICATION PUBLICATIONS							Remove	
Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1							
If you wish to add additional U.S. Published Application citation information please click the Add button.							Add	
FOREIGN PATENT DOCUMENTS							Remove	
Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²ⁱ	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	T ⁵
	1	9029	RU	U1	1999-01-16	Limited liability company U.T.M.		×
	2	178000	RU	U1	2018-03-19	Limited liability company PLANETA-NN	English Abstract Submitted	☐
If you wish to add additional Foreign Patent Document citation information please click the Add button.							Add	
NON-PATENT LITERATURE DOCUMENTS							Remove	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		16220484
	Filing Date		2018-12-14
	First Named Inventor	Hua Hsiang Lin	
	Art Unit	3754	
	Examiner Name	CRANE, LAUREN ASHLEY	
	Attorney Docket Number	IRC-0042-02-US	

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T ⁵
	1		

If you wish to add additional non-patent literature document citation information please click the Add button

EXAMINER SIGNATURE

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16220484
	Filing Date	2018-12-14
	First Named Inventor	Hua Hsiang Lin
	Art Unit	3754
	Examiner Name	CRANE, LAUREN ASHLEY
	Attorney Docket Number	IRC-0042-02-US

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/jamie m. drewry/	Date (YYYY-MM-DD)	2021-03-08
Name/Print	Jamie M. Drewry	Registration Number	61,320

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

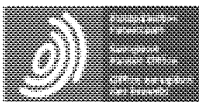
The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Publication Number: RU 9029 U1

Publication Date: Jan 16, 1999



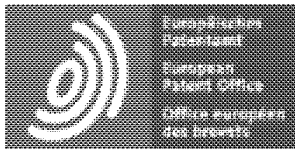
Espacenet

Bibliographic data: RU9029 (U1) — 1999-01-16

УЗЕЛ СОЕДИНЕНИЯ ТРУБЧАТЫХ ЭЛЕМЕНТОВ

Inventor(s): Варфоломеева Е.П.
Applicant(s): Общество с ограниченной ответственностью "U.T.M."
Classification: - **international:** *F16B7/00*; (IPC1-7): F16B7/00
- **cooperative:**
Application number: RU19980111874U 19980624
Priority number(s): RU19980111874U 19980624

Abstract not available for RU9029 (U1)



Patent Translate

Powered by EPO and Google

Notice

This translation is machine-generated. It cannot be guaranteed that it is intelligible, accurate, complete, reliable or fit for specific purposes. Critical decisions, such as commercially relevant or financial decisions, should not be based on machine-translation output.

DESCRIPTION RU9029U1

TUBE ELEMENT CONNECTION UNIT

[0002]

Joint for tubular elements

[0003]

The technical solution declared as a useful model relates to the field of mechanical engineering and can be used to connect tubular closed structural elements.

[0004]

Known mode for connecting tubular elements along with.

USSR N 1620706 dated 02.02.89, M.cl.

F16B 7/00, B62D 27/00, 33/06, containing tubular elements, a connecting element and elements of their fastening to each other.

The tubular element has a window in which the connecting element is installed with its protruding part.

[0005]

The structure described above is intended for connecting tubular elements, the axes of which are perpendicular to each other, and cannot be used for connecting coaxial tubular parts.

[0006]

In addition, due to the presence of a large number of threaded fasteners and the complex configuration of the connecting element, the above-described technical solution does not provide fast and reliable fixation under dynamic loads.

[0007]

MKI F16B 7 /00

[0008]

The closest in technical essence to the claimed technical solution is the connection unit along with.

USSR N 1805232 dated 02.11.90, Moscow cl.

F16B 2/22, 7/00, containing two hollow parts located in one plane with grooves on reciprocal surfaces and a connecting element made in the form of a plate with fixing heads at the ends.

[0009]

The above technical solution is intended for connecting tubular parts, the axes of which are parallel to each other, and cannot be used to connect coaxial tubular parts.

[0010]

The task of the utility model is to ensure the connection of coaxial tubular parts.

[0011]

The problem is solved by the fact that the joint unit containing two tubular elements located in the same plane and the connecting element made in the form of a plate additionally contains a fastening element, and the tubular elements are arranged coaxially and have a box-shaped section, and the connecting element additionally contains a plate with a threaded hole, with both plates bent at the edges and tightly adjacent to each other in the center and rigidly fixed at one end in one of the tubular elements.

[0012]

the other end of which is installed in another tubular element having a hole coaxial with the threaded hole of the connecting element plate for installing a fastening element made in the form of a screw installed so that its end part interacts with the connecting element plate.

[0013]

The essence of the proposed technical solution is illustrated by drawings, where figure 1 shows a joint assembly of tubular elements in an exploded view, figure 2 is a joint assembly in the assembly, and FIG.

H - section A-A in Fig. 2.

[0014]

The connection unit contains coaxially arranged tubular box-section elements 1, 2 and a connecting element made in the form of two plates 3, 4 bent along the edges and tightly adjacent to each other in the center of plates 3, 4, and plate 4 has a threaded hole 5 for installing a fastening element in it, made in the form of a screw 7.

Both plates 3, 4 are rigidly fixed (for example, by welding through a technological window) with one end in the tubular element 1, the other (free) end of these plates 3, 4 is installed in the tubular element 2 having a hole b, coaxial with the threaded hole 5 of the plate 4 of the connecting element to install an element in it

[0015]

fastening made in the form of a screw 7 installed with the possibility of interaction of its end part with the plate 3 of the connecting element.

[0016]

The connection is carried out as follows.

[0017]

The free part of the connecting element formed by the ends of the plates 3, 4 is installed in the cavity of the tubular element 2 until it stops.

In this case, the hole b in the tubular element 2 is coaxial with the threaded hole 5 of the plate 4.

The resulting joint is secured with a screw 7.

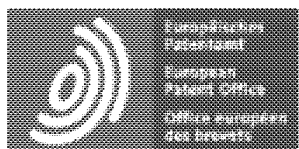
In this case, the screw 7 in the end position abuts the plate 3 with its end and pushes the plates 3 and 4 pressed against each other, creating an additional locking device and thereby increasing the reliability of the connection and preventing the self-unscrewing of the threaded connection under various dynamic loads.

[0018]

The disconnection of the tubular elements is carried out in the reverse order.

[0019]

The technical solution declared as a useful model provides a reliable connection of tubular coaxial elements, simplifies installation, allows you to quickly assemble and disassemble frames of any size and configuration, capable of taking significant static and dynamic loads.



Patent Translate

Powered by EPO and Google

Notice

This translation is machine-generated. It cannot be guaranteed that it is intelligible, accurate, complete, reliable or fit for specific purposes. Critical decisions, such as commercially relevant or financial decisions, should not be based on machine-translation output.

CLAIMS RU9029U1

1.

A joint unit containing two tubular elements located in the same plane, and a connecting element made in the form of a plate, characterized in that it additionally contains a fastening element, and the tubular elements are arranged coaxially and have a box-shaped section, and the connecting element additionally contains a plate with a threaded hole, while both plates are made bent at the edges tightly adjacent to each other in the center and are rigidly fixed at one end of tubular elements, the other end of which is installed in another tubular element having a hole coaxial with the threaded hole of the plate of the connecting element for installing the fastening element in it, made in the form of a screw, installed with the possibility of interaction of its end part with the plate of the connecting element.

РОССИЙСКАЯ ФЕДЕРАЦИЯ



ФЕДЕРАЛЬНАЯ СЛУЖБА
ПО ИНТЕЛЛЕКТУАЛЬНОЙ СОБСТВЕННОСТИ,
ПАТЕНТАМ И ТОВАРНЫМ ЗНАКАМ

(19) RU (11)

39 029 (13) U1

(51) МПК
H03H 21/00 (2000.01)

(12) ОПИСАНИЕ ПОЛЕЗНОЙ МОДЕЛИ К ПАТЕНТУ

(21), (22) Заявка: 2004107658/22, 16.03.2004

(24) Дата начала отсчета срока действия патента:
16.03.2004

(46) Опубликовано: 10.07.2004

Адрес для переписки:
620000, г.Екатеринбург, ул. Горького, 17,
ОАО "Уральский приборостроительный
завод", для ОКБ "Авионика", Д.Н. Дудину

(72) Автор(ы):

Иванов В.Э. (RU),
Малыгин И.В. (RU)

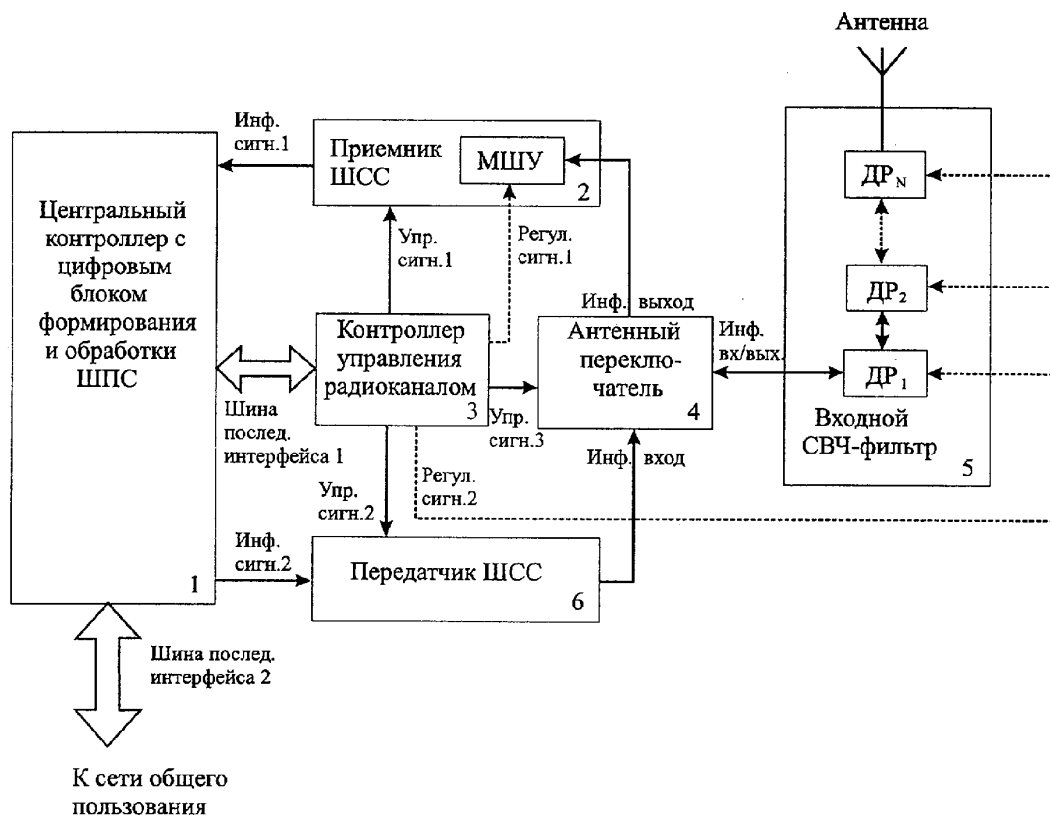
(73) Патентообладатель(и):

Открытое акционерное общество
"Уральский приборостроительный завод"
(RU)

(54) УСТРОЙСТВО АДАПТИВНОЙ ФИЛЬТРАЦИИ ШИРОКОПОЛОСНОЙ СИСТЕМЫ СВЯЗИ

Формула полезной модели

Устройство адаптивной фильтрации широкополосной системы связи, содержащее центральный контроллер, контроллер управления радиоканалом, приемник широкополосной системы связи с малошумящим усилителем, передатчик широкополосной системы связи, антенный переключатель, входной СВЧ-фильтр, первую и вторую шины последовательного интерфейса и антенну, причем центральный контроллер соединен первой и второй шинами последовательного интерфейса с сетью общего пользования и контроллером управления радиоканалом соответственно, выходным вторым информационным сигналом с входом передатчика широкополосной системы связи, а входным первым информационным сигналом с выходом приемника широкополосной системы связи; контроллер управления радиоканалом связан первым и вторым управляющими сигналами с приемником и передатчиком широкополосной системы связи соответственно, первым регулирующим сигналом - с малошумящим усилителем приемника широкополосной системы связи, а третьим управляющим сигналом - с командным входом антенного переключателя, информационный вход последнего соединен с выходом передатчика широкополосной системы связи, информационный выход - с входом приемника широкополосной системы связи, а информационный вход/выход - с входом/выходом СВЧ-фильтра, отличающееся тем, что СВЧ-фильтр выполнен на диэлектрических резонаторах, соединенных в последовательную линейку, которая включена между антенным переключателем и антенной, а управляющие входы линейки вторым регулирующим сигналом соединены с выходом контроллера управления радиоканалом.



Publication Number: RU 178000 U1

Publication Date: Mar 19, 2018

Abstract

The utility model refers to demonstration devices and can be used to create advertising stands, stands, etc. The essence of the utility model: an element of a spatial advertising structure consists of eight rods and eight connecting corner elements, each of which is made in the form of conjugation of three mutually perpendicular planes, and to each of which three rods are attached in different planes, while the rods are made in the form of tubular elements, and each connection of the corner and tubular elements is obtained by crimping the tubular element around the protrusion on the corner element, and a through hole is made in each of the mating planes of each corner element. The corner pieces are preferably made of a composite material, in particular glass-fiber reinforced polyamide. Tubular elements are made of aluminum. 3 C.p. f-ly, 3 dwg

РОССИЙСКАЯ ФЕДЕРАЦИЯ



(19) RU (11)

178 000 (13) U1

(51) МПК
G09F 15/00 (2006.01)
E04B 1/58 (2006.01)

ФЕДЕРАЛЬНАЯ СЛУЖБА
ПО ИНТЕЛЛЕКТУАЛЬНОЙ СОБСТВЕННОСТИ

(12) ОПИСАНИЕ ПОЛЕЗНОЙ МОДЕЛИ К ПАТЕНТУ

(52) СПК
G09F 15/00 (2006.01); E04B 1/58 (2006.01)

(21)(22) Заявка: 2017104020, 07.02.2017

(24) Дата начала отсчета срока действия патента:
07.02.2017

Дата регистрации:
19.03.2018

Приоритет(ы):

(22) Дата подачи заявки: 07.02.2017

(45) Опубликовано: 19.03.2018 Бюл. № 8

Адрес для переписки:

603106, г. Нижний Новгород, а/я 15, ООО
Патентно-правовая фирма "Петухов и
Партнеры"

(72) Автор(ы):

Борисов Павел Владимирович (RU)

(73) Патентообладатель(и):

Общество с ограниченной ответственностью
"Планета-НН" (RU)

(56) Список документов, цитированных в отчете
о поиске: RU2577339 C1, 20.03.2016.
EP2048380 A1, 15.04.2009. WO2003048472 A1,
12.06.2003. GB1569580 A, 18.06.1980.

(54) Элемент пространственной рекламной конструкции

(57) Реферат:

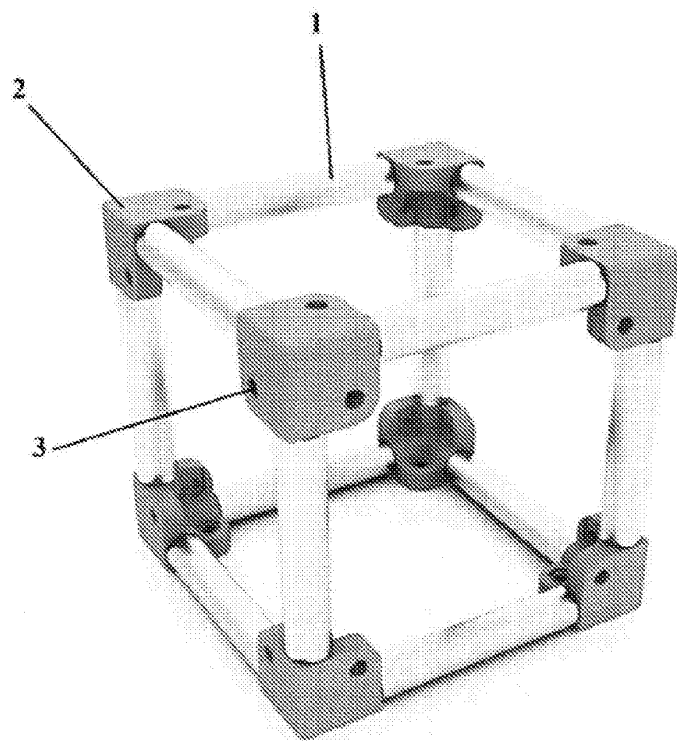
Полезная модель относится к демонстрационным устройствам и может быть использована для создания рекламных стоек, стендов и т.п. Сущность полезной модели: элемент пространственной рекламной конструкции состоит из восьми стержней и восьми соединительных угловых элементов, каждый из которых выполнен в виде сопряжения трех взаимноперпендикулярных плоскостей, и к каждому из которых крепятся в различных плоскостях три стержня, при этом стержни

выполнены в виде трубчатых элементов, а каждое соединение углового и трубчатого элементов получено посредством обжатия трубчатого элемента вокруг выступа на угловом элементе, а в каждой из сопряженных плоскостей каждого углового элемента выполнено сквозное отверстие. Угловые элементы предпочтительно выполняются из композитного материала, в частности из стеклонаполненного полиамида. Трубчатые элементы выполняются из алюминия. 3 з.п. ф-лы, 3 ил.

RU 178 000 U1

RU 178 000 U1

RU 178000 U1



Фиг. 1

RU 178000 U1

Полезная модель относится к демонстрационным устройствам и может быть использована для создания рекламных стоек, стендов и т.п.

Известна модульная система "CROWN TRUSS" [См., например: http://www.crowntruss.ru/YOI_EAAEI/yoi_eaaei.html], предназначенная для оформления выставок и других рекламных мероприятий, которая включает складные модули, раскладывающиеся в пространственные конструкции в виде прямоугольных параллелепипедов. Минимальная конструкция - угловой кубический модуль со стороной 15 см. Из складных модулей могут собираться пространственные рекламные конструкции различных конфигураций. Отдельные модули соединяются между собой винтовыми соединениями через специальную жесткую четырехугольную проставку. Материал модулей алюминий и композитные пластики.

Известное техническое решение характеризуется высокими материалоемкостью, пониженной надежностью, дополнительной номенклатурой.

Известна модульная система "X-Module" [См., например: <http://xmodule.ru/>], состоящая из предварительно собранных модулей в виде ферменных конструкций прямоугольных параллелепипедов, включая угловые соединительные блоки в форме куба, соединяющихся винтовыми соединениями. Для обеспечения удовлетворительной прочности конструкция выполняется с развитой системой упрочняющих элементов, что неизменно влечет за собой повышенную материалоемкость и требования к точности и качеству изготовления комплектующих деталей.

В качестве прототипа выбрана модульная система "Эспас" [См., например: http://www.bazilite.ru/es_osob.html], каждый элемент (в форме прямоугольного параллелепипеда) которой состоит из восьми стержней и восьми соединительных угловых элементов, каждый из которых выполнен в виде сопряжения трех взаимно перпендикулярных плоскостей, и к каждому из которых крепятся в различных плоскостях три стержня. Стержни выполняются из стеклопластика, а угловые элементы - из алюминиевого сплава, изготовлены фрезерованием. При этом стержни закрепляются в отверстиях в угловых элементах методом приклеивания на эпоксидном связующем с последующей покраской. Такое соединение ненадежно из-за неоптимального соотношения размеров углового элемента и диаметра стержня (прочность конструкции достигается либо за счет увеличения угловых элементов (высокая материалоемкость), либо за счет уменьшения диаметра (размера поперечного сечения) стержней). Соответственно, при изготовлении элементов большого размера возникает необходимость установки дополнительных упрочняющих стержней.

Технической проблемой, на устранение которой направлена полезная модель, является недостаточная надежность известной системы, составленной из известных элементов рекламной конструкции. Технический результат, на достижение которого направлена полезная модель - увеличение прочности элемента пространственной рекламной конструкции.

Указанная техническая проблема решается элементом пространственной рекламной конструкции, состоящим из восьми стержней и восьми соединительных угловых элементов, каждый из которых выполнен в виде сопряжения трех взаимно перпендикулярных плоскостей, и к каждому из которых крепятся в различных плоскостях три стержня, в котором, согласно предложению, стержни выполнены в виде трубчатых элементов, а каждое соединение углового и трубчатого элементов получено посредством обжатия трубчатого элемента вокруг выступа на угловом элементе, при этом в каждой из сопряженных плоскостей каждого углового элемента выполнено сквозное отверстие.

Предпочтительно угловые элементы выполнять из композитного материала, в частности из стеклонеполненного полиамида (ПА10).

Предпочтительно трубчатые элементы выполнять из алюминия.

Полезная модель поясняется чертежами.

5 На фиг. 1 представлен общий вид элемента пространственной рекламной конструкции кубической формы; на фиг. 2 - представлен общий вид изогнутого элемента пространственной рекламной конструкции, на фиг. 3 представлен пример соединения элементов в пространственную рекламную конструкцию.

10 Элемент пространственной рекламной конструкции состоит из восьми трубчатых элементов 1 и восьми соединительных угловых элементов 2, каждый из которых выполнен в виде сопряжения трех взаимно перпендикулярных плоскостей. К каждому элементу 2 крепятся три трубчатых элемента 1. Каждое соединение углового 2 и трубчатого 1 элементов получено посредством обжатия с помощью специального инструмента трубчатого элемента вокруг выступа (штыря) на угловом элементе. В 15 каждой из сопряженных плоскостей каждого углового элемента 2 выполнено сквозное отверстие 3.

Предварительно собранные элементы komponуют собственно в рекламную конструкцию (фиг. 3). Отдельные элементы стыкуют в соответствии с предварительно составленным планом и соединяют болтами через отверстия 3 в угловых элементах 2. 20 При этом за счет примененной системы соединения могут использоваться трубчатые элементы большего диаметра. Кроме того, угловые элементы 1 не выступают за плоскости, образованные трубчатыми элементами 1, что создает удобную плоскость для размещения рекламных плакатов, транспарантов и т.п., а также высокую несущую способность.

25 Следует также отметить, что при использовании изогнутых трубчатых элементов 1 (фиг. 2) можно получать элементы и соответственно создавать пространственные рекламные конструкции самых разнообразных конфигураций.

(57) Формула полезной модели

30 1. Элемент пространственной рекламной конструкции, состоящий из восьми стержней и восьми соединительных угловых элементов, каждый из которых выполнен в виде сопряжения трех взаимноперпендикулярных плоскостей, и к каждому из которых крепятся в различных плоскостях три стержня, отличающийся тем, что стержни выполнены в виде трубчатых элементов, а каждое соединение углового и трубчатого 35 элементов получено посредством обжатия трубчатого элемента вокруг выступа на угловом элементе, при этом в каждой из сопряженных плоскостей каждого углового элемента выполнено сквозное отверстие.

2. Элемент по п. 1, отличающийся тем, что угловые элементы выполнены из композитного материала.

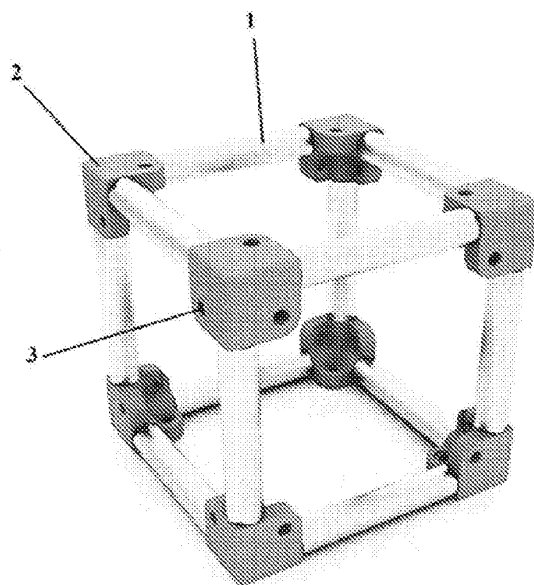
40 3. Элемент по п. 2, отличающийся тем, что угловые элементы выполнены из стеклонеполненного полиамида.

4. Элемент по п. 1 или 2, или 3, отличающийся тем, что трубчатые элементы выполнены из алюминия.

45

1

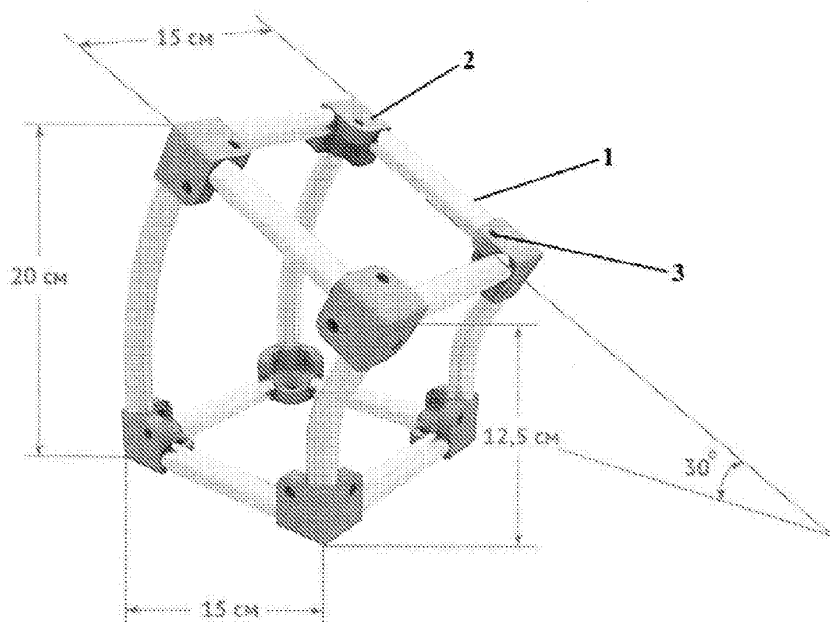
Элемент пространственной рекламной конструкции



Фиг. 1

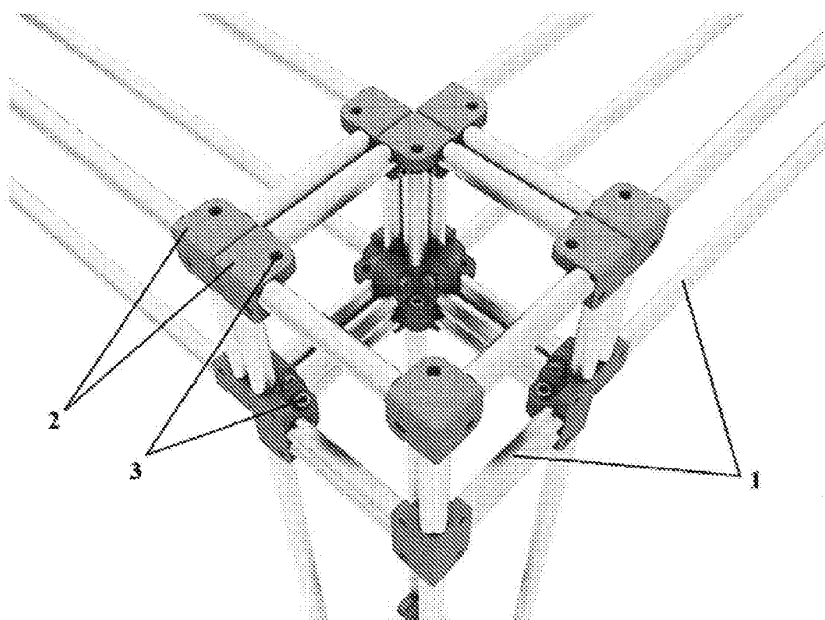
2

Элемент пространственной рекламной конструкции



Фиг. 2

Элемент пространственной рекламной конструкции



Фиг. 3

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.: 16/220,484

Confirmation No.: 3890

Inventor(s) Hua Hsiang Lin et al.

Filed: December 14, 2018

Title: JOINT FOR ABOVE GROUND
POOL FRAME

Art Unit: 3754

Examiner: Lauren Ashley Crane

Atty. Docket No.: IRC-0042-02-US

Customer No. 27268

AMENDMENT AFTER FINAL

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Commissioner:

In response to the Final Office Action of November 6, 2020 (hereinafter the “Office Action”), which had a period for response that expired on February 6, 2021, which period has been extended by one (1) month to March 8, 2021, please amend the above-identified application as follows:

Amendments to the Claims are reflected in the Listing of Claims which begins on page 2 of this paper.

Remarks begin on page 6 of this paper.

Applicant submits herewith a Request for Continued Examination pursuant to 37 C.F.R. § 1.114.

AMENDMENTS TO THE CLAIMS

Please amend the claims as set forth below. This Listing of Claims will replace all prior versions and listings of claims in the application.

Listing of Claims

1. (Currently Amended) A frame joint for an above ground pool frame having a first horizontal frame member, a second horizontal frame member, and a vertical frame member, the frame joint comprising:

a first horizontal joint portion including a first coupling assembly configured to couple with the first horizontal frame member;

a second horizontal joint portion including a second coupling assembly configured to couple with the second horizontal frame member; and

a vertical joint portion fixedly coupled to the first and second horizontal joint portions and configured to couple with the vertical frame member;

a liner wrapped around the first and second horizontal frame members, the liner defining a hole that is sized to expose the first and second coupling assemblies;

wherein a width of the vertical joint portion accounts for at least 50% of a width between the first and second coupling assemblies of the first and second horizontal joint portions.

2. (Original) The frame joint of claim 1, wherein the width of the vertical joint portion accounts for at least 40% of a total width of the frame joint.

3. (Original) The frame joint of claim 2, wherein the width of the vertical joint portion accounts for about 50% of the total width of the frame joint.

4. (Original) The frame joint of claim 1, wherein each of the first and second coupling assemblies comprises a base, a helical spring supported by the base, and a pin biased outward through a hole in the respective horizontal joint portion by the helical spring to engage a corresponding recess of the respective horizontal frame member.

5. (Original) The frame joint of claim 4, wherein the width of the vertical joint portion accounts for about 70% of a width between the pins of the first and second coupling assemblies.
6. (Canceled)
7. (Currently Amended) The frame joint of claim 1[[6]], wherein a width of the frame joint exceeds a width of the hole in the liner.
8. (Currently Amended) The frame joint of claim 1[[6]], wherein a height of the frame joint exceeds a height of the hole in the liner.
9. (Previously Presented) The frame joint of claim 1, wherein:
the first horizontal joint portion is constructed of plastic;
the second horizontal joint portion is constructed of plastic; and
the vertical joint portion is being constructed of plastic.
10. (Previously Presented) The frame joint of claim 1, wherein the vertical joint portion is centered between the first and second horizontal joint portions to form a T-shaped frame joint.
11. (Previously Presented) The frame joint of claim 1, wherein the first and second horizontal joint portions cooperate to form an obtuse angle.
12. (Previously Presented) The frame joint of claim 1, wherein the vertical joint portion is integrally formed with the first and second horizontal joint portions as a single piece.
13. (Canceled)
14. (Currently Amended) A method of assembling an above ground pool the method comprising:
coupling a first horizontal joint portion of a frame joint to a first horizontal frame member with a first coupling assembly;

coupling a second horizontal joint portion of the frame joint to a second horizontal frame member with a second coupling assembly; [[and]]

coupling a vertical joint portion of the frame joint to a vertical frame member; and wrapping a liner around the first and second horizontal frame members with a hole exposing the first and second coupling assemblies;

wherein a width of the vertical joint portion accounts for a majority of a width between the first and second coupling assemblies of the first and second horizontal joint portions.

15. (Original) The method of claim 14, wherein:

an external cross-section of the first horizontal joint portion matches an internal cross-section of the first horizontal frame member;

an external cross-section of the second horizontal joint portion matches an internal cross-section of the second horizontal frame member; and

an external cross-section of the vertical joint portion matches an internal cross-section of the vertical frame member.

16. (Original) The method of claim 14, wherein the first horizontal joint portion, the second horizontal joint portion, and the vertical joint portion are constructed of plastic.

17. (Original) The method of claim 14, wherein:

coupling the first horizontal joint portion to the first horizontal frame member comprises depressing a first pin into the first horizontal joint portion and releasing the first pin into engagement with the first horizontal frame member; and

coupling the second horizontal joint portion to the second horizontal frame member comprises depressing a second pin into the second horizontal joint portion and releasing the second pin into engagement with the second horizontal frame member.

18. (Canceled)

19. (Currently Amended) The method of claim 14[[18]], wherein a width of the hole in the liner exceeds a width between the first and second coupling assemblies.

20. (Currently Amended) The method of claim 14[[18]], wherein the vertical joint portion of the frame joint is coupled to the vertical frame member with a third coupling assembly, and wherein a height of the hole in the liner is less than a distance between the first and third coupling assemblies.

21. (Previously Presented) The frame joint of claim 1, wherein the vertical joint portion includes at least one internal vertical reinforcing rib.

22. (Previously Presented) The frame joint of claim 1, wherein at least one of the first horizontal joint portion and the second horizontal joint portion includes an internal horizontal reinforcing rib.

23. (Previously Presented) The frame joint of claim 1, wherein at least one of the first horizontal joint portion and the second horizontal joint portion includes an internal horizontal support member.

REMARKS

Claims 1-5, 7-12, 14-17, and 19-23 are pending in the application, wherein claims 1 and 14 are presented in independent form. All of the pending claims stand rejected. With entry of this amendment, claims 1 and 14 are amended to include the limitations of previously pending claims 6 and 18, respectively. Claims 6 and 18 have been correspondingly canceled. Claims 7, 8, 19, and 20, have been amended to correct dependency. No new matter has been introduced by amendment. Entry of the amendments is respectfully requested.

Claim Rejections – 35 U.S.C. § 102

Claims 14, 15, 17, and 19 stand rejected under 35 U.S.C. § 102 as being anticipated by U.S. Publication No. 2002/0042948 to Lee (hereinafter “Lee”).

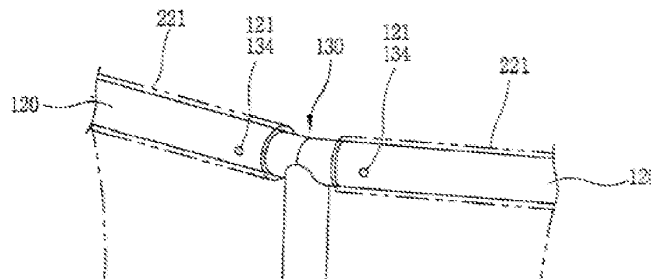
Independent claim 14 recites “...wrapping a liner around the first and second horizontal frame members with a hole exposing the first and second coupling assemblies; wherein a width of the vertical joint portion accounts for a majority of a width between the first and second coupling assemblies of the first and second horizontal joint portions.”

The Office Action cites FIG. 3 of Lee as disclosing “a width of the vertical joint portion accounts for a majority of a width between the first and second coupling assemblies of the first and second horizontal joint portions.” Notably, Lee does not explicitly disclose the measurement of the width of the vertical joint portion relative to the first and second coupling assemblies. Therefore, the Office Action relies on the drawings alone as evidence of actual proportions in rejecting the above limitation of independent claim 14. MPEP § 2125 prohibits such rejections, noting that “[w]hen the reference does not disclose that the drawings are to scale and is silent as to dimensions, arguments based on measurement of the drawing features are of little value.” MPEP § 2125 further specifies that “it is well established that patent drawings do not define the precise proportions of the elements and may not be relied on to show particular sizes if the specification is completely silent on the issue” *citing Hockerson-Halberstadt, Inc. v. Avia Group Int’l*, 222 F.3d 951,956 (Fed. Cir. 2000).

Because the written disclosure of Lee is completely silent on the ratio of the width of the vertical joint portion to the width between the first and second coupling assemblies of the first and second horizontal joint portions and Lee does not explicitly state that the drawings are to

scale, the rejection of the precise proportions of the claimed elements based on FIG. 3 alone is improper. Furthermore, Applicant respectfully submits that FIG. 3 does not disclose that the width of the vertical joint portion accounts for a *majority* of the width between the first and second coupling assemblies.

To advance prosecution, independent claim 14 has further been amended to require “wrapping a liner around the first and second horizontal frame members with a hole exposing the first and second coupling assemblies...” This limitation was previously found in now-cancelled claim 18, also rejected over Lee. The Office action alleges that this limitation is anticipated by FIG. 9 of Lee. For ease of reference, a portion of FIG. 9 is reproduced below.



As illustrated, horizontal frame 120 is inserted into pocket units 221 of a circumferential sidewall of Lee’s pool. An open portion 222 is defined between the pocket units 221, where the T-shaped connector 130 is positioned (see [0085]-[0086] of Lee). The horizontal frame 120 includes a fixing hole 121 to receive a fixing protrusion 134 of the T-shaped connector 130 to couple the T-shaped connector 130 with the horizontal frame 120 (see also [0065] of Lee). The coupling of the fixing protrusion 134 and the fixing hole 121 makes up the coupling assembly of Lee. As shown, the coupling assemblies 121/134 of Lee are not exposed by the liner as required by independent claim 14. Instead, the coupling assemblies 121/134 are covered by respective pocket units 221. As such, FIG. 9 discloses and teaches *the opposite* of what is claimed by independent claim 14. Paragraph [0086] of Lee further supports this point, stating “the open portion 222 is preferably formed in a size to expose only the connection unit 133 of the T-shaped connector 130.” As explained in paragraphs [0063]-[0064], the connection unit 133 is the section of the T-shaped connector 130 between the horizontal units 132 of the connector 130 that defines “the connection position of the horizontal frame 120.” As such, it is respectfully submitted that Lee does not disclose or suggest this limitation of independent claim 14.

For at least the foregoing reasons, it is respectfully submitted that Lee does not disclose each and every limitation of independent claim 14 as presented. Withdrawal of the rejections to independent claim 14 and its dependent claims is respectfully requested.

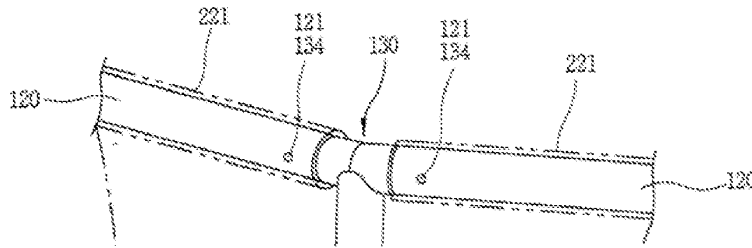
Claim Rejections – 35 U.S.C. § 103

Claims 1-3 and 5-8 stand rejected under 35 U.S.C. § 103 as being obvious over Lee.

Independent claim 1 recites “...a liner wrapped around the first and second horizontal frame members, the liner defining a hole that is sized to expose the first and second coupling assemblies; wherein a width of the vertical joint portion accounts for at least 50% of a width between the first and second coupling assemblies of the first and second horizontal joint portions.”

The Office Action alleges that the width of the vertical joint portion in relation to the width between the first and second coupling assemblies is a matter of “mere design consideration” because “Applicant has not disclosed [that the limitation] solves any stated problem or is for any particular purpose.” Applicant respectfully submits, however, that such stated problem and solution was provided in the Response filed on August 17, 2020. Specifically, as explained in published paragraphs [0023]-[0024] of the present application, the claimed width relationships allow the adjacent hole 82 in the pool liner 8 to be “minimized” to reduce water leakage from the pool, especially when waves form in the pool and cause the water line to rise above the holes 82 at the sidewalls, while also providing easy access to the coupling assemblies for easy disassembly, as further clarified with the amendments to independent claim 1 and further discussed below. It is further submitted that the rejection to independent claim 1 is similar to the rejection to independent claim 14; as such, the arguments presented above in relation to independent claim 14 further applies to independent claim 1 as presented.

To advance prosecution, independent claim 1 has further been amended to require “a liner wrapped around the first and second horizontal frame members, the liner defining a hole that is sized to expose the first and second coupling assemblies...” This limitation was previously found in now-cancelled claim 6, also rejected over Lee. The Office action alleges that this limitation is disclosed by FIG. 1 of Lee. It is respectfully submitted that FIG. 1 does not illustrate the coupling assemblies of Lee in relation to the liner. As such, FIG. 2, a close-up view of FIG. 1, is reproduced below.



As illustrated, horizontal frame 120 is inserted into pocket units 221 of a circumferential sidewall of Lee's pool. An open portion 222 is defined between the pocket units 221, where the T-shaped connector 130 is positioned (see [0085]-[0086] of Lee). The horizontal frame 120 includes a fixing hole 121 to receive a fixing protrusion 134 of the T-shaped connector 130 to couple the T-shaped connector 130 with the horizontal frame 120 (see also [0065] of Lee). The coupling of the fixing protrusion 134 and the fixing hole 121 makes up the coupling assembly of Lee. As shown, the coupling assemblies 121/134 of Lee are not exposed by the liner as required by independent claim 1. Instead, the coupling assemblies 121/134 are covered by respective pocket units 221. As such, FIG. 2 discloses and teaches *the opposite* of what is claimed by independent claim 14. Paragraph [0086] of Lee further supports this point, stating "the open portion 222 is preferably formed in a size to expose only the connection unit 133 of the T-shaped connector 130." As explained in paragraphs [0063]-[0064], the connection unit 133 is the section of the T-shaped connector 130 between the horizontal units 132 of the connector 130 that defines "the connection position of the horizontal frame 120." As such, it is respectfully submitted that Lee does not disclose this limitation of independent claim 1.

For at least the foregoing reasons, it is respectfully submitted that Lee does not disclose or suggest the limitations of independent claim 1 as presented. Withdrawal of the rejections to independent claim 1 and its dependent claims is respectfully requested.

Claims 9-12 and 16 stand rejected under 35 U.S.C. § 103 as being obvious over Lee in view of U.S. Publication No. 2014/0325751 to Hake (hereinafter "Hake"). Claims 9-12 and 16 depend from independent claims 1 and 14 respectively. For at least the reasons presented above in relation to independent claims 1 and 14, it is respectfully submitted that Lee fails to disclose or teach the limitations of claims 9-12 and 16 and Hake fails to cure the deficiencies of Lee. Withdrawal of the rejections is respectfully requested.

Claim 4 stands rejected under 35 U.S.C. § 103 as being obvious over Lee in view of U.S. Patent No. 6,079,894 to Obitts (hereinafter “Obitts”). Claim 4 depends from independent claim 1. For at least the reasons presented above in relation to independent claim 1, it is respectfully submitted that Lee fails to disclose or teach the limitations of claim 4 and Obitts fails to cure the deficiencies of Lee. Withdrawal of the rejection is respectfully requested.

Claim 20 stands rejected under 35 U.S.C. § 103 as being obvious over Lee in view of U.S. Publication No. 2004/0118844 to Bennett (hereinafter “Bennett”). Claim 20 depends from claim 14. For at least the reasons presented above in relation to independent claim 14, it is respectfully submitted that Lee fails to disclose or teach the limitations of claim 20 and Bennett fails to cure the deficiencies of Lee. Withdrawal of the rejection is respectfully requested.

Claims 21-22 stand rejected under 35 U.S.C. § 103 as being obvious over Lee in view of U.S. Publication No. 2017/0356206 to Huang (hereinafter “Huang”). Claims 21 and 22 depend from independent claim 1. For at least the reasons presented above in relation to independent claim 1, it is respectfully submitted that Lee fails to disclose or teach the limitations of claims 21 and 22 and Huang fails to cure the deficiencies of Lee. Withdrawal of the rejections is respectfully requested.

Claim 23 stand rejected under 35 U.S.C. § 103 as being obvious over Lee in view of U.S. Patent No. 5,143,476 to Pruis (hereinafter “Pruis”). Claim 23 depends from independent claim 1. For at least the reasons presented above in relation to independent claim 1, it is respectfully submitted that Lee fails to disclose or teach the limitations of claim 23 and Pruis fails to cure the deficiencies of Lee. Withdrawal of the rejection is respectfully requested.

Supplemental Information Disclosure Statement

Applicant submits herewith a Supplemental Information Disclosure Statement and respectfully requests consideration of the references cited therein.

Final Remarks

Applicant respectfully submits that claims 1-5, 7-12, 14-17, and 19-23 are in condition for allowance. Such action is earnestly solicited.

In the event Applicant has overlooked the need for an extension of time or payment of fee, Applicant hereby petitions therefor and authorizes that any charges be made to Deposit

Application No. 16/220,484

Account No. 02-0390, Faegre Drinker Biddle & Reath LLP.

If any questions concerning this application should arise, the Examiner is encouraged to telephone the undersigned at 317-237-1130.

Respectfully submitted,

/Alyssa R. Eckerley/

Alyssa R. Eckerley
Registration No. 74,511

Attorney for Applicant

Faegre Drinker Biddle & Reath LLP
300 North Meridian Street, Suite 2500
Indianapolis, Indiana 46204
Telephone: 317-237-1361
Facsimile: 317-237-1000

Date: March 8, 2021

Electronic Patent Application Fee Transmittal				
Application Number:		16220484		
Filing Date:		14-Dec-2018		
Title of Invention:		JOINT FOR ABOVE GROUND POOL FRAME		
First Named Inventor/Applicant Name:		Hua Hsiang Lin, deceased		
Filer:		Alyssa Rynanne Eckerley/Melissa Russell		
Attorney Docket Number:		IRC-0042-02-US		
Filed as Large Entity				
Filing Fees for U.S. National Stage under 35 USC 371				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension - 1 month with \$0 paid	1251	1	220	220
Miscellaneous:				
RCE- 1ST REQUEST	1801	1	1360	1360
Total in USD (\$)				1580

Electronic Acknowledgement Receipt	
EFS ID:	42120036
Application Number:	16220484
International Application Number:	
Confirmation Number:	3890
Title of Invention:	JOINT FOR ABOVE GROUND POOL FRAME
First Named Inventor/Applicant Name:	Hua Hsiang Lin, deceased
Customer Number:	27268
Filer:	Alyssa Rianne Eckerley/Melissa Russell
Filer Authorized By:	Alyssa Rianne Eckerley
Attorney Docket Number:	IRC-0042-02-US
Receipt Date:	08-MAR-2021
Filing Date:	14-DEC-2018
Time Stamp:	17:42:19
Application Type:	U.S. National Stage under 35 USC 371

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	\$1580
RAM confirmation Number	E202138H42322622
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Request for Continued Examination (RCE)	IRC_0042_02_US_RCE.pdf	1349991	no	3
			536f6b15bc7564a5b7cef591319d1506a256999a		
Warnings:					
Information:					
2	Extension of Time	IRC_0042_02_US_EOT.pdf	165730	no	2
			a3ceb5c3a994ddbdcce59106dea62576ad148c78d		
Warnings:					
Information:					
3	Information Disclosure Statement (IDS) Form (SB08)	IRC_0042_02_US_IDS.pdf	1053327	no	4
			ce9e9a398890786591b4390ce5e2651c3a57b911		
Warnings:					
Information:					
A U.S. Patent Number Citation or a U.S. Publication Number Citation is required in the Information Disclosure Statement (IDS) form for autoloading of data into USPTO systems. You may remove the form to add the required data in order to correct the Informational Message if you are citing U.S. References. If you chose not to include U.S. References, the image of the form will be processed and be made available within the Image File Wrapper (IFW) system. However, no data will be extracted from this form. Any additional data such as Foreign Patent Documents or Non Patent Literature will be manually reviewed and keyed into USPTO systems.					
4	Foreign Reference	1_RU9029U1_1189692.pdf	282049	no	8
			007c1ba89bc887598a2e17454672c8a174e45394		
Warnings:					
Information:					
5	Foreign Reference	2_RU178000U1_1189691.pdf	443868	no	8
			0dfa7d087b638e85de944847057e46a4843fca89		
Warnings:					
Information:					

6		IRC_0042_02_US_Amendment.pdf	182916 12e2e52aa51e2ff9ae06377fa2f2d5b9e9dcf758	yes	11
Multipart Description/PDF files in .zip description					
	Document Description	Start	End		
	Response After Final Action	1	1		
	Claims	2	5		
	Applicant Arguments/Remarks Made in an Amendment	6	11		
Warnings:					
Information:					
7	Fee Worksheet (SB06)	fee-info.pdf	32667 bfc16ccaaabf520138537db69e0029eb6aa692bf	no	2
Warnings:					
Information:					
Total Files Size (in bytes):			3510548		
<p>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</p> <p><u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p>					



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/220,484	12/14/2018	Hua Hsiang Lin, deceased	IRC-0042-02-US	3890
27268	7590	04/09/2021	EXAMINER	
FAEGRE DRINKER BIDDLE & REATH LLP			CRANE, LAUREN ASHLEY	
300 NORTH MERIDIAN STREET				
SUITE 2500				
INDIANAPOLIS, IN 46204				
			ART UNIT	PAPER NUMBER
			3754	
			NOTIFICATION DATE	DELIVERY MODE
			04/09/2021	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

intear@faegredrinker.com

Notice of Pre-AIA or AIA Status

1. The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/8/2021 has been entered.

Claim Rejections - 35 USC § 103

1. In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

2. The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3, 5, 7-12, 14-17, 16 is/are rejected under 35 U.S.C. 103 as being unpatentable over Lee (US Patent Publication 2002/0042948) in view of Hake (US Patent 2014/0325751).

4. Regarding claim 1, Lee shows A frame joint for an above ground pool frame having a first horizontal frame member (120), a second horizontal frame member (120), and a vertical frame member (110), the frame joint comprising: a first horizontal joint portion (132) including a first coupling assembly (134) configured to couple with the first horizontal frame member; a second horizontal joint portion (132) including a second coupling assembly (134) configured to couple with the second horizontal frame member; and a vertical joint portion (131) fixedly coupled to the first and second horizontal joint portions and configured to couple with the vertical frame member (11); Lee is silent regarding the percentage the width of the vertical joint portion accounts for the width between the first and second coupling assemblies of the first and second horizontal joint portions and a liner wrapped around the first and second horizontal frame members, the liner defining a hole that is sized to expose the first and second coupling assemblies. Instead, Lee discloses that the vertical joint portion does account for a portion of the width between the first and second coupling assemblies of the first and second horizontal joint portions. Applicant has not disclosed that having the width of the vertical joint portion accounting for a portion of the width between the first and second coupling assemblies solves any stated problem or is for any particular purpose. Moreover, it appears that the width of the vertical joint portion of Lee, or applicant's invention, would perform equally well with the width of the first and second coupling assemblies. Accordingly, it would have been prima facie obvious to one of ordinary skill

in the art at the time the invention was made to have modified Lee such that wherein a width of the vertical joint portion accounts for at least 50% of a width between the first and second coupling assemblies of the first and second horizontal joint portions because such a modification would have been considered a mere design consideration which fails to patentably distinguish over Lee.

5. Hake teaches a plastic receptacle. The device includes a liner (1) wrapped around the first and second horizontal frame members (14), the liner defining a hole (15) that is sized to expose the first and second coupling assemblies (11) (paragraph 51). It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to include a liner wrapped around the first and second horizontal frame members as taught by Hake to the liner as taught by Lee in order to allow the user to easily assemble the pool.

6. Regarding Claim 2, Lee shows the frame joint of claim 1, but is silent regarding the percentage of the width of the vertical joint portion accounts for a portion of the total width of the frame joint. Instead, Lee discloses that the vertical joint portion does account for a portion of total width of the frame joint. Applicant has not disclosed that having the width of the vertical joint portion accounting for a portion of the total width of the frame joint solves any stated problem or is for any particular purpose. Moreover, it appears that the width of the vertical joint portion of Lee, or applicant's invention, would perform equally well with the width of the frame joint. Accordingly, it would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to have modified Lee such that wherein the width of the vertical joint portion accounts for at least 40% of a total width of the frame joint because such a modification would

have been considered a mere design consideration which fails to patentably distinguish over Lee.

7. Regarding Claim 3, Lee shows the frame joint of claim 1, but is silent regarding the percentage of the width of the vertical joint portion accounts for a portion of the total width of the frame joint. Instead, Lee discloses that the vertical joint portion does account for a portion of total width of the frame joint. Applicant has not disclosed that having the width of the vertical joint portion accounting for a portion of the total width of the frame joint solves any stated problem or is for any particular purpose. Moreover, it appears that the width of the vertical joint portion of Lee, or applicant's invention, would perform equally well with the width of the frame joint. Accordingly, it would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to have modified Lee such that wherein the width of the vertical joint portion accounts for about 50% of a total width of the frame joint because such a modification would have been considered a mere design consideration which fails to patentably distinguish over Lee.

8. Regarding Claim 5, Lee shows the frame joint of claim 4, but is silent regarding the percentage the width of the vertical joint portion accounts for the width between the pins of the first and second coupling assemblies. Instead, Lee discloses that the vertical joint portion does account for a portion of the width between the pins of the first and second coupling assemblies. Applicant has not disclosed that having the width of the vertical joint portion accounting for a portion of the width between the pins of the first and second coupling assemblies solves any stated problem or is for any particular purpose. Moreover, it appears that the width of the vertical joint portion of Lee, or

applicant's invention, would perform equally well with the width between the pins of the first and second coupling assemblies. Accordingly, it would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to have modified Lee such that wherein the width of the vertical joint portion accounts for about 70% of a width between the pins of the first and second coupling assemblies because such a modification would have been considered a mere design consideration which fails to patentably distinguish over Lee.

9. Regarding Claims 7, Lee shows the frame joint of claim 1, A width of the frame joint exceeds a width of the hole in the liner, Fig.9.

10. Regarding Claims 8, Lee shows the frame joint of claim 1, A height of the frame joint exceeds a height of the hole in the liner, Fig.9.

11.

12. Regarding Claim 9, Lee shows the frame joint of claim 1 , but fails to show the first horizontal joint portion, the second horizontal joint portion and the vertical joint portion being constructed of plastic. Hake teaches a container. The container is constructed is plastic (paragraph 22). It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to a frame constructed of plastic in order to prevent the frame from deteriorating.

13. Regarding Claims 10, Lee shows the frame joint of claim 9, wherein the vertical joint portion is centered between the first and second horizontal joint portions to form a T-shaped frame joint, Fig.3.

14. Regarding Claims 11, Lee shows the frame joint of claim 9, The first and second horizontal joint portions cooperate to form an obtuse angle, Fig.3.

15. Regarding Claims 12, Lee shows the frame joint of claim 9, The vertical joint portion is integrally formed with the first and second horizontal joint portions as a single piece, Fig.3.

16. Regarding Claim 14, Lee shows a method of assembling an above ground pool, the method comprising: coupling a first horizontal joint portion (132) of a frame joint to a first horizontal frame member (120) with a first coupling assembly (134); coupling a second horizontal joint portion (120) of the frame joint to a second horizontal frame member (120) with a second coupling assembly (134); and coupling a vertical joint portion (131) of the frame joint to a vertical frame member (110); wherein a width of the vertical joint portion accounts for a majority of a width between the first and second coupling assemblies of the first and second horizontal joint portions, Fig.3.

17. Lee fails to show wrapping a liner around the first and second horizontal frame.

18. Hake teaches a plastic receptacle. The device includes a step of wrapping a liner (1) around the first and second horizontal frame members (14) with a hole (15) exposing the first and second coupling assemblies (11) (paragraph 51).

19. It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to include a step of wrapping a liner around the first and second horizontal frame members as taught by Hake to the liner as taught by Lee in order to allow the user to easily assemble the pool.

20. Regarding Claim 15, Lee shows the method of claim 14, wherein: an external cross-section of the first horizontal joint portion matches an internal cross- section of the first horizontal frame member which are both circular; an external cross-section of the second horizontal joint portion matches an internal cross- section of the second

horizontal frame member which are both circular; and an external cross-section of the vertical joint portion matches an internal cross-section of the vertical frame member which are both circular, Fig.3.

21. Regarding Claim 16, Lee shows the method of claim 14, but fails to show the first horizontal joint portion, the second horizontal joint portion, and the vertical joint portion are constructed of plastic. Hake teaches a container. The container is constructed is plastic (paragraph 22). It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to a frame constructed of plastic in order to prevent the frame from deteriorating.

22.

23. Regarding Claim 17, Lee shows the method of claim 14, wherein: coupling the first horizontal joint portion to the first horizontal frame member comprises depressing a first pin into the first horizontal joint portion and releasing the first pin into engagement with the first horizontal frame member; and coupling the second horizontal joint portion to the second horizontal frame member comprises depressing a second pin into the second horizontal joint portion and releasing the second pin into engagement with the second horizontal frame member, Fig.7.

24. Regarding Claim 19, Lee shows the method of claim 14, wherein a width of the hole in the liner exceeds a width between the first and second coupling assemblies, Fig.9.

25.

26. Claim 4 is/are rejected under 35 U.S.C. 103 as being unpatentable over Lee (US Patent Publication 2002/0042948) in view of Hake (US Patent 2014/0325751) as

applied to claim 1 above and further in view of Obitts (US Patent 6079894). Lee shows the frame joint of claim 1, but fails to show a helical spring. Obitts teaches a snap button. The device includes wherein each of the first and second coupling assemblies(12,24) comprises a base (158), a helical spring (170) supported by the base (144), and a pin biased outward through a hole (14) in the respective horizontal joint portion by the helical spring to engage a corresponding recess of the respective horizontal frame member. It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to a helical spring in order to ensure the two pieces were securely attached together.

27. Claim 20 is/are rejected under 35 U.S.C. 103 as being unpatentable over Lee (US Patent Publication 2002/0042948) in view of Hake (US Patent 2014/0325751) as applied to claim 14 above and further in view of Bennett et al (US Patent Publication 2004/0118844 herein after Bennett). Lee shows the method of claim 14, and further shows wherein the vertical joint portion (131) of the frame joint is coupled to the vertical frame member (110), and wherein a height of the hole in the liner is less than a distance between the first and third coupling assemblies, Fig.2. Lee fails to show a third coupling assembly. Bennett teaches a fluid storage tank. The device includes a frame having a vertical frame member (120) with a third coupling assembly. It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to a third coupling assembly in order to ensure the vertical frame member was securely attached to the frame.

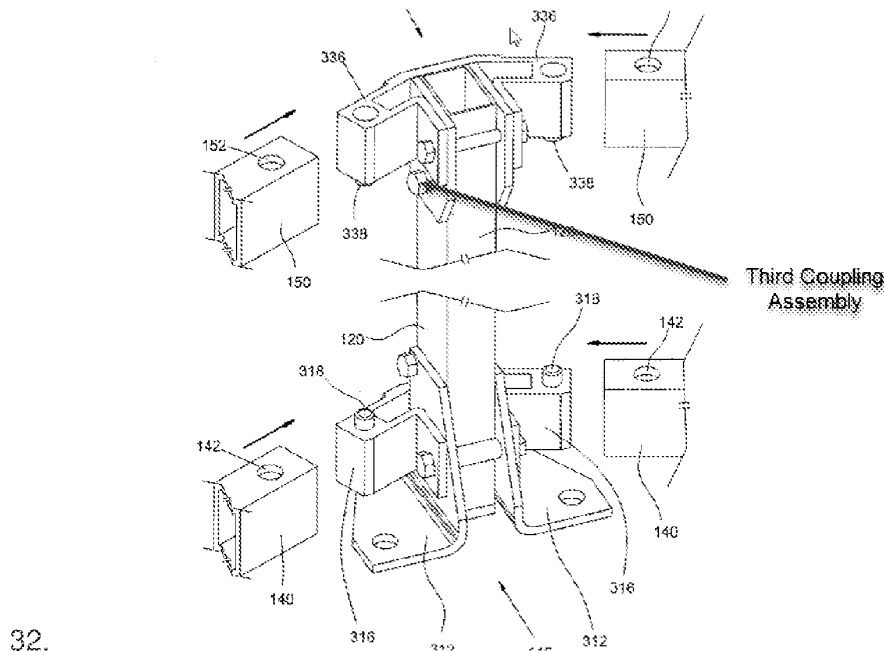
28. Claims 21-22 is/are rejected under 35 U.S.C. 103 as being unpatentable over Lee (US Patent Publication 2002/0042948) in view of Hake (US Patent 2014/0325751) as applied to claim 1 above and further in view Huang (US Patent 20170356206).

29. Regarding Claim 21, Lee shows the frame joint of claim 1, but fails to show wherein the vertical joint portion (32) includes at least one internal vertical reinforcing rib. Huang teaches a pool frame. A vertical joint portion (32) includes at least one internal vertical reinforcing rib (50). It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to an internal vertical reinforcing rib in order to add structural support to the joint.

30. Regarding Claim 22, Lee shows the frame joint of claim 1, but fails to show at least one of the first horizontal joint portion and the second horizontal joint portion includes an internal horizontal reinforcing rib. Huang teaches a pool frame. At least one of the first horizontal joint portion (31) and the second horizontal joint portion (31) includes an internal horizontal reinforcing rib (50). It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to an internal horizontal reinforcing rib in order to add structural support to the joint.

31. Claims 23 is/are rejected under 35 U.S.C. 103 as being unpatentable over Lee (US Patent 20020042948) in view of Pruis (US Patent 5,143,476). Lee shows the frame joint of claim 1, but fails to show wherein at least one of the first horizontal joint portion and the second horizontal joint portion includes an internal horizontal support member. Pruis teaches a pool frame. The frame includes at least one of the first horizontal joint portion (18) and the second horizontal joint portion includes an internal horizontal support member (26). It would have been obvious to one having ordinary skill in the art

before the effective filing date of the claimed invention to internal horizontal support member in order to add structural support to the joint.

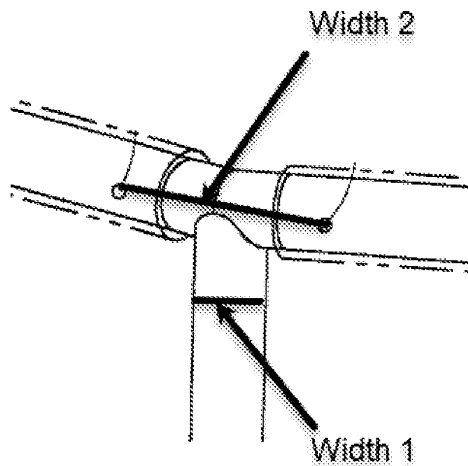


Response to Arguments

1. Applicant's arguments filed 3/8/2021 have been fully considered but they are not persuasive.
2. Applicants arguments directed toward the new limitations have been addressed in the action above.
3. Applicant argues that Lee fails to show a width of the vertical joint portion account for at least 50%, at least 40%, or about 50% of a width between first and second coupling assemblies. The examiner disagrees. Lee doesn't explicitly state the ratio of widths between the coupling assemblies but does shows a width of the vertical

joint portion account for at least 50%, at least 40%, or about 50% of a width between first and second coupling assemblies, see annotated figure below.

4. Applicant argues that Lee fails to show a width of the vertical joint portion account for the majority of a width between first and second coupling assemblies. The examiner disagrees. Lee shows a width of the vertical joint portion account for the majority of a width between first and second coupling assemblies, see annotated figure below.



Conclusion

2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAUREN ASHLEY CRANE whose telephone number is (571)270-5198. The examiner can normally be reached on Mondays & Tuesdays 8 am - 4pm.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at <http://www.uspto.gov/interviewpractice>.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Angwin can be reached on 571-270-3735. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <https://ppair-my.uspto.gov/pair/PrivatePair>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

**/LAUREN A CRANE/
Primary Examiner, Art Unit 3754**

<i>Search Notes</i> 	Application/Control No. 16/220,484	Applicant(s)/Patent Under Reexamination Lin, deceased et al.
	Examiner LAUREN A CRANE	Art Unit 3754

CPC - Searched*		
Symbol	Date	Examiner
F16B7/17	04/14/2020	LC
E04H4/0056	11/03/2020	LC

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner
4	654	04/14/2020	LC
4	506	11/03/2020	

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner
Text search of F16B7/14	11/03/2020	LC
Forward backward search of tagged art	11/03/2020	LC
Search of Tagged Art	04/06/2021	LC

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner

/LAUREN A CRANE/ Primary Examiner, Art Unit 3754	
---	--

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S33	2	("20020042948").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2021/04/05 14:24
S34	3	((("20020042948") or ("20140325751"))).PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2021/04/05 14:40
S35	8	((("20020042948") or ("20140325751") or ("6079894") or ("20040118844"))).PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2021/04/05 14:41
S36	10	((("20020042948") or ("20140325751") or ("6079894") or ("20040118844") or ("5,143,476"))).PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2021/04/05 14:43
L1	136	(4/246.3).CCLS.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2021/04/06 09:55

EAST Search History (Interference)

<This search history is empty>

4/6/2021 9:55:40 AM

C:\Users\lheitzer\Documents\EAST\Workspaces\16220484.wsp

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16220484
	Filing Date	2018-12-14
	First Named Inventor	Hua Hsiang Lin
	Art Unit	3754
	Examiner Name	CRANE, LAUREN ASHLEY
	Attorney Docket Number	IRC-0042-02-US

U.S. PATENTS							Remove	
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1							
If you wish to add additional U.S. Patent citation information please click the Add button.							Add	
U.S. PATENT APPLICATION PUBLICATIONS							Remove	
Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1							
If you wish to add additional U.S. Published Application citation information please click the Add button.							Add	
FOREIGN PATENT DOCUMENTS							Remove	
Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²ⁱ	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	T ⁵
	1	9029	RU	U1	1999-01-16	Limited liability company U.T.M.		×
	2	178000	RU	U1	2018-03-19	Limited liability company PLANETA-NN	English Abstract Submitted	☐
If you wish to add additional Foreign Patent Document citation information please click the Add button.							Add	
NON-PATENT LITERATURE DOCUMENTS							Remove	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		16220484
	Filing Date		2018-12-14
	First Named Inventor	Hua Hsiang Lin	
	Art Unit	3754	
	Examiner Name	CRANE, LAUREN ASHLEY	
	Attorney Docket Number	IRC-0042-02-US	

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T ⁵
	1		

If you wish to add additional non-patent literature document citation information please click the Add button

EXAMINER SIGNATURE

Examiner Signature	/LAUREN A CRANE/	Date Considered	04/05/2021
--------------------	------------------	-----------------	------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16220484
	Filing Date	2018-12-14
	First Named Inventor	Hua Hsiang Lin
	Art Unit	3754
	Examiner Name	CRANE, LAUREN ASHLEY
	Attorney Docket Number	IRC-0042-02-US

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/jamie m. drewry/	Date (YYYY-MM-DD)	2021-03-08
Name/Print	Jamie M. Drewry	Registration Number	61,320

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Doc code: IDS

Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (02-18)

Approved for use through 11/30/2020. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16220484
	Filing Date	2018-12-14
	First Named Inventor	Hua Hsiang Lin
	Art Unit	3754
	Examiner Name	CRANE, LAUREN ASHLEY
	Attorney Docket Number	IRC-0042-02-US

U.S.PATENTS						Remove
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	3877491		1975-04-15	THASTRUP OVE	
	2	D304486		1989-11-07	ELDER et al.	
	3	D343889	S	1994-02-01	STONECYPHER BOBBY B	
	4	D348723	S	1994-07-12	CARROLL RICKY W	
	5	D454940	S	2002-03-26	HOENIG RICHARD	
	6	D580530	S	2008-11-11	MCALPINE JAMES KENNETH	
	7	D755940	S	2016-05-10	SCHULZE MICHAEL	
	8	D770599	S	2016-11-01	DAUGHTERS DANA L	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		16220484	
	Filing Date		2018-12-14	
	First Named Inventor		Hua Hsiang Lin	
	Art Unit		3754	
	Examiner Name		CRANE, LAUREN ASHLEY	
	Attorney Docket Number		IRC-0042-02-US	

	9	D815300	S	2018-04-10	LIN et al.	
	10	D900286	S	2020-10-27	DAUGHTERS DANA L	

If you wish to add additional U.S. Patent citation information please click the Add button.

U.S.PATENT APPLICATION PUBLICATIONS						<input type="button" value="Remove"/>
--	--	--	--	--	--	---------------------------------------

Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20070068584	A1	2007-03-29	MURDOCK et al.	
	2	20080314466	A1	2008-12-25	CIMBERIO et al.	
	3	20150115186	A1	2015-04-30	BORLAND et al.	
	4	20190032796	A1	2019-01-31	DI MONTE MICHAEL ANTHONY	

If you wish to add additional U.S. Published Application citation information please click the Add button.

FOREIGN PATENT DOCUMENTS								<input type="button" value="Remove"/>
---------------------------------	--	--	--	--	--	--	--	---------------------------------------

Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T ⁵
	1	206054469	CN	U	2017-03-29	INTEX IND (XIAMEN) CO LTD	English Abstract Submitted	

If you wish to add additional Foreign Patent Document citation information please click the Add button.

NON-PATENT LITERATURE DOCUMENTS								<input type="button" value="Remove"/>
--	--	--	--	--	--	--	--	---------------------------------------

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		16220484
	Filing Date		2018-12-14
	First Named Inventor	Hua Hsiang Lin	
	Art Unit	3754	
	Examiner Name	CRANE, LAUREN ASHLEY	
	Attorney Docket Number	IRC-0042-02-US	

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T ⁵
	1		

If you wish to add additional non-patent literature document citation information please click the Add button

EXAMINER SIGNATURE

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16220484
	Filing Date	2018-12-14
	First Named Inventor	Hua Hsiang Lin
	Art Unit	3754
	Examiner Name	CRANE, LAUREN ASHLEY
	Attorney Docket Number	IRC-0042-02-US

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Alyssa R Eckerley/	Date (YYYY-MM-DD)	2021-06-29
Name/Print	Alyssa Eckerley	Registration Number	74,511

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Publication Number: CN 206054469 U

Publication Date: Mar 29, 2017

Abstract

The utility model discloses a T venturi tube connects for connect two limit pipes and a foot pipe, including two limit couplings and a foot coupling, two limit couplings and a foot coupling are the injection molding, and integrated into one piece to constitute the T venturi tube connects structure, two limit couplings are adorned respectively and have been met limit pipe elastic pin group, the limit pipe is equipped with the pinhole, and when this limit coupling and limit pipe box connect the cooperation, this limit pipe elastic pin group card was arranged in the pinhole of limit pipe, foot coupling dress has met foot pipe elastic pin group, the foot pipe is equipped with the pinhole, and when this foot coupling and foot pipe box connect the cooperation, this foot pipe elastic pin group card was arranged in the pinhole of foot pipe. The utility model provides a being applicable to the T venturi tube connects in pipe support pond, having reduced the friction between coupling and body, prevented the corrosion of body, prolonged the life of product, easy dismounting is simple to use simultaneously.



(21)申请号 201621039473.3

(22)申请日 2016.09.06

(66)本国优先权数据

201620598406.9 2016.06.17 CN

(73)专利权人 明达实业(厦门)有限公司

地址 361000 福建省厦门市海沧新阳工业
区翁角路858号

(72)发明人 林华乡 许耀元

(74)专利代理机构 厦门市首创君合专利事务所
有限公司 35204

代理人 杨依展

(51)Int.Cl.

F16B 7/08(2006.01)

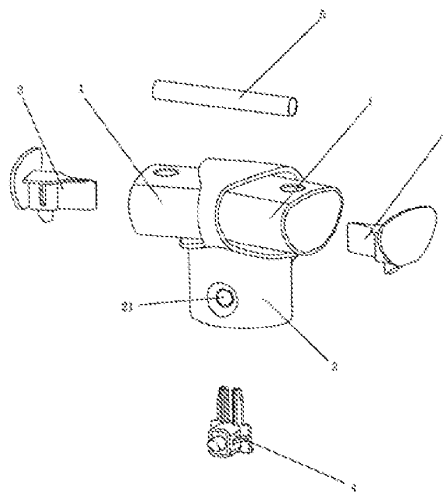
权利要求书1页 说明书3页 附图4页

(54)实用新型名称

一种T形管接头

(57)摘要

本实用新型公开了一种T形管接头,用于连接二个边管和一个脚管,包括二个边管接头和一个脚管接头,所述二个边管接头和一个脚管接头为注塑件,且一体成型,并构成T形管接头结构;所述二个边管接头分别装接有边管弹销组,所述边管设有销孔,在该边管接头与边管套接配合时,该边管弹销组卡置于所述边管的销孔;所述脚管接头装接有脚管弹销组,所述脚管设有销孔,在该脚管接头与脚管套接配合时,该脚管弹销组卡置于所述脚管的销孔。本实用新型提供了一种适用于管架水池的T形管接头,减少了管接头与管体间的摩擦,防止了管体的锈蚀,延长了产品的使用寿命,同时拆装方便,使用简单。



1. 一种T形管接头,用于连接二个边管和一个脚管,其特征在于:包括二个边管接头和一个脚管接头,所述二个边管接头和一个脚管接头为注塑件,且一体成型,并构成T形管接头结构;所述二个边管接头的轴线之间具有一定的夹角。

2. 根据权利要求1所述的一种T形管接头,其特征在于:所述二个边管接头分别装接有边管弹销组,所述边管设有销孔,在该边管接头与边管套接配合时,该边管弹销组卡置于所述边管的销孔;所述脚管接头装接有脚管弹销组,所述脚管设有销孔,在该脚管接头与脚管套接配合时,该脚管弹销组卡置于所述脚管的销孔。

3. 根据权利要求1所述的一种T形管接头,其特征在于:所述边管接头的截面为圆缺形状、圆形、椭圆形或矩形,相应的,所述边管的截面形状与所述边管接头的截面形状相同。

4. 根据权利要求1所述的一种T形管接头,其特征在于:所述脚管接头的截面为圆缺形状、圆形、椭圆形或矩形,相应的,所述脚管的截面形状与所述脚管接头的截面形状相同。

5. 根据权利要求1所述的一种T形管接头,其特征在于:还包括设置于所述脚管接头的纵向加强筋,所述脚管弹销组卡装于该纵向加强筋。

6. 根据权利要求1所述的一种T形管接头,其特征在于:还包括横向加强筋,该横向加强筋贯通所述二个边管接头。

7. 根据权利要求5所述的一种T形管接头,其特征在于:还包括补强管,所述补强管卡装与所述横向加强筋。

8. 根据权利要求1所述的一种T形管接头,其特征在于:所述边管弹销组包括边管弹销座、边管弹簧和边管弹销,所述边管弹销座具有纵向的槽孔,所述边管弹销通过所述边管弹簧装接于所述边管弹销座。

9. 根据权利要求1所述的一种T形管接头,其特征在于:所述脚管弹销组包括脚管弹销座、脚管弹簧和脚管弹销,所述脚管弹销座具有横向的槽孔,所述脚管弹销通过所述边管脚管装接于所述脚管弹销座。

一种T形管接头

技术领域

[0001] 本实用新型涉及一种T形管接头,特别是涉及一种应用于管架水池的T形管接头。

背景技术

[0002] 管架水池是以管体为支架搭建的水池结构,通过若干个边管和脚管搭接构件水池的框架,而后再在水池的框架上固定装接水池布,以形成水池结构。其中,边管和脚管需要通过T形管接头进行固定套接。现有技术中的T形管接头包括一竖直设置的脚管接头和由一段铁质管体弯折形成的二个边管接头。一方面,T形管接头、边管和脚管均为金属材质,装接和运输过程中易发生摩擦和挤压,使表面的镀层受到磨损,产生锈蚀;另一方面,T形管接头的整体尺寸较大,由于水池布绕过边管反折固定时,T形管接头的部分无法被水池布覆盖,形成了较大的反折孔,影响了水池的整体外观。

实用新型内容

[0003] 本实用新型的目的在于克服现有技术之不足,提供一种适用于管架水池的T形管接头,减少了管接头与管体间的摩擦,防止了管体的锈蚀,延长了产品的使用寿命,同时拆装方便,使用简单。

[0004] 本实用新型解决其技术问题所采用的技术方案是:一种T形管接头,用于连接二个边管和一个脚管,其特征在于:包括二个边管接头和一个脚管接头,所述二个边管接头和一个脚管接头为注塑件,且一体成型,并构成T形管接头结构;所述二个边管接头的轴线之间具有一定的夹角。即T形管接头所连接的二个边管具有一定夹角,当若干个边管通过T形管接头串联在一起后,可形成圆环形水池构架。

[0005] 作为一种优选,所述二个边管接头分别装接有边管弹销组,所述边管设有销孔,在该边管接头与边管套接配合时,该边管弹销组卡置于所述边管的销孔;所述脚管接头装接有脚管弹销组,所述脚管设有销孔,在该脚管接头与脚管套接配合时,该脚管弹销组卡置于所述脚管的销孔。

[0006] 作为一种优选,所述边管接头的截面为圆缺形状、圆形、椭圆形或矩形,相应的,所述边管的截面形状与所述边管接头的截面形状相同。

[0007] 作为一种优选,所述脚管接头的截面为圆缺形状、圆形、椭圆形或矩形,相应的,所述脚管的截面形状与所述脚管接头的截面形状相同。

[0008] 作为一种优选,还包括设置于所述脚管接头的纵向加强筋,所述脚管弹销组卡装于该纵向加强筋。

[0009] 作为一种优选,还包括横向加强筋,该横向加强筋贯通所述二个边管接头。

[0010] 作为一种优选,还包括补强管,所述补强管卡装与所述横向加强筋。

[0011] 作为一种优选,所述边管弹销组包括边管弹销座、边管弹簧和边管弹销,所述边管弹销座具有纵向的槽孔,所述边管弹销通过所述边管弹簧装接于所述边管弹销座。

[0012] 作为一种优选,所述脚管弹销组包括脚管弹销座、脚管弹簧和脚管弹销,所述脚管

弹销座具有横向的槽孔,所述脚管弹销通过所述边管脚管装接于所述脚管弹销座。

[0013] 本实用新型的有益效果是:

[0014] 1、本实用新型的T形管接头整体采用注塑成型,与边管和脚管装接在一起时,由于注塑件弹性较好,且质地比金属材质的边管和脚管更软,故不会磨伤边管或脚管的表面涂层,进而使边管和脚管不易发生锈蚀。延长了产品的使用寿命,改善了用户体验。

[0015] 2、本实用新型的T形管接头通过弹销组与边管的销孔或脚管的销孔卡装配合,仅需按下弹销,即可实现边管或脚管的拆装,拆装方便,使用简单。

[0016] 3、本实用新型的T形管接头整体尺寸较小,即无法被水池布覆盖到的部分减小;当水池布绕过边管反折固定时,相邻反折片之间所形成的反折孔较小,使整体外观得到提升。

[0017] 以下结合附图及实施例对本实用新型作进一步详细说明;但本实用新型的一种T形管接头不局限于实施例。

附图说明

[0018] 图1是本实用新型的爆炸示意图;

[0019] 图2是本实用新型的侧面剖视图;

[0020] 图3是本实用新型的配合示意图;

[0021] 图4是本实用新型的安装示意图。

具体实施方式

[0022] 实施例:

[0023] 参见图1至图2所示,本实用新型的一种T形管接头,用于连接二个边管6和一个脚管7,其特征在于:包括二个边管接头1和一个脚管接头2,所述二个边管接头1和一个脚管接头2为注塑件,且一体成型,并构成T形管接头结构;

[0024] 所述二个边管接头1分别装接有边管弹销组3,所述边管6设有销孔,在该边管接头1与边管6套接配合时,该边管弹销组3卡置于所述边管6的销孔;所述脚管接头2装接有脚管弹销组4,所述脚管7设有销孔,在该脚管接头2与脚管7套接配合时,该脚管弹销组4卡置于所述脚管7的销孔。

[0025] 所述边管接头1的截面为圆缺形状、圆形、椭圆形或矩形,相应的,所述边管6的截面形状与所述边管接头1的截面形状相同。

[0026] 所述脚管接头2的截面为圆缺形状、圆形、椭圆形或矩形,相应的,所述脚管7的截面形状与所述脚管接头2的截面形状相同。

[0027] 还包括设置于所述脚管接头2的纵向加强筋21,所述脚管弹销组4卡装于该纵向加强筋21。

[0028] 还包括横向加强筋11,该横向加强筋11贯通所述二个边管接头1。

[0029] 还包括补强管5,所述补强管5卡装与所述横向加强筋11。

[0030] 参见图3所示,所述边管弹销组3包括边管弹销座31、边管弹簧32和边管弹销33,所述边管弹销座31具有纵向的槽孔,所述边管弹销33通过所述边管弹簧32装接于所述边管弹销座31。当边管接头1与边管6相互卡装时,按压所述边管弹销33,并将边管6套接于边管接头1,直到边管弹销33卡置于边管6的销孔中。

[0031] 所述脚管弹销组4包括脚管弹销座41、脚管弹簧42和脚管弹销43,所述脚管弹销座41具有横向的槽孔,所述脚管弹销43通过所述边管6脚管7装接于所述脚管弹销座41。当脚管接头2与脚管7相互卡装时,按压所述脚管弹销43,并将脚管6套接于脚管接头2,直到脚管弹销43卡置于脚管7的销孔中。

[0032] 所述二个边管接头1的轴线之间具有一定夹角。即T形管接头所连接的二个边管6具有一定夹角,当若干个边管6通过T形管接头串联在一起后,可形成圆环形水池构架。

[0033] 参见图4所示,边管接头1与边管6相套接,底管接头2与底管7相套接;通过将水池布8所设置的反折片81翻折固定在所述边管6上,可构成管架水池结构。其中二个相邻的反折片81之间形成一反折孔82。由于边管接头1的长度较短,所以反折孔82尺寸也相应缩小,使整体外观得到改善。

[0034] 上述实施例仅用来进一步说明本实用新型的一种T形管接头,但本实用新型并不局限于实施例,凡是依据本实用新型的技术实质对以上实施例所作的任何简单修改、等同变化与修饰,均落入本实用新型技术方案的保护范围内。

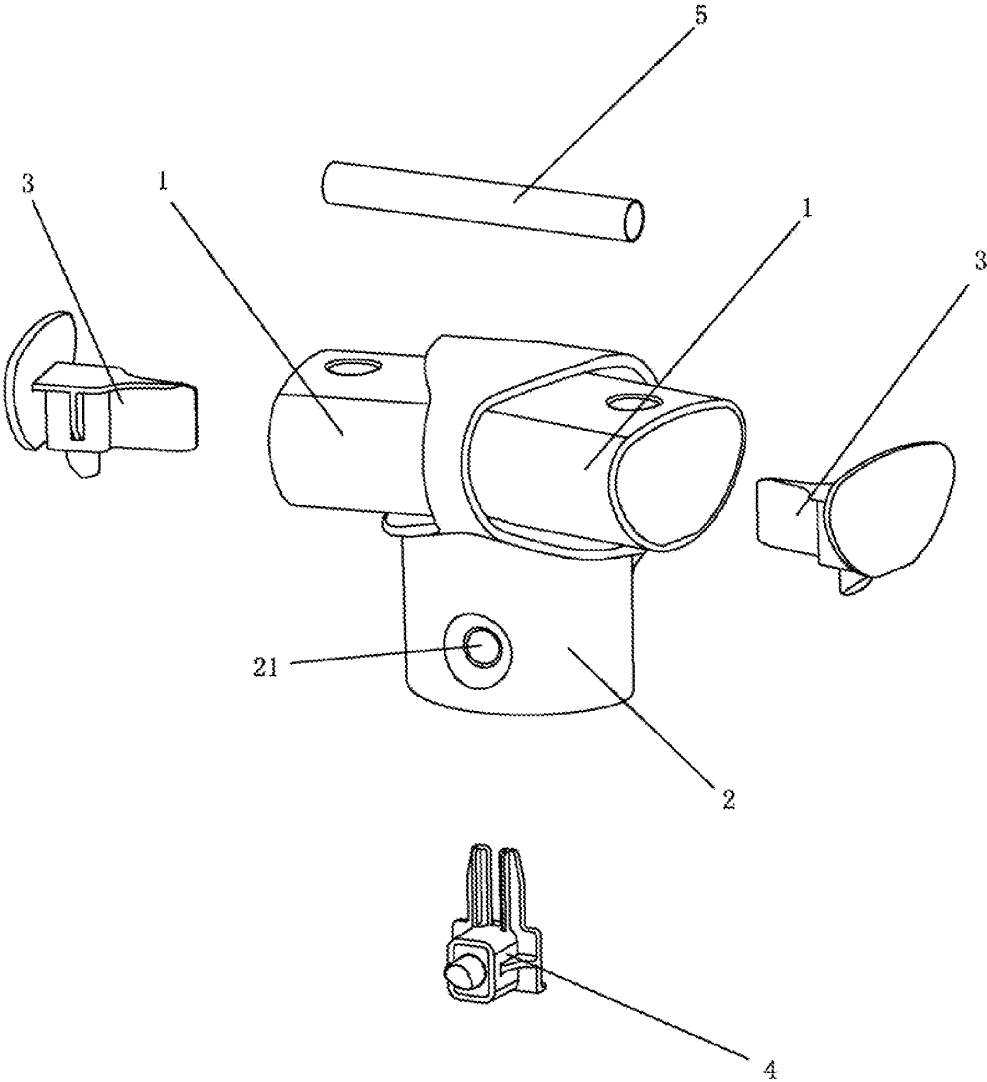
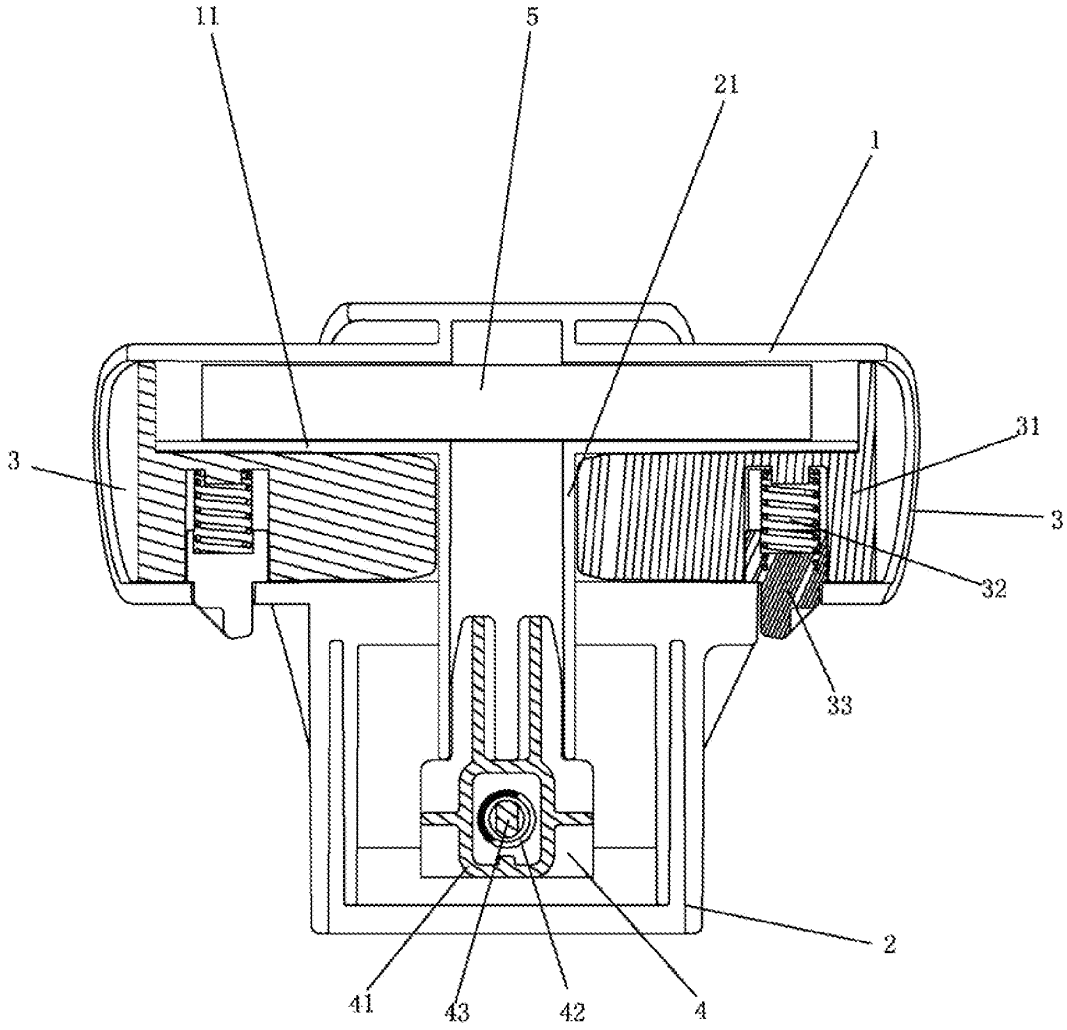


图1



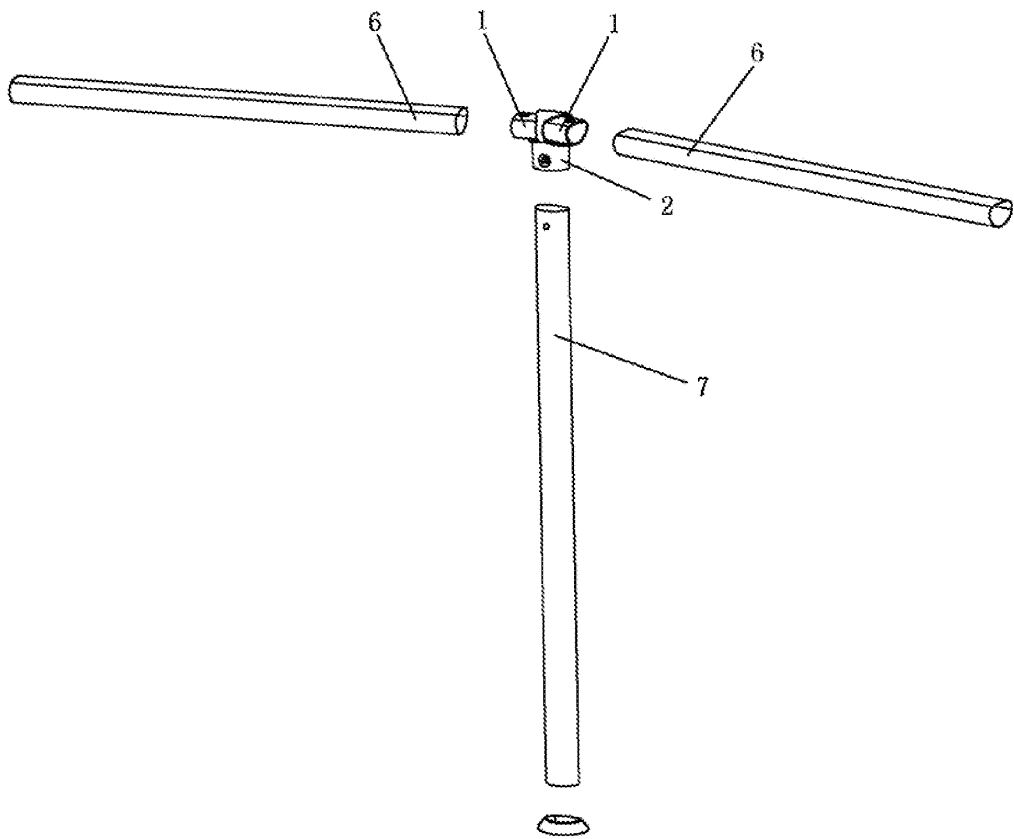


图3

Electronic Acknowledgement Receipt	
EFS ID:	43113739
Application Number:	16220484
International Application Number:	
Confirmation Number:	3890
Title of Invention:	JOINT FOR ABOVE GROUND POOL FRAME
First Named Inventor/Applicant Name:	Hua Hsiang Lin, deceased
Customer Number:	27268
Filer:	Alyssa Rianne Eckerley/Carol Jansen
Filer Authorized By:	Alyssa Rianne Eckerley
Attorney Docket Number:	IRC-0042-02-US
Receipt Date:	29-JUN-2021
Filing Date:	14-DEC-2018
Time Stamp:	13:40:24
Application Type:	U.S. National Stage under 35 USC 371

Payment information:

Submitted with Payment	no
------------------------	----

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	IDS_16220484_1.pdf	1044082	no	5
			dcf75236bccd56fec190ef1c7cb6605e45e1c3f3		

Warnings:

Information:					
2	Foreign Reference	1_CN206054469U_1280201.pdf	516638	no	10
			567ec44fb00e7188cdf6716b36a09599eebc6c4		
Warnings:					
Information:					
Total Files Size (in bytes):			1560720		
<p>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</p> <p><u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p>					

Doc code: IDS

Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (02-18)

Approved for use through 11/30/2020. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16220484
	Filing Date	2018-12-14
	First Named Inventor	Hua Hsiang Lin
	Art Unit	3754
	Examiner Name	CRANE, LAUREN ASHLEY
	Attorney Docket Number	IRC-0042-02-US

U.S. PATENTS							Remove	
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1							
If you wish to add additional U.S. Patent citation information please click the Add button.							Add	
U.S. PATENT APPLICATION PUBLICATIONS							Remove	
Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1							
If you wish to add additional U.S. Published Application citation information please click the Add button.							Add	
FOREIGN PATENT DOCUMENTS							Remove	
Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²ⁱ	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	T ⁵
	1	2195595	CN	Y	1995-04-26	YUAN WENZHANG	English Abstract Submitted	
	2	2480479	CN	Y	2002-03-06	LIAO WEIPING	English Abstract Submitted	
	3	101787807	CN	A	2010-07-28	INVENT2BUILD LTD	English Abstract Submitted	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		16220484	
	Filing Date		2018-12-14	
	First Named Inventor	Hua Hsiang Lin		
	Art Unit	3754		
	Examiner Name	CRANE, LAUREN ASHLEY		
	Attorney Docket Number	IRC-0042-02-US		

	4	202745430	CN	U	2013-02-20	SHANGHAI JILONG PLASTIC PRODUCTS CO LTD	English Abstract Submitted	
	5	204475913	CN	U	2015-07-15	SHANGHAI BESTWAY INFLATABLES & MATERIAL CORP	English Abstract Submitted	
	6	209130364	CN	U	2019-07-19	INTEX IND XIAMEN CO LTD	English Abstract Submitted	
	7	2774416	FR	A1	1999-08-06	TORRENTE IND	English Abstract Submitted	
	8	009029	RU	U1	1999-01-16	Limited Liability Company	English Abstract Submitted	

If you wish to add additional Foreign Patent Document citation information please click the Add button

Add

NON-PATENT LITERATURE DOCUMENTS

Remove

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T ⁵
	1	Best Way https://www.amazon.com/Steel-Pro-Frame-Pool-Set/dp/BOOHZAM07U/ref=sr_1_24?dchild=1&keywords=above+ground+frame+pool&qid=1605540738&sr=8-24 (Year: 2017)	
	2	International Preliminary Report on Patentability received for PCT Patent Application No. PCT/IB2019/057831, mailed on March 25, 2021, 7 pages.	
	3	International Search Report and Written Opinion received for PCT Patent Application No. PCT/IB2019/057831, mailed on December 20, 2019, 9 pages.	
	4	Killife Pool Cart https://www.amazon.com/KITLIFE-Storage-Resistant-Cracking-Included/dp/B08B46LM5N/ (Year: 2018)	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		16220484
	Filing Date		2018-12-14
	First Named Inventor	Hua Hsiang Lin	
	Art Unit	3754	
	Examiner Name	CRANE, LAUREN ASHLEY	
	Attorney Docket Number	IRC-0042-02-US	

	5	Summer https://www.amazon.com/Summer-Waves-Premium-Swimming-Accessory/dp/B07BXC85HG/ (Year: 2018)
If you wish to add additional non-patent literature document citation information please click the Add button <input type="button" value="Add"/>		
EXAMINER SIGNATURE		
Examiner Signature		Date Considered
*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.		
<small> ¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached. </small>		

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16220484
	Filing Date	2018-12-14
	First Named Inventor	Hua Hsiang Lin
	Art Unit	3754
	Examiner Name	CRANE, LAUREN ASHLEY
	Attorney Docket Number	IRC-0042-02-US

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

☒ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/William S. Meyers/	Date (YYYY-MM-DD)	2021-08-04
Name/Print	William S. Meyers	Registration Number	42,884

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

From the INTERNATIONAL BUREAU

PCT

NOTIFICATION CONCERNING
TRANSMITTAL OF COPY OF INTERNATIONAL
PRELIMINARY REPORT ON PATENTABILITY
(CHAPTER I OF THE PATENT COOPERATION TREATY)

(PCT Rule 44bis 1(c))

To:

DREWRY, Jamie M.
Faegre Baker Daniels LLP
300 N. Meridian Street
Suite 2500
Indianapolis, Indiana 46204
ÉTATS-UNIS D'AMÉRIQUE

Date of mailing (<i>day/month/year</i>) 25 March 2021 (25.03.2021)		
Applicant's or agent's file reference IRC-0112-01-WO		IMPORTANT NOTICE
International application No. PCT/IB2019/057831	International filing date (<i>day/month/year</i>) 17 September 2019 (17.09.2019)	Priority date (<i>day/month/year</i>) 17 September 2018 (17.09.2018)
Applicant INTEX INDUSTRIES XIAMEN CO. LTD		

The International Bureau transmits herewith a copy of the international preliminary report on patentability (Chapter I of the Patent Cooperation Treaty)

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer Cécile Chatel e-mail to ib@wipo.int Telephone No. +41 22 338 92 22
---	---

Form PCT/IB/326 (revised January 2020)

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference IRC-0112-01-WO	FOR FURTHER ACTION See item 4 below	
International application No. PCT/IB2019/057831	International filing date (<i>day/month/year</i>) 17 September 2019 (17.09.2019)	Priority date (<i>day/month/year</i>) 17 September 2018 (17.09.2018)
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237		
Applicant INTEX INDUSTRIES XIAMEN CO. LTD		

1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 *bis*. 1(a).
2. This REPORT consists of a total of 6 sheets, including this cover sheet.

In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.

3. This report contains indications relating to the following items:

- | | | |
|-------------------------------------|--------------|---|
| ☒ | Box No. I | Basis of the report |
| ☒ | Box No. II | Priority |
| ☐ | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| ☐ | Box No. IV | Lack of unity of invention |
| ☒ | Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| ☐ | Box No. VI | Certain documents cited |
| ☐ | Box No. VII | Certain defects in the international application |
| ☐ | Box No. VIII | Certain observations on the international application |

4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).

	Date of issuance of this report 09 March 2021 (09.03.2021)
The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer Cécile Chatel e-mail ro_ib@wipo.int

Form PCT/IB/373 (revised January 2020)

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

To: 46204 China Faegre Baker Daniels LLP 300 N.Meridian Street Suite 2500 Indianapolis, Indiana, United States of America DREWRYJamie M.

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Applicant's or agent's file reference IRC-0112-01-WO		Date of mailing (day/month/year) 20 December 2019
FOR FURTHER ACTION See paragraph 2 below		
International application No. PCT/IB2019/057831	International filing date (day/month/year) 17 September 2019	Priority date (day/month/year) 17 September 2018
International Patent Classification (IPC) or both national classification and IPC E04H 4/04(2006.01)i		
Applicant INTEX INDUSTRIES XIAMEN CO.LTD		

1. This opinion contains indications relating to the following items: ☒ Box No. I Basis of the opinion ☒ Box No. II Priority ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability ☐ Box No. IV Lack of unity of invention ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement ☐ Box No. VI Certain documents cited ☐ Box No. VII Certain defects in the international application ☐ Box No. VIII Certain observations on the international application
2. FURTHER ACTION If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered. If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later. For further options, see Form PCT/ISA/220.

Name and mailing address of the ISA/ National Intellectual Property Administration, PRC China 6, Xitucheng Rd., Jimen Bridge, Haidian District, Beijing 100088	Date of completion of this opinion 16 December 2019	Authorized officer Li, Li
Facsimile No. (86—10) 62019451	Telephone No. 86-10-53961160	

Form PCT/ISA/237 (Cover sheet) (January 2015)

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/IB2019/057831

Box No. I

Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of:
 - ☒ the international application in the language in which it was filed.
 - ☐ a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).
2. ☐ This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43*bis*.1(a)).
3. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of a sequence listing:
 - a. ☐ forming part of the international application as filed:
 - ☐ in the form of an Annex C/ST.25 text file.
 - ☐ on paper or in the form of an image file.
 - b. ☐ furnished together with the international application under PCT Rule 13*ter*.1(a) for the purposes of international search only in the form of an Annex C/ST.25 text file.
 - c. ☐ furnished subsequent to the international filing date for the purposes of international search only:
 - ☐ in the form of an Annex C/ST.25 text file (Rule 13*ter*.1(a)).
 - ☐ on paper or in the form of an image file (Rule 13*ter*.1(b) and Administrative Instructions, Section 713).
4. ☐ In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that forming part of the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
5. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/IB2019/057831

Box No. II

Priority

1. ☐ The validity of the priority claim has not been considered because the International Searching Authority does not have in its possession a copy of the earlier application whose priority has been claimed or, where required, a translation of that earlier application. This opinion has nevertheless been established on the assumption that the relevant date (Rules 43*bis*.1 and 64.1) is the claimed priority date.
2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43*bis*.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.
3. Additional observations, if necessary:
 - [1] (1) Regarding to claims 1-2, 4-6, 8, the priority claim of priority document cn201821518351.1 is considered to be valid.
 - [2] (2) Regarding to claims 3, 7, 9-16, 18-20, the priority claim of priority document cn201920498611.1 is considered to be valid.
 - [3] (3) Regarding to claim 17, the priority claim is considered to be invalid, because none of the priority documents explicitly or implicitly disclose the feature 'the multi-piece joint friction-fit to the horizontal frame and the vertical frame without any mechanical fasteners'.

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/IB2019/057831

Box No. V	Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement		
1. Statement			
Novelty (N)	Claims	4-8, 10-11, 14-15, 17, 19	YES
	Claims	1-3, 9, 12-13, 16, 18, 20	NO
Inventive step (IS)	Claims	None	YES
	Claims	1-20	NO
Industrial applicability (IA)	Claims	1-20	YES
	Claims	None	NO
2. Citations and explanations :			
[1] D1: CN2195595Y			
[2] D2: FR2774416A1			
[3] I. Novelty:			
[4] (1) Claim 1 relates to a joint. D1 discloses (see paragraph 2, figures 1, 2): a joint 81 for an above ground pool having a frame assembly 8 and a liner 87 supported by the frame assembly 8, the frame assembly 8 including a first horizontal frame 85, a second horizontal frame 85, and a vertical frame 83, the joint 81 comprising: a first horizontal portion having a continuous outer wall configured to surround a first end of the first horizontal frame 85; a second horizontal portion having a continuous outer wall configured to surround a second end of the second horizontal frame 85; and a vertical portion positioned between the first and second horizontal portions, the vertical portion having a continuous outer wall configured to surround an upper end of the vertical frame 83. The first horizontal portion has an inner circular cross-section; the second horizontal portion has an inner circular cross-section.			
[5] Claim 9 relates to an above ground pool. D1 discloses (see paragraph 2, figures 1, 2): an above ground pool comprising: a frame assembly 8 comprising a first horizontal frame 85, a second horizontal frame 85, a vertical frame 83; and a T-shaped joint 81 friction-fit to the first horizontal frame 85, the second horizontal frame 85, and the vertical frame 83 without any mechanical fasteners; and a liner 87 supported by the frame assembly 8.			
[6] Claim 18 relates to a method of assembling an above ground pool. D1 discloses (see paragraph 2, figures 1, 2): a method of assembling an above ground pool comprising the steps of assembling a frame assembly 8 including a plurality of T-shaped joints 81, the assembling step comprising coupling each joint 81 to first and second horizontal frames 85 without any mechanical fasteners and to an upper end of a vertical frame 83 without any mechanical fasteners; positioning a lower end of the vertical frame 83 on a support surface; and supporting a liner 87 on the frame assembly 8.			
[7] The additional technical features of claims 2, 3, 12, 13, 16, 20 are disclosed by D1.			
[8] Claims 1-3, 9, 12, 13, 16, 18, 20 are not novel, and do not meet the criteria of Article 33(2) PCT.			
[9] (2) Claim 4 differs from D1 in "the vertical portion has an inner elliptical cross-section", each of the claims 5-8, 10-11, 14-15, 17, 19 differs from D1 in its additional technical feature.			
[10] Claims 4-8, 10-11, 14-15, 17, 19 are novel, and meet the criteria of Article 33(2) PCT.			
[11] II. Inventive Step:			
[12] (1) Based on the difference between claim 4 and D1, the technical problem to be solved by the present invention may be regarded as how to prevent the rotation between the vertical portion and the joint. Based on the differences between claims 5, 14 and D1, the technical problems to be solved may be regarded as how to securely assemble the frame. Based on the differences between claims 6, 7, 15 and D1, the technical problems to be solved may be regarded as how to reduce the weight of the frame. Based on the differences between claims 8, 17 and D1, the technical problems to be solved may be regarded as how to easily replace the damaged parts.			

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/IB2019/057831

Box No. V	Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement
------------------	--

- [13] The technical feature "the vertical portion has an inner elliptical cross-section" and the additional technical features of claims 5-8, 14-15, 17 are common knowledge in the art, claims 4-8, 14-15, 17 do not meet the requirements of PCT Article 33(3).
- [14] (2) Based on the differences between claims 10-11, 19 and D1, the technical problems to be solved may be regarded as how to securely fix the frame and the liner.
- [15] D2 discloses (see pages 3-5, figures 1, 2): a liner includes an upper sleeve 4 configured to receive the first and second horizontal frames, the upper sleeve 4 defining a first horizontal area; and a side wall that defines a water cavity 5, the water cavity 5 having a second horizontal area smaller than the first horizontal area. The side wall being located radially inward of the upper sleeve 4. The supporting step comprises inserting the first and second horizontal frames in an upper sleeve 4 of the liner; and positioning a side wall of the liner radially inward of the upper sleeve 4. Therefore, it would be obvious to a person skilled in the art to reach the technical solution in claims 10-11, 19 by combining D1, D2. Claims 10-11, 19 do not involve an inventive step, and do not meet the requirements of PCT Article 33(3).
- [16] III. Industrial applicability:
- [17] Claims 1-20 can be manufactured and used in the technical field of pool and thus meet the requirements of PCT Article 33 (4).

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference IRC-0112-01-WO	FOR FURTHER ACTION <div style="display: flex; justify-content: space-between; font-size: small;"> see Form PCT/ISA/220 as well as, where applicable, item 5 below. </div>	
International application No. PCT/IB2019/057831	International filing date (<i>day/month/year</i>) 17 September 2019	(Earliest) Priority Date (<i>day/month/year</i>) 17 September 2018
Applicant INTEX INDUSTRIES XIAMEN CO.LTD		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 4 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the **language**, the international search was carried out on the basis of:

- ☒ the international application in the language in which it was filed.
☐ a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

b. ☐ This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6bis(a)).

c. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (see Box No. II).

3. ☐ **Unity of invention is lacking** (see Box No. III).

4. With regard to the **title**,

- ☒ the text is approved as submitted by the applicant.
☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

- ☐ the text is approved as submitted by the applicant.
☒ the text has been established, according to Rule 38.2, by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the **drawings**,

- a. the figure of the **drawings** to be published with the abstract is Figure No. 1
☒ as suggested by the applicant.
☐ as selected by this Authority, because the applicant failed to suggest a figure.
☐ as selected by this Authority, because this figure better characterizes the invention.
- b. ☐ none of the figures is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/IB2019/057831**Box No. IV Text of the abstract (Continuation of item 5 of the first sheet)**

An above ground frame pool (10) includes a frame assembly (20) and a liner (40) supported by the frame assembly (20). The frame assembly (20) includes a plurality of horizontal pipes (22), a plurality of vertical pipes (24), and a plurality of T-shaped joints (30). The joints (30) may lack mechanical fasteners with adjacent pipes or corresponding apertures. The joints (30) may be one-piece or multi-piece structures. Such joints (30) maybe water-resistant and convenient to manufacture, assemble, disassemble, and store.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/IB2019/057831

A. CLASSIFICATION OF SUBJECT MATTER		
E04H 4/04(2006.01);		
According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED		
Minimum documentation searched (classification system followed by classification symbols)		
E04H		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)		
CNPAT,WPI,EPODOC,CNKI:pool, frame?, assembl+, pipe?, joint		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
PX	CN 209130364 U (MINGDA XIAMENG CO., LTD.) 19 July 2019 (2019-07-19) the whole document	1-20
X	CN 2195595 Y (Yuan, Wenzhang) 26 April 1995 (1995-04-26) paragraph 2, figures 1, 2	1-9, 12-18, 20
Y	CN 2195595 Y (Yuan, Wenzhang) 26 April 1995 (1995-04-26) paragraph 2, figures 1, 2	10-11, 19
Y	FR 2774416 A1 (TORRENTE IND.) 06 August 1999 (1999-08-06) pages 3-5, figures 1, 2	10-11, 19
A	CN 200968073 Y (MINGDA XIAMENG CO., LTD.) 31 October 2007 (2007-10-31) the whole document	1-20
A	CN 2480479 Y (Liao, Weiping) 06 March 2002 (2002-03-06) the whole document	1-20
A	CN 202745430 U (SHANGHAI JILONG PLASTIC CO., LTD.) 20 February 2013 (2013-02-20) the whole document	1-20
☐ Further documents are listed in the continuation of Box C. ☒ See patent family annex.		
* Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "D" document cited by the applicant in the international application "E" earlier application or patent but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family		
Date of the actual completion of the international search		Date of mailing of the international search report
27 November 2019		20 December 2019
Name and mailing address of the ISA/CN		Authorized officer
National Intellectual Property Administration, PRC 6, Xitucheng Rd., Jimen Bridge, Haidian District, Beijing 100088 China		LI, Li
Facsimile No. (86-10)62019451		Telephone No. 86-10-53961160

Form PCT/ISA/210 (second sheet) (January 2015)

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.

PCT/IB2019/057831

Patent document cited in search report			Publication date (day/month/year)	Patent family member(s)			Publication date (day/month/year)
CN	209130364	U	19 July 2019	None			
CN	2195595	Y	26 April 1995	None			
FR	2774416	A1	06 August 1999	ES	1039479	U	16 December 1998
				DE	19904335	A1	05 August 1999
CN	200968073	Y	31 October 2007	None			
CN	2480479	Y	06 March 2002	None			
CN	202745430	U	20 February 2013	None			

Form PCT/ISA/210 (patent family annex) (January 2015)

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

To: 46204 China Faegre Baker Daniels LLP 300 N.Meridian Street Suite 2500 Indianapolis, Indiana, United States of America DREWRYJamie M.

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Applicant's or agent's file reference IRC-0112-01-WO		Date of mailing (day/month/year) 20 December 2019
FOR FURTHER ACTION See paragraph 2 below		
International application No. PCT/IB2019/057831	International filing date (day/month/year) 17 September 2019	Priority date (day/month/year) 17 September 2018
International Patent Classification (IPC) or both national classification and IPC E04H 4/04(2006.01)i		
Applicant INTEX INDUSTRIES XIAMEN CO.LTD		

1. This opinion contains indications relating to the following items:

- | | | |
|-------------------------------------|--------------|---|
| ☒ | Box No. I | Basis of the opinion |
| ☒ | Box No. II | Priority |
| ☐ | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| ☐ | Box No. IV | Lack of unity of invention |
| ☒ | Box No. V | Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement |
| ☐ | Box No. VI | Certain documents cited |
| ☐ | Box No. VII | Certain defects in the international application |
| ☐ | Box No. VIII | Certain observations on the international application |

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

Name and mailing address of the ISA/ National Intellectual Property Administration, PRC China 6, Xitucheng Rd., Jimen Bridge, Haidian District, Beijing 100088	Date of completion of this opinion 16 December 2019	Authorized officer Li, Li
Facsimile No. (86—10) 62019451	Telephone No. 86-10-53961160	

Form PCT/ISA/237 (Cover sheet) (January 2015)

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/IB2019/057831

Box No. I

Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of:
 - ☒ the international application in the language in which it was filed.
 - ☐ a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).
2. ☐ This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43*bis*.1(a)).
3. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of a sequence listing:
 - a. ☐ forming part of the international application as filed:
 - ☐ in the form of an Annex C/ST.25 text file.
 - ☐ on paper or in the form of an image file.
 - b. ☐ furnished together with the international application under PCT Rule 13*ter*.1(a) for the purposes of international search only in the form of an Annex C/ST.25 text file.
 - c. ☐ furnished subsequent to the international filing date for the purposes of international search only:
 - ☐ in the form of an Annex C/ST.25 text file (Rule 13*ter*.1(a)).
 - ☐ on paper or in the form of an image file (Rule 13*ter*.1(b) and Administrative Instructions, Section 713).
4. ☐ In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that forming part of the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
5. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/IB2019/057831

Box No. II

Priority

1. ☐ The validity of the priority claim has not been considered because the International Searching Authority does not have in its possession a copy of the earlier application whose priority has been claimed or, where required, a translation of that earlier application. This opinion has nevertheless been established on the assumption that the relevant date (Rules 43*bis*.1 and 64.1) is the claimed priority date.
2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43*bis*.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.
3. Additional observations, if necessary:
 - [1] (1) Regarding to claims 1-2, 4-6, 8, the priority claim of priority document cn201821518351.1 is considered to be valid.
 - [2] (2) Regarding to claims 3, 7, 9-16, 18-20, the priority claim of priority document cn201920498611.1 is considered to be valid.
 - [3] (3) Regarding to claim 17, the priority claim is considered to be invalid, because none of the priority documents explicitly or implicitly disclose the feature 'the multi-piece joint friction-fit to the horizontal frame and the vertical frame without any mechanical fasteners'.

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/IB2019/057831

Box No. V	Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement		
1. Statement			
Novelty (N)	Claims	4-8, 10-11, 14-15, 17, 19	YES
	Claims	1-3, 9, 12-13, 16, 18, 20	NO
Inventive step (IS)	Claims	None	YES
	Claims	1-20	NO
Industrial applicability (IA)	Claims	1-20	YES
	Claims	None	NO
2. Citations and explanations :			
[1] D1: CN2195595Y			
[2] D2: FR2774416A1			
[3] I. Novelty:			
[4] (1) Claim 1 relates to a joint. D1 discloses (see paragraph 2, figures 1, 2): a joint 81 for an above ground pool having a frame assembly 8 and a liner 87 supported by the frame assembly 8, the frame assembly 8 including a first horizontal frame 85, a second horizontal frame 85, and a vertical frame 83, the joint 81 comprising: a first horizontal portion having a continuous outer wall configured to surround a first end of the first horizontal frame 85; a second horizontal portion having a continuous outer wall configured to surround a second end of the second horizontal frame 85; and a vertical portion positioned between the first and second horizontal portions, the vertical portion having a continuous outer wall configured to surround an upper end of the vertical frame 83. The first horizontal portion has an inner circular cross-section; the second horizontal portion has an inner circular cross-section.			
[5] Claim 9 relates to an above ground pool. D1 discloses (see paragraph 2, figures 1, 2): an above ground pool comprising: a frame assembly 8 comprising a first horizontal frame 85, a second horizontal frame 85, a vertical frame 83; and a T-shaped joint 81 friction-fit to the first horizontal frame 85, the second horizontal frame 85, and the vertical frame 83 without any mechanical fasteners; and a liner 87 supported by the frame assembly 8.			
[6] Claim 18 relates to a method of assembling an above ground pool. D1 discloses (see paragraph 2, figures 1, 2): a method of assembling an above ground pool comprising the steps of assembling a frame assembly 8 including a plurality of T-shaped joints 81, the assembling step comprising coupling each joint 81 to first and second horizontal frames 85 without any mechanical fasteners and to an upper end of a vertical frame 83 without any mechanical fasteners; positioning a lower end of the vertical frame 83 on a support surface; and supporting a liner 87 on the frame assembly 8.			
[7] The additional technical features of claims 2, 3, 12, 13, 16, 20 are disclosed by D1.			
[8] Claims 1-3, 9, 12, 13, 16, 18, 20 are not novel, and do not meet the criteria of Article 33(2) PCT.			
[9] (2) Claim 4 differs from D1 in "the vertical portion has an inner elliptical cross-section", each of the claims 5-8, 10-11, 14-15, 17, 19 differs from D1 in its additional technical feature.			
[10] Claims 4-8, 10-11, 14-15, 17, 19 are novel, and meet the criteria of Article 33(2) PCT.			
[11] II. Inventive Step:			
[12] (1) Based on the difference between claim 4 and D1, the technical problem to be solved by the present invention may be regarded as how to prevent the rotation between the vertical portion and the joint. Based on the differences between claims 5, 14 and D1, the technical problems to be solved may be regarded as how to securely assemble the frame. Based on the differences between claims 6,7,15 and D1, the technical problems to be solved may be regarded as how to reduce the weight of the frame. Based on the differences between claims 8, 17 and D1, the technical problems to be solved may be regarded as how to easily replace the damaged parts.			

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/IB2019/057831

Box No. V	Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement
	<p>[13] The technical feature "the vertical portion has an inner elliptical cross-section" and the additional technical features of claims 5-8, 14-15, 17 are common knowledge in the art, claims 4-8, 14-15, 17 do not meet the requirements of PCT Article 33(3).</p> <p>[14] (2) Based on the differences between claims 10-11, 19 and D1, the technical problems to be solved may be regarded as how to securely fix the frame and the liner.</p> <p>[15] D2 discloses (see pages 3-5, figures 1, 2): a liner includes an upper sleeve 4 configured to receive the first and second horizontal frames, the upper sleeve 4 defining a first horizontal area; and a side wall that defines a water cavity 5, the water cavity 5 having a second horizontal area smaller than the first horizontal area. The side wall being located radially inward of the upper sleeve 4. The supporting step comprises inserting the first and second horizontal frames in an upper sleeve 4 of the liner; and positioning a side wall of the liner radially inward of the upper sleeve 4. Therefore, it would be obvious to a person skilled in the art to reach the technical solution in claims 10-11, 19 by combining D1, D2. Claims 10-11, 19 do not involve an inventive step, and do not meet the requirements of PCT Article 33(3).</p> <p>[16] III. Industrial applicability:</p> <p>[17] Claims 1-20 can be manufactured and used in the technical field of pool and thus meet the requirements of PCT Article 33 (4).</p>

Form PCT/ISA/237 (Box No. V) (January 2015)

Publication Number: CN 2195595 Y

Publication Date: Apr 26, 1995

Abstract

The utility model relates to a combined swimming pool supporting frame, which is especially suitable for the detachable combined swimming pool of beaches and pool shores. The combined swimming pool supporting frame comprises a Y-shaped sleeve, a supporting column tube and a round tube and is characterized in that the a middle sleeve and a supporting seat tube which are orderly sheathed on the profile surface of a supporting column and be supported on the bottom end are arranged below the Y-shaped sleeve, the middle sleeve has a slot through hole in the center and has side tubes on the two sides, a slot hole which is muff coupled with one end of the round tube is arranged in the side tubes, the other end of the round tube is muff coupled in the side tube slot hole of the adjacent middle sleeve, and the frame body is formed by one connections, thereby, when children play in a swimming pool, the dangerous of supporting frame deformation, breaking off and overturn can not be occurred.



[12] 实用新型专利说明书

[21] ZL 专利号 94208889.1

[51]Int.Cl⁵

[45]授权公告日 1995 年 4 月 26 日

E04H 4/04

[22]申请日 94.5.21 [24]颁证日 95.2.19

[73]专利权人 范文璋

地址 台湾省台北市北投区立德路150号

[72]设计人 范文璋

[21]申请号 94208889.1

[74]专利代理机构 三友专利事务所

代理人 曹广生

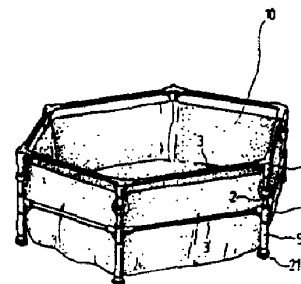
说明书页数:

附图页数:

[54]实用新型名称 组合泳池加强支撑架

[57]摘要

本实用新型涉及一种组合泳池支撑架,尤其指适于沙滩、池边的可拆卸组合泳池。它包括 Y 形套管、支撑柱管、圆管,其特征是:在 Y 形套管下方设有依次穿套在支撑柱管外形面、且支持在底端的中间套管和支撑座管,该中间套管具有中央通槽孔及两侧具有侧管,该侧管内具有与圆管一端套接的槽孔,该圆管的另一端套接在相邻的中间套管的侧管槽孔中,逐一连接形成一框架体。从而,孩童在泳池内玩耍不会出现支撑架变形、折断及翻倒危险。



(BJ)第 1452 号

权 利 要 求 书

1、一种组合泳池加强支撑架包括Y形套管、支撑柱管、圆管，其特征是：在Y形套管下方设有依次穿套在支撑柱管外形面、且支持在底端的中间套管和支撑座管，该中间套管具有中央通槽孔及两侧具有侧管，该侧管内具有与圆管一端套接的槽孔，该圆管的另一端套接在相邻的中间套管的侧管槽孔中，逐一连接形成一框架体。

2、按权利要求1所述的组合泳池加强支撑架，其特征是：上述支撑座管底端为一底座。

3、按权利要求1所述的组合泳池加强支撑架，其特征是：上述形成的框架体为多边框架体。

组合泳池加强支撑架

本实用新型涉及一种组合泳池支撑架，尤其指适于沙滩、池边的可拆卸组合泳池。

目前，常见的组合泳池支撑架结构是以架体单元 8 做为支撑的重心，如图 1、2 所示，该架体单元 8 系设有一 Y 形套管 8 1，该套管 8 1 下端设有槽孔 8 2，藉该槽孔 8 2 可与一支撑柱管 8 3 相连接，该支撑柱管 8 3 底端则套设一胶套 8 4；如此，以相同的多个架体单元 8 加以组合，并在相邻的架体单元 8 间藉圆管 8 5 插置在各架体单元 8 的套管 8 1 两侧槽孔 8 6 中，即可将各架体单元 8 逐一地连接起来，形成一框架体，此时，泳池本体 8 7 再藉其上所设的连接元件 8 8 连接在框架体的支撑柱管 8 3 上，即形成整个泳池。此种装置在使用时，因为支撑架结构的主要支撑力量系落在套管 8 1 与支撑柱管 8 3 交接处，其圆管 8 5 系用连接各架体单元 8，以辅助支撑在泳池本体 8 7 的功用，于是，小孩嬉戏追撞产生的冲击极易使该支撑架体失去重心，不但会破坏架体的结构稳定性、且易因架体的分解或池水的翻复而波及孩童的安危，另外，当池内的水量超出其支撑的重量或小孩在池内玩耍剧烈，该圆管 8 5 及支撑柱管 8 3 是否能发生变形，甚至折断都令人怀疑。

鉴此，本实用新型的目的是提供一种组合泳池加强支撑架，在架体单元设置多个 Y 形套管及其相连的横筋构成稳固的支撑架。

本实用新型的目的是这样实现的：一种组合泳池加强支撑架包括 Y 形套管、支撑柱管、圆管，其特征是：在 Y 形套管下方设有依次穿套在支撑柱管外形面、且支持在底端的中间套管和支撑座管，该中间套管具有中央通槽孔及两侧具有侧管，该侧管内具有与圆管一端套接的槽孔，该圆管的另一端套接在相邻的中间套管的侧管槽孔中，逐一连接形成一框架体。上述支撑座管底端为一底座。上述形成的框架体为多边框架体。

由于采用上述方案：可让孩童在泳池内任意玩耍而不会出现支撑架变形、折断及翻倒等意外事故，故安全可靠。

下面结合附图和实施例对本实用新型进一步说明。

图 1 为现有技术的立体示意图。

图 2 为现有技术的组合立体示意图。

图 3 为本实用新型典型实施例分解图。

图 4 为本实用新型典型实施例组合立体示意图。

如图 3、4 所示，本实施例由多组相同的架体 1 及圆管 3 连接构成。其中架体 1 包括 Y 形套管 6、支撑柱管 2、中间套管 4 及支撑座管 5。

Y 形套管 6 下端设有槽孔 6 4，藉该槽孔 6 4 与一支撑柱管 2 顶端相连接，而该 Y 形套管 6 的两侧分别设有侧管 6 1，其上也设有槽孔 6 3，各侧管 6 1 彼此相交一定的角度（按合理的受力结构要求）、且侧管 6 1 的槽孔 6 3 与圆管 3 的一端相套接，而该圆管 3 的另一端与相邻架体 1 的 Y 形套管 6 相应侧管的槽孔套接；

支撑柱管 2 顶端系与 Y 形套管 6 下端槽孔 6 4 相连接，该支撑柱管 2 另一端外表面则依序贯穿中间套管 4 与支撑座管 5，且支持在其底端，该底端装设一台阶式底座 2 1；

中间套管 4 中央设有通槽孔 4 1，藉该通槽孔 4 1 可藉支撑柱管 2 贯穿其中，该套管 4 的两侧分别设有侧管 4 2，该侧管 4 2 上并设有槽孔 4 6，各侧管 4 2 相交一定的角度（按合理的受力结构要求），以上述槽孔 4 6 套接圆管 3' 的一端，而圆管 3' 的另一端与相邻的架体的相应中间套管相接。

如图 4 所示，以相同的多组架体 1 藉圆管 3、3' 插置在各架体单元的 Y 形套管 6、中间套管 4 两侧的槽孔 6 3、4 6 中，逐一地连接成一多边形框架体，也可连接成圆形、三边形框架体，再与泳池本体 1 0 相连接而形成可拆卸的整体泳池；泳池本体 1 0 藉扣件或其它连接件与框架连接，整体泳池的重心将不仅系由各该架体单元 1 的 Y 形套管 6 和支撑柱管 2 支持、且该支撑柱管 2 上所设的支撑座管 5、中间套管 4 及圆管 3 组成的结构，将处于泳池本体 1 0 侧缘的中间部位形成另一支撑架体结构，使泳池本体的支撑架更为稳固，又围绕在泳池本体周缘的圆管 3 也因承受泳池侧向压力的受力点增多，增加支撑架的稳定性，故安全可靠。

说明书附图

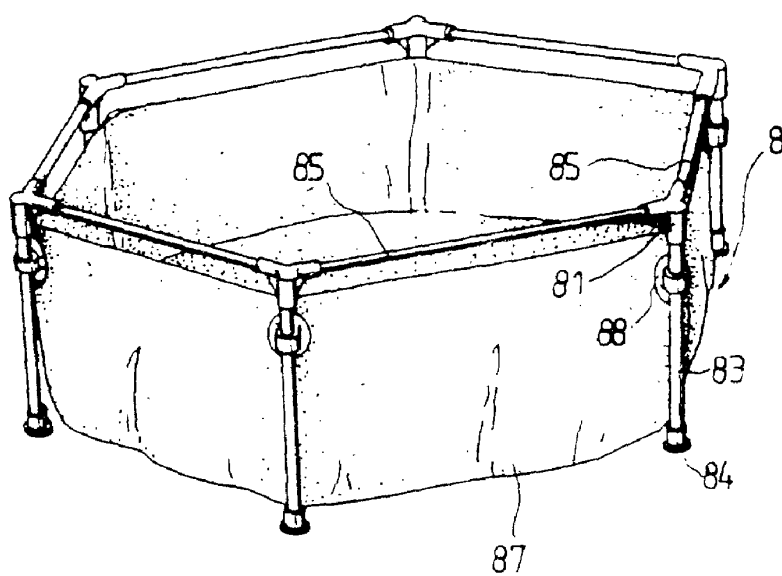


图 1

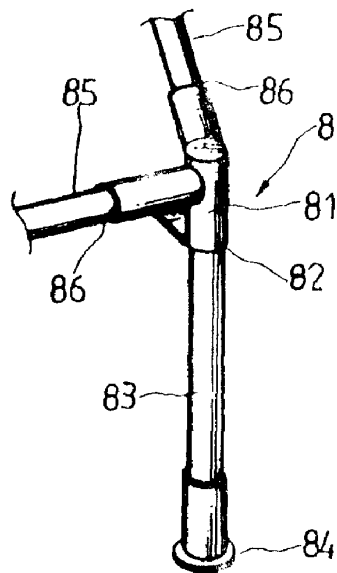


图 2

说明书附图

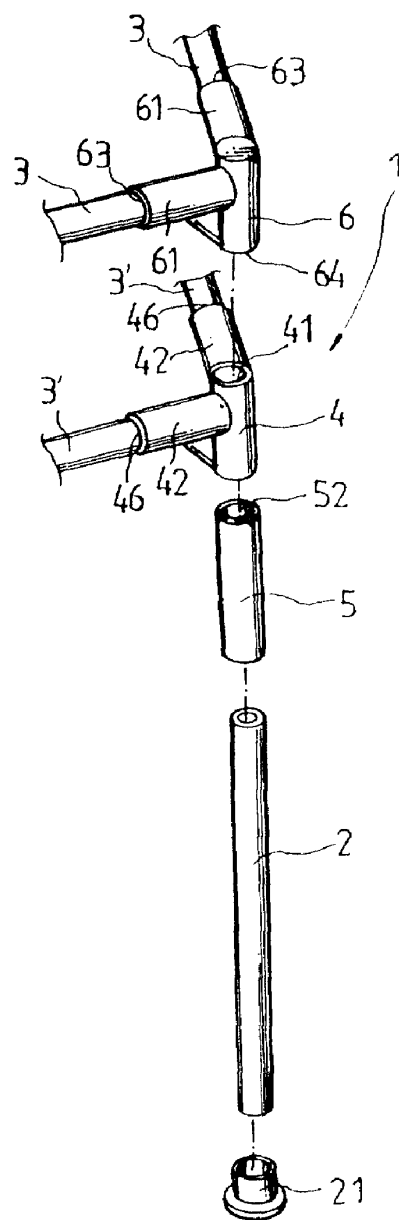


图 3

说明书附图

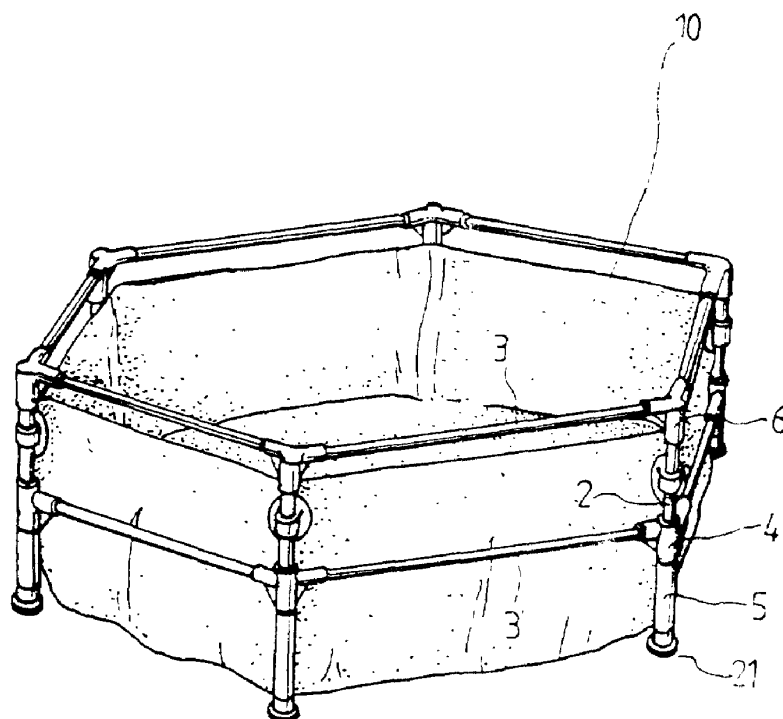


图 4

Publication Number: CN 2480479 Y

Publication Date: Mar 06, 2002

Abstract

The utility model discloses a dismantling pool composed a water cloth and a support bracket, the support bracket comprises a connecting pipe, a pipe connector, and a straight pipe, the connecting pipe and the connecting pipe, the connecting pipe and the straight pipe are connected by pipe connector, the edge of the water cloth is connected with the connecting pipe by bell socket, the straight pipes are connected together by a reinforcing band, while using, firstly connect the connecting pipe to the water cloth by bell socket, connect the connecting pipes together by pipe connector, connect the straight pipes to the pipe connector then strengthen the fixation, thereby a whole pool is conveniently formed, the pool has the advantages of application in any place and convenient dismantling and use.

[19] 中华人民共和国国家知识产权局

[51] Int. Cl⁷
E04H 4/04

[12] 实用新型专利说明书

[21] ZL 专利号 01242575.3

[45] 授权公告日 2002 年 3 月 6 日

[11] 授权公告号 CN 2480479Y

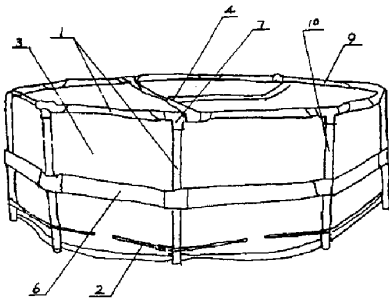
[22] 申请日 2001.7.10 [24] 颁证日 2002.3.6
[73] 专利权人 廖伟平
地址 510235 广东省广州市南华西街 74 号 501 房
[72] 设计人 廖伟平

[21] 申请号 01242575.3

权利要求书 1 页 说明书 2 页 附图页数 1 页

[54] 实用新型名称 可拆装游泳池
[57] 摘要

本实用新型公开了一种由围水布、支架组成的可拆装游泳池，支架由连接管、管件连接件、直管组成，连接管之间、连接管与直管之间通过管件连接件连接，围水布上面的周边套接在接管上，直管之间通过加强带连接在一起，使用时，先把连接管套在围水布上，通过管件连接件把连接管连接在一起，直管接装在连接件后通过加强的固定，方便地形成一个完整的游泳池，这游泳池具有适用于任何地方、拆装、使用方便的特点。



ISSN 1008-4274

知识产权出版社出版

01.07.18

权 利 要 求 书

1、一种可拆装游泳池，它由围水布（3）、支架（1）组成，其特征在于：支架（1）又由连接管（9）、管件连接件（7）、直管（10）组成，连接管（9）之间、连接管（9）与直管（10）之间通过管件连接件（7）连接，围水布（3）上面的周边套接在连接管（9）上，直管（10）之间通过加强带（6）连接在一起。

2、根据权利要求 1 所述的可拆装游泳池，其特征在于：在连接管（9）之间还设有固身带（4）。

3、根据权利要求 1 所述的可拆装游泳池，其特征在于：在直管（10）之间还通过绳子（2）固定。

010716

说明书

可拆装游泳池

本实用新型涉及游泳池，是一种可拆装的活动式游泳池。

生活中，当人们需要去游泳健身时，都要去江河、水库或经营性游泳池才能达到游泳健身的目的。但江河、水库往往缺乏安全措施，而经营性游泳池则又因时间紧，去泳池的路途耗时且容易造成疾病的交叉感染。如果采用一种小巧、方便、易拆装、平时又不占用过大的空间，且能在安全、省时的前提下同样达到游泳健身的目的可拆式游泳池，目前市面上还没有上市。

本实用新型目的，在于提供一种小巧、方便、易拆装、使用时能达到游泳健身、娱乐、省时的可拆装游泳池。

本实用新型的目的是这样实现的：可拆装游泳池由围水布、支架组成，支架又由连接管、管件连接件、直管组成，连接管之间，连接管与直管之间，通过管件连接件连接，围水布上面的周边套接在连接管上，直管之间通过加强带连接在一起。

本实用新型进一步的改进方案：在连接管之间还设有固身带。

本实用新型另一改进方案：在直管之间还通过绳子固定。

本实用新型相比现有技术具有如下优点：设计合理，不论在任何地方都可安装游泳池，体积小，具有使用拆装方便，获得游泳健身的效果。

附图的图面说明如下：

图 1 为本实用新型具体的一种实施案的结构示意图。

下面将结合附图和实施例对本实用新型游泳池作进一步详述：

该游泳池由围水布 3，支架 1 组成，支架 12 由连接管 9，管件连接件 7，直管 10 组成，连接管 9 之间、连接管 9 直管 10 之间通过管件

01.07.15

说明书

连接件 7 连接，围水布 3 上面的周边套接在连接管 9 上，直管 10 之间通过加强带 6 连接在一起，连接管 9 之间还设有固身带 4，在直管 10 之间还通过绳子 2 固定。安装时，先把连接管 9 套在围水布 3 上，通过管件连接件 7 把连接管 9 连接在一起，直管 10 接装在连接 7 后通过加强带 6 固定，从而快而方便地安装成一个完整的游泳池，这游泳池具有适用于任何地方和拆装使用方便的特点。

01-07-15

说明书附图

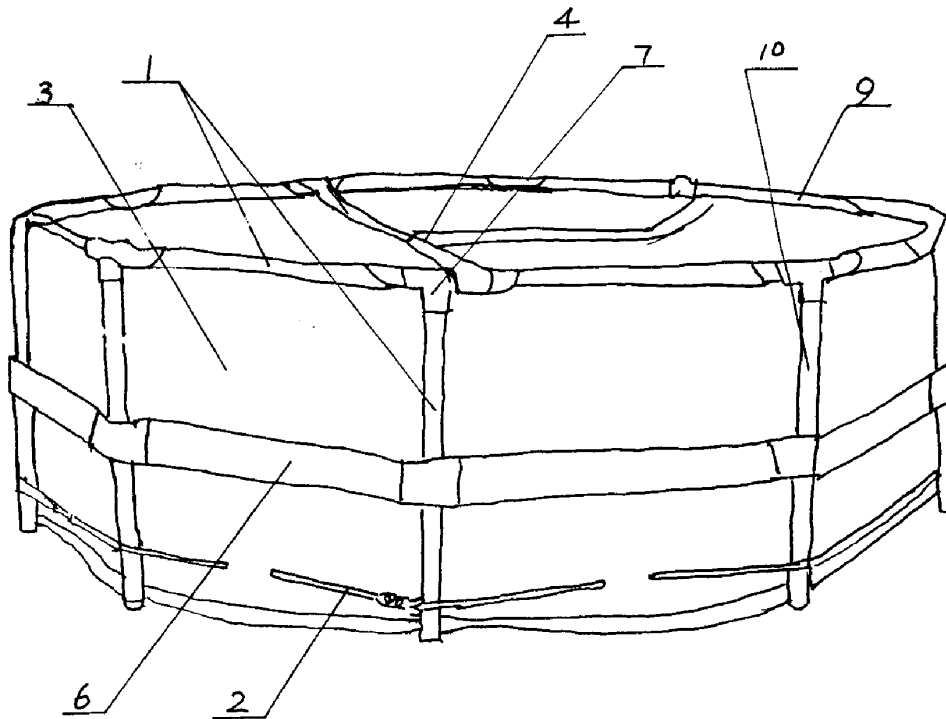


图 1

Publication Number: CN 101787807 A

Publication Date: Jul 28, 2010

Abstract

Disclosed herein is a fixture support. The structure, in accordance with the present invention, is a support for mounting various fixtures on an above ground pool. The support is adapted to be secured to the rails or posts of such a pool without causing damage to the pool liner or the pool frame. The fixture support includes a support member, which in an exemplary embodiment is parallel to the pool posts. The support member includes a clamp for connecting the fixture with either one of the rails or the posts of the pool frame. The clamp is fixed to one end of the support member. On the other end of the support member is a receptacle adapted for connection to various fixture modules. The fixture support in accordance with the instant invention allows each of the modules to be mounted on the water side of the pool and provide electrical connection thereto.

(19) 中华人民共和国国家知识产权局



(12) 发明专利申请

(10) 申请公布号 CN 101787807 A

(43) 申请公布日 2010. 07. 28

(21) 申请号 200910179201. 1

(22) 申请日 2009. 09. 29

(30) 优先权数据

12/247913 2008. 10. 08 US

(71) 申请人 发明易实现有限公司

地址 中国香港观塘巧明街 110 号兴建工业
大厦 8 楼 A 室

(72) 发明人 许永健

(74) 专利代理机构 北京律诚同业知识产权代理
有限公司 11006

代理人 黄韧敏

(51) Int. Cl.

E04H 4/04 (2006. 01)

权利要求书 1 页 说明书 4 页 附图 3 页

(54) 发明名称

用于地上泳池的附件的支座

(57) 摘要

本发明披露了一种用于在地上泳池中支撑附件的支座, 其适用于固定在泳池的立柱或栏杆, 而不引起对泳池衬里或泳池框架的损坏。该支座包括一支撑部件, 与附件模件适配的附件插座, 与所述支撑部件连接; 以及一夹持部件, 用于将所述支撑部件与所述框架连接并固定。本发明的支座允许各个附件安装在泳池的水侧面上, 并为其提供电连接。

CN 101787807 A

1. 用于在地上泳池中支撑附件的支座,其中所述地上泳池包括一在地上支撑该泳池的框架,所述框架包括多个互相垂直的立柱和栏杆,和一由所述框架支撑的用于保持池水的衬里,所述支座包括:

一支撑部件;

与附件模件适配的附件插座,与所述支撑部件连接;以及

一夹持部件,用于将所述支撑部件与所述框架连接并固定。

2. 权利要求1所述的支座,其中所述支撑部件设置有助于容纳电源线的电线通道,所述夹持部件设置供电源线穿过的开口或通道。

3. 权利要求1所述的支座,其中所述夹持部件设置通孔,所述支撑部件设置有与夹持部件配合的衔接部件,通过夹持部件与衔接部件连接并夹紧框架。

4. 权利要求2或3所述的支座,其中所述夹持部件为一U形卡箍,用于将所述支撑部件与框架立柱的顶部夹紧固定。

5. 权利要求2或3所述的支座,其中所述夹持部件为一C形卡箍,用于将所述支撑部件与框架立柱的侧部夹紧固定。

6. 权利要求1所述的支座,其中所述夹持部件可变形地夹紧所述立柱或栏杆。

7. 权利要求2所述的支座,其中所述附件插座设置至少一个与所述电源线连接的电输出端口。

8. 权利要求7所述的支座,其中所述附件插座设置多个电输出端口和/或附件模件接口。

9. 权利要求3所述的支座,其中通过螺栓穿过所述通孔将所述夹持部件与所述支撑部件连接。

10. 权利要求1所述支座,其中所述附件模件包括一个或多个附件。

用于地上泳池的附件的支座

技术领域

[0001] 本发明一般来说涉及泳池产品领域。更具体地,本发明涉及一种用于地上泳池的附件的支座装置,其与地上泳池配合并提供附件与泳池的刚性连接。

背景技术

[0002] 如图 1 所示,地上泳池包括一框架,其具有互为适当角度的一系列立柱 100 和栏杆 102。该泳池典型地为类似圆形或类似矩形的形状。该框架,即立柱和栏杆,典型地是由金属制成。然而,该构造虽然足够结实,刚性却远远不够。

[0003] 然后,将用于保持泳池的水的衬里 104 固定在该泳池框架上。可以理解的是,衬里 104 形成泳池的侧壁和底部。与地下泳池不同,地上泳池有柔韧的侧壁。因此,实际上不可能将泳池设备连接到侧壁上而永远不损坏泳池和面临渗漏的危险。

[0004] 在地上泳池的一些安装中,回水管是通过在泳池衬里 104 上穿洞来连接到泳池。当然,这导致了潜在渗漏和对泳池的永久损坏。安装固定装置,例如灯,进一步导致潜在的损坏和渗漏,因为目前还没有办法将固定装置连接到柔性衬里而不损坏它。

[0005] 人们需要一种支撑物,其允许将各种附件(例如照明装置)连接到地上泳池,而不引起对泳池的损坏或促进渗漏的可能性。

发明内容

[0006] 根据本发明的支座是用于在地上泳池上安装各种附件的支撑结构。该支座适于固定在那些泳池的立柱或栏杆上,而不引起对泳池衬里或泳池框架的损坏。该支座包括一支撑部件,在一种实施方式中,支撑部件平行于泳池立柱,支座还包括用于将支撑部件与泳池框架的其中一个立柱或栏杆相连接的夹持部件(clamp)。该夹持部件被固定在支撑部件的一端。支撑部件的另一端是适用于连接各种附件模件的附件插座。根据本发明的支座允许各个模件安装在泳池的水侧,并且向那里提供电连接。

[0007] 因此,本发明的目的是提供一种附件支座,其可牢固地连接到地上泳池,尤其是框架,同时使泳池及其衬里和框架不受损坏。

[0008] 本发明的另一个目的是提供这样一种支座,该结构上可安装其允许各种附件模件连接到地面泳池,例如电模件或需要供电的模件。

[0009] 根据以上提出的以及本文即将描述和实现的目的,本发明的用于在地上泳池中支撑附件的支座,其中所述地上泳池包括一在地上支撑该泳池的框架,所述框架包括多个互相垂直的立柱和栏杆,和一由所述框架支撑的用于保持池水的衬里,所述支座包括:

[0010] 一支撑部件;

[0011] 与附件模件适配的附件插座,与所述支撑部件连接;以及

[0012] 一夹持部件,用于将所述支撑部件与所述框架连接并固定。

[0013] 本发明所述的支座,其中所述支撑部件设置有用以容纳电源线的电线通道,所述夹持部件设置供电源线穿过的开口或通道。

[0014] 所述的支座,其中所述夹持部件设置通孔,所述支撑部件设置有与夹持部件配合的衔接部件,通过夹持部件与衔接部件连接并夹紧框架。

[0015] 所述的支座,其中所述夹持部件为一 U 形卡箍,用于将所述支撑部件与框架立柱的顶部夹紧固定。

[0016] 所述的支座,其中所述夹持部件为一 C 形卡箍,用于将所述支撑部件与框架立柱的侧部夹紧固定。

[0017] 所述的支座,其中所述夹持部件可变形地夹紧所述立柱或栏杆。

[0018] 所述的支座,其中所述附件插座设置至少一个与所述电源线连接的电输出端口。

[0019] 所述的支座,其中所述附件插座设置多个电输出端口和 / 或附件模件接口。

[0020] 所述的支座,其中通过螺栓穿过所述通孔将所述夹持部件与所述支撑部件夹紧。

[0021] 所述的支座,其中所述附件模件包括一个或多个附件。

[0022] 在一种示范性实施方式中,本发明的支座可安装在泳池框架的顶部。在该实施方式中,所述夹持部件为一 U 形卡箍,该 U 形卡箍位于支撑部件的顶部,框架的立柱和栏杆在此处构成 T- 型交叉。通过将多个螺栓插入 U 形卡箍的相对的两部分的叶片,该 U 形卡箍被固定在立柱的顶部。在一种示范性实施方式中,该 U 形卡箍是可以变形的,以适应泳池框架的形状。

[0023] 在一种示范性实施方式中,卡箍包括弯曲的肋,其与框架一起限定出一电源线通道,以便电源线能够穿过该限定的通道。

[0024] 在另一种示范性实施方式中,本发明的支座可安装在泳池框架的侧面的栏杆上。在该实施方式中,所述夹持部件为一 C 形卡箍,该 C 形卡箍位于支撑部件的侧面。通过将螺栓穿过该 C 形卡箍的相对的两部分的叶片,可将该 C 形卡箍固定在泳池侧面的栏杆上。该实施方式中的 C 形卡箍,具有与 U 形卡箍相同的作用。

[0025] 同样地,在一种实施方式中,该 C 形卡箍是可变形的,以适应泳池框架或泳池栏杆的形状。

[0026] 在一种实施方式中,本发明的支座包括一连接到该支撑部件的附件插座。在一种示范性实施方式中,将支座连接到泳池时,夹持部件位于支撑部件的顶部。此时,所述附件插座位于支撑部件另一端部,即位于支撑部件的底部。在一种实施方式中,所述附件模件为一类泳池产品,可以是电装置或需要供给电力的装置,例如照明装置,水池清洁机等。所述支撑部件包括用于容纳电源线的电线管道,电源线穿过该支撑部件进入附件插座,以便为附件模件供电。

[0027] 在一种实施方式中,所述附件插座包括至少一个电输出口,用于连接附件模件。电源线穿过电线管道,进入附件插座,连接到电输出口,为附件模件供电。例如,可将泳池清洁机连接到该输出口,而不必经过地面电线。视需要,所述附件插座包括多个输出口,可插入连接一个以上的附件模件。例如,可将照明装置和撇渣器同时连接到该支座上。

[0028] 根据本发明的支座的一个优点是,其允许连接各种需要供电的泳池设备,且不会造成对泳池,尤其是泳池的衬里的损坏。

[0029] 本发明的另一个优点是提供这样一种支座,其设置有水下电力输出口,使得不再需要泳池底板或类似表面上的地上电线。

[0030] 附图简要说明

[0031] 为了进一步了解本发明的目的和优点,应结合附图参考以下详细说明,其中相同的部件用相同的参考数字表示,其中:

[0032] 图 1 是典型的地上泳池,举例为通常圆形的实施方式。

[0033] 图 2 是安装于泳池框架的 T 形面的支座的部分部件分解图。

[0034] 图 3 是安装于泳池框架的 T 形面的支座的部分部件分解图,显示连接到支座的电线。

[0035] 图 4 是本发明的支座的一种示范性实施方式的透视俯视图。

[0036] 图 5 是本发明的支座的另一种示范性实施方式的透视俯视图。

具体实施方式

[0037] 本发明的支座的一种示范性实施方式将在图 2-5 中描述,通常用数字 20 表示。

[0038] 具体参考图 2-4,其中显示了带有 U 形卡箍 50 的支座 20 的第一种示范性实施方式。该支座 20 包括一支撑部件 22。支撑部件 22 是一伸长的部件,其第一末端 24 上安装 U- 形卡箍 50(夹持部件)。

[0039] 支撑部件 22 具有第二末端 26。支撑部件 22 的第二末端 26 连接附件插座 28。附件插座 28 适用于为附件本身提供连接位置,通过以下说明将更充分地加以理解。

[0040] 在这些图所示的示范性实施方式中,显示的附件包括电附件或需要供给电能的附件。具体地,显示的附件是照明装置 40。

[0041] 电线 42 为电附件或照明装置 40 供电。为了使电线 42 从外部电源到达附件 40,特别适用于在整个支座 20 设置电线管道。

[0042] 该管道的第一部分包括夹持部件 50 内的肋状通道 52。通过设置内部通孔 54 穿过支撑部件 22 的主体,支撑部件 22 进一步限定出该管道的另一部分,如图 3 清楚所示。

[0043] 电线 42 延伸至插座 28。一旦电线进入插座,视需要可将其分开和分段,以便为各种附件或输出口 44 提供电力。可以理解的是,可将一个或多个电输出口 44 或附件 40 连接到附件插座 28。

[0044] 在图 2-4 显示的示范性实施方式中,通过 U 形卡箍 50 可以将支座连接到水池的框架。该 U 形卡箍 50 具有一组通孔 54。此外,还设置一组螺栓 56,以便穿过通孔 54 将卡箍与支撑部件 22 连接并夹紧框架。

[0045] U 形卡箍 50 是可以变形的。如图 4 中清楚所示,U 形卡箍 50 变形以适应泳池框架的形状。在显示的该实施方式中,U 形卡箍 50 连接在泳池框架的 T 形交叉处。

[0046] 通过设置具有开口 32 的衔接部件 30,支撑部件 22 可以与夹持部件或 U 形卡箍 50 连接并固定在框架上。当螺栓 56 穿过 U 形卡箍 50 和衔接部件 30 时,U 形卡箍 50 变形,以适应泳池框架的形状,尤其是泳池框架的 T 形交叉处。

[0047] 在图 5 所示的另一种实施方式中,支座是通过侧面支撑连接到泳池框架上,而不是图 2-4 的顶部支撑。在该实施方式中,夹持部件包括 C- 卡箍 60。侧面的 C- 卡箍 60 有一对“耳朵”62。耳朵 62 带有开孔 64。连接螺栓 56 穿过开孔 64 并进入衔接部件 30 和开口 32。可以理解的是,不管使用 C 形卡箍 60 还是 U 形卡箍 50,衔接部件 30 保持不变。这为固定装置支撑结构提供了进一步的实用性和灵活性。它还为客户提供了安装的选择性。此外,客户有了进一步的灵活性,因为无论使用何种地上泳池,都能容易地配合使用该 C 形

或 U 形的卡箍。

[0048] 与 U 形卡箍 50 一样, C 形卡箍 60 是可变形的, 以适应泳池的框架。当螺栓拧紧进入衔接部件时, 卡箍变形, 适应泳池框架形状。

[0049] 在显示的示范性实施方式中, 各种模件均可连接到插座 28。例如, 除了之前描述的照明装置外, 其他模件也可容易地连接到支撑部件 22。例如, 可将撇渣器或加氯器连接到附件插座 28。

[0050] 可以理解的是, 将本发明的支座连接到泳池框架时, 不需要在衬里中打洞或穿孔。支座 20 易于连接到泳池框架本身, 并且对衬里或框架都没有任何损坏。此外, 可以理解的是, 插座 28 上可以连接一个或一个以上的附件模件。例如, 照明装置和撇渣器很可能同时连接到支座 20 上。

[0051] 虽然前面的具体描述已经说明了本发明的支座的几种实施方式, 然而可以理解的是, 以上描述仅是说明性的, 并不是限制本发明的公开内容。具体地, 各种不同的模件可同时配合单个支座。还应理解的是, 在本发明的精神和范围内有关于支座的各种变形, 并且尤其关注的是支座连接到泳池框架而不损坏框架或衬里的能力。因此, 本发明仅通过以下提出的权利要求来限制。

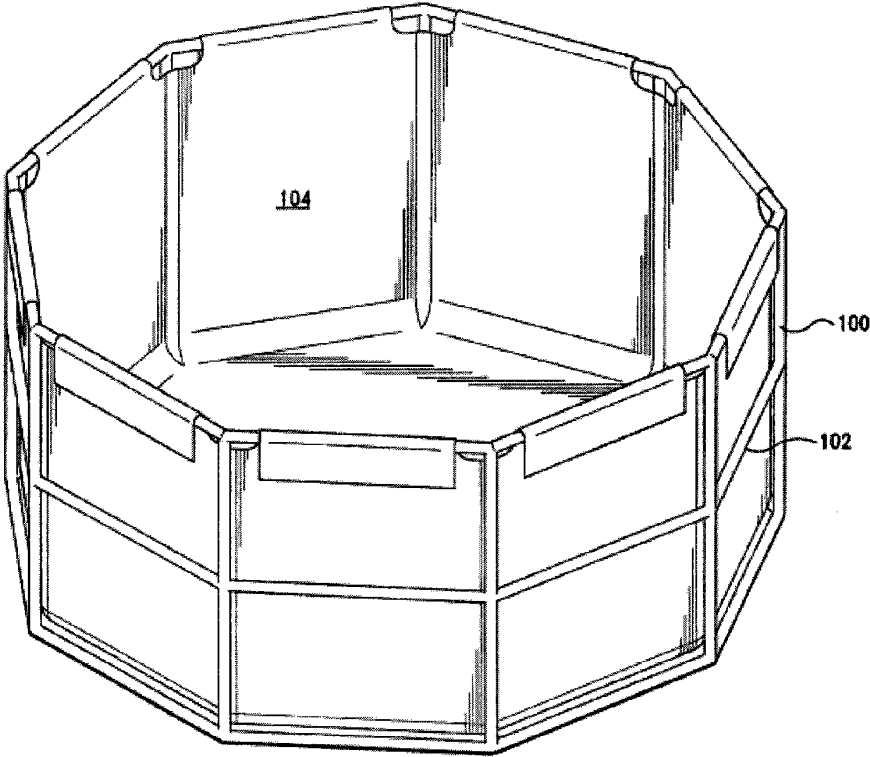


图 1

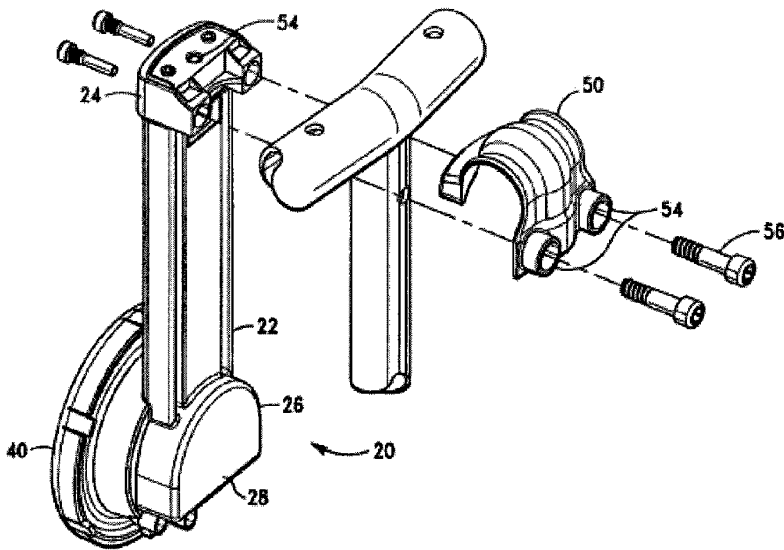


图 2

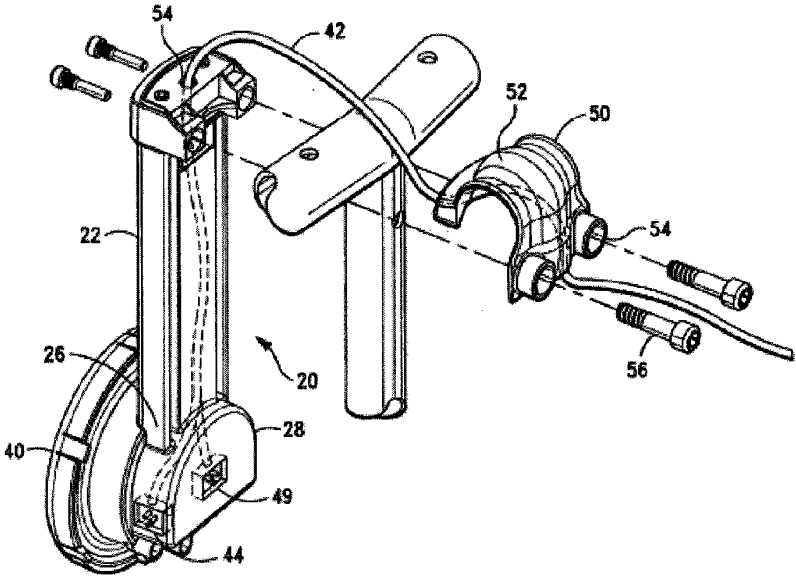


图 3

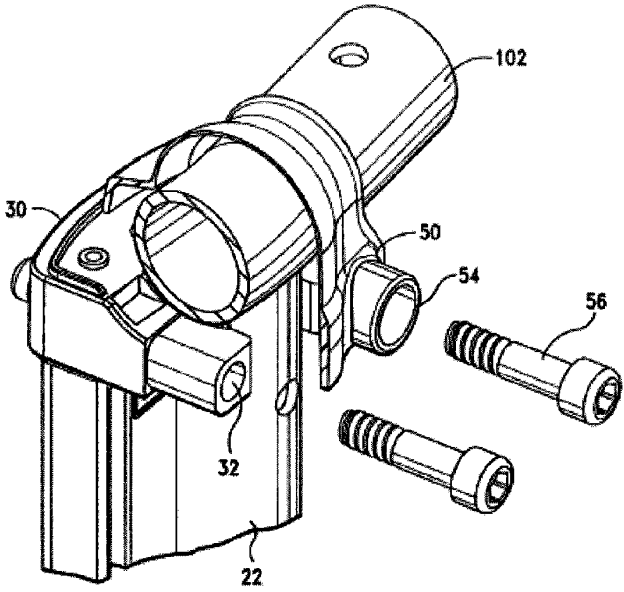


图 4

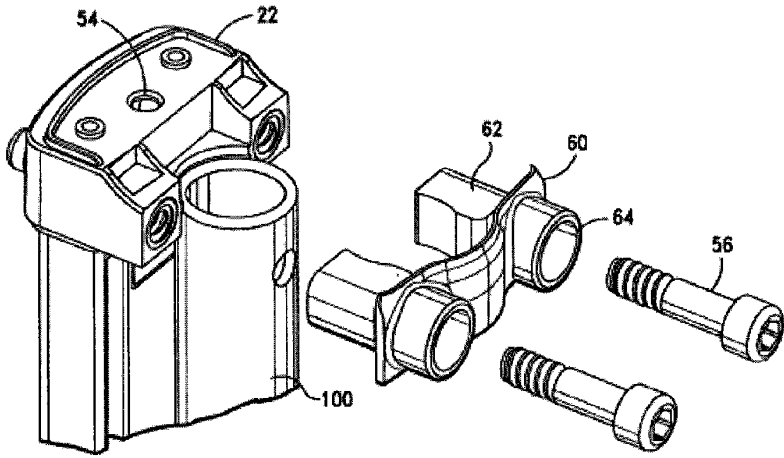


图 5

Publication Number: CN 202745430 U

Publication Date: Feb 20, 2013

Abstract

The utility model discloses a water pond having an anti-skidding structure. The water pond comprises net clamping side boards and a pond bottom, wherein the net clamping side boards are connected end to end to form an apron, the pond bottom is installed at the bottoms of the net clamping side boards, the pond bottom is provided with a plurality of anti-skidding granules, and the pond bottom and the granules are integrated. The water pond further comprises an inflating pipe which is installed on the tops of the net clamping side boards. The water pond further comprises a plurality of supporting frames, and the supporting frames are vertically installed on the peripheries of the net clamping side boards and enable the net clamping side boards to form a many-sided shape in supported mode. The pond bottom of the water pond is provided with the anti-skidding granules, roughness of the pond bottom is greatly improved, and obvious anti-skidding effect is achieved.



(12) 实用新型专利

(10) 授权公告号 CN 202745430 U

(45) 授权公告日 2013.02.20

(21) 申请号 201220418212.8

(22) 申请日 2012.08.22

(73) 专利权人 上海吉龙塑胶制品有限公司

地址 201205 上海市浦东新区川沙栏学路
460-520 号

(72) 发明人 刘继梁

(74) 专利代理机构 上海信好专利代理事务所
(普通合伙) 31249

代理人 徐雯琼

(51) Int. Cl.

E04H 4/04(2006.01)

E04H 4/14(2006.01)

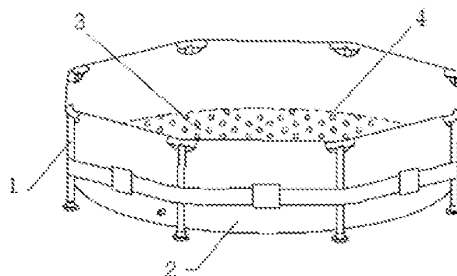
权利要求书 1 页 说明书 2 页 附图 1 页

(54) 实用新型名称

一种具有防滑结构的水池

(57) 摘要

本实用新型公开了一种具有防滑结构的水池,包含夹网旁板,夹网旁板首尾相连形成围裙;池底,池底设置在夹网旁板的底部,该池底设有与池底融为一体的若干防滑颗粒。该水池还包含充气管,充气管设置在夹网旁板的顶部。该水池还包含若干支架,若干支架垂直设置在夹网旁板外周,将夹网旁板支撑为多边形形状。该水池池底设有防滑颗粒,大大增加了池底的粗糙度,起到明显的防滑效果。



1. 一种具有防滑结构的水池,其特征在于,包含夹网旁板(2),所述的夹网旁板(2)首尾相连形成围裙;

池底(3),所述的池底(3)设置在夹网旁板(2)的底部,该池底(3)设有与池底(3)融为一体的若干防滑颗粒(4)。

2. 如权利要求1所述的具有防滑结构的水池,其特征在于,还包含充气管(5),所述的充气管(5)设置在夹网旁板(2)的顶部。

3. 如权利要求1所述的具有防滑结构的水池,其特征在于,还包含若干支架(1),若干所述的支架(1)垂直设置在夹网旁板(2)外周,将夹网旁板(2)支撑为多边形状。

4. 如权利要求1所述的具有防滑结构的水池,其特征在于,所述的池底(3)与防滑颗粒(4)均采用聚氯乙烯材料制成。

一种具有防滑结构的水池

技术领域

[0001] 本实用新型涉及一种夹网水池，具体涉及一种具有防滑结构的水池。

背景技术

[0002] 目前，现有的夹网水池在添加防滑功能的时候，需要在池底放置一块表面粗糙的防滑点，或者通过高周波将防滑底熔接在池底上，该方式复杂，采购及生产及成本高，使用起来麻烦且用后不易保存。

实用新型内容

[0003] 本实用新型提供了一种具有防滑结构的水池，该水池池底设有防滑颗粒，大大增加了池底的粗糙度，起到明显的防滑效果。

[0004] 为了达到上述目的，本实用新型通过以下技术方案实现：

[0005] 一种具有防滑结构的水池，其特点是，包含夹网旁板，所述的夹网旁板首尾相连形成围裙；

[0006] 池底，所述的池底设置在夹网旁板的底部，该池底设有与池底融为一体的若干防滑颗粒。

[0007] 该水池还包含充气管，所述的充气管设置在夹网旁板的顶部。

[0008] 该水池还包含若干支架，若干所述的支架垂直设置在夹网旁板外周，将夹网旁板支撑为多边形。

[0009] 所述的池底与防滑颗粒均采用聚氯乙烯材料制成。

[0010] 本实用新型一种具有防滑结构的水池与现有技术相比具有以下优点：

[0011] 1、本实用新型专利采用滴塑工艺，即在水池生产之前，将液态的塑胶成分一滴一滴地滴在池底材料上，在池底上形成颗粒状的凸起，大大增加池底的粗糙度，起到防滑的效果，不需要额外增加防滑垫。

[0012] 2、本实用新型解决了生产工艺复杂的难题，滴塑过的池底在生产时工艺和未滴塑的池底一样，不增加后续工艺难度。

[0013] 3、本实用新型的成品无纺布类部件，使用后易晾晒，保存时易折叠，体积小易存放。

[0014] 4、防滑颗粒可以通过改变颗粒凸起的大小、密度，以达到控制池底的粗糙度，起到不同的防滑效果。

附图说明

[0015] 图1为本实用新型一种具有防滑结构的水池实施例1结构示意图；

[0016] 图2为本实用新型池底的结构示意图；

[0017] 图3为本实用新型一种具有防滑结构的水池实施例2结构示意图。

具体实施方式

[0018] 以下结合附图,通过详细说明一个较佳的具体实施例,对本实用新型做进一步阐述。

[0019] 实施例 1,如图 1、图 2 所示,一种具有防滑结构的水池,包含夹网旁板 2,所述的夹网旁板 2 首尾相连形成围裙;池底 3,所述的池底 3 设置在夹网旁板 2 的底部,该池底 3 设有与池底 3 融为一体的若干防滑颗粒 4;若干支架 1,若干所述的支架 1 垂直设置在夹网旁板 2 外周,将夹网旁板 2 支撑为多边形形状。所述的池底 3 与防滑颗粒 4 均采用 PVC(聚氯乙烯)材料制成。

[0020] 实施例 2,如图 2、图 3 所示,一种具有防滑结构的水池,包含夹网旁板 2,所述的夹网旁板 2 首尾相连形成围裙;池底 3,所述的池底 3 设置在夹网旁板 2 的底部,该池底 3 设有与池底 3 融为一体的若干防滑颗粒 4;充气管 5,所述的充气管 5 设置在夹网旁板 2 的顶部,当充气管 5 充气后,能将夹网旁板 2 撑开。所述的池底 3 与防滑颗粒 4 均采用 PVC(聚氯乙烯)材料制成。

[0021] 防滑颗粒 4 形成之前是一种 PVC 液态塑胶,将这种液态塑胶流进带有网孔的表面(网孔大小可以调节),液态塑胶便以液滴形式往下方滴去。在网孔表面下方,将池底 3 以传送带方式缓慢通过,液态塑胶便滴在池底 3 表面。由于用于制作防滑颗粒的液体成分和池底成分一样,都是 PVC 材料,待液态塑胶冷却后,液态塑胶便和池底融为一体,并在池底表面形成颗粒状凸起(如图 2 所示),即形成了防滑颗粒 4。防滑颗粒凸起的大小和密度可以通过调节网孔的大小、密度和池底 3 运动的速度来调节。

[0022] 防滑底皮料完成之后便可和原先皮料(无防滑颗粒)一样作为池底原料投入生产。生产工艺、生产设备及工人操作方法完全不变,相比无防滑功能水池,只是在池底表面增加了防滑颗粒。这种防滑功能的结构将带有防滑功能的水池成本降至最低。

[0023] 综上所述,本实用新型一种具有防滑结构的水池,该水池池底设有防滑颗粒,大大增加了池底的粗糙度,起到明显的防滑效果。

[0024] 尽管本实用新型的内容已经通过上述优选实施例作了详细介绍,但应当认识到上述的描述不应被认为是对本实用新型的限制。在本领域技术人员阅读了上述内容后,对于本实用新型的多种修改和替代都将是显而易见的。因此,本实用新型的保护范围应由所附的权利要求来限定。

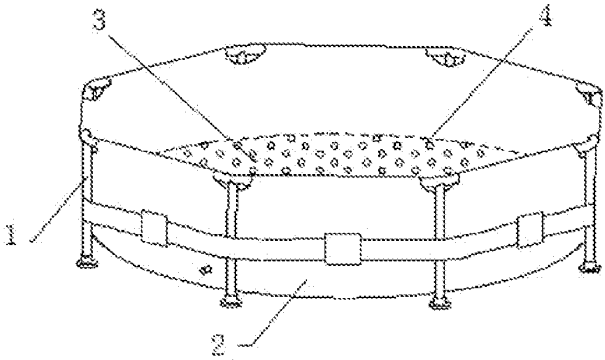


图 1

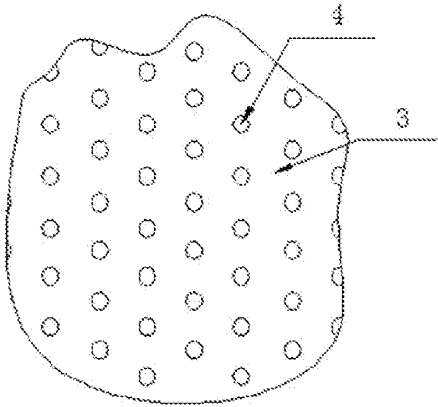


图 2

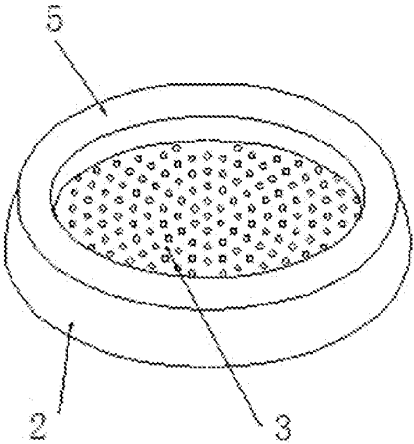


图 3

Publication Number: CN 204475913 U

Publication Date: Jul 15, 2015

Abstract

The utility model provides a support pool which comprises multiple vertical supporting pipes, multiple horizontal supporting pipes, a pool body, a strengthening band, a fixing band and at least one fixing device, wherein the horizontal supporting pipes are connected with the vertical supporting pipes and used as a supporting structure for the support pool. The pool body comprises a pool bottom and pool walls arranged on the inner side of the vertical supporting pipes, connected with the edge of the pool bottom and vertically extend upward. The strengthening band is continuous annular, arranged on the inner side of the vertical supporting pipes and the outer side of the pool walls, covers the whole or part of the circumference of the pool body and fits for the pool walls. The fixing band is continuous annular and arranged on the outer side of the strengthening band and the vertical supporting pipes. The fixing device is fixedly connected with the strengthening band, and a fixing band penetrates through the fixing device. The vertical supporting pipes of the support pool are not prone to moving and good in overall stability so that possible collapse accidents caused by movement of the vertical supporting pipes can be avoided.

(19) 中华人民共和国国家知识产权局



(12) 实用新型专利



(10) 授权公告号 CN 204475913 U

(45) 授权公告日 2015.07.15

(21) 申请号 201520017165.X

(22) 申请日 2015.01.12

(73) 专利权人 上海荣威塑胶工业有限公司

地址 201812 上海市嘉定区上海市曹安路
3065 号

(72) 发明人 刘峰

(74) 专利代理机构 上海专利商标事务所有限公
司 31100

代理人 徐洁晶

(51) Int. Cl.

E04H 4/04(2006.01)

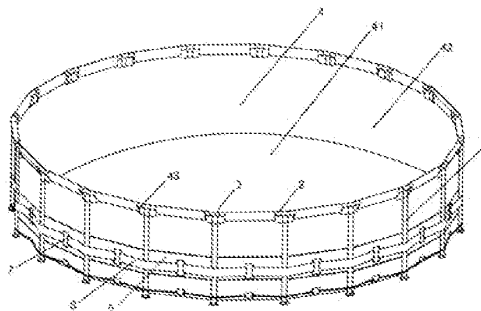
权利要求书1页 说明书4页 附图4页

(54) 实用新型名称

支架水池

(57) 摘要

本实用新型提供一种支架水池,包括:多个垂直支撑管;多个水平支撑管,与多个垂直支撑管相连接,共同作为支架水池的支撑结构;水池体,其包括:池底;池壁,设于垂直支撑管的内侧,与池底的边缘相连接且垂直向上延伸;补强带,呈一连续的环形形状并设于垂直支撑管的内侧、池壁的外侧,补强带覆盖整个或部分水池体的周长且与池壁之间相贴合;固定带,呈一连续的环形形状并设于补强带和垂直支撑管的外侧;以及至少一个固定装置,其与补强带固定连接,固定带从固定装置中穿过。本支架水池的垂直支撑管不易移动,整体稳定性好,避免垂直支撑管移动可能导致的坍塌事故。



CN 204475913 U

1. 一种支架水池, 其特征在于, 包括:
多个垂直支撑管 (1);
多个水平支撑管 (2), 与多个所述垂直支撑管 (1) 相连接; 所述水平支撑管 (2) 与所述垂直支撑管 (1) 共同作为所述支架水池的支撑结构;
水池体 (4), 其包括:
池底 (41);
池壁 (42), 与所述池底 (41) 的边缘相连接且垂直向上延伸, 所述池壁 (42) 设于所述垂直支撑管 (1) 的内侧;
补强带 (5), 呈一连续的环形形状并设于所述垂直支撑管 (1) 的内侧、所述池壁 (42) 的外侧, 所述补强带 (5) 覆盖整个或者部分所述水池体 (4) 的周长且与所述池壁 (42) 之间相贴合;
固定带 (6), 呈一连续的环形形状并设于所述补强带 (5) 和所述垂直支撑管 (1) 的外侧; 以及
至少一个固定装置 (7), 其与所述补强带 (5) 固定连接, 所述固定带 (6) 从所述固定装置 (7) 中穿过。
2. 根据权利要求 1 所述的支架水池, 其特征在于, 多个所述垂直支撑管 (1) 系按照一环形形状彼此分开排列, 于是多个所述水平支撑管 (2) 与多个所述垂直支撑管 (1) 之间通过多个 T 型接头 (3) 相连接, 使所述水平支撑管 (2) 连接成环形。
3. 根据权利要求 2 所述的支架水池, 其特征在于, 所述水池体 (4) 还包括支撑管套管 (43), 设于所述池壁 (42) 的上边缘, 所述水平支撑管 (2) 穿设在所述支撑管套管 (43) 中, 并露出所述 T 型接头 (3)。
4. 根据权利要求 3 所述的支架水池, 其特征在于, 所述水池体 (4) 系由柔性胶布制成。
5. 根据权利要求 4 所述的支架水池, 其特征在于, 所述固定装置 (7) 为固定贴片 (71)、固定贴环 (72) 或者固定贴件 (73)。
6. 根据权利要求 5 所述的支架水池, 其特征在于, 所述水池体 (4)、所述补强带 (5)、所述固定带 (6)、所述固定贴片 (71) 和 / 或所述固定贴环 (72) 为两层 PVC 胶布夹设一层网布的增强型 PVC 胶布。
7. 根据权利要求 6 所述的支架水池, 其特征在于, 所述网布为尼龙网布或者涤纶网布。
8. 根据权利要求 7 所述的支架水池, 其特征在于, 所述固定贴件 (73) 为塑料注塑件或者橡胶注塑件。
9. 根据权利要求 8 所述的支架水池, 其特征在于, 所述垂直支撑管 (1)、所述水平支撑管 (2) 和 / 或所述 T 型接头 (3) 是采用硬质金属管或者硬质注塑管制成的, 其截面形状为 D 形、椭圆形或者圆形。
10. 根据权利要求 9 所述的支架水池, 其特征在于, 所述补强带 (5) 与所述池壁 (42) 之间、所述固定装置 (7) 与所述补强带 (5) 之间是通过高频焊接的方式进行固定连接的。

支架水池

技术领域

[0001] 本实用新型涉及一种水池,具体来说,本实用新型涉及一种包含支撑管和柔性水池体的支架水池。

背景技术

[0002] 地上水池目前已经非常流行,特别是在欧美国家,地上水池被安装在家里的院子里或其它空地上,供成人和儿童娱乐。

[0003] 地上水池的结构和形式多样,圆形支架水池是其中一种比较典型的地上水池,其主要由水平的支撑管、垂直支撑管和柔性增强 PVC 胶布材质的水池体构成。水池体包括垂直池底和池壁,池壁安装在水平支撑管上,池壁上设有固定垂直支撑管的固定带,垂直支撑管设于固定带和池壁之间。

[0004] 这种结构的支架水池充满水之后水体对池壁的压力很大,且池壁位置低的部分承受的压力较位置高的部分承受的压力更大。这种压力分布使得池壁的下部容易发生向外膨胀变形。由于垂直支撑管靠近池壁的外侧,池壁膨胀变形到一定的程度后就会对垂直支撑管横向挤压,使得垂直支撑管发生位移,而固定带很难对垂直支撑管起到固定的作用。这样会直接影响到整个支架水池的稳定性,安全性较差,容易导致水池的倾覆倒塌,造成人身安全事故。

实用新型内容

[0005] 本实用新型所要解决的技术问题是提供一种改进的支架水池,其垂直支撑管不易移动,整体稳定性好,避免水池的垂直支撑管移动可能导致的坍塌事故。

[0006] 为解决上述技术问题,本实用新型提供一种支架水池,包括:

[0007] 多个垂直支撑管;

[0008] 多个水平支撑管,与多个所述垂直支撑管相连接;所述水平支撑管与所述垂直支撑管共同作为所述支架水池的支撑结构;

[0009] 水池体,其包括:

[0010] 池底;

[0011] 池壁,与所述池底的边缘相连接且垂直向上延伸,所述池壁设于所述垂

[0012] 直支撑管的内侧;

[0013] 补强带,呈一连续的环形形状并设于所述垂直支撑管的内侧、所述池壁的外侧,所述补强带覆盖整个或者部分所述水池体的周长且与所述池壁之间相贴合;

[0014] 固定带,呈一连续的环形形状并设于所述补强带和所述垂直支撑管的外侧;以及

[0015] 至少一个固定装置,其与所述补强带固定连接,所述固定带从所述固定装置中穿过。

[0016] 可选地,多个所述垂直支撑管系按照一环形形状彼此分开排列,于是多个所述水平支撑管与多个所述垂直支撑管之间通过多个 T 型接头相连接,使所述水平支撑管连接成

环形。

[0017] 可选地,所述水池体还包括支撑管套管,设于所述池壁的上边缘,所述水平支撑管穿设在所述支撑管套管中,并露出所述 T 型接头。

[0018] 可选地,所述水池体系由柔性胶布制成。

[0019] 可选地,所述固定装置为固定贴片、固定贴环或者固定贴件。

[0020] 可选地,所述水池体、所述补强带、所述固定带、所述固定贴片和 / 或所述固定贴环为两层 PVC 胶布夹设一层网布的增强型 PVC 胶布。

[0021] 可选地,所述网布为尼龙网布或者涤纶网布。

[0022] 可选地,所述固定贴件为塑料注塑件或者橡胶注塑件。

[0023] 可选地,所述垂直支撑管、所述水平支撑管和 / 或所述 T 型接头是采用硬质金属管或者硬质注塑管制成的,其截面形状为 D 形、椭圆形或者圆形。

[0024] 可选地,所述补强带与所述池壁之间、所述固定装置与所述补强带之间是通过高频焊接的方式进行固定连接的。

[0025] 与现有技术相比,本实用新型具有以下优点:

[0026] 本实用新型的支架水池在充水后最容易膨胀变形的池壁外侧(例如其下半部)、垂直支撑管的内侧设置了补强带,以有效减少池壁的膨胀变形;同时将固定带设置在膨胀变形最小的位置,即补强带和垂直支撑管的外侧,这样大大减小了池壁对垂直支撑管的向外推力。固定带和固定装置配合则可以有效限制垂直支撑管的位置,使其不易移动,防止其发生向外位移。

[0027] 本实用新型的支架水池大大改善了支撑结构的整体稳定性,避免了因水池的垂直支撑管移动可能导致的垮塌的风险,具有很好的安全性,且结构简单,易于推广。

附图说明

[0028] 本实用新型的上述的以及其他的特征、性质和优势将通过下面结合附图和实施例的描述而变得更加明显,其中:

[0029] 图 1 为本实用新型一个实施例的支架水池的整体立体结构示意图;

[0030] 图 2 为本实用新型一个实施例的支架水池的垂直支撑管、水平支撑管、T 型接头和水池体组装的局部结构示意图;

[0031] 图 3 为本实用新型一个实施例的支架水池的池壁、补强带、固定带和固定装置的剖面结构示意图;

[0032] 图 4 为本实用新型另一个实施例的支架水池的垂直支撑管、池壁、补强带、固定带和固定装置的局部结构示意图;

[0033] 图 5 为图 4 所示实施例的支架水池的池壁、补强带、固定带和固定装置的剖面结构示意图;

[0034] 图 6 为本实用新型再一个实施例的支架水池的垂直支撑管、池壁、补强带、固定带和固定装置的局部结构示意图;

[0035] 图 7 为图 6 所示实施例的支架水池的池壁、补强带、固定带和固定装置的剖面结构示意图。

具体实施方式

[0036] 下面结合具体实施例和附图对本实用新型作进一步说明,在以下的描述中阐述了更多的细节以便于充分理解本实用新型,但是本实用新型显然能够以多种不同于此描述的其它方式来实施,本领域技术人员可以在不违背本实用新型内涵的情况下根据实际应用情况作类似推广、演绎,因此不应以此具体实施例的内容限制本实用新型的保护范围。

[0037] 图1为本实用新型一个实施例的支架水池的整体立体结构示意图。需要注意的是,这个以及后续其他的附图均仅作为示例,其并非是按照等比例的条件绘制的,并且不应该以此作为对本实用新型实际要求的保护范围构成限制。如图1所示,该支架水池主要包括:多个垂直支撑管1、多个水平支撑管2、水池体4、补强带5、固定带6和至少一个固定装置7。其中,多个垂直支撑管1可以按照一环形形状彼此分开排列;多个水平支撑管2与多个垂直支撑管1之间通过多个T型接头3相连接。水平支撑管2被T型接头3连接成环形,与垂直支撑管1共同作为支架水池的支撑结构。为了保证有足够的支撑强度,垂直支撑管1、水平支撑管2和T型接头3最好都采用高强度的硬质金属管(例如钢管)或者硬质注塑管制成,它/它们的截面形状可以为D形、椭圆形或者圆形。

[0038] 作为充水容器的水池体4可以由柔性胶布制成,优选为由两层PVC胶布夹设一层网布的柔性的增强型PVC胶布,该网布可以为尼龙网布或者涤纶网布。该水池体4主要包括池底41(优选为圆形)和池壁42。其中,池壁42与池底41的边缘相连接且垂直向上延伸,形成一个可以容纳水体的容器,池壁42设于垂直支撑管1的内侧。图2为本实用新型一个实施例的支架水池的垂直支撑管、水平支撑管、T型接头和水池体组装的局部结构示意图。请结合图1和图2所示,该水池体4还可以包括支撑管套管43,其设于池壁42的上边缘,水平支撑管2穿设在支撑管套管43中,并露出T型接头3。

[0039] 由于水池体4充满水之后,池壁42位置低的部分承受水体的压力较位置高的部分承受的压力更大,更容易膨胀变形。图3为本实用新型一个实施例的支架水池的池壁、补强带、固定带和固定装置的剖面结构示意图。请结合图1和图3所示,为了解决池壁42的下半部向外膨胀变形情况,在池壁42的外侧下半部、垂直支撑管1的内侧可设置一个呈连续的环形形状的补强带5,其覆盖整个或者部分水池体4的周长,且通过高频焊接(高频热合)的方式使补强带5与池壁42之间贴合固定连接。补强带5的作用在于增加池壁42的强度,大幅度减小池壁42向外膨胀变形的幅度,减小或避免其对外侧的垂直支撑管1施力。

[0040] 固定带6呈一连续的环形形状并设于补强带5和垂直支撑管1的外侧,而固定装置7(在图3中具体化为固定贴片71)也通过高频焊接(高频热合)的方式与补强带5固定连接,固定带6从固定装置7中穿过,使环形形状的固定带6固定在补强带5上,而垂直支撑管1是穿设在固定带6的内侧。由此可以限定垂直支撑管1的位置,防止垂直支撑管1向外发生位移。

[0041] 当然,在本实用新型中,上述固定装置7的形式可以是多样的,并不仅限于图3中所示的上下两端分别与补强带5固定连接的固定贴片71,下面再示例性地给出两种固定装置7的其他形式。

[0042] 图4为本实用新型另一个实施例的支架水池的垂直支撑管、池壁、补强带、固定带和固定装置的局部结构示意图;图5为图4所示实施例的支架水池的池壁、补强带、固定带和固定装置的剖面结构示意图。图6为本实用新型再一个实施例的支架水池的垂直支撑

管、池壁、补强带、固定带和固定装置的局部结构示意图；图7为图6所示实施例的支架水池的池壁、补强带、固定带和固定装置的剖面结构示意图。如图4、5以及如图6、7所示，该固定装置7的具体形式还可以采用固定贴环72或者固定贴件73，同样都能够起到与固定贴片71相同的固定作用。

[0043] 在本实用新型中，上述补强带5、固定带6、固定贴片71和固定贴环72的材质可以是与水池体4相同的增强型PVC胶布，即两层PVC胶布夹设一层网布的PVC胶布，该网布可以为尼龙网布或者涤纶网布。而上述固定贴件73的材质可以为塑料注塑件或者橡胶注塑件。

[0044] 综上所述，本实用新型的支架水池在充水后最容易膨胀变形的池壁42外侧（例如下半部）、垂直支撑管1的内侧设置了补强带5，以有效减少池壁42的膨胀变形；同时将固定带6设置在膨胀变形最小的位置，即补强带5和垂直支撑管1的外侧，这样大大减小了池壁42对垂直支撑管1的向外推力。固定带6和形式各异的固定装置7配合，则可以有效限制垂直支撑管1的位置，使其不易移动，防止其发生向外位移。

[0045] 本实用新型的支架水池大大改善了支撑结构的整体稳定性，避免了因水池的垂直支撑管移动可能导致的垮塌的风险，具有很好的安全性，且结构简单，易于推广。

[0046] 本实用新型虽然以较佳实施例公开如上，但其并不是用来限定本实用新型，任何本领域技术人员在不脱离本实用新型的精神和范围内，都可以做出可能的变动和修改。因此，凡是未脱离本实用新型技术方案的内容，依据本实用新型的技术实质对以上实施例所作的任何修改、等同变化及修饰，均落入本实用新型权利要求所界定的保护范围之内。

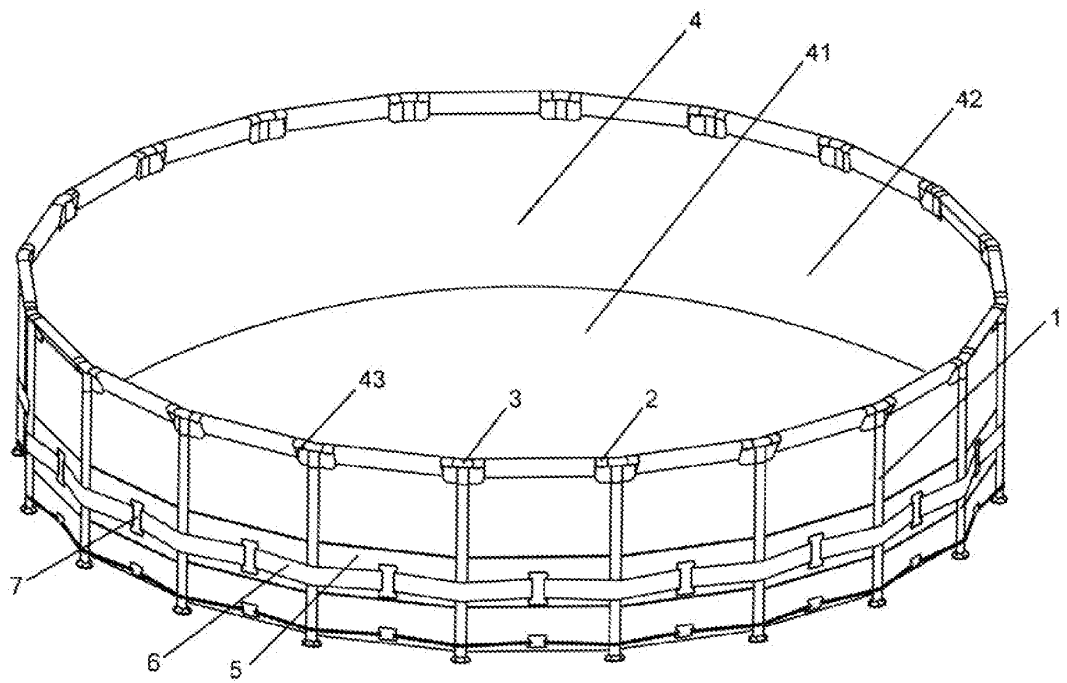


图 1

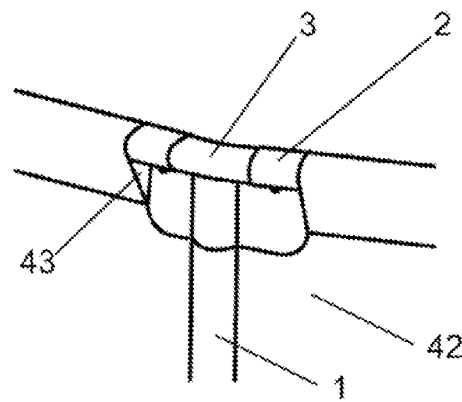


图 2

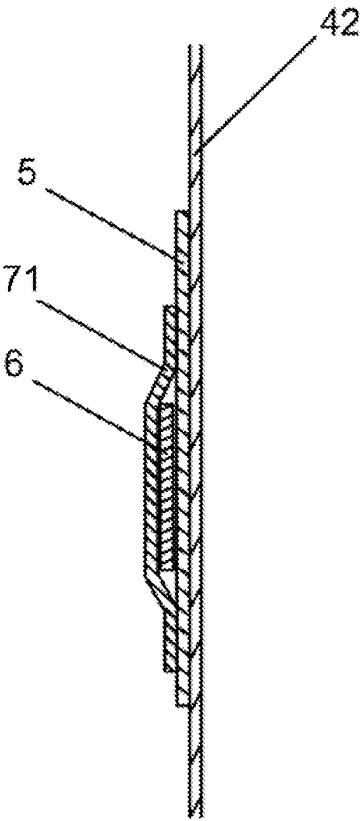


图 3

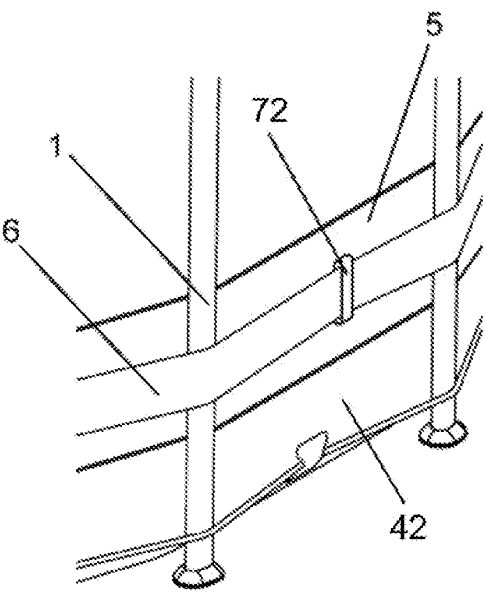


图 4

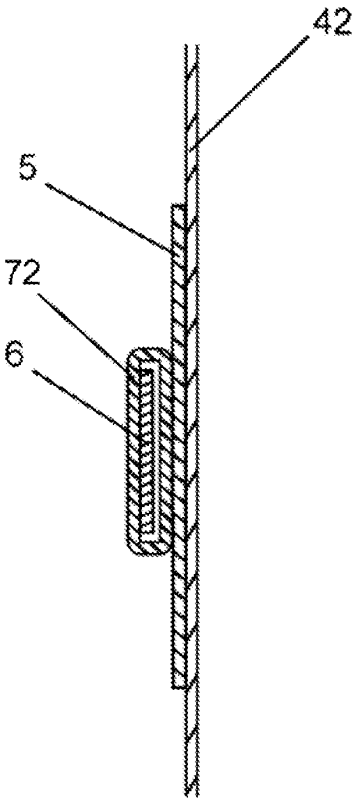


图 5

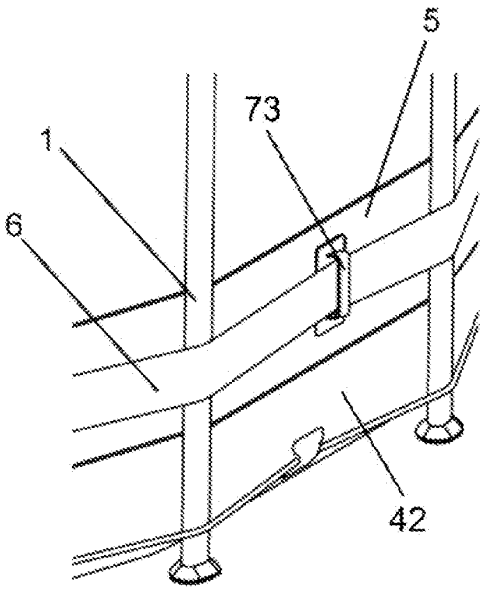


图 6

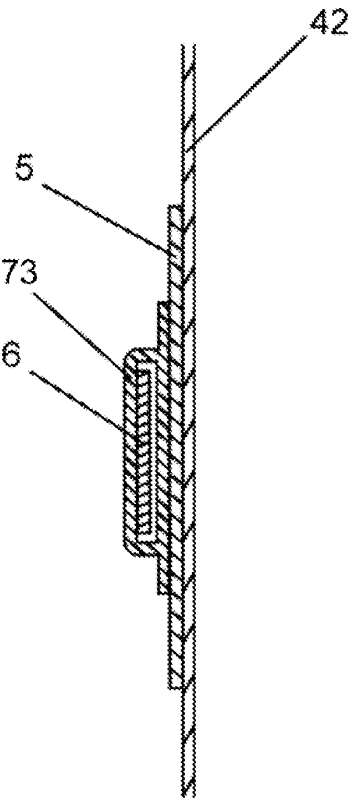


图 7

Publication Number: CN 209130364 U

Publication Date: Jul 19, 2019

Abstract

The utility model discloses a split type T-shaped joint for being connected with a pipe frame water pool. The pipe joint comprises two side pipe joints and a foot pipe joint, wherein the two side pipe joints and the foot pipe joint are matched to form a T-shaped structure, the T-shaped joint is divided into at least two parts which are independently made of plastic, and the at least two parts can be assembled, disassembled and fixedly assembled together to form the T-shaped structure comprising the two side pipe joints and the foot pipe joint. The utility model has the advantages that modular production is convenient to realize so as to reduce the production cost; the production precision of each joint can be improved, a gap between a pipe and the joint is reduced, water is prevented from entering, and pipe rusting (such as metal pipe selection) is reduced or delayed; simplified mold.



(21)申请号 201821518351.1

(22)申请日 2018.09.17

(73)专利权人 明达实业(厦门)有限公司

地址 361000 福建省厦门市海沧新阳工业
区翁角路858号

(72)发明人 黄志雄 谭艾明 许耀元

(74)专利代理机构 厦门市首创君合专利事务所
有限公司 35204

代理人 杨依展

(51)Int.Cl.

F16L 41/02(2006.01)

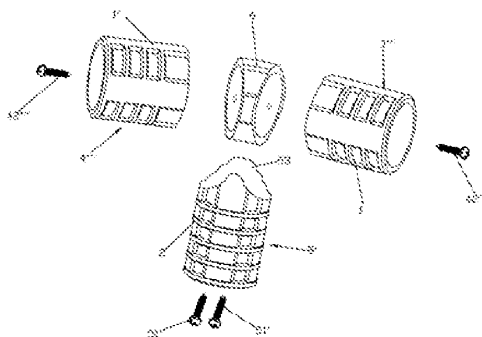
权利要求书2页 说明书4页 附图9页

(54)实用新型名称

用于连接管架水池的分体式T形接头

(57)摘要

本实用新型公开了用于连接管架水池的分体式T形接头,包括两个边管接头和一个脚管接头,该两个边管接头和一个脚管接头配合形成T形结构,该T形接头分成至少两个由塑胶独立制成的部件,该至少两个部件能装拆固定装接在一起且构成上述包含有两个边管接头和一个脚管接头的T形结构。它具有如下优点:方便实现模块化生产,以降低生产成本;可提高各接头生产精度,减少管和接头之间的间隙,避免水进入,减少或延误管生锈(如选用金属管);简化模具。



1. 用于连接管架水池的分体式T形接头,包括两个边管接头和一个脚管接头,该两个边管接头和一个脚管接头配合形成T形结构,其特征在于:该T形接头分成至少两个由塑胶独立制成的部件,该至少两个部件能装拆固定装接在一起且构成上述包含有两个边管接头和一个脚管接头的T形结构。

2. 根据权利要求1所述的用于连接管架水池的分体式T形接头,其特征在于:该T形接头分成两个由塑胶独立制成的部件,该两个部件分别为第一部件和第二部件;该第一部件包括一体成型的两个边管接头,该两个边管接头形成夹角;该第二部件包括一体成型的脚管接头。

3. 根据权利要求2所述的用于连接管架水池的分体式T形接头,其特征在于:该第一部件还具有一个介于两个边管接头之间的中间座,该中间座包括一围壁和一固接在围壁内的第一固接座;该第二部件还包括一固接在脚管接头内的第二固接座;该脚管接头和围壁适配套接,另设锁接件穿过脚管接头并固接该第一固接座和第二固接座。

4. 根据权利要求1所述的用于连接管架水池的分体式T形接头,其特征在于:该T形接头分成两个由塑胶独立制成的部件,该两个边管接头形成夹角且分别为第一边管接头和第二边管接头;该两个部件分别为第一部件和第二部件,该第一部件包括一体成型的第一边管接头和脚管接头,该第二部件包括第二边管接头。

5. 根据权利要求4所述的用于连接管架水池的分体式T形接头,其特征在于:该第一部件还具有一连接第一边管接头和脚管接头的中间座,该中间座包括一围壁和一固接在围壁内的第一固接座;该第二部件还包括一固接在第二边管接头内的第二固接座;该第二边管接头和围壁适配套接,另设锁接件穿过第二边管接头或第一边管接头并固接该第一固接座和第二固接座。

6. 根据权利要求1所述的用于连接管架水池的分体式T形接头,其特征在于:该T形接头分成三个由塑胶独立制成的部件,该两个边管接头形成夹角且分别为第一边管接头和第二边管接头;该三个部件分别为第一部件、第二部件和第三部件,该第一部件包括第一边管接头,该第二部件包括第二边管接头,该第三部件包括脚管接头。

7. 根据权利要求6所述的用于连接管架水池的分体式T形接头,其特征在于:该第一边管接头内固接有第一固接座,该第二边管接头内固接有第二固接座,该脚管接头内固接有第三固接座;另配设第一锁接件和两第二锁接件,该第一锁接件锁接该第一边管接头和第二边管接头,一第二锁接件锁接该脚管接头和第一边管接头,另一第二锁接件锁接该脚管接头和第二边管接头。

8. 根据权利要求1所述的用于连接管架水池的分体式T形接头,其特征在于:该T形接头分成四个由塑胶独立制成的部件,该两个边管接头形成夹角且分别为第一边管接头和第二边管接头;该四个部件分别为第一部件、第二部件、第三部件和第四部件,该第一部件包括第一边管接头,该第二部件包括第二边管接头,该第三部件包括脚管接头,该第四部件包括中间座。

9. 根据权利要求8所述的用于连接管架水池的分体式T形接头,其特征在于:该第一边管接头内固接有第一固接座,该第二边管接头内固接有第二固接座,该脚管接头内固接有第三固接座,该中间座介于该第一边管接头和第二边管接头之间;另配设两第一锁接件和第二锁接件,一第一锁接件锁接该第一边管接头和中间座,另一第一锁接件锁接该第二边

管接头和中间座,该第二锁接件锁接该脚管接头和中间座。

用于连接管架水池的分体式T形接头

技术领域

[0001] 本实用新型涉及一种管架水池的零部件,尤其涉及一种用于连接管架水池的分体式T形接头。

背景技术

[0002] 传统的用于连接管架水池的分体式T形接头都采用金属制成,由于金属制成的T形接头存在有接触水易生锈及金属硬度过高装配过程中可能损害水池管架或水池的不足,因此本申请人曾提出了一种采用注塑件一体成型出T形接头的解决方案,如CN206054469U所公告的实用新型。T形接头包括两个边管接头和一个脚管接头,该两个边管接头和一个脚管接头配合形成T形结构。由于T形接头包括有三个接头,三个接头一体成型因此存在有如下待改进之处:其一,需同时确保三个接头的精度,才能方便管架和接头的插接,因此T形接头的精度要求较高;其二,损坏任一接头就会导致整个T形接头无法使用;其三,模具复杂,占用空间大,生产成品率有待提高。

实用新型内容

[0003] 本实用新型提供了用于连接管架水池的分体式T形接头,其克服了背景技术中一体成型T形接头所存在的不足。

[0004] 本实用新型解决其技术问题的所采用的技术方案是:

[0005] 用于连接管架水池的分体式T形接头,包括两个边管接头和一个脚管接头,该两个边管接头和一个脚管接头配合形成T形结构,该T形接头分成至少两个由塑胶独立制成的部件,该至少两个部件能装拆固定装接在一起且构成上述包含有两个边管接头和一个脚管接头的T形结构。

[0006] 该T形接头分成两个由塑胶独立制成的部件,该两个部件分别为第一部件和第二部件;该第一部件包括一体成型的两个边管接头,该两个边管接头形成夹角;该第二部件包括一体成型的脚管接头。

[0007] 该第一部件还具有一个介于两个边管接头之间的中间座,该中间座包括一围壁和一固接在围壁内的第一固接座;该第二部件还包括一固接在脚管接头内的第二固接座;该脚管接头和围壁适配套接,另设锁接件穿过脚管接头并固接该第一固接座和第二固接座。

[0008] 该T形接头分成两个由塑胶独立制成的部件,该两个边管接头形成夹角且分别为第一边管接头和第二边管接头;该两个部件分别为第一部件和第二部件,该第一部件包括一体成型的第一边管接头和脚管接头,该第二部件包括第二边管接头。

[0009] 该第一部件还具有一连接第一边管接头和脚管接头的中间座,该中间座包括一围壁和一固接在围壁内的第一固接座;该第二部件还包括一固接在第二边管接头内的第二固接座;该第二边管接头和围壁适配套接,另设锁接件穿过第二边管接头或第一边管接头并固接该第一固接座和第二固接座。

[0010] 该T形接头分成三个由塑胶独立制成的部件,该两个边管接头形成夹角且分别为

第一边管接头和第二边管接头;该三个部件分别为第一部件、第二部件和第三部件,该第一部件包括第一边管接头,该第二部件包括第二边管接头,该第三部件包括脚管接头。

[0011] 该第一边管接头内固接有第一固接座,该第二边管接头内固接有第二固接座,该脚管接头内固接有第三固接座;另配设第一锁接件和两第二锁接件,该第一锁接件锁接该第一边管接头和第二边管接头,一第二锁接件锁接该脚管接头和第一边管接头,另一第二锁接件锁接该脚管接头和第二边管接头。

[0012] 该T形接头分成四个由塑胶独立制成的部件,该两个边管接头形成夹角且分别为第一边管接头和第二边管接头;该四个部件分别为第一部件、第二部件、第三部件和第四部件,该第一部件包括第一边管接头,该第二部件包括第二边管接头,该第三部件包括脚管接头,该第四部件包括中间座。

[0013] 该第一边管接头内固接有第一固接座,该第二边管接头内固接有第二固接座,该脚管接头内固接有第三固接座,该中间座介于该第一边管接头和第二边管接头之间;另配设两第一锁接件和第二锁接件,一第一锁接件锁接该第一边管接头和中间座,另一第一锁接件锁接该第二边管接头和中间座,该第二锁接件锁接该脚管接头和中间座。

[0014] 本技术方案与背景技术相比,它具有如下优点:

[0015] 由于先独立制成部件再组装,因此具有如下技术效果:其一,方便实现模块化生产,以降低生产成本;其二,可提高各接头生产精度,减少管和接头之间的间隙,避免水进入,减少或延误管生锈(如选用金属管);其三,简化模具。

[0016] T形接头分成两个由塑胶独立制成的部件,第一部件包括一体成型的两个边管接头,第二部件包括一体成型的脚管接头,结构简单,而且组装方便。

[0017] 脚管接头和围壁适配套接,另设锁接件穿过脚管接头并固接该第一固接座和第二固接座,连接强度高。

[0018] 两个部件分别为第一部件和第二部件,第一部件包括一体成型的第一边管接头和脚管接头,第二部件包括第二边管接头,结构简单,而且组装方便。

[0019] 三个部件分别为第一部件、第二部件和第三部件,第一部件包括第一边管接头,第二部件包括第二边管接头,第三部件包括脚管接头,结构简单,而且组装方便。

[0020] 第一部件包括第一边管接头,第二部件包括第二边管接头,第三部件包括脚管接头,第四部件包括中间座,结构简单,而且组装方便。

附图说明

[0021] 下面结合附图和具体实施方式对本实用新型作进一步说明。

[0022] 图1是实施例一的分体式T形接头的结构示意图。

[0023] 图2是实施例一的分体式T形接头、边管及脚管装接在一起的结构示意图。

[0024] 图3是实施例一的分体式T形接头、边管及脚管装接在一起的分解结构示意图。

[0025] 图4是实施例一的分体式T形接头、边管及脚管装接在一起的剖面示意图。

[0026] 图5是实施例一的脚管的截面示意图。

[0027] 图6是实施例二的分体式T形接头、边管及脚管装接在一起的分解结构示意图。

[0028] 图7是实施例三的分体式T形接头、边管及脚管装接在一起的剖面示意图。

[0029] 图8是实施例四的分体式T形接头的结构示意图。

[0030] 图9是实施例五的分体式T形接头的结构示意图。

[0031] 图10是实施例六的分体式T形接头的结构示意图。

具体实施方式

[0032] 实施例一

[0033] 用于连接管架水池的分体式T形接头,请查阅图1至图5,包括两个边管接头1和一个脚管接头2,该两个边管接头1和一个脚管接头2配合形成T形结构,该两边管接头1的夹角可为多角度。该T形接头分成至少两个由塑胶独立制成的部件,该至少两个部件能装拆固定装接在一起且构成上述包含有两个边管接头和一个脚管接头的T形结构。该部件例如为塑胶射出件。由于先独立制成部件再组装,因此一方面,可选用配套不同直径管的部件进行组装,方便实现模块化生产,以降低生产成本;另一方面,可提高各接头生产精度,减少管和接头之间的间隙,避免水进入,减少或延误管生锈(如选用金属管)。该管根据需要可选用金属或非金属管。

[0034] 本具体实施方式之中:该T形接头分成两个由塑胶独立制成的部件,该两个部件分别为第一部件3和第二部件4;该第一部件3包括一体成型的两个边管接头1,该两个边管接头1形成夹角,该夹角如90-180度;该第二部件4包括一体成型的脚管接头2。该第一部件3还具有一个介于两个边管接头1之间的中间座31,该中间座31包括一围壁和一固接在围壁内的第一固接座;该第二部件4还包括一固接在脚管接头内的第二固接座41;该脚管接头和围壁适配套接,另设锁接件42,该锁接件如螺钉,穿过脚管接头并固接该第一固接座和第二固接座。

[0035] 使用过程中,两个边管A分别能装拆地插接在两个边管接头1之内,脚管B能装拆地插接在脚管接头2之内,该脚管B的截面如为跑道型。该边管A和边管接头1之间,及,该脚管B和脚管接头2之间,都设有能松释的锁接结构,该锁接结构的结构如:该边管接头1或脚管接头2设有未封闭且贯穿内外的切缝C1,使该切缝C1中围有一个悬臂C2,该悬臂C2之内壁凸设有锁凸C3;该边管或脚管凹设有通至该边管或脚管一端面的滑槽C4,该滑槽C4之槽壁的内末端凹设有锁槽C5;使用过程中,该滑槽C4对齐该锁凸C3,插入边管或脚管,使锁凸C3和锁槽C5配合实现卡扣锁接,用力拔出即可松释该锁接。采用该结构,一方面通过锁凸和锁槽配合实现锁接,另一方面该滑槽和锁凸配合还能提供导向。

[0036] 实施例二

[0037] 它与实施例一不同之处在于:请查阅图6,该边管A和边管接头1之间的锁接结构采用如下结构:该边管接头1设有贯穿上下的第一通孔D1,该边管A设有贯穿上下的第二通孔D2;另配设插销,该插销一端设有插销头D3,另一端端面凹设有横向贯穿的切缝D4,通过切缝使另一端形成至少两个悬空臂,该悬空臂末端凸设有锁接舌D5;使用过程中:插销的另一端穿过该第一通孔D1和第二通孔D2,该插销头D3和锁接舌D5分别顶抵在边管接头1之顶壁和底壁以将边管接头1和边管A锁接在一起;按压该锁接舌D5即可拔出插销实现锁接机构的松释。根据需要,该插销还可配套有垫圈D6,该垫圈D6套接插销且顶抵在插销头和边管接头1之间。

[0038] 实施例三

[0039] 它与实施例二不同之处在于:请查阅图7,该边管A和边管接头1之间的锁接结构采

用如下结构:该边管接头1设有贯穿内外的第一贯穿孔E1,该边管A设有贯穿内外的第二贯穿孔E2;该边管A内固设有固座E3,该固座E3设有滑动的锁接头E4,该锁接头E4和固座E3之间设有弹簧E5;该锁接头E4穿过第二贯穿孔并插入第一贯穿孔,以此实现锁接;按压该锁接头E4使其内缩以脱离第一贯穿孔,即可实现松释。

[0040] 实施例四

[0041] 它与实施例一、二、三不同之处在于:请查阅图8,该T形接头分成两个由塑胶独立制成的部件,该两个边管接头形成夹角且分别为第一边管接头1和第二边管接头1';该两个部件分别为第一部件3'和第二部件4',该第一部件3'包括一体成型的第一边管接头1和脚管接头2,该第二部件4'包括第二边管接头1'。该第一部件还具有一连接第一边管接头和脚管接头的中间座31',该中间座包括一围壁和一固接在围壁内的第一固接座;该第二部件还包括一固接在第二边管接头内的第二固接座41';该第二边管接头1'和围壁适配套接,另设锁接件42',锁接件42'例如螺钉,穿过第二边管接头或第一边管接头并固接该第一固接座和第二固接座。

[0042] 实施例五

[0043] 它与实施例四不同之处在于:请查阅图9,该T形接头分成三个由塑胶独立制成的部件,该两个边管接头形成夹角且分别为第一边管接头1和第二边管接头1';该三个部件分别为第一部件3''、第二部件4''和第三部件5,该第一部件3''包括第一边管接头,该第二部件4''包括第二边管接头,该第三部件5包括脚管接头。该第一边管接头内固接有第一固接座,该第二边管接头内固接有第二固接座,该脚管接头内固接有第三固接座;另配设第一锁接件42''和两第二锁接件51,该第一锁接件锁接该第一边管接头和第二边管接头,一第二锁接件锁接该脚管接头和第一边管接头,另一第二锁接件锁接该脚管接头和第二边管接头。而且,具体结构中,该第三部件之脚管接头上周缘的前后向局部向上延伸成保护壁53,该第一部件和第二部件介于该前后的保护壁53之间,以增强连接强度。该保护壁53在沿前后投影中呈顶角在上的三角形。

[0044] 实施例六

[0045] 它与实施例五不同之处在于:请查阅图10,该T形接头分成四个由塑胶独立制成的部件,该两个边管接头形成夹角且分别为第一边管接头和第二边管接头;该四个部件分别为第一部件3'''、第二部件4'''、第三部件5'和第四部件6,该第一部件包括第一边管接头,该第二部件包括第二边管接头,该第三部件包括脚管接头,该第四部件包括中间座。该第一边管接头内固接有第一固接座,该第二边管接头内固接有第二固接座,该脚管接头内固接有第三固接座,该中间座介于该第一边管接头和第二边管接头之间;另配设两第一锁接件42'''和第二锁接件52',一第一锁接件锁接该第一边管接头和中间座,另一第一锁接件锁接该第二边管接头和中间座,该第二锁接件锁接该脚管接头和中间座。

[0046] 以上所述,仅为本实用新型较佳实施例而已,故不能依此限定本实用新型实施的范围,即依本实用新型专利范围及说明书内容所作的等效变化与修饰,皆应仍属本实用新型涵盖的范围内。

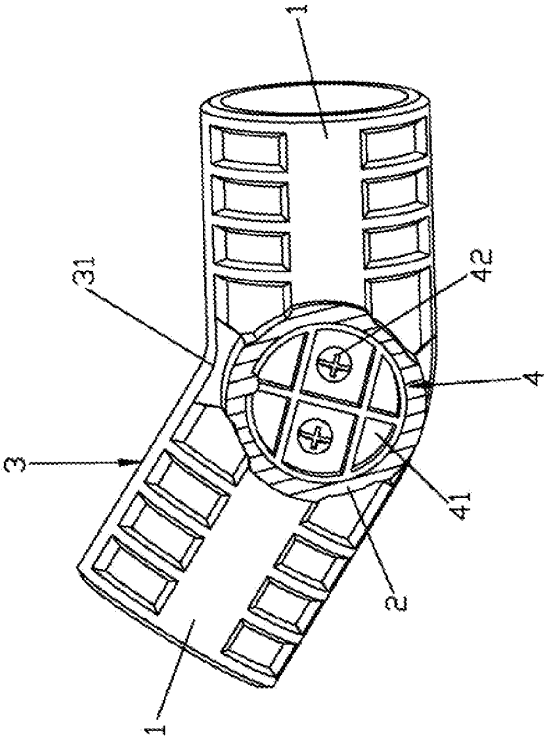


图1

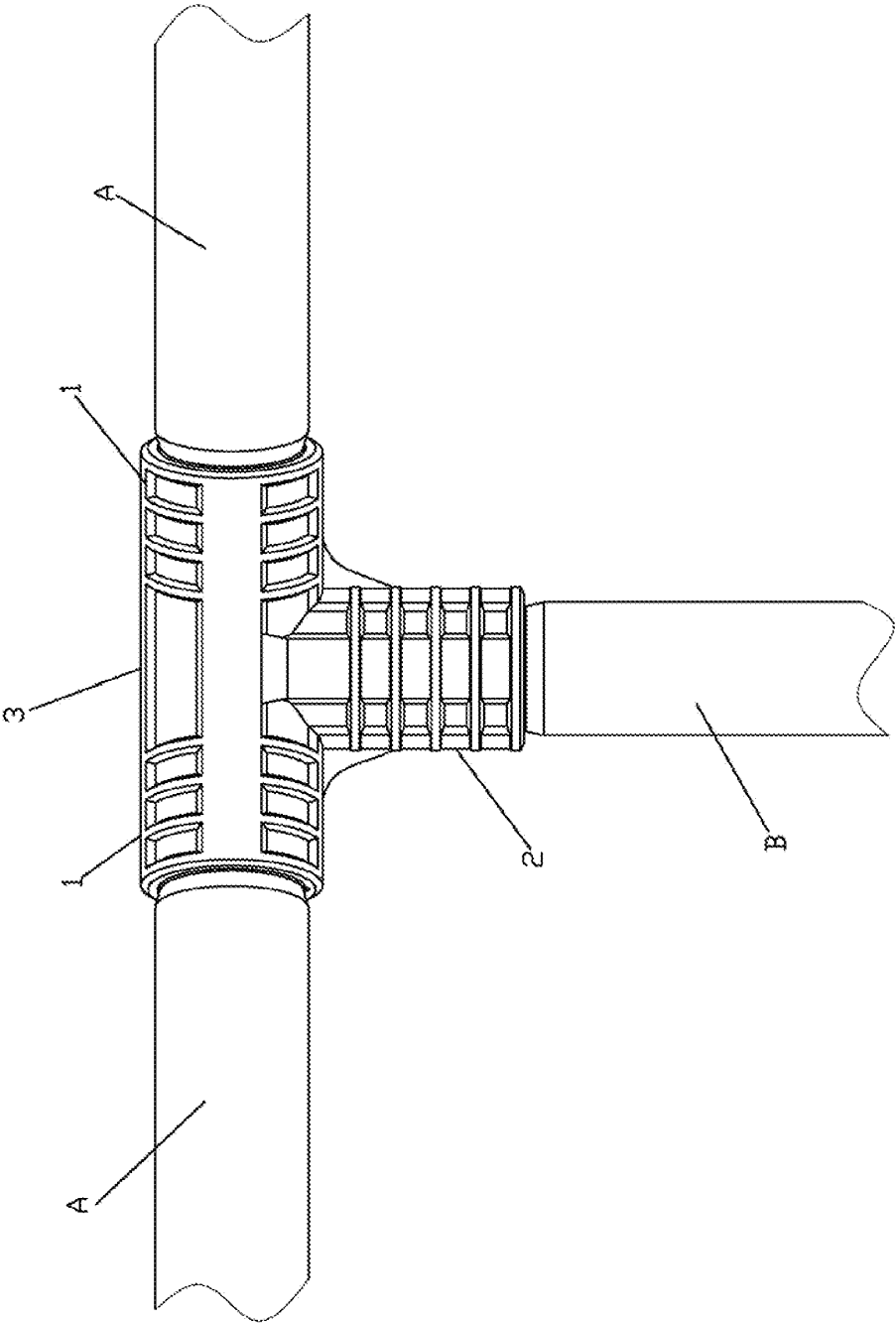


图2

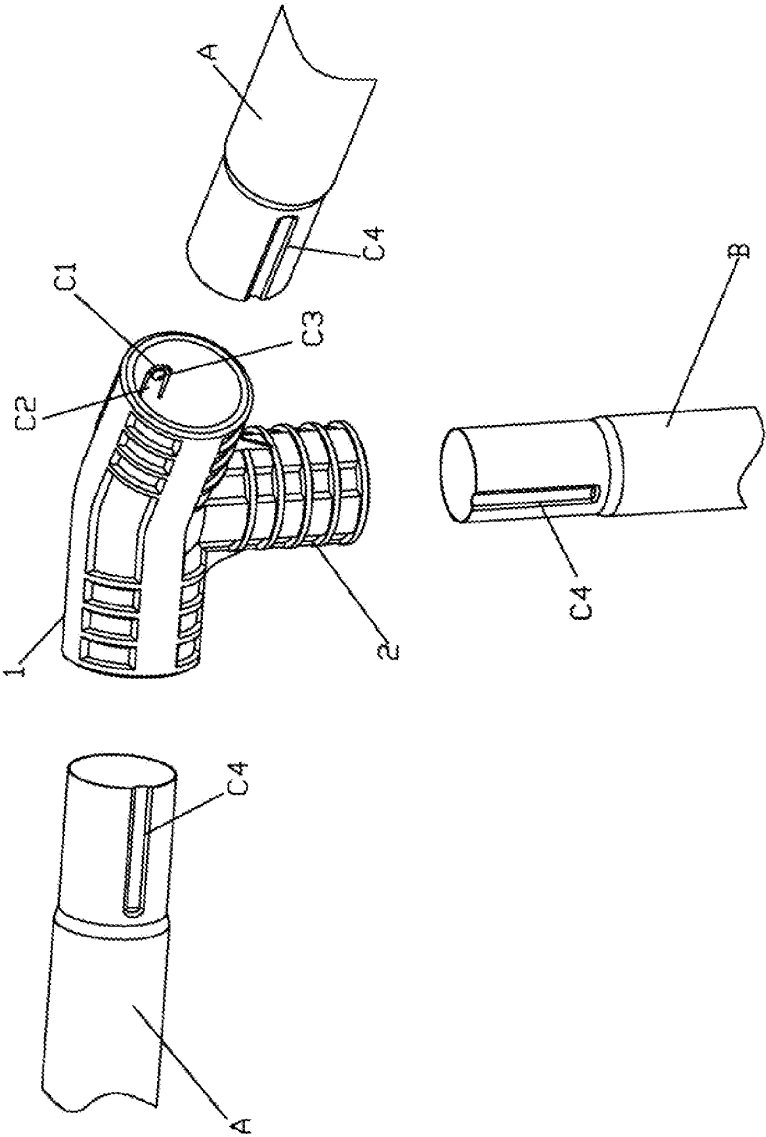


图3

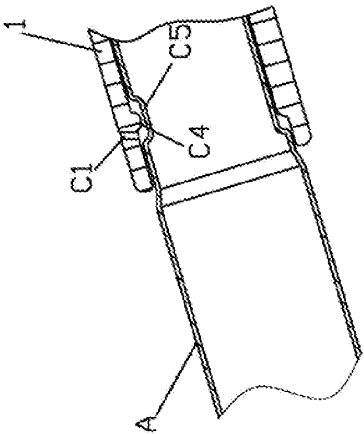


图4

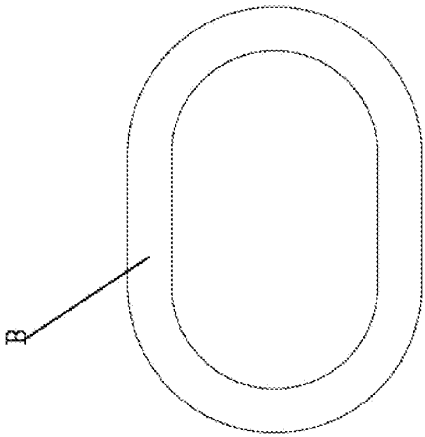


图5

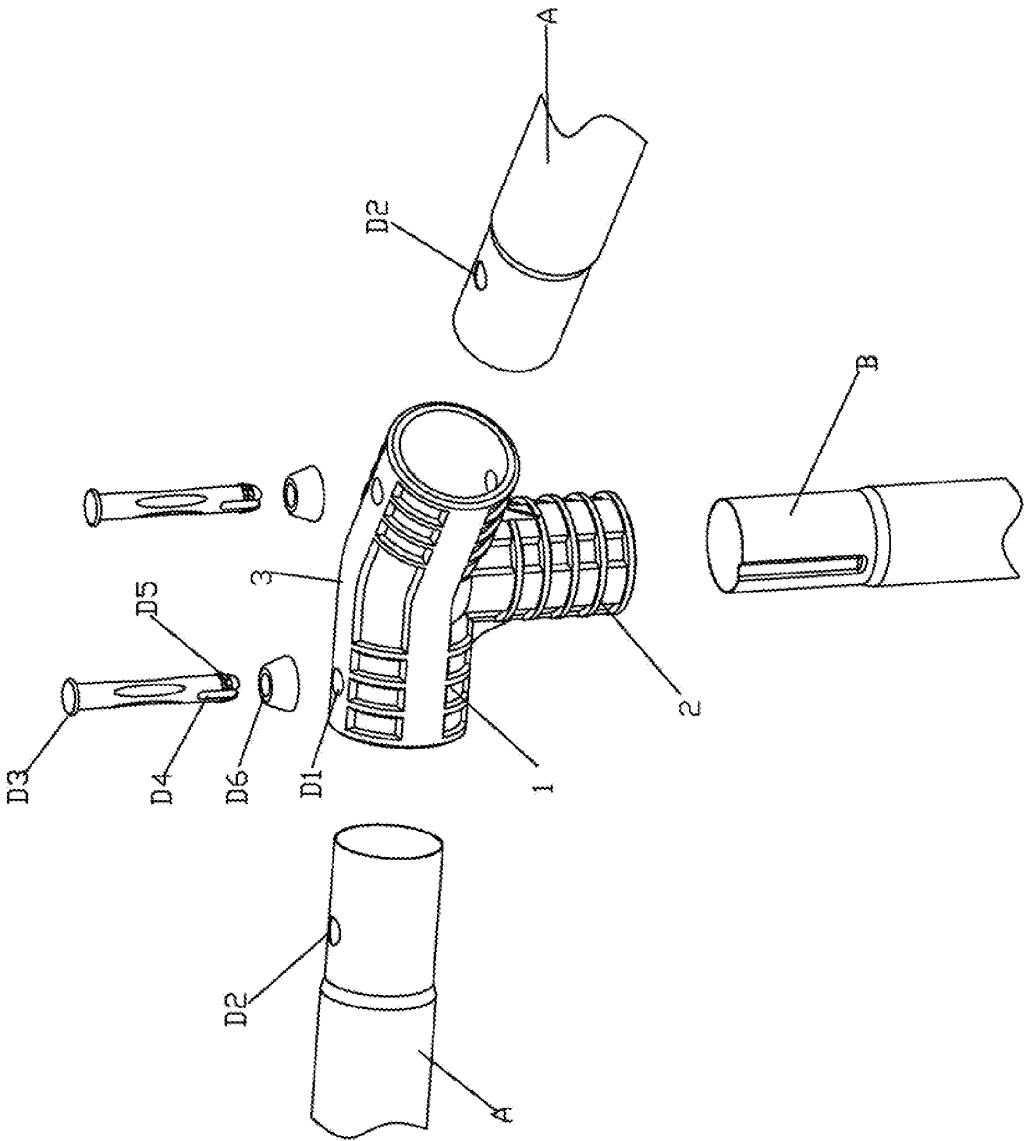


图6

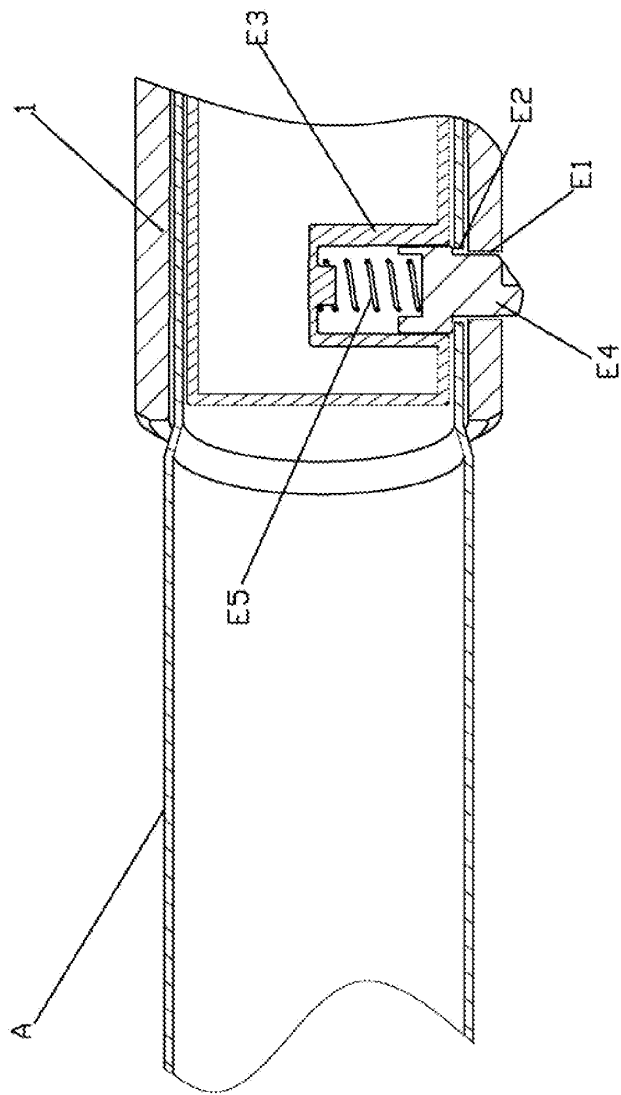


图7

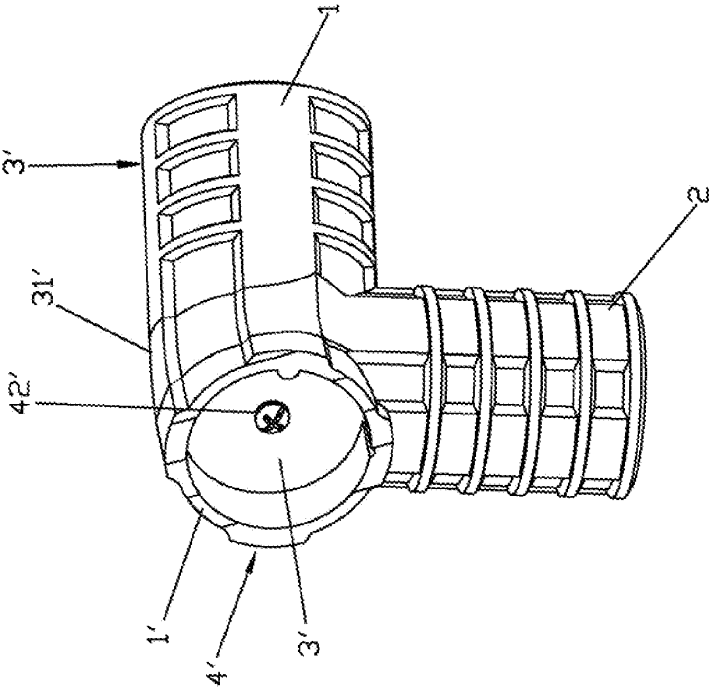


图8

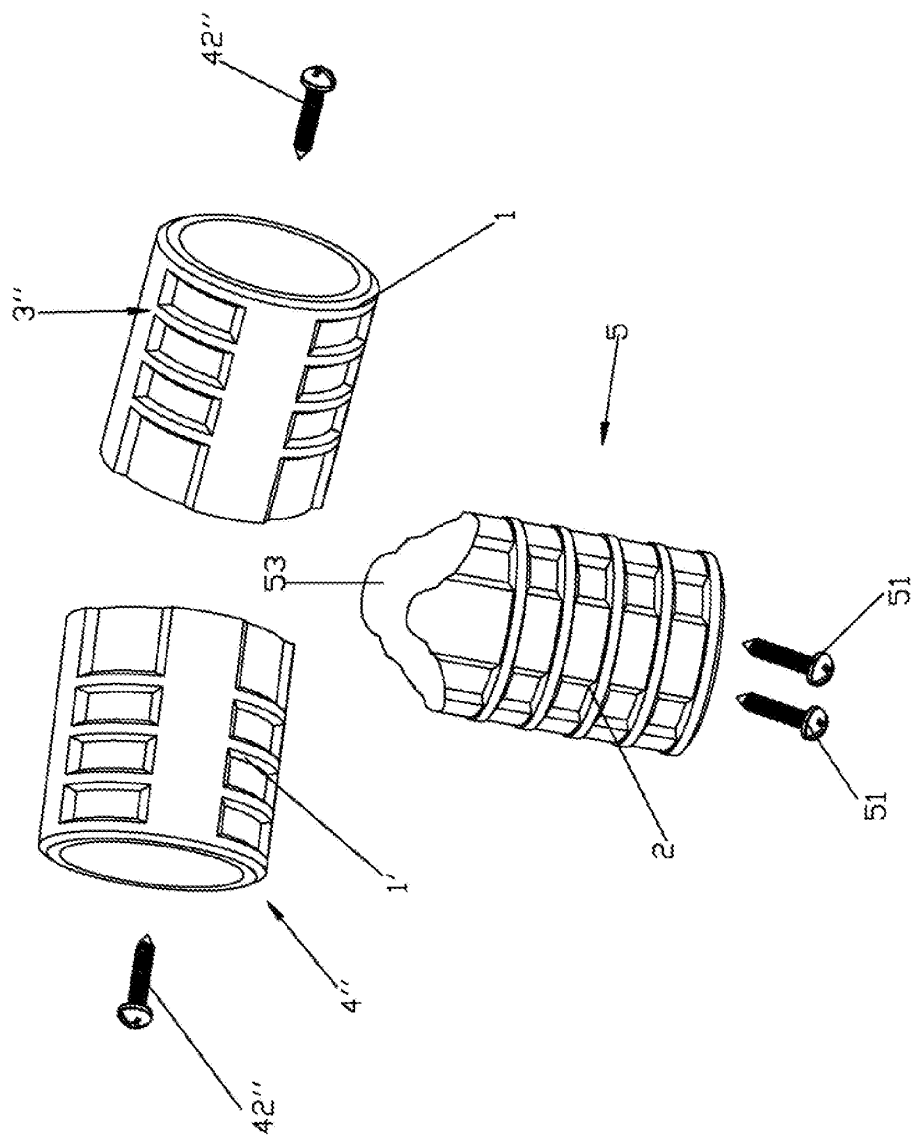


图9

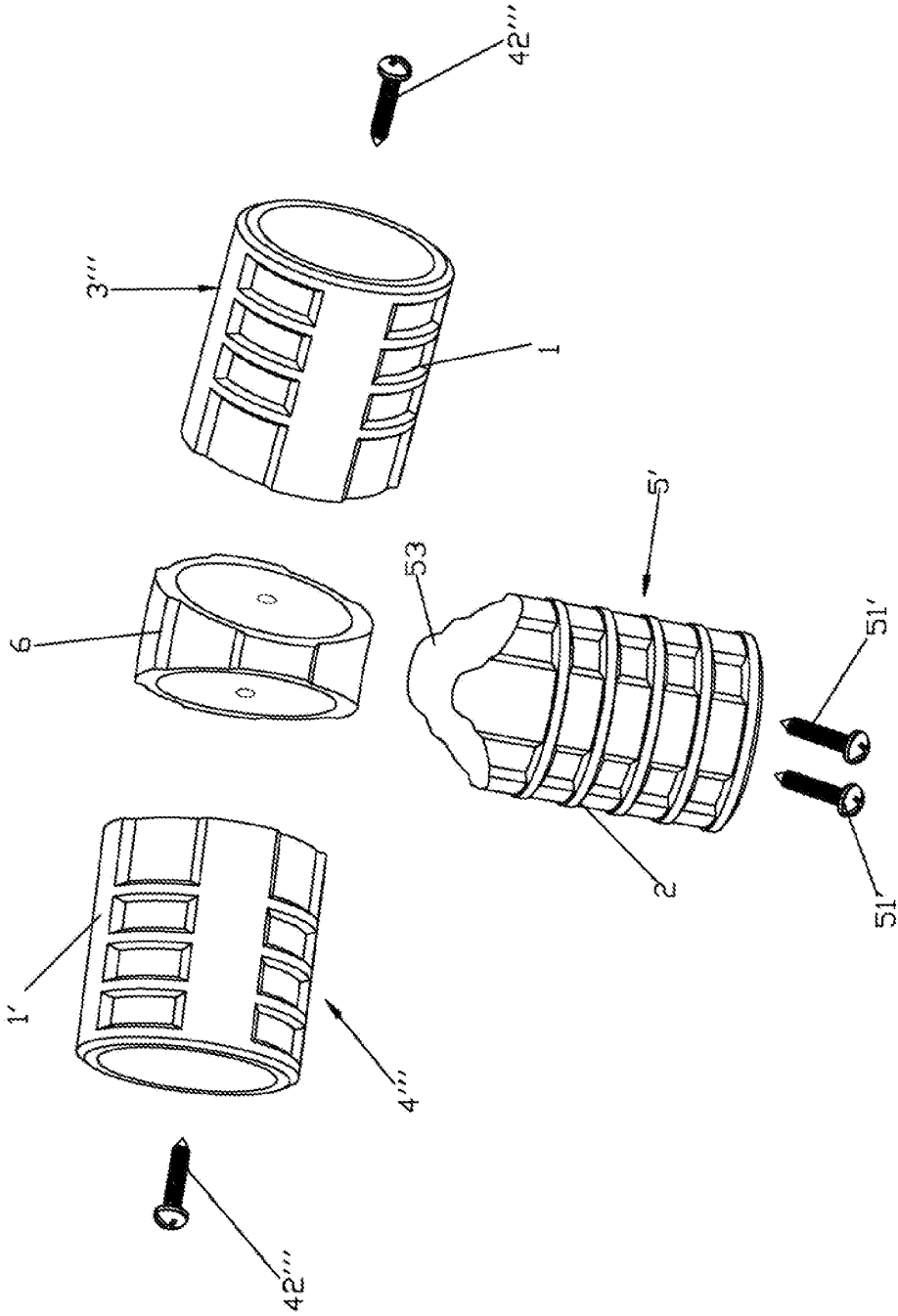


图10

Publication Number: FR 2774416 A1

Publication Date: Aug 06, 1999

Abstract

<P> Improved removable pool. It has vertical legs (1) and horizontal rails (2), connected at their ends with pieces or knots (3), thus forming a structure which supports a container flexible (5), containing the corresponding water (6). The crosspieces (2) mentioned are divided into independent sections (7 and 8) which have means of joining together, in order to facilitate a reduced volume occupancy of the folded swimming pool and introduced in its packaging. The joining means preferably consist of an interlocking between the sections mentioned (7 and 8). </P>

19 RÉPUBLIQUE FRANÇAISE
INSTITUT NATIONAL
DE LA PROPRIÉTÉ INDUSTRIELLE
PARIS

11 N° de publication : 2 774 416
(à n'utiliser que pour les
commandes de reproduction)

21 N° d'enregistrement national : 99 01219

51 Int Cl⁶ : E 04 H 4/04, E 04 H 4/14

12 DEMANDE DE BREVET D'INVENTION A1

22 Date de dépôt : 03.02.99.

30 Priorité : 04.02.98 ES 09800304.

43 Date de mise à la disposition du public de la
demande : 06.08.99 Bulletin 99/31.

56 Liste des documents cités dans le rapport de
recherche préliminaire : *Ce dernier n'a pas été
établi à la date de publication de la demande.*

60 Références à d'autres documents nationaux
apparentés :

71 Demandeur(s) : TORRENTE INDUSTRIAL S.L. — ES.

72 Inventeur(s) : AGUILAR DE KEGEL DIMAS.

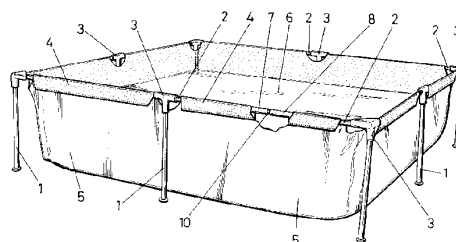
73 Titulaire(s) :

74 Mandataire(s) : CABINET BEAU DE LOMENIE.

54 PISCINE DEMONTABLE AMELIOREE.

57 Piscine démontable améliorée.

Elle est dotée de pattes verticales (1) et de traverses horizontales (2), reliées sur leurs extrémités à l'aide de pièces ou de noeuds (3), en formant ainsi une structure qui supporte un récipient flexible (5), contenant l'eau correspondante (6). Les traverses (2) mentionnées sont divisées en tronçons indépendants (7 et 8) qui disposent de moyens d'union entre eux, afin de faciliter une occupation réduite de volume de la piscine pliée et introduite dans son emballage. Les moyens d'union consistent de préférence en un emboîtement entre les tronçons mentionnés (7 et 8).



FR 2 774 416 - A1



OBJET DE L'INVENTION

Comme il est exprimé dans l'énoncé de ce mémoire descriptif, la présente invention se réfère à une piscine démontable améliorée dont la finalité consiste à réduire considérablement le volume occupé par la piscine une fois pliée et introduite dans son emballage ou caisse, pour cela, les profils de formation de la piscine sont divisés en parties ou tronçons qui s'encastrent. De cette manière, la piscine démontée occupera moins d'espace, ce qui facilitera son transport et stockage, ainsi que sa mise en place sur les points de vente et dans la propre maison de l'utilisateur.

Une autre finalité consiste à fournir des noeuds d'union entre les profils qui s'adapteront aussi bien aux profils de section circulaire qu'à des profils de section quadrangulaire ou d'autres formes.

ANTÉCÉDENTS DE L'INVENTION

On connaît les piscines démontables qui sont constituées de pattes et de traverses qui s'assemblent à l'aide de noeuds et qui supportent un récipient flexible prévu pour contenir l'eau correspondante de la piscine conformée.

Ces piscines présentent l'inconvénient de ce que les traverses mentionnées sont d'une longueur considérable qui rend nécessaire l'emploi d'emballages de grandes dimensions qui provoquent des problèmes importants au moment de transporter le produit, le ramasser ou le stocker et y compris le palettiser pour les transports internationaux.

DESCRIPTION DE L'INVENTION

Pour atteindre les objectifs et éviter les inconvénients indiqués dans les alinéas antérieurs, l'invention consiste en une piscine démontable améliorée qui est dotée de pattes verticales qui s'assemblent à l'aide de noeuds sur des traverses horizontales qui

conforment l'embouchure ou bord supérieur de la piscine et qui supportent un récipient flexible dans lequel l'eau de la piscine correspondante est déposée.

5 Nouvellement, les traverses mentionnées sont divisées en tronçons qui s'assemblent en s'encastrent, de manière que un des tronçons présent une vaste extrémité moins grosse qui s'introduit dans l'extrémité du tronçon adjacent. L'on obtient ainsi une rigidité des tronçons qui conforment la traverse similaire à la rigidité que
10 présenterait une traverse constituée par un seul tronçon de longueur supérieure, mais avec l'avantage de ce que la taille de l'emballage de la piscine démontée est grandement réduit. Dans une autre réalisation l'encastrement entre les tronçons consiste à insérer une pièce tubulaire auxiliaire
15 sur les extrémités de deux tronçons adjacents.

 De plus, les noeuds d'union entre les traverses et les pattes présentent intérieurement une matrice radiale à reliefs longitudinaux de la même hauteur qui favorise l'introduction d'un profil à section circulaire aussi bien
20 qu'à section carrée et d'autres formes géométriques.

 Tant si l'on utilise des profils à section circulaire que si l'on emploie des profils à section carrée ou d'autres formes géométriques pour les pattes et les traverses de la piscine, on maintient le système
25 d'encastrement de tronçons qui configure les traverses, de manière que la taille de la piscine démontée est toujours très inférieure que celle d'une piscine conventionnelle ayant des traverses formées par un tronçon unique.

 Afin de faciliter une meilleure compréhension de ce
30 mémoire descriptif et comme faisant partie de ce dernier, nous joignons par la suite des figures qui ont un caractère illustratif et non limitatif sur lesquelles on a reproduit l'objet de l'invention.

BRÈVE DESCRIPTION DES FIGURES

Figure 1.- Elle représente une vue en perspective d'une piscine démontable améliorée réalisée selon la présente invention, la piscine mentionnée étant montée et présentant une déchirure qui montre l'union encastrée de tronçons sur la constitution des traverses.

Figure 2.- Elle représente une vue de profil sectionnée longitudinalement de l'union entre deux tronçons montés par encastrement et constituant une traverse de la piscine démontable améliorée de la présente invention.

Figure 3.- Elle représente une vue sectionnée transversalement d'un noeud comme ceux que comporte la piscine démontable améliorée de l'invention, un profil à section circulaire étant monté sur ce noeud.

Figure 4.- Elle représente une vue sectionnée transversalement d'un noeud comme ceux que comporte la piscine démontable améliorée de l'invention, un profil à section quadrangulaire étant monté sur ce noeud.

Figure 5.- Elle représente une vue en perspective d'une pièce tubulaire auxiliaire, employée dans une autre réalisation d'union de tronçons dans la piscine démontable améliorée de l'invention.

Figure 6.- Elle représente une vue de profil sectionnée longitudinalement d'une union entre des tronçons, selon la réalisation à laquelle il est fait référence dans la figure 5.

DESCRIPTION D'UN EXEMPLE DE RÉALISATION DE L'INVENTION

Nous réalisons par la suite une description d'un exemple de l'invention, en faisant référence à la numération adoptée sur les figures.

Ainsi, la piscine démontable améliorée de cet exemple de réalisation, est dotée de pattes verticales 1 et de traverses horizontales 2 qui sont unies entre elles par des noeuds 3 sur lesquels sont insérées les extrémités de ces pattes 1 et traverses 2.

Avant l'union des pattes 1 et des traverses 2, les traverses 2 sont introduites dans une espèce de pli supérieur 4 présenté par les bords supérieurs d'un récipient flexible 5 prévu pour contenir l'eau 6 de la piscine, de manière à ce qu'une fois cette piscine montée, la structure formée par les noeuds 3, pattes 1 et traverses 2, supporte le poids du récipient 5 et de l'eau 6, qui est finalement introduite dans le récipient 5 mentionné.

Jusqu'ici cette configuration de piscine démontable est connue. Une des nouveautés de l'invention consiste en ce que chaque traverse 2 est divisée en parties qui s'assemblent entre elles en s'encastrent. Concrètement dans cet exemple, chaque traverse 2 se compose de deux tronçons 7 et 8. Le tronçon 7 est un tronçon mâle qui présente une vaste extrémité 9 d'une grosseur inférieure qui s'introduit de manière ajustée dans une extrémité de l'autre tronçon ou tronçon femelle 8; en configurant une zone d'union 10 qui présente pratiquement autant de résistance que s'il s'agissait d'un tronçon unique. Les autres extrémités ou extrémités les plus externes des tronçons 7 et 8 sont montées normalement sur les noeuds 3.

Dans d'autres exemples, les traverses 2 peuvent être divisées en plus de deux tronçons qui s'assemblent également en s'encastrent, bien que la division en deux tronçons 7 et 8 de cet exemple fournit une réduction suffisante du volume de la piscine démontée, ce qui est le but poursuivi.

La disposition d'encastrement des tronçons 7 et 8 est valable pour des tronçons à section circulaire, quadrangulaire et ayant d'autres formes géométriques.

Une autre nouveauté de l'invention consiste en ce que l'intérieur des noeuds 3 présente des nerfs longitudinaux 11 de même hauteur et placés radialement. Ces nerfs 11 facilitent le montage des traverses 2 à section circulaire aussi bien que celui de traverses à section quadrangulaire

12 ou d'autres formes géométriques, comme le montrent les figures 3 et 4, en évitant, dans le cas des traverses à section quadrangulaire 12 mentionnées, leur rotation dans le sens axial.

5 Selon une autre réalisation, chaque traverse 2 se divise en plusieurs tronçons femelle 8 dont les extrémités sont unies entre elles à l'aide de pièces tubulaires auxiliaires 13 qui pénètrent dans les extrémités adjacentes correspondantes.

REVENDICATIONS

1.- PISCINE DÉMONTABLE AMÉLIORÉE, qui dispose de pattes verticales (1) et de traverses horizontales (2) unies par leurs extrémités à l'aide de noeuds (3) de manière à ce que la structure formée supporte un récipient flexible (5) prévu pour contenir l'eau correspondante (6); elle est caractérisée par le fait que les traverses mentionnées (2) se trouvent divisées en tronçons indépendants (7 et 8) avec des moyens d'union entre eux, ce qui facilite ainsi une occupation minimum de volume de la piscine pliée et introduite dans son emballage.

2.- PISCINE DÉMONTABLE AMÉLIORÉE, selon la revendication 1, caractérisée par les moyens d'union qui consistent en un encastrement entre les tronçons (7 et 8) constituant la traverse (2).

3.- PISCINE DÉMONTABLE AMÉLIORÉE, selon la revendication 2, caractérisée par l'encastrement mentionné qui consiste en une ample extrémité mince (9) d'un tronçon mâle (7) qui est introduit justement dans l'extrémité d'un tronçon femelle (8).

4.- PISCINE DÉMONTABLE AMÉLIORÉE, selon la revendication 1, caractérisée par le fait que la division mentionnée des traverses (2), en tronçons indépendants (7 et 8) est réalisée sur deux tronçons indépendants par traverse.

5.- PISCINE DÉMONTABLE AMÉLIORÉE, selon la revendication 1, caractérisée par le fait que l'intérieur des noeuds (3) présente dans leurs zones de montage des nerfs longitudinaux (11) de même hauteur et placés radialement, ce qui facilite l'introduction des traverses à section circulaire (2) aussi bien que des traverses à section quadrangulaire (12) ou de traverses ayant d'autres formes géométriques.

6.- PISCINE DÉMONTABLE AMÉLIORÉE, selon la revendication 1, caractérisée par le fait que les tronçons

indépendants mentionnés sont plusieurs tronçons femelle (8) et que les moyens d'union consistent en des pièces tubulaires auxiliaires (13) qui sont introduites dans les extrémités correspondantes adjacentes des tronçons femelles (8).

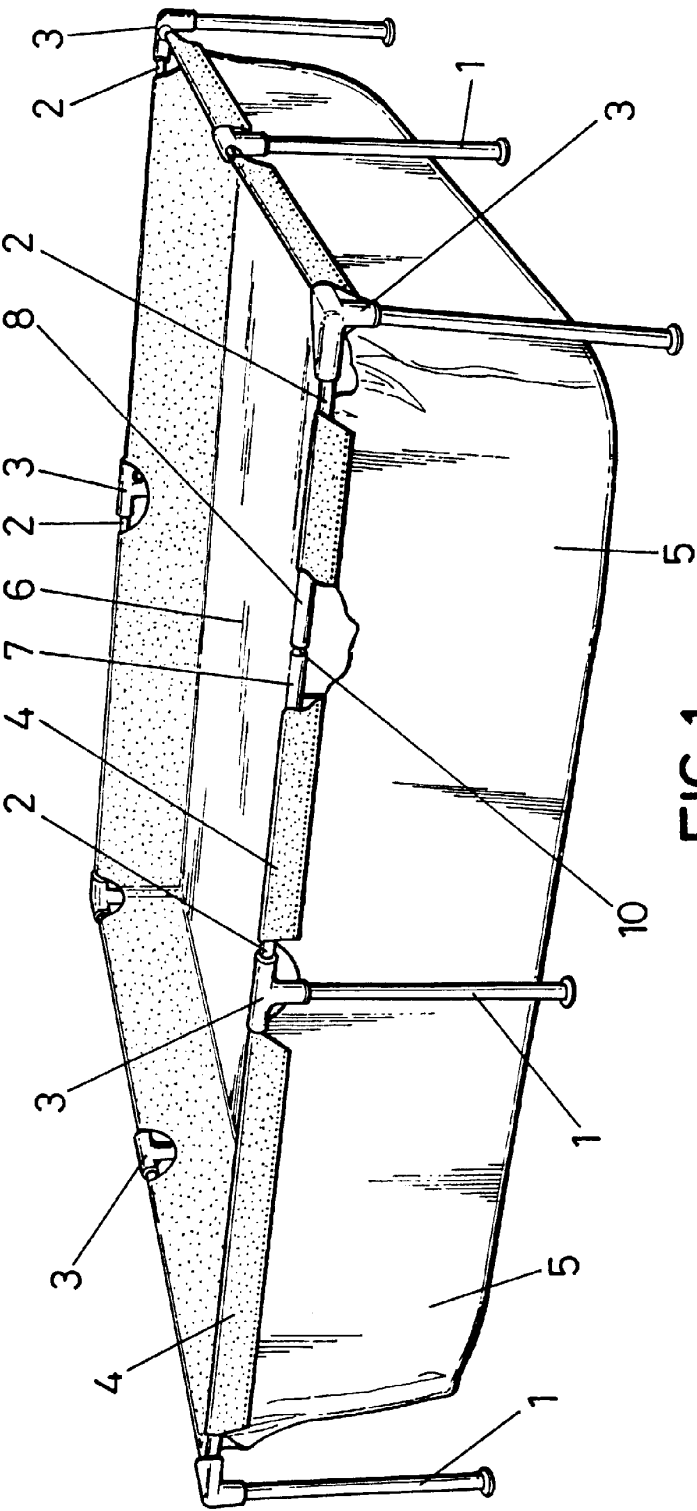


FIG.1

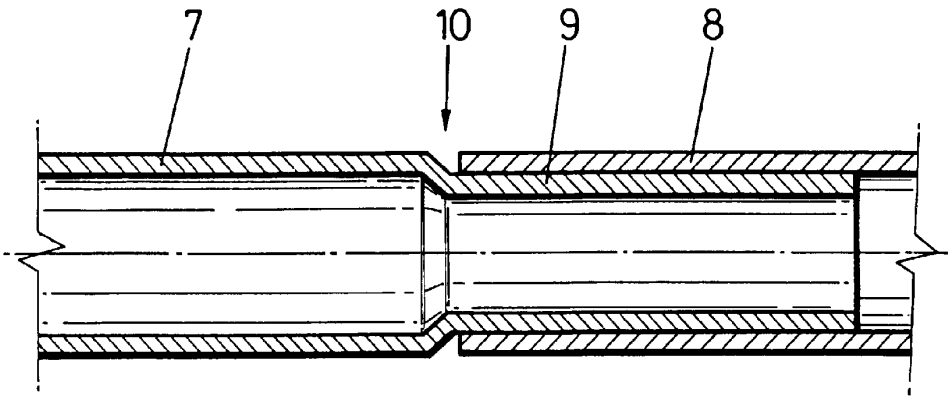


FIG. 2

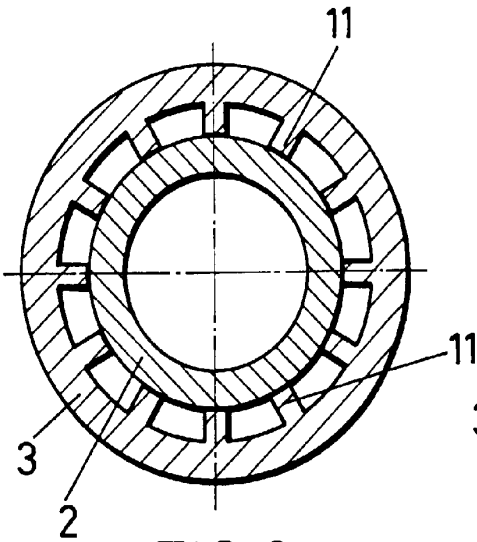


FIG. 3

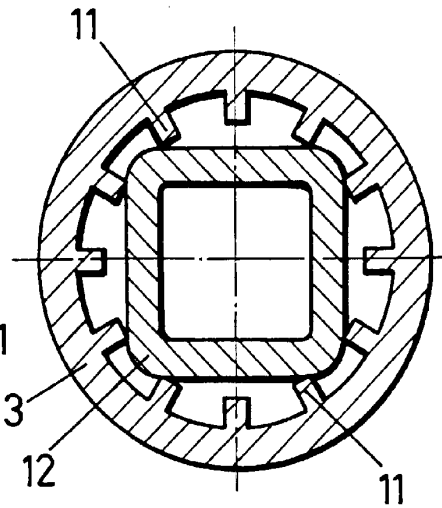


FIG. 4

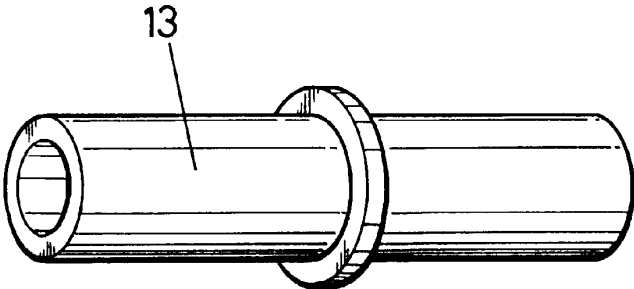


FIG. 5

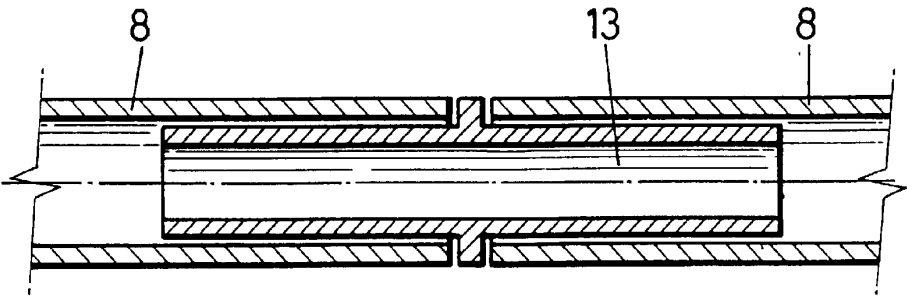


FIG. 6

Publication Number: RU 009029 U1

Publication Date: Jan 16, 1999

Abstract

[0001]

Joint assembly for tubular elements

[0002]

The claimed utility model relates to the field of mechanical engineering.

[0003]

The task of the utility model is to ensure the connection of coaxial closed tubular parts.

[0004]

The problem is solved by the fact that the joint unit containing two tubular elements located in the same plane, and the connecting element made in the form of a plate, additionally contains a fastening element, and the tubular elements are arranged coaxially and have a box-shaped section, and the connecting element additionally contains a plate with a threaded hole, while both plates are bent at the edges and tightly adjacent to each other in the center and rigidly fixed at one end in one of the tubular elements, the other end of which is installed in another tubular element having a hole coaxial with the threaded hole of the plate of the connecting element for installation into it a fastening element made in the form of a screw installed with the possibility of interaction of its end part with the plate of the connecting element.

[0005]

ESSAY

РОССИЙСКАЯ ФЕДЕРАЦИЯ



ФЕДЕРАЛЬНАЯ СЛУЖБА
ПО ИНТЕЛЛЕКТУАЛЬНОЙ СОБСТВЕННОСТИ,
ПАТЕНТАМ И ТОВАРНЫМ ЗНАКАМ

(19) RU (11)

39 029 (13) U1

(51) МПК
H03H 21/00 (2000.01)

(12) ОПИСАНИЕ ПОЛЕЗНОЙ МОДЕЛИ К ПАТЕНТУ

(21), (22) Заявка: 2004107658/22, 16.03.2004

(24) Дата начала отсчета срока действия патента:
16.03.2004

(46) Опубликовано: 10.07.2004

Адрес для переписки:
620000, г.Екатеринбург, ул. Горького, 17,
ОАО "Уральский приборостроительный
завод", для ОКБ "Авионика", Д.Н. Дудину

(72) Автор(ы):

Иванов В.Э. (RU),
Малыгин И.В. (RU)

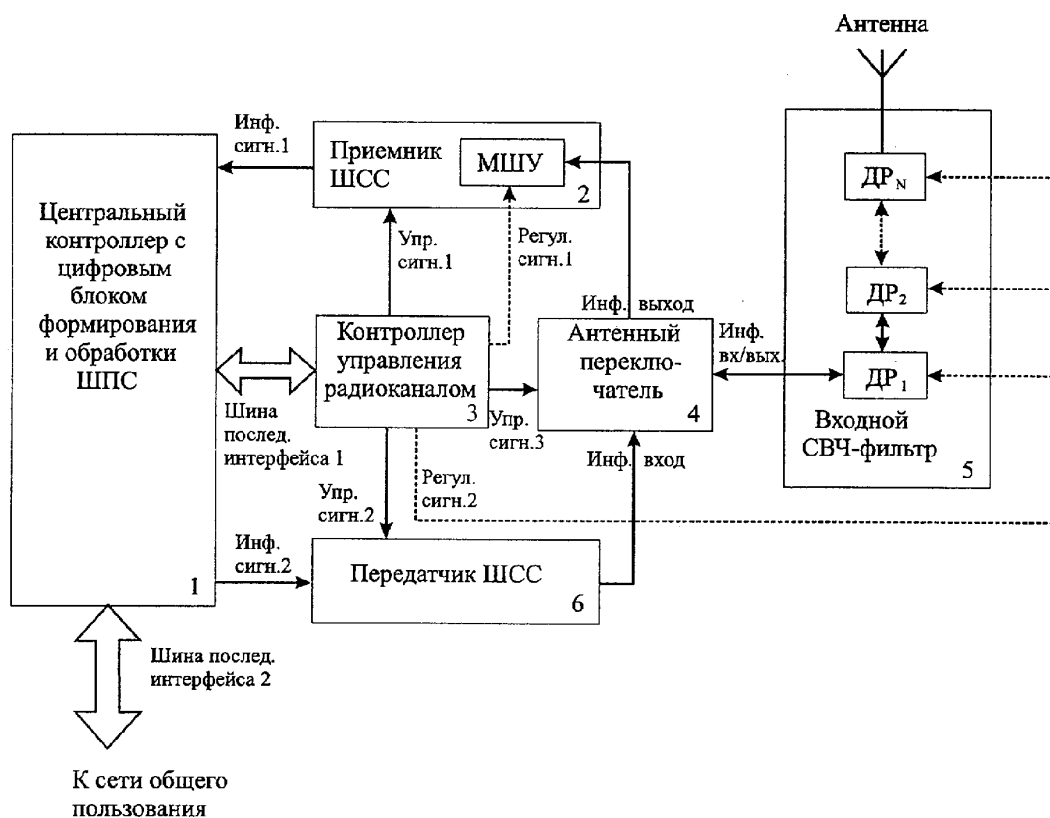
(73) Патентообладатель(и):

Открытое акционерное общество
"Уральский приборостроительный завод"
(RU)

(54) УСТРОЙСТВО АДАПТИВНОЙ ФИЛЬТРАЦИИ ШИРОКОПОЛОСНОЙ СИСТЕМЫ СВЯЗИ

Формула полезной модели

Устройство адаптивной фильтрации широкополосной системы связи, содержащее центральный контроллер, контроллер управления радиоканалом, приемник широкополосной системы связи с малошумящим усилителем, передатчик широкополосной системы связи, антенный переключатель, входной СВЧ-фильтр, первую и вторую шины последовательного интерфейса и антенну, причем центральный контроллер соединен первой и второй шинами последовательного интерфейса с сетью общего пользования и контроллером управления радиоканалом соответственно, выходным вторым информационным сигналом с входом передатчика широкополосной системы связи, а входным первым информационным сигналом с выходом приемника широкополосной системы связи; контроллер управления радиоканалом связан первым и вторым управляющими сигналами с приемником и передатчиком широкополосной системы связи соответственно, первым регулирующим сигналом - с малошумящим усилителем приемника широкополосной системы связи, а третьим управляющим сигналом - с командным входом антенного переключателя, информационный вход последнего соединен с выходом передатчика широкополосной системы связи, информационный выход - с входом приемника широкополосной системы связи, а информационный вход/выход - с входом/выходом СВЧ-фильтра, отличающееся тем, что СВЧ-фильтр выполнен на диэлектрических резонаторах, соединенных в последовательную линейку, которая включена между антенным переключателем и антенной, а управляющие входы линейки вторым регулирующим сигналом соединены с выходом контроллера управления радиоканалом.



Electronic Patent Application Fee Transmittal				
Application Number:		16220484		
Filing Date:		14-Dec-2018		
Title of Invention:		JOINT FOR ABOVE GROUND POOL FRAME		
First Named Inventor/Applicant Name:		Hua Hsiang Lin, deceased		
Filer:		William Stephen Meyers./Chiquita Bryant		
Attorney Docket Number:		IRC-0042-02-US		
Filed as Large Entity				
Filing Fees for U.S. National Stage under 35 USC 371				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
SUBMISSION- INFORMATION DISCLOSURE STMT	1806	1	260	260
Total in USD (\$)				260

Electronic Acknowledgement Receipt	
EFS ID:	43422589
Application Number:	16220484
International Application Number:	
Confirmation Number:	3890
Title of Invention:	JOINT FOR ABOVE GROUND POOL FRAME
First Named Inventor/Applicant Name:	Hua Hsiang Lin, deceased
Customer Number:	27268
Filer:	William Stephen Meyers.
Filer Authorized By:	
Attorney Docket Number:	IRC-0042-02-US
Receipt Date:	04-AUG-2021
Filing Date:	14-DEC-2018
Time Stamp:	14:42:31
Application Type:	U.S. National Stage under 35 USC 371

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	\$260
RAM confirmation Number	E202184E43192300
Deposit Account	020390
Authorized User	William Meyers
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: 37 CFR 1.17 (Patent application and reexamination processing fees) 37 CFR 1.19 (Document supply fees)	

37 CFR 1.21 (Miscellaneous fees and charges)
37 CFR 1.492 (National application filing, search, and examination fees)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	IDS_16220484_1.pdf	1044322	no	5
			993faf29dc3f3849cfeb4d09029907c4b8e4d276		
Warnings:					
Information:					
2	Non Patent Literature	1_Best_Way_httpswww_1282134.pdf	299052	no	4
			1e89d5d8fca8d136a933e40f179edb704e62aac3		
Warnings:					
Information:					
3	Non Patent Literature	2_1280199_1282136.pdf	276735	no	7
			77ef1af4c3c7d57a4fd408b67880d16a23af7ec8		
Warnings:					
Information:					
4	Non Patent Literature	3_977652_1282138.pdf	347199	no	9
			5a38b7df96821ca9cc0ac095c343048f0b5f3934		
Warnings:					
Information:					
5	Non Patent Literature	4_1189464_1282142.pdf	307123	no	3
			fd2340c40f44254cd85bbebdd86d99aa0cc0887f		
Warnings:					
Information:					
6	Non Patent Literature	5_Summer_httpswww_1282143.pdf	259870	no	3
			df387fc44efa4847696015cea2213c019cf79f97		
Warnings:					
Information:					

7	Foreign Reference	1_CN2195595Y_1282252.pdf	269995	no	9
			f13dcc337d32d7c2c683fcbc38dfc7a73d80bc4c		
Warnings:					
Information:					
8	Foreign Reference	2_CN2480479Y_1282253.pdf	172016	no	6
			9995e209055c5b46aad75cc78b566e07f3d0d45f		
Warnings:					
Information:					
9	Foreign Reference	3_CN101787807A_1282255.pdf	529866	no	10
			812ccc80a477019b2a8c32af5f31eeb04217ca74		
Warnings:					
Information:					
10	Foreign Reference	4_CN202745430U_1282256.pdf	327836	no	6
			877f6ce46336f1bbe907414208d4b97857cd6e90		
Warnings:					
Information:					
11	Foreign Reference	5_CN204475913U_1282257.pdf	523895	no	11
			e07673ba8a64e20609494ef2e247c30f96123719		
Warnings:					
Information:					
12	Foreign Reference	6_CN209130364U_1282260.pdf	962620	no	17
			9a79a05d633da38d69c5e655d0b691d096b67314		
Warnings:					
Information:					
13	Foreign Reference	7_FR2774416A1_1282262.pdf	417482	no	12
			19b752ff93a94c4577d822ec6f5ce09720c1b190		
Warnings:					
Information:					

14	Foreign Reference	8_RU009029U1_1282371.pdf	191227	no	3
			27662bd38b730b46b717cfac11f34bec9dc6a18		
Warnings:					
Information:					
15	Fee Worksheet (SB06)	fee-info.pdf	38173	no	2
			d60130268142f1994adceefdd584ce7d839469ce		
Warnings:					
Information:					
Total Files Size (in bytes):			5967411		
<p>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</p> <p><u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p>					

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875				Application or Docket Number 16/220,484		Filing Date 12/14/2018		☐ To be Mailed					
ENTITY: ☒ LARGE ☐ SMALL ☐ MICRO													
APPLICATION AS FILED - PART I													
		(Column 1)	(Column 2)										
FOR		NUMBER FILED	NUMBER EXTRA		RATE (\$)		FEE (\$)						
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))		N/A	N/A		N/A								
☐ SEARCH FEE (37 CFR 1.16(k), (l), or (m))		N/A	N/A		N/A								
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))		N/A	N/A		N/A								
TOTAL CLAIMS (37 CFR 1.16(j))		minus 20 =	*		x \$100 =								
INDEPENDENT CLAIMS (37 CFR 1.16(h))		minus 3 =	*		x \$460 =								
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))		If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).											
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))													
* If the difference in column 1 is less than zero, enter "0" in column 2.						TOTAL							
APPLICATION AS AMENDED - PART II													
		(Column 1)	(Column 2)		(Column 3)								
AMENDMENT	09/09/2021	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE (\$)		ADDITIONAL FEE (\$)				
	Total (37 CFR 1.16(j))	* 29	Minus	** 22	= 7		x \$100 =		700				
	Independent (37 CFR 1.16(h))	* 2	Minus	*** 3	= 0		x \$480 =		0				
	☐ Application Size Fee (37 CFR 1.16(s))												
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))												
								TOTAL ADD'L FEE		700			
AMENDMENT		(Column 1)	(Column 2)		(Column 3)								
		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE (\$)		ADDITIONAL FEE (\$)				
	Total (37 CFR 1.16(j))	*	Minus	**	=		x \$0 =						
	Independent (37 CFR 1.16(h))	*	Minus	***	=		x \$0 =						
	☐ Application Size Fee (37 CFR 1.16(s))												
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))													
								TOTAL ADD'L FEE					
* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.								LIE					
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".								/DAWN BREWER/					
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".													
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.													

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.: 16/220,484

Confirmation No.: 3890

Inventor(s) Hua Hsiang Lin

Filed: December 14, 2018

Title: JOINT FOR ABOVE GROUND
POOL FRAME

Art Unit: 3754

Examiner: Lauren Ashley Crane

Atty. Docket No.: IRC-0042-02-US

Customer No. 27268

AMENDMENT

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Commissioner:

In response to the Non-Final Office Action of April 9, 2021 (hereinafter the “Office Action”), please amend the above-identified application as follows:

Amendments to the Claims are reflected in the Listing of Claims which begins on page 2 of this paper.

Remarks begin on page 7 of this paper.

AMENDMENTS TO THE CLAIMS

Please amend the claims as set forth below. This Listing of Claims will replace all prior versions and listings of claims in the application.

Listing of Claims

1. (Currently Amended) A frame joint for an above ground pool frame having a first horizontal frame member, a second horizontal frame member, and a vertical frame member, the frame joint comprising:
 - a first horizontal joint portion including a first coupling assembly configured to couple with the first horizontal frame member;
 - a second horizontal joint portion including a second coupling assembly configured to couple with the second horizontal frame member; and
 - a vertical joint portion fixedly coupled to the first and second horizontal joint portions and configured to couple with the vertical frame member;
 - a liner positioned ~~wrapped~~ around the first and second horizontal frame members, the liner defining a hole that is sized to expose the first and second coupling assemblies;
 - wherein a width of the vertical joint portion accounts for at least 50% of a width between the first and second coupling assemblies of the first and second horizontal joint portions.
2. (Original) The frame joint of claim 1, wherein the width of the vertical joint portion accounts for at least 40% of a total width of the frame joint.
3. (Original) The frame joint of claim 2, wherein the width of the vertical joint portion accounts for about 50% of the total width of the frame joint.
4. (Original) The frame joint of claim 1, wherein each of the first and second coupling assemblies comprises a base, a helical spring supported by the base, and a pin biased outward through a hole in the respective horizontal joint portion by the helical spring to engage a corresponding recess of the respective horizontal frame member.

5. (Original) The frame joint of claim 4, wherein the width of the vertical joint portion accounts for about 70% of a width between the pins of the first and second coupling assemblies.
6. (Canceled)
7. (Previously Presented) The frame joint of claim 1, wherein a width of the frame joint exceeds a width of the hole in the liner.
8. (Previously Presented) The frame joint of claim 1, wherein a height of the frame joint exceeds a height of the hole in the liner.
9. (Previously Presented) The frame joint of claim 1, wherein:
the first horizontal joint portion is constructed of plastic;
the second horizontal joint portion is constructed of plastic; and
the vertical joint portion is being constructed of plastic.
10. (Previously Presented) The frame joint of claim 1, wherein the vertical joint portion is centered between the first and second horizontal joint portions to form a T-shaped frame joint.
11. (Previously Presented) The frame joint of claim 1, wherein the first and second horizontal joint portions cooperate to form an obtuse angle.
12. (Previously Presented) The frame joint of claim 1, wherein the vertical joint portion is integrally formed with the first and second horizontal joint portions as a single piece.
13. (Canceled)
14. (Previously Presented) A method of assembling an above ground pool the method comprising:
coupling a first horizontal joint portion of a frame joint to a first horizontal frame member with a first coupling assembly;

coupling a second horizontal joint portion of the frame joint to a second horizontal frame member with a second coupling assembly;
coupling a vertical joint portion of the frame joint to a vertical frame member; and
~~positioning~~ wrapping a liner around the first and second horizontal frame members with a hole exposing the first and second coupling assemblies;
wherein a width of the vertical joint portion accounts for a majority of a width between the first and second coupling assemblies of the first and second horizontal joint portions.

15. (Original) The method of claim 14, wherein:

an external cross-section of the first horizontal joint portion matches an internal cross-section of the first horizontal frame member;

an external cross-section of the second horizontal joint portion matches an internal cross-section of the second horizontal frame member; and

an external cross-section of the vertical joint portion matches an internal cross-section of the vertical frame member.

16. (Original) The method of claim 14, wherein the first horizontal joint portion, the second horizontal joint portion, and the vertical joint portion are constructed of plastic.

17. (Original) The method of claim 14, wherein:

coupling the first horizontal joint portion to the first horizontal frame member comprises depressing a first pin into the first horizontal joint portion and releasing the first pin into engagement with the first horizontal frame member; and

coupling the second horizontal joint portion to the second horizontal frame member comprises depressing a second pin into the second horizontal joint portion and releasing the second pin into engagement with the second horizontal frame member.

18. (Canceled)

19. (Previously Presented) The method of claim 14, wherein a width of the hole in the liner exceeds a width between the first and second coupling assemblies.

20. (Previously Presented) The method of claim 14, wherein the vertical joint portion of the frame joint is coupled to the vertical frame member with a third coupling assembly, and wherein a height of the hole in the liner is less than a distance between the first and third coupling assemblies.

21. (Previously Presented) The frame joint of claim 1, wherein the vertical joint portion includes at least one internal vertical reinforcing rib.

22. (Previously Presented) The frame joint of claim 1, wherein at least one of the first horizontal joint portion and the second horizontal joint portion includes an internal horizontal reinforcing rib.

23. (Previously Presented) The frame joint of claim 1, wherein at least one of the first horizontal joint portion and the second horizontal joint portion includes an internal horizontal support member.

24. (New) The frame joint of claim 1, wherein the first horizontal joint portion comprises a first external cross-section, the first external cross-section being generally triangular.

25. (New) The frame joint of claim 24, wherein the first external cross-section comprises rounded edges.

26. (New) The frame joint of claim 1, wherein the vertical joint portion comprises a second external cross-section, the second external cross-section being generally triangular.

27. (New) The frame joint of claim 26, wherein the second external cross-section comprises rounded edges.

28. (New) The frame joint of claim 1, wherein the first and second coupling assemblies are accessible from an exterior side of the liner through the hole defined in the liner.

29. (New) The frame joint of claim 1, wherein the first and second coupling assemblies are accessible from an exterior side of the liner through the hole defined in the liner and the first and second coupling assemblies are accessible from an interior side of the liner through the hole defined in the liner, the interior side of the liner being opposite the exterior side of the liner.
30. (New) The frame joint of claim 1, wherein the hole of the liner simultaneously exposes the first coupling assembly and the second coupling assembly.
31. (New) The frame joint of claim 1, wherein the hole of the liner exposes the first coupling assembly and the second coupling assembly in a resting position.
32. (New) The frame joint of claim 1, wherein the first coupling assembly and the second coupling assembly are actuatable from an exterior of the frame joint along a vertical direction.

REMARKS

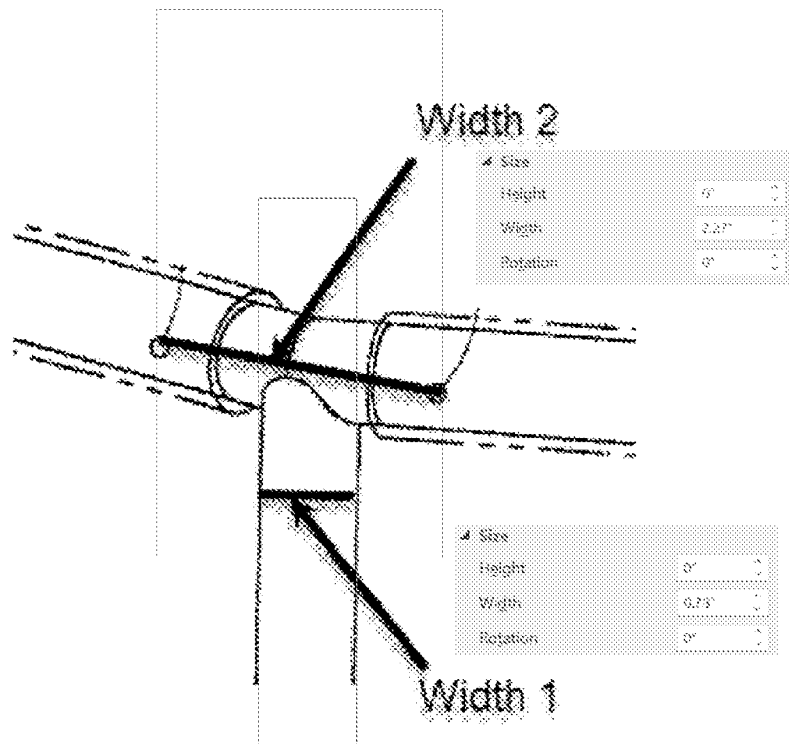
Following entry of this Amendment, claims 1-5, 7-12, 14-17, and 19-32 are pending in the application, wherein claims 1 and 14 are presented in independent form. Claims 1-5, 7-12, 14-17, and 19-23 stand rejected. Claims 1 and 14 are currently amended. Support for the amendments can be found throughout the specification and, for example, in FIG. 1 and paragraphs [0017], [0023]-[0024], and [0026]. Claims 24-32 are new. Support for these claims can be found throughout the specification and, for example, in FIGS. 1-4 and paragraphs [0019], [0021], and [0023]-[0026]. Entry of these amendments and claims is respectfully requested.

Claim Rejections – 35 U.S.C. § 103

Claims 1-3, 5, 7-12, 14-17, and 19 stand rejected under 35 U.S.C. § 103 as being obvious over U.S. Publication No. 2002/0042948 to Lee (hereinafter “Lee”) in view of U.S. Publication No. 2014/0325751 to Hake (hereinafter “Hake”).

Independent claim 1 recites, *inter alia*, “...a liner positioned around the first and second horizontal frame members, the liner defining a hole that is sized to expose the first and second coupling assemblies; wherein a width of the vertical joint portion accounts for at least 50% of a width between the first and second coupling assemblies of the first and second horizontal joint portions.”

Pages 11-12 of the Office Action insists that Lee discloses a vertical portion that has a width accounting for a majority of a width between the first and second coupling assemblies, offering an annotated figure of Lee as evidence. However, the provided annotated figure does not show a vertical portion with a width accounting for a majority of a width between the first and second coupling assemblies. When the annotated figure was reproduced in Microsoft® PowerPoint®, the width of the vertical portion (“Width 1”) measured 0.78”, while the width between the first and second coupling assemblies (“Width 2”) measured 2.27” (see below).



As such Width 1 does not account for at least 50% of Width 2, but only accounts for approximately 34% of Width 2. While Applicant observes that measurements based on drawings are not to be relied upon when drawings are not to scale, Applicant submits that the Office Action's insistence that this limitation is disclosed by Lee, based on the drawings of Lee alone, requires the proper observance of the illustrated ratio between Width 1 and Width 2, which does not meet the requirements of independent claim 1. The Office's attention is also kindly drawn to the Response filed on August 17, 2020, which offered similar observations.

Additionally, page 3 of the Office Action alleges that "Applicant has not disclosed that having the width of the vertical joint portion accounting for a portion of the width between the first and second coupling assemblies solves any stated problem or is for any particular purpose." However, at least one purpose and/or at least one stated problem and solution solved by this limitation is disclosed in paragraphs [0023]-[0024] of the present application, which Applicant has also presented in the Response filed on August 17, 2020 and the Amendment filed March 8, 2021. As such, Applicant respectfully submits that this allegation is unfounded and such basis has been provided contrary to the Office Action's statement.

Pages 3-4 of the Office Action acknowledges that Lee does not disclose “a liner positioned around the first and second horizontal frame members, the liner defining a hole that is sized to expose the first and second coupling assemblies”, alleging instead that this limitation is rendered obvious over the combination of Lee and Hake. In particular, the Office Action alleges that Hake’s plastic receptacle discloses “a liner (1) wrapped around the first and second horizontal frame members (14), the liner defining a hole (15) that is sized to expose the first and second coupling assemblies (11)”, referring additionally to paragraph [0051] of Hake. However, paragraph [0051] of Hake does not speak to the exposure of the first and second coupling assemblies upon assembly of the liner 1 with the aluminum tube pieces 14 and 20 at all, but merely discloses the sliding relationship between aluminum tube pieces 14 and 20.

As shown by FIG. 8 of Hake, the liner (1/2) extends to the top of the bath as shown by the dashed line which outlines the liner (1/2). The “hole” defined by the Office Action is, as Hake is understood, is merely a corner cut out of liner (1/2), to facilitate the attachment of the liners during assembly, when liner (1) and liner (2) are combined with aluminum tube pieces (14/20) to assemble the bath. As shown by the dotted lines, the aluminum tubes and their connectors are covered by liners (1/2) so that the connectors are not accessible from at least the outside of the bath. As such, none of Lee, Hake, or a combination thereof meet the limitations of independent claim 1.

For at least the foregoing reasons, it is respectfully submitted that independent claim 1 and the claims dependent therefrom are in condition for allowance. Withdrawal of the rejections is respectfully requested.

Independent claim 14 recites, *inter alia*, “positioning a liner around the first and second horizontal frame members with a hole exposing the first and second coupling assemblies; wherein a width of the vertical joint portion accounts for a majority of a width between the first and second coupling assemblies of the first and second horizontal joint portions.”

Applicant respectfully submits that the limitations of independent claim 14 are similar to the limitations of independent claim 1 discussed above. As such, for at least the reasons presented above in relation to independent claim 1, it is respectfully submitted that none of Lee, Hake, or a combination thereof meet the limitations of independent claim 14. It is respectfully

Application No. 16/220,484

submitted that independent claim 14 and the claims dependent therefrom are in condition for allowance. Withdrawal of the rejections is respectfully requested.

Claim 4 stands rejected under 35 U.S.C. § 103 as being obvious over Lee in view of Hake as applied to claim 1 above, and further in view of U.S. Patent No. 6,079,894 to Obitts (hereinafter “Obitts”).

Claim 20 stands rejected under 35 U.S.C. § 103 as being obvious over Lee in view of Hake as applied to claim 14 above, and further in view of U.S. Publication No. 2004/0118844 to Bennett et al. (hereinafter “Bennett”).

Claims 21-22 stand rejected under 35 U.S.C. § 103 as being obvious over Lee in view of Hake as applied to claim 1 above, and further in view of U.S. Publication No. 2017/0356206 to Huang (“hereinafter “Huang”).

Claim 23 stands rejected under 35 U.S.C. § 103 as being obvious over Lee in view of U.S. Patent No. 5,143,476 to Pruis (hereinafter “Pruis”).

Claims 4 and 20-23 each depend from one of independent claims 1 and 14. It is respectfully submitted that for at least the reasons presented above, claims 4 and 20-23 are in condition for allowance. Withdrawal of the rejections is respectfully requested.

Application No. 16/220,484

Final Remarks

Applicant respectfully submits that claims 1-5, 7-12, 14-17, and 19-35 are in condition for allowance. Such action is earnestly solicited.

In the event Applicant has overlooked the need for an extension of time or payment of fee, Applicant hereby petitions therefor and authorizes that any charges be made to Deposit Account No. 02-0390, Faegre Drinker Biddle & Reath LLP.

If any questions concerning this application should arise, the Examiner is encouraged to telephone the undersigned at 317-237-1361.

Respectfully submitted,

/Alyssa R Eckerley/

Alyssa R. Eckerley

Registration No. 74,511

Attorney for Applicant

Faegre Drinker Biddle & Reath LLP

300 North Meridian Street, Suite 2500

Indianapolis, Indiana 46204

Telephone: 317-237-1361

Facsimile: 317-237-1000

Date: September 9, 2021

PETITION FOR EXTENSION OF TIME UNDER 37 CFR 1.136(a)		Docket Number (Optional) IRC-0042-02-US																																		
Application Number 16/220,484	Filed December 14, 2018																																			
For JOINT FOR ABOVE GROUND POOL FRAME																																				
Art Unit 3754	Examiner Lauren Ashley Crane																																			
<p>This is a request under the provisions of 37 CFR 1.136(a) to extend the period for filing a reply in the above-identified application.</p> <p>The requested extension and fee are as follows (check time period desired and enter the appropriate fee below):</p> <table style="width: 100%; border-collapse: collapse;"><thead><tr><th></th><th style="text-align: center;"><u>Fee</u></th><th style="text-align: center;"><u>Small Entity Fee</u></th><th style="text-align: center;"><u>Micro Entity Fee</u></th><th></th></tr></thead><tbody><tr><td>☐ One month (37 CFR 1.17(a)(1))</td><td style="text-align: right;">\$220</td><td style="text-align: right;">\$110</td><td style="text-align: right;">\$55</td><td style="text-align: right;">\$ _____</td></tr><tr><td>☒ Two months (37 CFR 1.17(a)(2))</td><td style="text-align: right;">\$640</td><td style="text-align: right;">\$320</td><td style="text-align: right;">\$160</td><td style="text-align: right;">\$ 640</td></tr><tr><td>☐ Three months (37 CFR 1.17(a)(3))</td><td style="text-align: right;">\$1,480</td><td style="text-align: right;">\$740</td><td style="text-align: right;">\$370</td><td style="text-align: right;">\$ _____</td></tr><tr><td>☐ Four months (37 CFR 1.17(a)(4))</td><td style="text-align: right;">\$2,320</td><td style="text-align: right;">\$1,160</td><td style="text-align: right;">\$580</td><td style="text-align: right;">\$ _____</td></tr><tr><td>☐ Five months (37 CFR 1.17(a)(5))</td><td style="text-align: right;">\$3,160</td><td style="text-align: right;">\$1,580</td><td style="text-align: right;">\$790</td><td style="text-align: right;">\$ _____</td></tr></tbody></table> <p>☐ Applicant asserts small entity status. See 37 CFR 1.27.</p> <p>☐ Applicant certifies micro entity status. See 37 CFR 1.29. Form PTO/SB/15A or B or equivalent must either be enclosed or have been submitted previously.</p> <p>☐ A check in the amount of the fee is enclosed.</p> <p>☐ Payment by credit card. Form PTO-2038 is attached.</p> <p>☐ The Director has already been authorized to charge fees in this application to a Deposit Account.</p> <p>☐ The Director is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account Number _____.</p> <p>☒ Payment made via EFS-Web.</p> <p>WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.</p> <p>I am the</p> <p>☐ applicant/inventor.</p> <p>☐ assignee of record of the entire interest. See 37 CFR 3.71. 37 CFR 3.73(b) statement is enclosed (Form PTO/SB/96).</p> <p>☒ attorney or agent of record. Registration number 74,511</p> <p>☐ attorney or agent acting under 37 CFR 1.34. Registration number _____.</p> <table style="width: 100%; border-collapse: collapse;"><tr><td style="width: 50%; padding: 5px;">/Alyssa R Eckerley/ _____ Signature</td><td style="width: 50%; padding: 5px;">September 9, 2021 _____ Date</td></tr><tr><td style="padding: 5px;">Alyssa Eckerley _____ Typed or printed name</td><td style="padding: 5px;">317-237-1361 _____ Telephone Number</td></tr></table> <p>NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. Submit multiple forms if more than one signature is required, see below*.</p> <p>☐ * Total of _____ forms are submitted.</p>				<u>Fee</u>	<u>Small Entity Fee</u>	<u>Micro Entity Fee</u>		☐ One month (37 CFR 1.17(a)(1))	\$220	\$110	\$55	\$ _____	☒ Two months (37 CFR 1.17(a)(2))	\$640	\$320	\$160	\$ 640	☐ Three months (37 CFR 1.17(a)(3))	\$1,480	\$740	\$370	\$ _____	☐ Four months (37 CFR 1.17(a)(4))	\$2,320	\$1,160	\$580	\$ _____	☐ Five months (37 CFR 1.17(a)(5))	\$3,160	\$1,580	\$790	\$ _____	/Alyssa R Eckerley/ _____ Signature	September 9, 2021 _____ Date	Alyssa Eckerley _____ Typed or printed name	317-237-1361 _____ Telephone Number
	<u>Fee</u>	<u>Small Entity Fee</u>	<u>Micro Entity Fee</u>																																	
☐ One month (37 CFR 1.17(a)(1))	\$220	\$110	\$55	\$ _____																																
☒ Two months (37 CFR 1.17(a)(2))	\$640	\$320	\$160	\$ 640																																
☐ Three months (37 CFR 1.17(a)(3))	\$1,480	\$740	\$370	\$ _____																																
☐ Four months (37 CFR 1.17(a)(4))	\$2,320	\$1,160	\$580	\$ _____																																
☐ Five months (37 CFR 1.17(a)(5))	\$3,160	\$1,580	\$790	\$ _____																																
/Alyssa R Eckerley/ _____ Signature	September 9, 2021 _____ Date																																			
Alyssa Eckerley _____ Typed or printed name	317-237-1361 _____ Telephone Number																																			

This collection of information is required by 37 CFR 1.136(a). The information is required to obtain or retain a benefit by the public, which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 6 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Patent Application Fee Transmittal				
Application Number:		16220484		
Filing Date:		14-Dec-2018		
Title of Invention:		JOINT FOR ABOVE GROUND POOL FRAME		
First Named Inventor/Applicant Name:		Hua Hsiang Lin, deceased		
Filer:		Alyssa Rianne Eckerley		
Attorney Docket Number:		IRC-0042-02-US		
Filed as Large Entity				
Filing Fees for U.S. National Stage under 35 USC 371				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
CLAIMS IN EXCESS OF 20	1615	9	100	900
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension-of-Time:				
Extension - 2 months with \$0 paid	1252	1	640	640
Miscellaneous:				
Total in USD (\$)				1540

Electronic Acknowledgement Receipt	
EFS ID:	43728198
Application Number:	16220484
International Application Number:	
Confirmation Number:	3890
Title of Invention:	JOINT FOR ABOVE GROUND POOL FRAME
First Named Inventor/Applicant Name:	Hua Hsiang Lin, deceased
Customer Number:	27268
Filer:	Alyssa Rianne Eckerley
Filer Authorized By:	
Attorney Docket Number:	IRC-0042-02-US
Receipt Date:	09-SEP-2021
Filing Date:	14-DEC-2018
Time Stamp:	19:50:13
Application Type:	U.S. National Stage under 35 USC 371

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	\$1540
RAM confirmation Number	E202199J50521576
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		IRC-0042-02-US_Amendment_09092021.pdf	366959	yes	11
			2c3d7165aeb7a704942bae60e4baf38767cd5e4e		
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Amendment/Req. Reconsideration-After Non-Final Reject		1	1	
	Claims		2	6	
	Applicant Arguments/Remarks Made in an Amendment		7	11	
Warnings:					
Information:					
2	Extension of Time	IRC-0042-02-US_EOT_09092021.pdf	259476	no	2
			58183540ca8fe716a45a54cf681e00af9a6e84a0		
Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	40703	no	2
			c8c98edfcb1a786ba416b31f540b52cfee3c8ea6		
Warnings:					
Information:					
Total Files Size (in bytes):			667138		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/220,484	12/14/2018	Hua Hsiang Lin, deceased	IRC-0042-02-US	3890
27268 7590 11/05/2021 FAEGRE DRINKER BIDDLE & REATH LLP 300 NORTH MERIDIAN STREET SUITE 2500 INDIANAPOLIS, IN 46204			EXAMINER CRANE, LAUREN ASHLEY	
			ART UNIT 3754	PAPER NUMBER
			NOTIFICATION DATE 11/05/2021	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

intear@faegredrinker.com

Office Action Summary	Application No. 16/220,484	Applicant(s) Lin, deceased et al.	
	Examiner LAUREN A CRANE	Art Unit 3754	AIA (FITF) Status Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☐ Responsive to communication(s) filed on ____.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on ____.

2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.

3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.

4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5) ☒ Claim(s) 1-5,7-12,14-17 and 19-32 is/are pending in the application.

5a) Of the above claim(s) ____ is/are withdrawn from consideration.

6) ☐ Claim(s) ____ is/are allowed.

7) ☒ Claim(s) 1-5,7-12,14-17,19-23 and 28-32 is/are rejected.

8) ☒ Claim(s) 24-27 is/are objected to.

9) ☐ Claim(s) ____ are subject to restriction and/or election requirement

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

10) ☐ The specification is objected to by the Examiner.

11) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a) ☐ All b) ☐ Some** c) ☐ None of the:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. ____.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☒ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b)
Paper No(s)/Mail Date ____.

3) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____.

4) ☐ Other: ____.

Notice of Pre-AIA or AIA Status

1. The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

Claim Rejections - 35 USC § 103

1. In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

2. The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3, 5, 7-12, 14-17, 19, 32 is/are rejected under 35 U.S.C. 103 as being unpatentable over Lee (US Patent Publication 2002/0042948) in view of Hake (US Patent 2014/0325751).
4. Regarding claim 1, Lee shows A frame joint for an above ground pool frame having a first horizontal frame member (120), a second horizontal frame member (120), and a vertical frame member (110), the frame joint comprising: a first horizontal joint portion (132) including a first coupling assembly (134) configured to couple with the first horizontal frame member; a second horizontal joint portion (132) including a second coupling assembly (134) configured to couple with the second horizontal frame

member; and a vertical joint portion (131) fixedly coupled to the first and second horizontal joint portions and configured to couple with the vertical frame member (11); Lee is silent regarding the percentage the width of the vertical joint portion accounts for the width between the first and second coupling assemblies of the first and second horizontal joint portions and a liner positioned around the first and second horizontal frame members, the liner defining a hole that is sized to expose the first and second coupling assemblies. Instead, Lee discloses that the vertical joint portion does account for a portion of the width between the first and second coupling assemblies of the first and second horizontal joint portions. Applicant has not disclosed that having the width of the vertical joint portion accounting for a portion of the width between the first and second coupling assemblies solves any stated problem or is for any particular purpose. Moreover, it appears that the width of the vertical joint portion of Lee, or applicant's invention, would perform equally well with the width of the first and second coupling assemblies. Accordingly, it would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to have modified Lee such that wherein a width of the vertical joint portion accounts for at least 50% of a width between the first and second coupling assemblies of the first and second horizontal joint portions because such a modification would have been considered a mere design consideration which fails to patentably distinguish over Lee.

5. Hake teaches a plastic receptacle. The device includes a liner (1) positioned around the first and second horizontal frame members (14), the liner defining a hole (15) that is sized to expose the first and second coupling assemblies (11) (paragraph 51). It would have been obvious to one having ordinary skill in the art before the

effective filing date of the claimed invention to include a liner positioned around the first and second horizontal frame members as taught by Hake to the liner as taught by Lee in order to allow the user to easily assemble the pool.

6. Regarding Claim 2, Lee shows the frame joint of claim 1, but is silent regarding the percentage of the width of the vertical joint portion accounts for a portion of the total width of the frame joint. Instead, Lee discloses that the vertical joint portion does account for a portion of total width of the frame joint. Applicant has not disclosed that having the width of the vertical joint portion accounting for a portion of the total width of the frame joint solves any stated problem or is for any particular purpose. Moreover, it appears that the width of the vertical joint portion of Lee, or applicant's invention, would perform equally well with the width of the frame joint. Accordingly, it would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to have modified Lee such that wherein the width of the vertical joint portion accounts for at least 40% of a total width of the frame joint because such a modification would have been considered a mere design consideration which fails to patentably distinguish over Lee.

7. Regarding Claim 3, Lee shows the frame joint of claim 1, but is silent regarding the percentage of the width of the vertical joint portion accounts for a portion of the total width of the frame joint. Instead, Lee discloses that the vertical joint portion does account for a portion of total width of the frame joint. Applicant has not disclosed that having the width of the vertical joint portion accounting for a portion of the total width of the frame joint solves any stated problem or is for any particular purpose. Moreover, it appears that the width of the vertical joint portion of Lee, or applicant's invention, would

perform equally well with the width of the frame joint. Accordingly, it would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to have modified Lee such that wherein the width of the vertical joint portion accounts for about 50% of a total width of the frame joint because such a modification would have been considered a mere design consideration which fails to patentably distinguish over Lee.

8. Regarding Claim 5, Lee shows the frame joint of claim 4, but is silent regarding the percentage the width of the vertical joint portion accounts for the width between the pins of the first and second coupling assemblies. Instead, Lee discloses that the vertical joint portion does account for a portion of the width between the pins of the first and second coupling assemblies. Applicant has not disclosed that having the width of the vertical joint portion accounting for a portion of the width between the pins of the first and second coupling assemblies solves any stated problem or is for any particular purpose. Moreover, it appears that the width of the vertical joint portion of Lee, or applicant's invention, would perform equally well with the width between the pins of the first and second coupling assemblies. Accordingly, it would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to have modified Lee such that wherein the width of the vertical joint portion accounts for about 70% of a width between the pins of the first and second coupling assemblies because such a modification would have been considered a mere design consideration which fails to patentably distinguish over Lee.

9. Regarding Claims 7, Lee shows the frame joint of claim 1, A width of the frame joint exceeds a width of the hole in the liner, Fig.9.

10. Regarding Claims 8, Lee shows the frame joint of claim 1, A height of the frame joint exceeds a height of the hole in the liner, Fig.9.

11.

12. Regarding Claim 9, Lee shows the frame joint of claim 1 , but fails to show the first horizontal joint portion, the second horizontal joint portion and the vertical joint portion being constructed of plastic. Hake teaches a container. The container is constructed is plastic (paragraph 22). It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to a frame constructed of plastic in order to prevent the frame from deteriorating.

13. Regarding Claims 10, Lee shows the frame joint of claim 9, wherein the vertical joint portion is centered between the first and second horizontal joint portions to form a T-shaped frame joint, Fig.3.

14. Regarding Claims 11, Lee shows the frame joint of claim 9, The first and second horizontal joint portions cooperate to form an obtuse angle, Fig.3.

15. Regarding Claims 12, Lee shows the frame joint of claim 9, The vertical joint portion is integrally formed with the first and second horizontal joint portions as a single piece, Fig.3.

16. Regarding Claim 14, Lee shows a method of assembling an above ground pool, the method comprising: coupling a first horizontal joint portion (132) of a frame joint to a first horizontal frame member (120) with a first coupling assembly (134); coupling a second horizontal joint portion (120) of the frame joint to a second horizontal frame member (120) with a second coupling assembly (134); and coupling a vertical joint portion (131) of the frame joint to a vertical frame member (110); wherein a width of the

vertical joint portion accounts for a majority of a width between the first and second coupling assemblies of the first and second horizontal joint portions, Fig.3.

17. Lee fails to show wrapping a liner around the first and second horizontal frame.

18. Hake teaches a plastic receptacle. The device includes a step of wrapping a liner (1) around the first and second horizontal frame members (14) with a hole (15) exposing the first and second coupling assemblies (11) (paragraph 51).

19. It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to include a step of wrapping a liner around the first and second horizontal frame members as taught by Hake to the liner as taught by Lee in order to allow the user to easily assemble the pool.

20. Regarding Claim 15, Lee shows the method of claim 14, wherein: an external cross-section of the first horizontal joint portion matches an internal cross-section of the first horizontal frame member which are both circular; an external cross-section of the second horizontal joint portion matches an internal cross-section of the second horizontal frame member which are both circular; and an external cross-section of the vertical joint portion matches an internal cross-section of the vertical frame member which are both circular, Fig.3.

21. Regarding Claim 16, Lee shows the method of claim 14, but fails to show the first horizontal joint portion, the second horizontal joint portion, and the vertical joint portion are constructed of plastic. Hake teaches a container. The container is constructed is plastic (paragraph 22). It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to a frame constructed of plastic in order to prevent the frame from deteriorating.

22.

23. Regarding Claim 17, Lee shows the method of claim 14, wherein: coupling the first horizontal joint portion to the first horizontal frame member comprises depressing a first pin into the first horizontal joint portion and releasing the first pin into engagement with the first horizontal frame member; and coupling the second horizontal joint portion to the second horizontal frame member comprises depressing a second pin into the second horizontal joint portion and releasing the second pin into engagement with the second horizontal frame member, Fig.7.

24. Regarding Claim 19, Lee shows the method of claim 14, wherein a width of the hole in the liner exceeds a width between the first and second coupling assemblies, Fig.9.

25. Regarding Claim 32, Lee shows the frame joint of claim 1, and futehr shows wherein the first coupling assembly (134) and the second coupling assembly (134) are actuatable from an exterior of the frame joint along a vertical direction (because the assemblies are able to be attached to a support vertically; Fig.4) .

26. Claim 4 is/are rejected under 35 U.S.C. 103 as being unpatentable over Lee (US Patent Publication 2002/0042948) in view of Hake (US Patent 2014/0325751) as applied to claim 1 above and furhter in view of Obitts (US Patent 6079894). Lee shows the frame joint of claim 1, but fails to show a helical spring. Obitts teaches a snap button. The device includes wherein each of the first and second coupling assemblies(12,24) comprises a base (158), a helical spring (170) supported by the base (144), and a pin biased outward through a hole (14) in the respective horizontal joint portion by the helical spring to engage a corresponding recess of the respective

horizontal frame member. It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to a helical spring in order to ensure the two pieces were securely attached together.

27. Claim 20 is/are rejected under 35 U.S.C. 103 as being unpatentable over Lee (US Patent Publication 2002/0042948) in view of Hake (US Patent 2014/0325751) as applied to claim 14 above and further in view of Bennett et al (US Patent Publication 2004/0118844 herein after Bennett). Lee shows the method of claim 14, and further shows wherein the vertical joint portion (131) of the frame joint is coupled to the vertical frame member (110), and wherein a height of the hole in the liner is less than a distance between the first and third coupling assemblies, Fig.2. Lee fails to show a third coupling assembly. Bennett teaches a fluid storage tank. The device includes a frame having a vertical frame member (120) with a third coupling assembly. It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to a third coupling assembly in order to ensure the vertical frame member was securely attached to the frame.

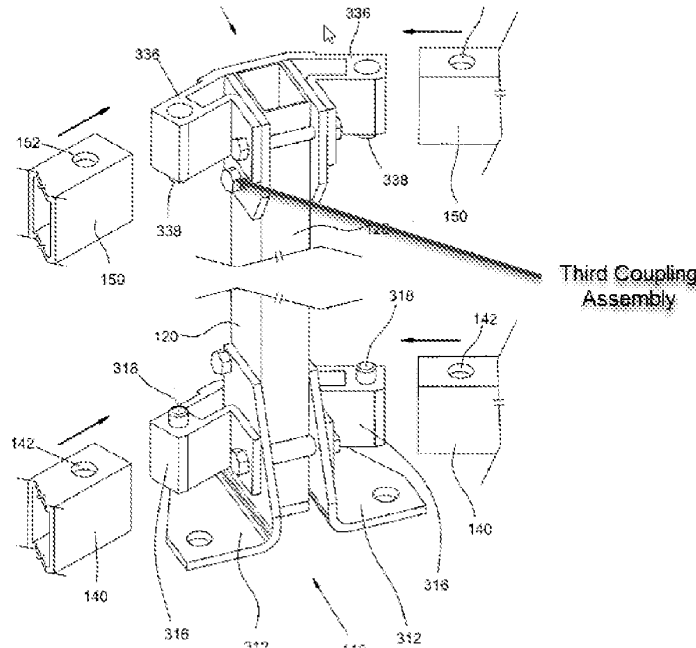
28. Claims 21-22 is/are rejected under 35 U.S.C. 103 as being unpatentable over Lee (US Patent Publication 2002/0042948) in view of Hake (US Patent 2014/0325751) as applied to claim 1 above and further in view Huang (US Patent 20170356206).

29. Regarding Claim 21, Lee shows the frame joint of claim 1, but fails to show wherein the vertical joint portion (32) includes at least one internal vertical reinforcing rib. Huang teaches a pool frame. A vertical joint portion (32) includes at least one internal vertical reinforcing rib (50). It would have been obvious to one having ordinary

skill in the art before the effective filing date of the claimed invention to an internal vertical reinforcing rib in order to add structural support to the joint.

30. Regarding Claim 22, Lee shows the frame joint of claim 1, but fails to show at least one of the first horizontal joint portion and the second horizontal joint portion includes an internal horizontal reinforcing rib. Huang teaches a pool frame. At least one of the first horizontal joint portion (31) and the second horizontal joint portion (31) includes an internal horizontal reinforcing rib (50). It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to an internal horizontal reinforcing rib in order to add structural support to the joint.

31. Claims 23 is/are rejected under 35 U.S.C. 103 as being unpatentable over Lee (US Patent 20020042948) in view of Pruis (US Patent 5,143,476). Lee shows the frame joint of claim 1, but fails to show wherein at least one of the first horizontal joint portion and the second horizontal joint portion includes an internal horizontal support member. Pruis teaches a pool frame. The frame includes at least one of the first horizontal joint portion (18) and the second horizontal joint portion includes an internal horizontal support member (26). It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to internal horizontal support member in order to add structural support to the joint.



32.

33. Claim 28-31 is/are rejected under 35 U.S.C. 103 as being unpatentable over Lee (US Patent Publication 2002/0042948) in view of Hake (US Patent 2014/0325751) as applied to claim 1 above and further in view of Cheng (US Patent Publication 2009/0205121).

34. Regarding Claim 28, Lee shows the frame joint of claim 1, but fails to show wherein the first and second coupling assemblies are accessible from an exterior side of the liner through the hole defined in the liner. Cheng teaches wherein a first and second coupling assemblies (164) are accessible from an exterior side of the liner through the hole defined in the liner (Fig 1B). It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to make the first and second couple assemblies accessible through the liner in order to allow for easy assembly of the device.

35. Regarding Claim 29, Lee shows the frame joint of claim 1, but fails to show wherein the first and second coupling assemblies are accessible from an exterior side of the liner through the hole defined in the liner and the first and second coupling assemblies are accessible from an interior side of the liner through the hole defined in the liner, the interior side of the liner being opposite the exterior side of the liner. Cheng teaches a first and second coupling assemblies (164) are accessible from an exterior side of the liner through the hole (25) defined in the liner and the first and second coupling assemblies are accessible from an interior side of the liner through the hole (25) defined in the liner, the interior side of the liner being opposite the exterior side of the liner (paragraph 4). It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to make the first and second couple assemblies accessible through the liner in order to allow for easy assembly of the device.

36. Regarding Claim 30, Lee shows the frame joint of claim 1, but fails to show wherein the hole of the liner simultaneously exposes the first coupling assembly and the second coupling assembly. Cheng shows the hole (25) of the liner simultaneously exposes the first coupling assembly (164) and the second coupling assembly (164) (Fig. 1B). It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to make the first and second couple assemblies simultaneously exposed through the liner in order to allow for easy assembly of the device.

37. Regarding Claim 31, Lee shows the frame joint of claim 1, but fails to shows the hole of the liner exposes the first coupling assembly and the second coupling assembly

in a resting position. Cheng teaches the hole (25) of the liner (100) exposes the first coupling assembly (164) and the second coupling assembly (164) in a resting position (Fig. 1B). It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to make the first and second couple assemblies accessible through the liner in the resting position in order to allow for easy assembly of the device.

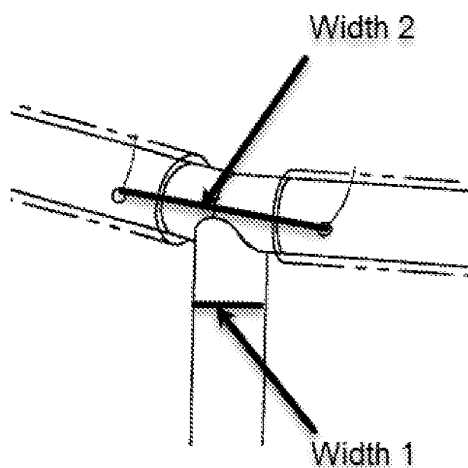
Allowable Subject Matter

38. Claims 24-26 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

1. Applicant's arguments filed 9/9/2021 have been fully considered but they are not persuasive.
2. Applicants arguments directed toward the new limitations have been addressed in the action above.
3. Applicant argues that Lee fails to show a width of the vertical joint portion account for at least 50%, at least 40%, or about 50% of a width between first and second coupling assemblies. The examiner disagrees. Lee doesn't explicitly state the ratio of widths between the coupling assemblies but does shows a width of the vertical joint portion account for at least 50%, at least 40%, or about 50% of a width between first and second coupling assemblies, see annotated figure below.

4. Applicant argues that Lee fails to show a width of the vertical joint portion account for the majority of a width between first and second coupling assemblies. The examiner disagrees. Lee shows a width of the vertical joint portion account for the majority of a width between first and second coupling assemblies, see annotated figure below.



Conclusion

1. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Liu (US Patent Publication 2016/0222686) is directed to the state of the art as a teaching of a swimming pool structure that includes a connector having an oval cross-section.
2. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

2.

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAUREN ASHLEY CRANE whose telephone number is (571)270-5198. The examiner can normally be reached Mondays & Tuesdays 8 am - 4pm.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at <http://www.uspto.gov/interviewpractice>.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Angwin can be reached on 571-270-3735. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of published or unpublished applications may be obtained from Patent Center. Unpublished application information in Patent Center is available to registered users. To file and manage patent submissions in Patent Center,

visit: <https://patentcenter.uspto.gov>. Visit <https://www.uspto.gov/patents/apply/patent-center> for more information about Patent Center and <https://www.uspto.gov/patents/docx> for information about filing in DOCX format. For additional questions, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/LAUREN A CRANE/
Primary Examiner, Art Unit 3754

<i>Notice of References Cited</i>	Application/Control No. 16/220,484		Applicant(s)/Patent Under Reexamination Lin, deceased et al.	
	Examiner LAUREN A CRANE		Art Unit 3754	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-20090205121-A1	08-2009	Cheng; Chung Wai (Paul)	E04H4/0056	4/506
*	B	US-20160222686-A1	08-2016	Liu; Feng	E04H4/0056	1/1
	C					
	D					
	E					
	F					
	G					
	H					
	I					
	J					
	K					
	L					
	M					

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

<i>Search Notes</i> 	Application/Control No. 16/220,484	Applicant(s)/Patent Under Reexamination Lin, deceased et al.
	Examiner LAUREN A CRANE	Art Unit 3754

CPC - Searched*		
Symbol	Date	Examiner
F16B7/17	04/14/2020	LC
E04H4/0056	11/03/2020	LC

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner
4	654	04/14/2020	LC
4	506	11/03/2020	

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner
Text search of F16B7/14	11/03/2020	LC
Forward backward search of tagged art	11/03/2020	LC
Search of Tagged Art	04/06/2021	LC
Search of Tagged Art	11/02/2021	LC

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner

/LAUREN A CRANE/ Primary Examiner, Art Unit 3754	
---	--

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16220484
	Filing Date	2018-12-14
	First Named Inventor	Hua Hsiang Lin
	Art Unit	3754
	Examiner Name	CRANE, LAUREN ASHLEY
	Attorney Docket Number	IRC-0042-02-US

U.S.PATENTS							Remove	
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear		
	1							
If you wish to add additional U.S. Patent citation information please click the Add button.							Add	
U.S.PATENT APPLICATION PUBLICATIONS							Remove	
Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear		
	1							
If you wish to add additional U.S. Published Application citation information please click the Add button.							Add	
FOREIGN PATENT DOCUMENTS							Remove	
Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²ⁱ	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T ⁵
	1	2195595	CN	Y	1995-04-26	YUAN WENZHANG	English Abstract Submitted	
	2	2480479	CN	Y	2002-03-06	LIAO WEIPING	English Abstract Submitted	
	3	101787807	CN	A	2010-07-28	INVENT2BUILD LTD	English Abstract Submitted	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		16220484	
	Filing Date		2018-12-14	
	First Named Inventor	Hua Hsiang Lin		
	Art Unit	3754		
	Examiner Name	CRANE, LAUREN ASHLEY		
	Attorney Docket Number	IRC-0042-02-US		

4	202745430	CN	U	2013-02-20	SHANGHAI JILONG PLASTIC PRODUCTS CO LTD	English Abstract Submitted	
5	204475913	CN	U	2015-07-15	SHANGHAI BESTWAY INFLATABLES & MATERIAL CORP	English Abstract Submitted	
6	209130364	CN	U	2019-07-19	INTEX IND XIAMEN CO LTD	English Abstract Submitted	
7	2774416	FR	A1	1999-08-06	TORRENTE IND	English Abstract Submitted	
8	009029	RU	U1	1999-01-16	Limited Liability Company	English Abstract Submitted	

If you wish to add additional Foreign Patent Document citation information please click the Add button

Add

NON-PATENT LITERATURE DOCUMENTS

Remove

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T ⁵
	1	Best Way https://www.amazon.com/Steel-Pro-Frame-Pool-Set/dp/BOOHZAM07U/ref=sr_1_24?dchild=1&keywords=above+ground+frame+pool&qid=1605540738&sr=8-24 (Year: 2017)	
	2	International Preliminary Report on Patentability received for PCT Patent Application No. PCT/IB2019/057831, mailed on March 25, 2021, 7 pages.	
	3	International Search Report and Written Opinion received for PCT Patent Application No. PCT/IB2019/057831, mailed on December 20, 2019, 9 pages.	
	4	Killife Pool Cart https://www.amazon.com/KITLIFE-Storage-Resistant-Cracking-Included/dp/B08B46LM5N/ (Year: 2018)	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		16220484
	Filing Date		2018-12-14
	First Named Inventor	Hua Hsiang Lin	
	Art Unit	3754	
	Examiner Name	CRANE, LAUREN ASHLEY	
	Attorney Docket Number	IRC-0042-02-US	

5	Summer https://www.amazon.com/Summer-Waves-Premium-Swimming-Accessory/dp/B07BXC85HG/ (Year: 2018)
---	---

If you wish to add additional non-patent literature document citation information please click the Add button

EXAMINER SIGNATURE

Examiner Signature	/LAUREN A CRANE/	Date Considered	11/02/2021
--------------------	------------------	-----------------	------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16220484
	Filing Date	2018-12-14
	First Named Inventor	Hua Hsiang Lin
	Art Unit	3754
	Examiner Name	CRANE, LAUREN ASHLEY
	Attorney Docket Number	IRC-0042-02-US

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

☒ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/William S. Meyers/	Date (YYYY-MM-DD)	2021-08-04
Name/Print	William S. Meyers	Registration Number	42,884

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

Doc code: IDS

Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (02-18)

Approved for use through 11/30/2020. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16220484
	Filing Date	2018-12-14
	First Named Inventor	Hua Hsiang Lin
	Art Unit	3754
	Examiner Name	CRANE, LAUREN ASHLEY
	Attorney Docket Number	IRC-0042-02-US

U.S. PATENTS						Remove
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear
	1	3877491		1975-04-15	THASTRUP OVE	
	2	D304486		1989-11-07	ELDER et al.	
	3	D343889	S	1994-02-01	STONECYPHER BOBBY B	
	4	D348723	S	1994-07-12	CARROLL RICKY W	
	5	D454940	S	2002-03-26	HOENIG RICHARD	
	6	D580530	S	2008-11-11	MCALPINE JAMES KENNETH	
	7	D755940	S	2016-05-10	SCHULZE MICHAEL	
	8	D770599	S	2016-11-01	DAUGHTERS DANA L	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		16220484	
	Filing Date		2018-12-14	
	First Named Inventor		Hua Hsiang Lin	
	Art Unit		3754	
	Examiner Name		CRANE, LAUREN ASHLEY	
	Attorney Docket Number		IRC-0042-02-US	

	9	D815300	S	2018-04-10	LIN et al.	
	10	D900286	S	2020-10-27	DAUGHTERS DANA L	

If you wish to add additional U.S. Patent citation information please click the Add button.

U.S.PATENT APPLICATION PUBLICATIONS						<input type="button" value="Remove"/>
--	--	--	--	--	--	---------------------------------------

Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20070068584	A1	2007-03-29	MURDOCK et al.	
	2	20080314466	A1	2008-12-25	CIMBERIO et al.	
	3	20150115186	A1	2015-04-30	BORLAND et al.	
	4	20190032796	A1	2019-01-31	DI MONTE MICHAEL ANTHONY	

If you wish to add additional U.S. Published Application citation information please click the Add button.

FOREIGN PATENT DOCUMENTS								<input type="button" value="Remove"/>
---------------------------------	--	--	--	--	--	--	--	---------------------------------------

Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T ⁵
	1	206054469	CN	U	2017-03-29	INTEX IND (XIAMEN) CO LTD	English Abstract Submitted	

If you wish to add additional Foreign Patent Document citation information please click the Add button.

NON-PATENT LITERATURE DOCUMENTS								<input type="button" value="Remove"/>
--	--	--	--	--	--	--	--	---------------------------------------

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		16220484
	Filing Date		2018-12-14
	First Named Inventor	Hua Hsiang Lin	
	Art Unit	3754	
	Examiner Name	CRANE, LAUREN ASHLEY	
	Attorney Docket Number	IRC-0042-02-US	

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T ⁵
	1		

If you wish to add additional non-patent literature document citation information please click the Add button

EXAMINER SIGNATURE

Examiner Signature	/LAUREN A CRANE/	Date Considered	11/02/2021
--------------------	------------------	-----------------	------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		16220484
	Filing Date		2018-12-14
	First Named Inventor	Hua Hsiang Lin	
	Art Unit	3754	
	Examiner Name	CRANE, LAUREN ASHLEY	
	Attorney Docket Number	IRC-0042-02-US	

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Alyssa R Eckerley/	Date (YYYY-MM-DD)	2021-06-29
Name/Print	Alyssa Eckerley	Registration Number	74,511

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

Electronic Patent Application Fee Transmittal				
Application Number:		16220484		
Filing Date:		14-Dec-2018		
Title of Invention:		JOINT FOR ABOVE GROUND POOL FRAME		
First Named Inventor/Applicant Name:		Hua Hsiang Lin, deceased		
Filer:		Alyssa RYanne Eckerley/LaVerne Walker		
Attorney Docket Number:		IRC-0042-02-US		
Filed as Large Entity				
Filing Fees for U.S. National Stage under 35 USC 371				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
NOTICE OF APPEAL	1401	1	840	840
Post-Allowance-and-Post-Issuance:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				840

Electronic Acknowledgement Receipt	
EFS ID:	44539281
Application Number:	16220484
International Application Number:	
Confirmation Number:	3890
Title of Invention:	JOINT FOR ABOVE GROUND POOL FRAME
First Named Inventor/Applicant Name:	Hua Hsiang Lin, deceased
Customer Number:	27268
Filer:	Alyssa Rianne Eckerley/LaVerne Walker
Filer Authorized By:	Alyssa Rianne Eckerley
Attorney Docket Number:	IRC-0042-02-US
Receipt Date:	16-DEC-2021
Filing Date:	14-DEC-2018
Time Stamp:	16:43:44
Application Type:	U.S. National Stage under 35 USC 371

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	\$ 840
RAM confirmation Number	E2021BFG45460612
Deposit Account	020390
Authorized User	LaVerne Walker
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: 37 CFR 1.21 (Miscellaneous fees and charges) 37 CFR 1.19 (Document supply fees)	

37 CFR 1.17 (Patent application and reexamination processing fees)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Notice of Appeal Filed	IRC-0042-02-US_Notice_of_Appeal.pdf	253019	no	2
			e92ebf625e4c1cc1084b90652d22d120f6877ca4		
Warnings:					
Information:					
2	Pre-Brief Conference request	IRC-0042-02-US_PABRR_PTOAIA33.pdf	222503	no	2
			aa76cbab8ceab078f5c334a18e68c7aed7be029b		
Warnings:					
Information:					
3	Pre-Brief Conference request	IRC-0042-02-US_PreAppeal_Brief_Request_for_Review.pdf	226917	no	4
			fa8b49161911da1e13dc0b647420830e3faed101		
Warnings:					
Information:					
4	Fee Worksheet (SB06)	fee-info.pdf	37859	no	2
			b5733c99e3b2c79dacdf49c0b2704c828f73a292f		
Warnings:					
Information:					
Total Files Size (in bytes):			740298		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

NOTICE OF APPEAL FROM THE EXAMINER TO THE PATENT TRIAL AND APPEAL BOARD		Docket Number (Optional) IRC-0042-02-US								
I hereby certify that this correspondence is being facsimile transmitted to the USPTO, EFS-Web transmitted to the USPTO, or deposited with the United States Postal Service with sufficient postage in an envelope addressed to "Commissioner for Patents, P.O. Box 1450, Alexandria, on Alexandria, VA 22313-1450" [37 CFR 1.8(a)] on _____. Signature _____ Typed or printed name _____	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2" style="padding: 2px;">In re Application of Hua Hsiang LIN et al.</td> </tr> <tr> <td style="width: 60%; padding: 2px;">Application Number 16/220,484</td> <td style="padding: 2px;">Filed December 14, 2018</td> </tr> <tr> <td colspan="2" style="padding: 2px;">For JOINT FOR ABOVE GROUND POOL FRAME</td> </tr> <tr> <td style="padding: 2px;">Art Unit 3754</td> <td style="padding: 2px;">Examiner CRANE, Lauren Ashley</td> </tr> </table>		In re Application of Hua Hsiang LIN et al.		Application Number 16/220,484	Filed December 14, 2018	For JOINT FOR ABOVE GROUND POOL FRAME		Art Unit 3754	Examiner CRANE, Lauren Ashley
In re Application of Hua Hsiang LIN et al.										
Application Number 16/220,484	Filed December 14, 2018									
For JOINT FOR ABOVE GROUND POOL FRAME										
Art Unit 3754	Examiner CRANE, Lauren Ashley									
Applicant hereby appeals to the Patent Trial and Appeal Board from the last decision of the examiner.										
The fee for this Notice of Appeal is (37 CFR 41.20(b)(1)) \$ 840										
☐ Applicant asserts small entity status. See 37 CFR 1.27. Therefore, the fee shown above is reduced by 50%, and the resulting fee is: \$ _____										
☐ Applicant certifies micro entity status. See 37 CFR 1.29. Therefore, the fee shown above is reduced by 75%, and the resulting fee is: \$ _____ Form PTO/SB/15A or B or equivalent must either be enclosed or have been submitted previously.										
☐ A check in the amount of the fee is enclosed.										
☒ Payment by credit card. Form PTO-2038 is attached.										
☒ The Director is hereby authorized to charge any fees which may be required, or credit any overpayment to Deposit Account No. <u>02-0390</u> .										
☒ Payment made via EFS-Web.										
☐ A petition for an extension of time under 37 CFR 1.136(a) (PTO/AIA/22 or equivalent) is enclosed. For extensions of time in reexamination proceedings, see 37 CFR 1.550.										
WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.										
I am the										
<table style="width: 100%;"> <tr> <td style="width: 33%;">☐ applicant</td> <td style="width: 33%;">☒ attorney or agent of record Registration number <u>74,511</u></td> <td style="width: 33%;">☐ attorney or agent acting under 37 CFR 1.34 Registration number _____</td> </tr> </table>			☐ applicant	☒ attorney or agent of record Registration number <u>74,511</u>	☐ attorney or agent acting under 37 CFR 1.34 Registration number _____					
☐ applicant	☒ attorney or agent of record Registration number <u>74,511</u>	☐ attorney or agent acting under 37 CFR 1.34 Registration number _____								
Signature <u>/Alyssa R Eckerley/</u>										
Typed or printed name <u>Alyssa R. Eckerley</u>										
Telephone Number <u>317-237-1361</u>										
Date <u>December 16, 2021</u>										
NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. Submit multiple forms if more than one signature is required, see below*.										
☐ * Total of _____ forms are submitted.										

This collection of information is required by 37 CFR 41.20(b)(1) and 41.31. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11, 1.14 and 41.6. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Doc Code: AP.PRE.REQ

PTO/AIA/33 (03-13)

Approved for use through 01/31/2021. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PRE-APPEAL BRIEF REQUEST FOR REVIEW		Docket Number (Optional) IRC-0042-02-US						
<p>I hereby certify that this correspondence is being facsimile transmitted to the USPTO, EFS-Web transmitted to the USPTO, or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to "Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR 1.8(a)] on _____</p> <p>Signature _____</p> <p>Typed or printed name _____</p>	<table border="1" style="width: 100%; border-collapse: collapse;"><tr><td style="width: 50%; padding: 5px;">Application Number 16/220,484</td><td style="width: 50%; padding: 5px;">Filed December 14, 2018</td></tr><tr><td colspan="2" style="padding: 5px;">First Named Inventor Hua Hsiang LIN</td></tr><tr><td style="padding: 5px;">Art Unit 3754</td><td style="padding: 5px;">Examiner CRANE, Lauren Ashley</td></tr></table>		Application Number 16/220,484	Filed December 14, 2018	First Named Inventor Hua Hsiang LIN		Art Unit 3754	Examiner CRANE, Lauren Ashley
Application Number 16/220,484	Filed December 14, 2018							
First Named Inventor Hua Hsiang LIN								
Art Unit 3754	Examiner CRANE, Lauren Ashley							
<p>Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.</p> <p>This request is being filed with a notice of appeal.</p> <p>The review is requested for the reason(s) stated on the attached sheet(s). Note: No more than five (5) pages may be provided.</p> <div style="display: flex; justify-content: space-between; margin-top: 20px;"><div style="width: 45%;"><p>I am the</p><p>☐ applicant.</p><p>☒ attorney or agent of record. Registration number <u>74,511</u></p><p>☐ attorney or agent acting under 37 CFR 1.34. Registration number if acting under 37 CFR 1.34 _____</p></div><div style="width: 50%;"><p><u>/Alyssa R Eckerley/</u> Signature <u>Alyssa R. Eckerley</u> Typed or printed name <u>317-237-1361</u> Telephone number <u>December 16, 2021</u> Date</p></div></div> <p style="font-size: small; margin-top: 10px;">NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. Submit multiple forms if more than one signature is required, see below*.</p>								
<div style="border: 1px solid black; padding: 5px;">☐ *Total of _____ forms are submitted.</div>								

This collection of information is required by 35 U.S.C. 132. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11, 1.14 and 41.6. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No. : 16/220,484 Confirmation No. 3890
Filed : December 14, 2018
Title : JOINT FOR ABOVE GROUND POOL FRAME
First Inventor : Hua Hsiang Lin
TC/A.U. : 3754
Examiner : Lauren Ashley Crane
Atty. Docket No. : IRC-0042-02-US
Customer No. : 27268

PRE-APPEAL BRIEF REQUEST FOR REVIEW

MAIL STOP AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Commissioner:

Appellant requests review of the Final Office Action dated November 5, 2021 (hereinafter the "Office Action") in the above-identified application. No amendments are being filed with this request. This request is being filed with a Notice of Appeal.

Review is requested for the reasons stated on the attached five (5) sheets, numbered as pages 1-5. Appellant reserves the right to make additional arguments in the Appeal Brief if this case proceeds to the Board of Appeals.

REASONS FOR REVIEW**The Rejection of Claims 1-3, 5, 7-12, 14-17, 19, and 32 Under 35 U.S.C. § 103 Over Lee in view of Hake is Improper and Should be Withdrawn**

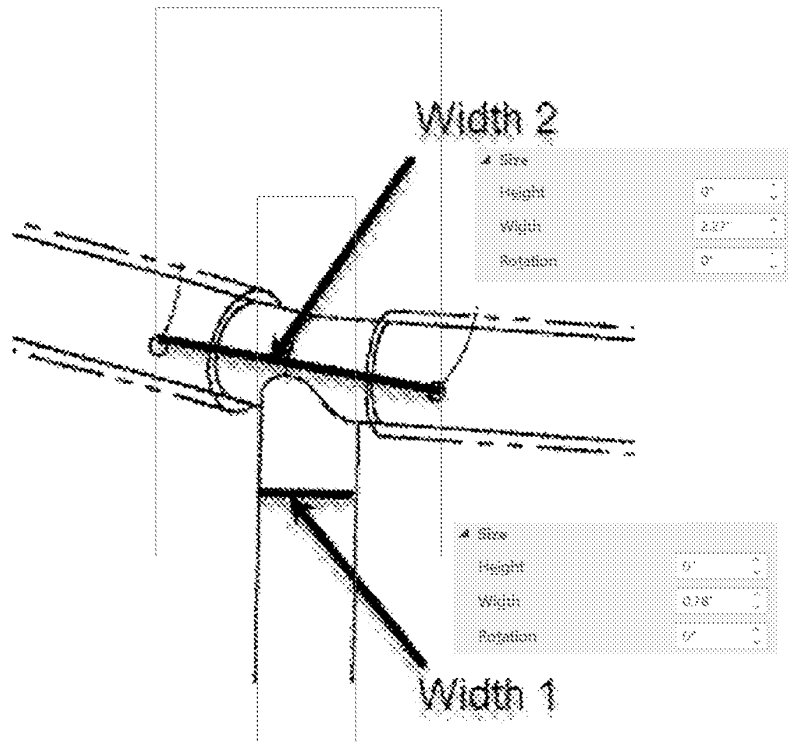
On pages 2-4 of the Office Action, claims 1-3, 5, 7-12, 14-17, 19, and 32 have been rejected under 35 U.S.C. § 103 as being unpatentable over Lee in view of Hake.

Independent claim 1 recites, *inter alia*, "...a liner positioned around the first and second horizontal frame members, the liner defining a hole that is sized to expose the first and second coupling assemblies; wherein a width of the vertical joint portion accounts for at least 50% of a width between the first and second coupling assemblies of the first and second horizontal joint portions." Similarly, independent claim 14 recites, *inter alia*, "positioning a liner around the first and second horizontal frame members with a hole exposing the first and second coupling assemblies; wherein a width of the vertical joint portion accounts for a majority of a width between the first and second coupling assemblies of the first and second horizontal joint portions."

The Examiner insists on pages 13-14 of the Office Action that Lee discloses a vertical portion that has a width accounting for a majority of a width between the first and second coupling assemblies, offering an annotated figure of Lee as evidence. The Examiner relies on the drawings of Lee alone as evidence of actual proportions in rejecting the above limitations. Applicant respectfully submits that the drawing of Lee does not explicitly disclose the measurement of the width of the vertical joint portion relative to the first and second coupling assemblies. M.P.E.P. § 2125 prohibits such rejections, nothing that "[w]hen the reference does not disclose that the drawings are to scale and is silent as to dimensions, arguments based on measurement of the drawing features are of little value." M.P.E.P. § 2125 further specifies that "it is well established that patent drawings do not define the precise proportions of the elements and may not be relied upon to show particular sizes if the specification is completely silent on the issue" citing *Hockerson-Halberstadt, Inc. v. Avia Group Int'l*, 222 F.3d 951, 956 (Fed. Cir. 2000).

Further, the claimed proportions are not taught by Lee. The provided annotated figure of Lee was reproduced in Microsoft® PowerPoint® and has a width of the vertical portion ("Width 1") measuring 0.78" and a width between the first and second coupling assemblies ("Width 2")

measuring 2.27" (see below) resulting in a ratio of approximately 34%, which does not meet the recited claim limitations.



While Applicant observes that measurements based on drawings are not to be relied upon when drawings are not to scale, Applicant submits that the Office Action's insistence that this limitation is disclosed by Lee, based on the drawings of Lee alone, requires the proper observance of the illustrated ratio between Width 1 and Width 2, which does not meet the requirements of independent claim 1. Applicant respectfully submits, for at least these reasons, the incorrect reliance on the drawing of Lee and the explicit ratios pulled from Lee not meeting the claimed limitations, a *prima facie* case of obviousness has not been established.

Removal of the rejection is respectfully requested. Applicant reserves the right to make further arguments on appeal should the rejection be maintained.

Respectfully submitted,

/Alyssa R Eckerley/

Alyssa R. Eckerley, Reg. No. 74,511

Attorney for Applicants

FAEGRE DRINKER BIDDLE & REATH, LLP

300 N. Meridian St., Suite 2500

Indianapolis, IN 46204

Telephone: 317-237-1361

Dated: December 16, 2021



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/220,484	12/14/2018	Hua Hsiang Lin, deceased	IRC-0042-02-US	3890
27268	7590	01/10/2022		
FAEGRE DRINKER BIDDLE & REATH LLP 300 NORTH MERIDIAN STREET SUITE 2500 INDIANAPOLIS, IN 46204			EXAMINER CRANE, LAUREN ASHLEY	
			ART UNIT 3754	PAPER NUMBER
			NOTIFICATION DATE 01/10/2022	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

intear@faegredrinker.com

Notice of Panel Decision from Pre-Appeal Brief Review	Application No. 16/220,484		Applicant(s) Lin, deceased et al.	
	Examiner LAUREN A CRANE		Art Unit 3754	AIA (FITF) Status Yes
	<p>This is in response to the Pre-Appeal Brief Request for Review filed <u>16 December 2021</u> .</p> <p>1. ☐ Improper Request - The Request is improper and a conference will not be held for the following reason(s):</p> <div style="margin-left: 20px;"> ☐ The Notice of Appeal has not been filed concurrent with the Pre-Appeal Brief Request. ☐ The request does not include reasons why a review is appropriate. ☐ A proposed amendment is included with the Pre-Appeal Brief request. ☐ Other: _____. </div> <p>The time period for filing a response continues to run from the receipt date of the Notice of Appeal or from the mail date of the last Office communication, if no Notice of Appeal has been received.</p> <p>2. ☒ Proceed to Board of Patent Appeals and Interferences - A Pre-Appeal Brief conference has been held. The application remains under appeal because there is at least one actual issue for appeal. Applicant is required to submit an appeal brief in accordance with 37 CFR 41.37. The time period for filing an appeal brief will be reset to be one month from mailing this decision, or the balance of the two-month time period running from the receipt of the notice of appeal, whichever is greater. Further, the time period for filing of the appeal brief is extendible under 37 CFR 1.136 based upon the mail date of this decision or the receipt date of the notice of appeal, as applicable.</p> <div style="margin-left: 20px;"> ☒ The panel has determined the status of the claim(s) is as follows: Claim(s) allowed: _____. Claim(s) objected to: <u>24-27</u> . Claim(s) rejected: <u>1-5,7-12,17-14,19-23,38-32</u> . Claim(s) withdrawn from consideration: _____. </div> <p>3. ☐ Allowable application - A conference has been held. The rejection is withdrawn and a Notice of Allowance will be mailed. Prosecution on the merits remains closed. No further action is required by applicant at this time.</p> <p>4. ☐ Reopen Prosecution - A conference has been held. The rejection is withdrawn and a new Office action will be mailed. No further action is required by applicant at this time.</p>			
All participants:				
(1) <u>LAUREN A CRANE</u> .		(3) <u>Erin Deery</u> .		
(2) <u>David Angwin</u> .		(4) _____.		
/LAUREN A CRANE/ Primary Examiner, Art Unit 3754	/ERIN DEERY/ Primary Examiner, Art Unit 3754	/DAVID P ANGWIN/ Supervisory Patent Examiner, Art Unit 3754		

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16220484
	Filing Date	2018-12-14
	First Named Inventor	Hua Hsiang Lin
	Art Unit	3754
	Examiner Name	CRANE, LAUREN ASHLEY
	Attorney Docket Number	IRC-0042-02-US

U.S. PATENTS							Remove	
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1							
If you wish to add additional U.S. Patent citation information please click the Add button.							Add	
U.S. PATENT APPLICATION PUBLICATIONS							Remove	
Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1							
If you wish to add additional U.S. Published Application citation information please click the Add button.							Add	
FOREIGN PATENT DOCUMENTS							Remove	
Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²ⁱ	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	T ⁵
	1	201502321	CL		2015-08-19	CORRAL SANTELICES HERNAN CLAUDIO		
If you wish to add additional Foreign Patent Document citation information please click the Add button.								Add
NON-PATENT LITERATURE DOCUMENTS							Remove	
Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.						T ⁵

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		16220484
	Filing Date		2018-12-14
	First Named Inventor	Hua Hsiang Lin	
	Art Unit	3754	
	Examiner Name	CRANE, LAUREN ASHLEY	
	Attorney Docket Number	IRC-0042-02-US	

	1		
If you wish to add additional non-patent literature document citation information please click the Add button <input type="button" value="Add"/>			
EXAMINER SIGNATURE			
Examiner Signature		Date Considered	
*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.			
<small> ¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached. </small>			

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16220484
	Filing Date	2018-12-14
	First Named Inventor	Hua Hsiang Lin
	Art Unit	3754
	Examiner Name	CRANE, LAUREN ASHLEY
	Attorney Docket Number	IRC-0042-02-US

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

☒ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/William S. Meyers/	Date (YYYY-MM-DD)	2022-02-21
Name/Print	William S. Meyers	Registration Number	42,884

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

PATENTS • SEARCH IN DATABASE

(https://www.inapi.cl/)

Seeker**Hit List****Patent**

N Application:	201502321	Application date:	08/19/2015
Publication date:	07/29/2016	State:	Abandoned
N Patent Registration:		Registration date:	
Type of request:	Invention Patent		
Priority:			
IPC Ratings (5):	E04H4 / 00 E04H4 / 04		

Title or Subject of the Request

MODULAR PREFABRICATED POOL

Summary

MODULAR PREFABRICATED SWIMMING POOL INCLUDING TWO OR MORE CORNER MODULES, TWO OR MORE CENTRAL MODULES, TWO OR MORE ACCESS CORNER MODULES, IN WHICH SUCH MODULES ARE ASSEMBLED BY MEANS OF BOLTS AND SEALED CAVITIES WITH A SIMILAR EPISODE MORTAR, SEALED WITH A SIMILAR MORTARED MORTAR WITH A MORING EITHER. COMPLEMENTED WITH THE EPOXIC SEAL OR SIMILAR ON ALL THE SURFACE JOINTS OF THE MODULES ALREADY CONNECTED; PROCESS.

Applicant

Name / Company Name	CORRAL SANTELICES HERNÁN CLAUDIO
Country:	CHILI

Inventor

Name / Company Name	CORRAL SANTELICES HERNÁN CLAUDIO
Commune:	Rancagua
Country:	CHILI

Representative

Name / Company Name	CORRAL SANTELICES HERNÁN CLAUDIO
Commune:	Rancagua

PATENTS - Search in Database

(https://www.inapi.cl/)

Administrative Instances

Date	Description	Observations
07/13/2016	Acceptance resolution for processing	
07/21/2016	Publication payment made (Official Gazette)	
07/29/2016	Publication in the Official Gazette (new law)	
10/12/2016	Resolution of warning of payment of expert fee (new law)	
02/02/2017	Resolution of abandonment due to non-payment of expert fee	
04/08/2017	Resolution of definitive abandonment due to non-payment of expert fee	

Administrative Instances

Instituto Nacional
de Propiedad
Industrial
INAPI - Chile

Where we are

National Institute of
Industrial Property (INAPI)
RUT: 65.999.669-3

Av. Libertador Bernardo O'higgins 194, 1st floor, Santiago, Chile

Tel. (56 2) 2 887 0400

Email: inapi@inapi.cl

Let's talk

- + Contact (<https://www.inapi.cl/contacto>)
- + Facebook (<https://www.facebook.com/pages/category/Government-Building/Inapi-Chile-558741104230651/>)
- + Twitter (<https://twitter.com/inapichile>)
- + Instagram (https://www.instagram.com/inapi_chile/)
- + LinkedIn (<https://cl.linkedin.com/company/inapi-chile>)

Access

- + Keyboard Shortcuts (<https://www.inapi.cl/atajos-del-teclado>)
- + Download Viewers (<https://www.inapi.cl/descarga-de-visualizadores>)
- + Glossary (<https://www.inapi.cl/glosario>)
- + Site Map (<https://www.inapi.cl/mapa-del-sitio>)
- + Use of the Contents of this Site (<https://www.inapi.cl/uso-de-los-contenidos-de-este-sitio>)
- + Accessibility (<https://www.inapi.cl/accesibilidad>)
- + Privacy Policy (https://www.inapi.cl/docs/default-source/default-document-library/politica_de_privacidad.pdf?sfvrsn=b781d48b_2)

© 2017 INAPI . All rights reserved

Electronic Patent Application Fee Transmittal				
Application Number:		16220484		
Filing Date:		14-Dec-2018		
Title of Invention:		JOINT FOR ABOVE GROUND POOL FRAME		
First Named Inventor/Applicant Name:		Hua Hsiang Lin, deceased		
Filer:		William Stephen Meyers./Chiquita Bryant		
Attorney Docket Number:		IRC-0042-02-US		
Filed as Large Entity				
Filing Fees for U.S. National Stage under 35 USC 371				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
SUBMISSION- INFORMATION DISCLOSURE STMT	1806	1	260	260
Total in USD (\$)				260

Electronic Acknowledgement Receipt	
EFS ID:	45046064
Application Number:	16220484
International Application Number:	
Confirmation Number:	3890
Title of Invention:	JOINT FOR ABOVE GROUND POOL FRAME
First Named Inventor/Applicant Name:	Hua Hsiang Lin, deceased
Customer Number:	27268
Filer:	William Stephen Meyers.
Filer Authorized By:	
Attorney Docket Number:	IRC-0042-02-US
Receipt Date:	21-FEB-2022
Filing Date:	14-DEC-2018
Time Stamp:	22:18:17
Application Type:	U.S. National Stage under 35 USC 371

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	\$260
RAM confirmation Number	E20222KM18394025
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	IDS_16220484_1.pdf	1043571	no	4
			a4f4dc2584d827b48930584a7ab0138079d0b0e7		
Warnings:					
Information:					
2	Foreign Reference	1_CL201502321_1315861.pdf	559957	no	2
			b8d886e1f0cefc01c4efd6bbeca19d1d0453b1d2		
Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	38166	no	2
			2be67e82b0d331e75e6a9d0f548bfa825aad00d6		
Warnings:					
Information:					
Total Files Size (in bytes):			1641694		
<p>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</p> <p><u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p>					

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No. : 16/220,484 Confirmation No. 3890
Filed : December 14, 2018
Title : JOINT FOR ABOVE GROUND POOL FRAME
First Inventor : Hua Hsiang Lin
TC/A.U. : 3754
Examiner : Lauren Ashley Crane
Atty. Docket No. : IRC-0042-02-US

MAIL STOP APPEAL BRIEF - PATENTS

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

APPELLANT'S BRIEF ON APPEAL (37 C.F.R. § 41.31)

Appellant timely filed a Notice of Appeal on December 16, 2021, from the Final Office Action dated November 5, 2020 (hereinafter the "Office Action"). The arguments presented in this Appeal Brief are in response to the status and disposition of the pending claims as represented by the Office Action. This Appeal Brief is proper because the instant application includes claims that have either been twice rejected or finally rejected. This Appeal Brief includes each section required by 37 C.F.R. § 41.37.

No fee is believed to be necessary. Should any fee be required, the Commissioner is authorized to charge our Deposit Account 02-0390.

I. REAL PARTY IN INTEREST

INTEX MARKETING LTD., the assignee of record, is the real party in interest to this application and appeal.

II. RELATED APPEALS, INTERFERENCES, AND TRIALS

There are no known appeals, interferences, or trials that may be related to, directly affect or be directly affected by, or have a bearing on the Board's decision in this appeal.

III. SUMMARY OF CLAIMED SUBJECT MATTER

The following is a concise explanation of the claimed subject matter by numbering and insertion of reference to figures and reference number and paragraph numbers. It is intended by Appellant to be exemplary and not limiting or exclusive.

Independent claim 1 describes, for example, a frame joint for an above ground pool frame having a first horizontal frame member, a second horizontal frame member, and a vertical frame member (*see, e.g.*, FIGS. 1, 2, Abstract, paragraphs [0003], [0014]-[0016]), the frame joint comprising: a first horizontal joint portion including a first coupling assembly configured to couple with the first horizontal member; a second horizontal joint portion including a second coupling assembly configured to couple with the second horizontal frame member; and a vertical joint portion fixedly coupled to the first and second horizontal joint portions and configured to couple with the vertical frame member (*see, e.g.*, FIGS. 1, 2, paragraphs [0016], [0019]-[0022]); a liner positioned around the first and second horizontal frame members, the liner defining a hole that is sized to expose the first and second coupling assemblies (*see, e.g.*, FIG. 1, paragraphs [0017], [0023]); wherein a width of the vertical joint portion accounts for at least 50% of a width between the first and second coupling assemblies of the first and second horizontal joint portions (*see, e.g.*, paragraph [0025]).

Independent claim 14 describes, for example, a method of assembling an above ground pool (*see, e.g.*, FIGS. 1, 2, Abstract, paragraphs [0003], [0014]-[0016]), the method comprising: coupling a first horizontal joint portion of a frame joint to a first horizontal frame member with a first coupling assembly; coupling a second horizontal joint portion of the frame joint to a second horizontal frame member with a second coupling assembly; coupling a vertical joint portion of the frame joint to a vertical frame member (*see, e.g.*, FIGS. 1, 2, paragraphs [0016], [0019]-

[0022]); positioning a liner around the first and second horizontal frame members with a hole exposing the first and second coupling assemblies (*see, e.g.*, FIG. 1, paragraphs [0017], [0023]); wherein a width of the vertical joint portion accounts for a majority of a width between the first and second coupling assemblies of the first and second horizontal joint portions (*see, e.g.*, paragraph [0025]).

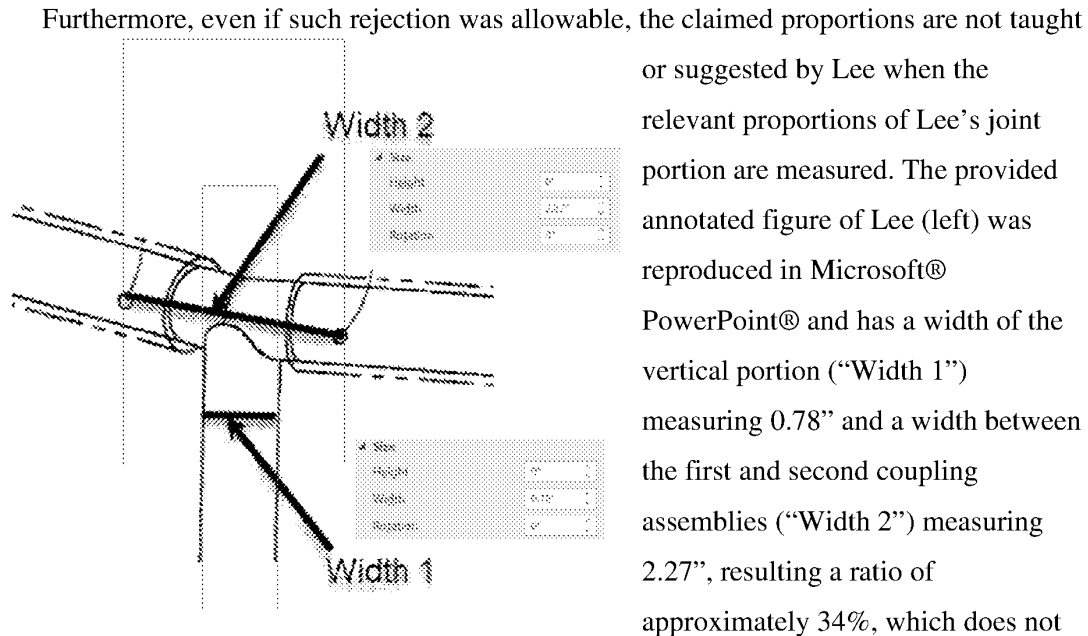
IV. ARGUMENT

Claims 1-3, 5, 7-12, 14-17, 19, and 32 stand rejected under 35 U.S.C. § 103 as being unpatentable over U.S. Publication No. 2002/0042948 to Lee (hereinafter “Lee”) in view of U.S. Publication No. 2014/0325751 to Hake (hereinafter “Hake”).

Independent claim 1 recites, *inter alia*, “...a liner positioned around the first and second horizontal frame members, the liner defining a hole that is sized to expose the first and second coupling assemblies; wherein a width of the vertical joint portion accounts for at least 50% of a width between the first and second coupling assemblies of the first and second horizontal joint portions.” Similarly, independent claim 14 recites, *inter alia*, “positioning a liner around the first and second horizontal frame members with a hole exposing the first and second coupling assemblies; wherein a width of the vertical joint portion accounts for a majority of a width between the first and second coupling assemblies of the first and second horizontal joint portions.”

The Examiner insists on pages 13-14 of the Office Action that Lee discloses a vertical portion that has a width accounting for a majority of a width between the first and second coupling assemblies, offering an annotated figure of Lee as evidence. The Examiner relies on the drawings of Lee alone as evidence of actual proportions in rejecting the above limitations. Applicant respectfully submits that the drawing of Lee does not explicitly disclose the measurement of the width of the vertical joint portion relative to the first and second coupling assemblies. M.P.E.P. § 2125 prohibits such rejections, noting that “[w]hen the reference does not disclose that the drawings are to scale and is silent as to dimensions, arguments based on measurement of the drawing features are of little value.” M.P.E.P. § 2125 further specifies that “it is well established that patent drawings do not define the precise proportions of the elements and may not be relied upon to show particular sizes if the specification is completely silent on

the issue” citing *Hockerson-Halberstadt, Inc. v. Avia Group Int’l*, 222 F.3d 951, 956 (Fed. Cir. 2000).



meet or even come near to the recited claim limitations. Appellant respectfully submits for at least these reasons, the incorrect reliance on the drawing of Lee and the actual ratios measured from the drawing, Lee fails to meet or suggest the claimed limitations and, as such, a prima facie case of obviousness has not been established.

The Examiner attempts to justify the improper rejection on page 3 of the Office Action by further alleging that that “Applicant has not disclosed that having the width of the vertical joint portion accounting for a portion of the width between the first and second coupling assemblies solves any stated problem or is for any particular purpose.” However, at least one purpose and/or at least one stated problem and solution solved by this limitation is disclosed in paragraphs [0023]-[0024] of the present application, which Appellant has also presented in the Responses filed on September 9, 2020 and August 17, 2020 and the Amendment filed March 8, 2021. Specifically, the present disclosure states that the structure of the “joint 10 may be minimized such that the size of the corresponding hole 82 in the pool liner 8...may also be minimized[, which] may improve the appearance and water containment” of the corresponding pool (paragraph [0023]). Paragraph [0024] further explains that the relative width of the vertical portion allows exposure of the pins of the coupling assemblies for allowing subsequent

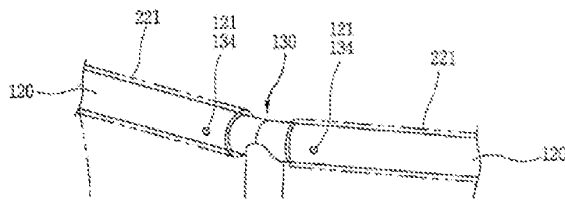
disassembly without having to manipulate the pool liner to reach said coupling assemblies. As such, Appellant respectfully submits that this allegation is unfounded and such basis has been provided upon every request contrary to the Examiner's statement.

For at least the reasons provided above, it is respectfully submitted that none of Lee, Hake, or a combination thereof disclose or teach the limitations of independent claims 1 or 14, and any such attempted rejection is improper. Appellant therefore respectfully requests that the rejections be reversed.

In addition to the reasons provided above in relation to independent claim 1, Appellant further submits that claims 2, 3, and 5 require further limitations related to the relative width of the vertical portion of the joint to the total width of the joint and/or the width between the coupling assemblies. These limitations are not disclosed or taught by a combination of Lee and Hake for the same reasons presented above; namely, that the rejection of such is improper for its reliance on the drawings and, furthermore, the ratio that appears to be depicted in the drawings of Lee is, at the maximum, 34%, which does not meet and is further not near to the limitations required by the claims. Appellant therefore respectfully requests that the rejections be reversed.

In addition to the reasons provided above in relation to independent claim 14, Appellant

FIG. 9



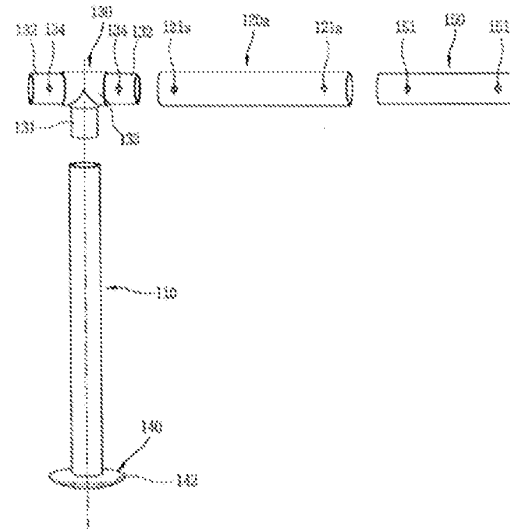
further submits that the rejection of claim 19 is improper. Claim 19 requires, *inter alia*, “a width of the hole in the liner exceeds a width between the first and second coupling assemblies.” The Examiner alleges on page 8 of the Office Action that this limitation is illustrated by FIG. 9 of Lee (left). However, Appellant notes that the dotted lines 221 referencing the liner of Lee clearly show that

the liner completely covers the coupling assemblies 121/134 of Lee, the liner of Lee merely being wide enough to expose the central, or vertical, portion of Lee's joint, which appears to account for only 34% of the width between the coupling assemblies as discussed above. As such,

Appellant submits that the limitations of claim 19 are clearly not disclosed by Lee and therefore respectfully requests that the rejections be reversed.

In addition to the reasons provided above in relation to independent claim 1, Appellant further submits that claim 32 requires, *inter alia*, “wherein the first coupling assembly and the second coupling assembly are actuatable from an exterior of the frame joint along a vertical direction.” The Examiner alleges on page 8 of the Office Action that this limitation is illustrated by FIG. 4 of Lee (right), “because the assemblies are able to be attached to a support vertically”. Appellant respectfully submits that while the joint in Lee has a vertical portion capable of attaching to a vertical frame member, this does not fulfill the limitations of claim 32. FIG. 4 of Lee still clearly shows that the pin 134/hole 121 assembly mechanism is actuatable in a direction orthogonal to the vertical axis (illustrated by the dashed line) of the vertical frame 110. In other words, in order to assemble or disassemble Lee’s frame and joint assembly, the pin 134 is actuated in a “Z” direction relative to horizontal frame 120 and vertical frame 110. Every embodiment of Lee using such mechanism shows the same actuation mechanism and direction (*see, e.g.,* FIGS. 2-6, 9, 10, 12, 15, 24, and 30). As such, Appellant submits that the limitations of claim 32 are clearly not met and therefore respectfully requests that the rejections be reversed.

FIG. 4



Claim 4 is rejected under 35 U.S.C. § 103 as being unpatentable over Lee in view of Hake as applied to claim 1 and further in view of U.S. Patent No. 6,079,894 to Obitts (hereinafter “Obitts”).

The Examiner alleges on pages 8-9 of the Office Action that the disclosure of Obitts alone teaches the limitations specifically recited by claim 4, while the combination of Lee and Hake disclose the limitations of claim 1 imparted to claim 4 via dependency. Appellant

respectfully submits that Obitts is directed to “adjustable-length canes, crutches, walkers, and the like [or] broader applications such as adjustable height chairs and commodes....”

M.P.E.P. § 2141.01(a)(I) states, “In order for a reference to be proper for use in an obviousness rejection under 35 U.S.C. 103, the reference must be analogous art to the claimed invention” (citing *In re Bigio*, 381, F.3d 1320, 1325 (Fed. Cir. 2004)). A reference is considered analogous art if “(1) the reference is from the same field of endeavor as the claimed invention (even if it addresses a different problem); or (2) the reference is reasonably pertinent to the problem faced by the inventor (even if it is not in the same field of endeavor as the claimed invention)” (M.P.E.P. § 2141.01(a)(I) (parentheticals in original) (citing *Bigio*, 381 F.3d at 1325)). Appellant submits that a cane or adjustable chair is clearly not within the same field of endeavor as an above-ground frame pool. As such, use of Obitts must rely on the “reasonably pertinent” prong of the analysis.

To be considered “reasonably pertinent”, the reference cited must “‘logically [] have commended itself to an inventor’s attention in considering his problem’” (M.P.E.P. § 2141.01(a)(I) (omission in original) (quoting *In re ICON Health and Fitness Inc.*, 496 F.3d 1374, 1379-80 (Fed. Cir. 2007), quoting *In re Clay*, 966 F.2d 656, 658 (Fed. Cir. 1992)). Further, the prong should be considered in view of “the problem faced by the inventor, as reflected – either explicitly or implicitly – in the specification” (M.P.E.P. § 2141.01(a)(I) (citing *In re Klein*, 647 F.3d 1343 (Fed. Cir. 2011)). Appellant submits that this instruction clearly requires Obitts to be considered nonanalogous art, as it is unclear why or how an inventor would look to Obitts, directed to adjustable canes or chairs, in solving a problem of minimizing a joint of an above-ground frame pool as discussed in paragraphs [0023]-[0024] of the present application.

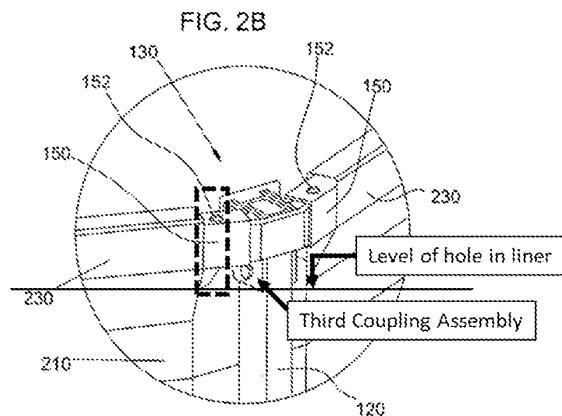
As such, Appellant submits that the rejection of claim 4 is improper under M.P.E.P. § 2141.01(a). Appellant therefore respectfully requests that the rejections be reversed.

Claim 20 is rejected under 35 U.S.C. § 103 as being unpatentable over Lee in view of Hake as applied to claim 14, and further in view of U.S. Publication No. 2004/0118844 to Bennett (hereinafter “Bennett”).

Claim 20 requires the limitations of claim 14 and in addition, *inter alia*, “the vertical joint portion of the frame joint is coupled to the vertical frame member with a third coupling

assembly, and wherein a height of the hole in the liner is less than a distance between the first and third coupling assemblies.”

The Examiner admits on page 9 of the Office Action that the combination of Lee and Hake fails to disclose a third coupling assembly for coupling a vertical joint portion of a frame joint to a vertical frame member, alleging that it would be obvious to include a third coupling assembly as illustrated in FIG. 2 of Bennett “in order to ensure the vertical frame member was securely attached to the frame.” Without acquiescing to such assertion, Appellant submits that the Examiner has failed to consider all of the limitations of the claim. In particular, the Examiner has failed to provide an explanation as to what combination of elements from any of the cited references teach or disclose “a height of the hole in the liner is less than a distance between the



first and third coupling assemblies.” It is assumed, *arguendo*, that Lee is not alleged to disclose or teach this limitation, as the Examiner has already admitted that the combination of Lee and Hake fails to disclose or teach a third coupling assembly, and it is further submitted that Bennett also falls short of this limitation. For example, as shown in annotated FIG. 2B of Bennett (left), the hole in

the liner, outlined by a dashed square, extends below the level of the alleged third coupling assembly. As such, none of the cited references teach or suggest the limitations of claim 20, nor has the Examiner provided any motivation as to why or how such limitation would be reached.

As such, Appellant submits that the limitations of claim 20 are not met and, further, the rejection to claim 20 is improper. Appellant therefore respectfully requests that the rejections be reversed

Claims 21 and 22 are rejected under 35 U.S.C. § 103 as being unpatentable over Lee in view of Hake as applied to claim 1 and further in view of U.S. Publication No. 2017/0356206 to Huang (hereinafter “Huang”).

Claim 21 requires the limitations of independent claim 1 and, additionally, “wherein the vertical joint portion includes at least one internal vertical reinforcing rib.” Similarly, claim 22

requires the limitations of independent claim 1 and, additionally, “wherein at least one of the first horizontal joint portion and the second horizontal joint portion includes an internal horizontal reinforcing rib.”

The Examiner admits on pages 9-10 of the Office Action that the combination of Lee and Hake fails to disclose these limitations of claims 21-22, alleging that the internal reinforcing rib is fulfilled by sheath 50 of Huang. Embodiments of Huang’s sheath 50 are illustrated in FIGS. 4-9, 11, 12, and 14-17. As shown, sheath 50 has a body 51 that is “a hollow pipe structure” (paragraph [0076]), which may have “at least one ring structure” (paragraphs [0077], [0089]), or “a ring structure” that “is preferably an O-shaped ring” (paragraph [0087]). None of these descriptions fit the limitation of an “internal reinforcing rib” as required by claim 21. As illustrated in the figures mentioned above, and further illustrated in FIGS. 10, 13, and 18 of Huang, the sheath is intended to be disposed between the Huang’s joint 30 and corresponding support pipes 10, 20, and is neither a “rib” nor an “internal” inclusion of the joint 30 (see also paragraph [0072] of Huang). Appellant respectfully submits that the sheath 50 of Huang cannot reasonably be said to meet or teach the limitations of claims 21 or 22, which is admittedly not met or taught by the combination of Lee or Hake.

As such, Appellant submits that the limitations of claims 21 and 22 are not met and therefore respectfully request that the rejections be reversed.

CONCLUSION

In view of the foregoing, Appellant respectfully requests that the Board reverse the outstanding rejections of the foregoing claims.

Respectfully submitted,

/Alyssa R Eckerley/

Alyssa R Eckerley

Reg. Number: 74,511

+1 317 237-1361

Customer No.: 27268

Date: April 5, 2022

V. CLAIMS APPENDIX

1. (Previously Presented) A frame joint for an above ground pool frame having a first horizontal frame member, a second horizontal frame member, and a vertical frame member, the frame joint comprising:

a first horizontal joint portion including a first coupling assembly configured to couple with the first horizontal frame member;

a second horizontal joint portion including a second coupling assembly configured to couple with the second horizontal frame member; and

a vertical joint portion fixedly coupled to the first and second horizontal joint portions and configured to couple with the vertical frame member;

a liner positioned around the first and second horizontal frame members, the liner defining a hole that is sized to expose the first and second coupling assemblies;

wherein a width of the vertical joint portion accounts for at least 50% of a width between the first and second coupling assemblies of the first and second horizontal joint portions.

2. (Original) The frame joint of claim 1, wherein the width of the vertical joint portion accounts for at least 40% of a total width of the frame joint.

3. (Original) The frame joint of claim 2, wherein the width of the vertical joint portion accounts for about 50% of the total width of the frame joint.

4. (Original) The frame joint of claim 1, wherein each of the first and second coupling assemblies comprises a base, a helical spring supported by the base, and a pin biased outward through a hole in the respective horizontal joint portion by the helical spring to engage a corresponding recess of the respective horizontal frame member.

5. (Original) The frame joint of claim 4, wherein the width of the vertical joint portion accounts for about 70% of a width between the pins of the first and second coupling assemblies.

6. (Canceled)

7. (Previously Presented) The frame joint of claim 1, wherein a width of the frame joint exceeds a width of the hole in the liner.
8. (Previously Presented) The frame joint of claim 1, wherein a height of the frame joint exceeds a height of the hole in the liner.
9. (Previously Presented) The frame joint of claim 1, wherein:
 - the first horizontal joint portion is constructed of plastic;
 - the second horizontal joint portion is constructed of plastic; and
 - the vertical joint portion is being constructed of plastic.
10. (Previously Presented) The frame joint of claim 1, wherein the vertical joint portion is centered between the first and second horizontal joint portions to form a T-shaped frame joint.
11. (Previously Presented) The frame joint of claim 1, wherein the first and second horizontal joint portions cooperate to form an obtuse angle.
12. (Previously Presented) The frame joint of claim 1, wherein the vertical joint portion is integrally formed with the first and second horizontal joint portions as a single piece.
13. (Canceled)
14. (Previously Presented) A method of assembling an above ground pool the method comprising:
 - coupling a first horizontal joint portion of a frame joint to a first horizontal frame member with a first coupling assembly;
 - coupling a second horizontal joint portion of the frame joint to a second horizontal frame member with a second coupling assembly;
 - coupling a vertical joint portion of the frame joint to a vertical frame member; and

positioning a liner around the first and second horizontal frame members with a hole exposing the first and second coupling assemblies;

wherein a width of the vertical joint portion accounts for a majority of a width between the first and second coupling assemblies of the first and second horizontal joint portions.

15. (Original) The method of claim 14, wherein:

an external cross-section of the first horizontal joint portion matches an internal cross-section of the first horizontal frame member;

an external cross-section of the second horizontal joint portion matches an internal cross-section of the second horizontal frame member; and

an external cross-section of the vertical joint portion matches an internal cross-section of the vertical frame member.

16. (Original) The method of claim 14, wherein the first horizontal joint portion, the second horizontal joint portion, and the vertical joint portion are constructed of plastic.

17. (Original) The method of claim 14, wherein:

coupling the first horizontal joint portion to the first horizontal frame member comprises depressing a first pin into the first horizontal joint portion and releasing the first pin into engagement with the first horizontal frame member; and

coupling the second horizontal joint portion to the second horizontal frame member comprises depressing a second pin into the second horizontal joint portion and releasing the second pin into engagement with the second horizontal frame member.

18. (Canceled)

19. (Previously Presented) The method of claim 14, wherein a width of the hole in the liner exceeds a width between the first and second coupling assemblies.

20. (Previously Presented) The method of claim 14, wherein the vertical joint portion of the frame joint is coupled to the vertical frame member with a third coupling assembly, and wherein

a height of the hole in the liner is less than a distance between the first and third coupling assemblies.

21. (Previously Presented) The frame joint of claim 1, wherein the vertical joint portion includes at least one internal vertical reinforcing rib.

22. (Previously Presented) The frame joint of claim 1, wherein at least one of the first horizontal joint portion and the second horizontal joint portion includes an internal horizontal reinforcing rib.

23. (Previously Presented) The frame joint of claim 1, wherein at least one of the first horizontal joint portion and the second horizontal joint portion includes an internal horizontal support member.

24. (Previously Presented) The frame joint of claim 1, wherein the first horizontal joint portion comprises a first external cross-section, the first external cross-section being generally triangular.

25. (Previously Presented) The frame joint of claim 24, wherein the first external cross-section comprises rounded edges.

26. (Previously Presented) The frame joint of claim 1, wherein the vertical joint portion comprises a second external cross-section, the second external cross-section being generally triangular.

27. (Previously Presented) The frame joint of claim 26, wherein the second external cross-section comprises rounded edges.

28. (Previously Presented) The frame joint of claim 1, wherein the first and second coupling assemblies are accessible from an exterior side of the liner through the hole defined in the liner.

29. (Previously Presented) The frame joint of claim 1, wherein the first and second coupling assemblies are accessible from an exterior side of the liner through the hole defined in the liner and the first and second coupling assemblies are accessible from an interior side of the liner through the hole defined in the liner, the interior side of the liner being opposite the exterior side of the liner.

30. (Previously Presented) The frame joint of claim 1, wherein the hole of the liner simultaneously exposes the first coupling assembly and the second coupling assembly.

31. (Previously Presented) The frame joint of claim 1, wherein the hole of the liner exposes the first coupling assembly and the second coupling assembly in a resting position.

32. (Previously Presented) The frame joint of claim 1, wherein the first coupling assembly and the second coupling assembly are actuatable from an exterior of the frame joint along a vertical direction.

Electronic Patent Application Fee Transmittal				
Application Number:		16220484		
Filing Date:		14-Dec-2018		
Title of Invention:		JOINT FOR ABOVE GROUND POOL FRAME		
First Named Inventor/Applicant Name:		Hua Hsiang Lin, deceased		
Filer:		Alyssa Rianne Eckerley/LaVerne Walker		
Attorney Docket Number:		IRC-0042-02-US		
Filed as Large Entity				
Filing Fees for U.S. National Stage under 35 USC 371				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension - 2 months with \$0 paid	1252	1	640	640
Miscellaneous:				
Total in USD (\$)				640

Electronic Acknowledgement Receipt	
EFS ID:	45401643
Application Number:	16220484
International Application Number:	
Confirmation Number:	3890
Title of Invention:	JOINT FOR ABOVE GROUND POOL FRAME
First Named Inventor/Applicant Name:	Hua Hsiang Lin, deceased
Customer Number:	27268
Filer:	Alyssa Rianne Eckerley/LaVerne Walker
Filer Authorized By:	Alyssa Rianne Eckerley
Attorney Docket Number:	IRC-0042-02-US
Receipt Date:	05-APR-2022
Filing Date:	14-DEC-2018
Time Stamp:	16:53:15
Application Type:	U.S. National Stage under 35 USC 371

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	\$ 640
RAM confirmation Number	E202245G55331910
Deposit Account	020390
Authorized User	LaVerne Walker
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: 37 CFR 1.17 (Patent application and reexamination processing fees) 37 CFR 1.19 (Document supply fees)	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Extension of Time	EOT2_IRC-0042-02-US.pdf	166327	no	2
			bc47da6e712650865bfff0807b2151438212f4b4e		

Warnings:**Information:**

2	Appeal Brief Filed	Appeal_Brief_IRC-0042-02-US.pdf	414557	no	14
			5a6f51820fbde324b2ac4cf12a4165258f0961c6		

Warnings:**Information:**

3	Fee Worksheet (SB06)	fee-info.pdf	38597	no	2
			e17c5c51459fec2c61e752d73d8166e99e550c12		

Warnings:**Information:**

Total Files Size (in bytes):	619481
-------------------------------------	--------

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PETITION FOR EXTENSION OF TIME UNDER 37 CFR 1.136(a)		Docket Number (Optional) IRC-0042-02-US																																		
Application Number 16/220,484	Filed December 14, 2018																																			
For JOINT FOR ABOVE GROUND POOL FRAME																																				
Art Unit 3754	Examiner CRANE, Lauren Ashley																																			
<p>This is a request under the provisions of 37 CFR 1.136(a) to extend the period for filing a reply in the above-identified application.</p> <p>The requested extension and fee are as follows (check time period desired and enter the appropriate fee below):</p> <table style="width: 100%; border-collapse: collapse;"><thead><tr><th></th><th style="text-align: center;"><u>Fee</u></th><th style="text-align: center;"><u>Small Entity Fee</u></th><th style="text-align: center;"><u>Micro Entity Fee</u></th><th></th></tr></thead><tbody><tr><td>☐ One month (37 CFR 1.17(a)(1))</td><td style="text-align: right;">\$220</td><td style="text-align: right;">\$110</td><td style="text-align: right;">\$55</td><td>\$ _____</td></tr><tr><td>☒ Two months (37 CFR 1.17(a)(2))</td><td style="text-align: right;">\$640</td><td style="text-align: right;">\$320</td><td style="text-align: right;">\$160</td><td>\$ 640</td></tr><tr><td>☐ Three months (37 CFR 1.17(a)(3))</td><td style="text-align: right;">\$1,480</td><td style="text-align: right;">\$740</td><td style="text-align: right;">\$370</td><td>\$ _____</td></tr><tr><td>☐ Four months (37 CFR 1.17(a)(4))</td><td style="text-align: right;">\$2,320</td><td style="text-align: right;">\$1,160</td><td style="text-align: right;">\$580</td><td>\$ _____</td></tr><tr><td>☐ Five months (37 CFR 1.17(a)(5))</td><td style="text-align: right;">\$3,160</td><td style="text-align: right;">\$1,580</td><td style="text-align: right;">\$790</td><td>\$ _____</td></tr></tbody></table> <p>☐ Applicant asserts small entity status. See 37 CFR 1.27.</p> <p>☐ Applicant certifies micro entity status. See 37 CFR 1.29. Form PTO/SB/15A or B or equivalent must either be enclosed or have been submitted previously.</p> <p>☐ A check in the amount of the fee is enclosed.</p> <p>☒ Payment by credit card. Form PTO-2038 is attached.</p> <p>☐ The Director has already been authorized to charge fees in this application to a Deposit Account.</p> <p>☒ The Director is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account Number <u>02-0390</u>.</p> <p>☒ Payment made via EFS-Web.</p> <p>WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.</p> <p>I am the</p> <p>☐ applicant.</p> <p>☒ attorney or agent of record. Registration number <u>74,511</u>.</p> <p>☐ attorney or agent acting under 37 CFR 1.34. Registration number _____.</p> <table style="width: 100%; border-collapse: collapse;"><tr><td style="width: 50%; padding: 5px;"><u>/Alyssa R Eckerley/</u> Signature</td><td style="width: 50%; padding: 5px;"><u>April 5, 2022</u> Date</td></tr><tr><td style="padding: 5px;"><u>Alyssa R. Eckerley</u> Typed or printed name</td><td style="padding: 5px;"><u>317.237.1361</u> Telephone Number</td></tr></table> <p>NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. Submit multiple forms if more than one signature is required, see below*.</p>				<u>Fee</u>	<u>Small Entity Fee</u>	<u>Micro Entity Fee</u>		☐ One month (37 CFR 1.17(a)(1))	\$220	\$110	\$55	\$ _____	☒ Two months (37 CFR 1.17(a)(2))	\$640	\$320	\$160	\$ 640	☐ Three months (37 CFR 1.17(a)(3))	\$1,480	\$740	\$370	\$ _____	☐ Four months (37 CFR 1.17(a)(4))	\$2,320	\$1,160	\$580	\$ _____	☐ Five months (37 CFR 1.17(a)(5))	\$3,160	\$1,580	\$790	\$ _____	<u>/Alyssa R Eckerley/</u> Signature	<u>April 5, 2022</u> Date	<u>Alyssa R. Eckerley</u> Typed or printed name	<u>317.237.1361</u> Telephone Number
	<u>Fee</u>	<u>Small Entity Fee</u>	<u>Micro Entity Fee</u>																																	
☐ One month (37 CFR 1.17(a)(1))	\$220	\$110	\$55	\$ _____																																
☒ Two months (37 CFR 1.17(a)(2))	\$640	\$320	\$160	\$ 640																																
☐ Three months (37 CFR 1.17(a)(3))	\$1,480	\$740	\$370	\$ _____																																
☐ Four months (37 CFR 1.17(a)(4))	\$2,320	\$1,160	\$580	\$ _____																																
☐ Five months (37 CFR 1.17(a)(5))	\$3,160	\$1,580	\$790	\$ _____																																
<u>/Alyssa R Eckerley/</u> Signature	<u>April 5, 2022</u> Date																																			
<u>Alyssa R. Eckerley</u> Typed or printed name	<u>317.237.1361</u> Telephone Number																																			

☒ * Total of 1 forms are submitted.

This collection of information is required by 37 CFR 1.136(a). The information is required to obtain or retain a benefit by the public, which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 6 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop PCT, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Doc code: IDS

Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-22)

Approved for use through 05/31/2024. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16220484
	Filing Date	2018-12-14
	First Named Inventor	Hua Hsiang Lin
	Art Unit	3754
	Examiner Name	CRANE, LAUREN ASHLEY
	Attorney Docket Number	IRC-0042-02-US

U.S. PATENTS							Remove	
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1	5083327		1992-01-28	GILLEBAARD HENDRIK C			
If you wish to add additional U.S. Patent citation information please click the Add button.							Add	
U.S. PATENT APPLICATION PUBLICATIONS							Remove	
Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1	20220034113	A1	2022-02-03	HUANG et al.			
If you wish to add additional U.S. Published Application citation information please click the Add button.							Add	
FOREIGN PATENT DOCUMENTS							Remove	
Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²ⁱ	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	T ⁵
	1	8810857	DE	U1	1988-10-13	CHIANG-HSIUNG, LIU, TAIPEH/T'AI-PEI, TW		×
	2	19904335	DE	A1	1999-08-05	TORRENTE IND	English Abstract Submitted	☐
If you wish to add additional Foreign Patent Document citation information please click the Add button.							Add	
NON-PATENT LITERATURE DOCUMENTS							Remove	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		16220484
	Filing Date		2018-12-14
	First Named Inventor	Hua Hsiang Lin	
	Art Unit	3754	
	Examiner Name	CRANE, LAUREN ASHLEY	
	Attorney Docket Number	IRC-0042-02-US	

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T ⁵
	1	European Search Report for EP Patent Application No. 19862486.8, Issued on April 26, 2022, 7 pages.	

If you wish to add additional non-patent literature document citation information please click the Add button

EXAMINER SIGNATURE

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16220484
	Filing Date	2018-12-14
	First Named Inventor	Hua Hsiang Lin
	Art Unit	3754
	Examiner Name	CRANE, LAUREN ASHLEY
	Attorney Docket Number	IRC-0042-02-US

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Zi Yie/	Date (YYYY-MM-DD)	2022-06-03
Name/Print	Zi Yie	Registration Number	80066

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

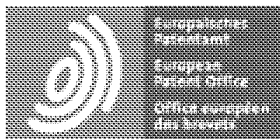
The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Publication Number: DE 8810857 U1

Publication Date: Oct 13, 1988



Espacenet

DE8810857U1 null

Applicants: CHIANG-HSIUNG, LIU, TAIPEH/T'AI-PEI, TW

Inventors:

Classifications:

IPC *E04H4/00; E04H4/14; (IPC1-7): E04H3/18;*

CPC *E04H4/0056 (EP); E04H2004/146 (EP);*

Priorities: DE8810857U 1988-08-27

Application: DE8810857U 1988-08-27

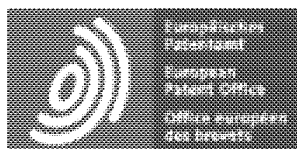
Publication: DE8810857U1 1988-10-13

Published as: DE8810857U1

null

Abstract

No abstract found. Please consult other publications of this patent family in "Available in", if displayed above.



Patent Translate

Powered by EPO and Google

Notice

This translation is machine-generated. It cannot be guaranteed that it is intelligible, accurate, complete, reliable or fit for specific purposes. Critical decisions, such as commercially relevant or financial decisions, should not be based on machine-translation output.

DESCRIPTION DE8810857U1

[0001]

..... ■■■■■ ■■■■

Mobile pool that can be assembled

[0002]

The innovation relates to a portable pool that can be assembled.

[0003]

Traditionally, swimming pools and paddling pools for children are made of one? manufactured in a submerged container.

The inflation with air involves considerable effort, which brings with it many inconveniences as well as unnecessary physical efforts and a lot of time.

A weak point of such inflatable containers is that they are very susceptible to mechanical stresses, especially by sharp objects, are easily pierced and then after the repair, if such is still possible with reasonable effort, it is necessary to mobilize the container inflate again with the already mentioned inconveniences.

[0004]

The object of the present innovation is to create a swimming pool in which the disadvantages mentioned above are avoided.

[0005]

This object is achieved with a transportable, collapsible swimming pool according to claim 1;

[0006]

The modernization of the design of the pool is achieved in advantageous Weise that this very quickly and in a very simple manner

[0007]

..... ■

[0008]

can be easily assembled at any location and - if necessary - disassembled again.

In addition, the swimming pool according to the innovation is characterized by a simple structural design and thus more favorable economic manufacturability as well as a high level of operational safety and a long service life.

[0009]

The innovation is shown in the drawing in an embodiment and will be described with reference to this below.

[0010]

Show it:

Figure 1 is a perspective view of a

[0011]

composite pool according to the innovation,

[0012]

FIG. 2 in an enlarged section from FIG. 1 a detail,

Figure 3 in a perspective view and

[0013]

on a slightly larger scale, a three-way connector and

[0014]

Figure 4 is a partially sectioned view of the swimming pool of Figure 1, also on a slightly larger scale.

[0015]

As can also be seen from FIG. 1 and from FIG. 4, the trough-like container 11 is formed with the hollow upper edge 12 and the hollow lower edge 13.

At the bottom hollow edge 13 is in one piece, the bottom 10 formed.

According to FIGS. 1 and 2, both the upper and the lower hollow edge 12 or 13 are preferably at equal distances from one another around the circumference of the container 11.

[0016]

I I > I > II II

... I

[0017]

arranged openings 14 provided.

Arranged in the hollow upper and lower edge 12 and 13 are the circularly curved horizontal tubular supporting and stiffening elements 16, which are connected to one another in the area over the openings 14 by means of the three-way connecting members 15 and supported against one another via the vertical tubular supporting and stiffening elements 17 are.

[0018]

For this purpose, the three-way connectors 15 are provided, as shown in Figure 3, with a transverse tubular member 18 and a vertical tubular member 19 disposed in the center thereof and extending perpendicularly thereto, the tubular members 18 and 19 being of course designed to connect »it let the horizontal support and stiffening elements 16 and the vertical support and support parts 17 fit together in a simple Heise.

In order to increase the rigidity and thus the supporting effect, the three-way connecting links 15 are additionally provided with the stiffening angles 20.

[0019]

As can be seen from the figures of the drawing, a very simple supporting frame is realized by means of the horizontal supporting and stiffening elements 16 and the vertical supporting and stiffening elements 17 and the three-way connecting link 15 connecting them to one another, which can be assembled and disassembled very easily .

This framework makes the use of an inflatable container with all its disadvantages, in particular its complicated inflation and its susceptibility to mechanical stress, superfluous and, on the contrary, makes it possible to use it

[0020]

|||| | *♦ * « · · «

[0021]

||

a container 11, whose wall thickness can be dimensioned

[0022]

f

that it can also withstand heavy use.

[0023]

The embodiment shown in the drawing of the swimming pool according to innovation can in the context

[0024]

- the innovation of course in many ways

[0025]

be modified.

So it is of course possible to realize a rectangular or square shape or any other shape instead of the shown circular shape of the swimming pool.

Likewise, it is not absolutely necessary to form the parts 15, 16 and 17 with a circular tube cross-section; rather, other cross-sectional shapes could also be considered, although the round cross-sectional shape has the advantage that corners and edges are largely avoided.

[0026]

The three-way connecting link 15 is expediently designed in such a way that the ends of its transverse horizontal part 18 protrude into the horizontal support and stiffening elements 16 on the inside, while its vertical tube part 19, as shown in Figure 2,

has the vertical support tube element 17 on the outside spread over or can also reach into this on the inside.

Furthermore, it could be provided that the center piece of the horizontal part 18 is thickened or that the lateral ends are connected to the center piece with a stepped shoulder, so that on the one hand the center piece can be provided with the same cross-sectional dimensions as the horizontal support elements 16

[0027]

te, on the other hand, there would be a stop for the part of the support elements 16 that overlaps the ends of the part 18 .

Of course, the one or

[0028]

-Overlapping ends of the parts 18 and 19 dimensioned so that a sufficiently secure connection is guaranteed.

In addition, it could also be provided that the ends of the support tubes 16 are slotted for the engagement of the angle reinforcements 20.

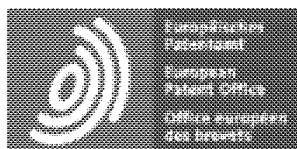
Although this would mean that the parts would have to be plugged together in an oriented manner, this would hardly be a disadvantage given the very simple design of the parts.

[0029]

Correspondingly suitable known plastics are preferably considered as the material for the swimming pool, but other materials could also be used for the parts of the supporting framework, for example light metals such as sufficiently strong aluminum alloys or the like.

[0030]

Finally, it should be mentioned that the dimensions of the parts of the swimming pool are of course also selected in such a way that they correspond to the size of the swimming pool or the amount of water to be filled into it or that the required strength is ensured.



Patent Translate

Powered by EPO and Google

Notice

This translation is machine-generated. It cannot be guaranteed that it is intelligible, accurate, complete, reliable or fit for specific purposes. Critical decisions, such as commercially relevant or financial decisions, should not be based on machine-translation output.

CLAIMS DE8810857U1

1.

PROTECTION CLAIMS

2.

1. Portable pool that can be assembled, characterized by the following characteristics

3.

a) a container (11) having a hollow top rim (12) and a hollow bottom rim (13), both of which are provided with a number of spaced apertures (14),

4.

b) a number of three-way connectors (15) disposed in the openings (14) of the upper and lower hollow rims (12) and (13) respectively and formed with a transverse tubular portion (18) and a tubular part (19) connected thereto and extending in the middle perpendicular thereto,

5.

c) a number of support tube elements (16) arranged in the hollow upper and lower edges (12) and (13) and connected to one another by means of the transverse tubular parts (18) of the three-way connecting elements (15),

6.

d) a number of supporting tube elements (17), arranged between and connected to the tube part (19) each in the upper and in the lower hollow edge (12) or (13) of the container (11) disordered three-way connecting element (15) .

7.

2. Transportable, assemblable swimming pool according to Anep-uch 1, characterized in that reinforcing brackets (200) are arranged between the tubular parts (18) and (19) of the three-way connecting elements (15).

9.

94

ff« «» 4* «· ··

10.

ff> | · C * η *«

11.

are.

12.

3. Transportable, assemblable swimming pool according to Claim 1 or 2, characterized in that the tube parts (16, 17, 18, 19) have a circular cross-section.

13.

4. Transportable, assemblable swimming pool according to one of Claims 1 to 3, characterized in that the tube parts (16, 18) are bent in a circular shape.

© BUNDESREPUBLIK DEUTSCHLAND



© **Gebrauchsmuster**

U 1

⑩

(11) Rollennummer G 88 10 857.0

(51) Hauptklasse E04H 3/18

(22) Anmeldetag 27.08.88

(47) Eintragungstag 13.10.88

(43) Bekanntmachung
im Patentblatt 24.11.88

(54) Bezeichnung des Gegenstandes
Transportables zusammensetzbares Schwimmbecken

(71) Name und Wohnsitz des Inhabers
Chiang-Hsiung, Liu, Taipeh/T'ai-pei, TW

(74) Name und Wohnsitz des Vertreters
Klöpsch, G., Dipl.-Ing. Dr.-Ing., Pat.-Anw., 5000
Köln

G 0253
1.21

27.08.88

1

Transportables zusammensetzbares Schwimmbecken

Die Neuerung bezieht sich auf ein transportables zusammensetzbares Schwimmbecken.

Herkömmlicherweise werden Schwimmbecken und Planschbecken für Kinder aus einem aufblasbaren Behälter hergestellt. Das Aufblasen mit Luft ist dabei mit erheblichen Anstrengungen verbunden, was viele Unannehmlichkeiten wie auch an sich überflüssige physikalische Anstrengungen sowie den Aufwand einer Menge Zeit mit sich bringt. Ein Schwachpunkt solcher aufblasbarer Behälter ist auch, daß sie gegen mechanische Beanspruchungen sehr anfällig sind, insbesondere von spitzen Gegenständen leicht durchbohrt werden und es dann nach erfolgter Reparatur, sofern eine solche mit vertretbarem Aufwand überhaupt noch möglich ist, notwendig ist, den Behälter unter Aufbietung der schon erwähnten Unannehmlichkeiten erneut aufzublasen.

Aufgabe der vorliegenden Neuerung ist es, ein Schwimmbecken zu schaffen, bei dem die vorstehend erwähnten Nachteile vermieden werden.

Diese Aufgabe wird mit einem transportablen zusammensetzbaren Schwimmbecken gemäß Anspruch 1 gelöst. Zweckmäßige weitere Ausgestaltungen der Neuerung sind in den Unteransprüchen beschrieben.

Durch die neuerungsgemäße Ausbildung des Schwimmbeckens wird in vorteilhafter Weise erreicht, daß dieses in sehr einfacher Weise sehr schnell und

27.08.88

2

leicht an beliebigen Orten sowohl zusammengesetzt wie auch - falls erforderlich - wieder auseinandergenommen werden kann. Darüberhinaus zeichnet sich das neuerungsgemäße Schwimmbecken durch einen einfachen konstruktiven Aufbau und damit günstiger wirtschaftlicher Herstellbarkeit sowie durch eine hohe Gebrauchssicherheit und eine lange Gebrauchsdauer aus.

Die Neuerung ist in der Zeichnung in einem Ausführungsbeispiel gezeigt und wird anhand dieses im folgenden beschrieben.

Es zeigen:

Figur 1 eine perspektivische Ansicht eines zusammengesetzten Schwimmbeckens gemäß der Neuerung,

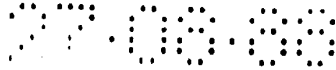
Figur 2 in einem vergrößerten Ausschnitt aus Figur 1 eine Einzelheit,

Figur 3 in einer perspektivischen Ansicht und in etwas größerem Maßstab ein Dreiwege-Verbindungsglied und

Figur 4 ebenfalls in etwas größerem Maßstab eine Teilschnitt-Ansicht des Schwimmbeckens der Figur 1.

Wie aus Figur 1 und aus Figur 4 auch ersichtlich, ist der trogartige Behälter 11 mit dem hohlen oberen Rand 12 und dem hohlen unteren Rand 13 ausgebildet. An den unteren hohlen Rand 13 ist einstückig der Boden 10 angeformt. Sowohl der obere wie auch der untere hohle Rand 12 bzw. 13 ist gemäß den Figuren 1 und 2 mit einer Anzahl von vorzugsweise in gleichmäßigen Abständen voneinander über den Umfang des Behälters 11

8810857



angeordneten Öffnungen 14 versehen. In dem hohlen oberen und unteren Rand 12 bzw. 13 sind die kreisringförmig gebogenen horizontalen rohrförmigen Trag- und Versteifungselemente 16 angeordnet, die im Bereich der Öffnungen 14 mittels der Dreiweg-Verbindungsglieder 15 miteinander verbunden und über die vertikalen rohrförmigen Stütz- und Versteifungselemente 17 gegeneinander abgestützt sind.

Die Dreiweg-Verbindungsglieder 15 sind gemäß Figur 3 zu diesem Zweck mit einem querverlaufenden rohrförmigen Teil 18 und mit einem in dessen Mitte angeordneten sich senkrecht dazu erstreckenden vertikalen Rohrteil 19 versehen, wobei die Rohrteile 18 und 19 selbstverständlich so ausgebildet sind, daß sie sich mit den horizontalen Trag- und Versteifungselementen 16 und den vertikalen Trag- und Stützteilen 17 in einfacher Weise passend zusammenfügen lassen. Zwecks Erhöhung der Steifigkeit und damit der Stützwirkung sind die Dreiweg-Verbindungsglieder 15 zusätzlich mit den Versteifungswinkeln 20 versehen.

Wie sich den Figuren der Zeichnung entnehmen läßt, wird mittels der horizontalen Trag- und Versteifungselemente 16 sowie den vertikalen Stütz- und Versteifungselementen 17 sowie den diese miteinander verbindenden Dreiweg-Verbindungsgliedern 15 ein sehr einfaches Tragegerüst realisiert, das sich sehr leicht zusammenbauen und wieder auseinandernehmen läßt. Dieses Gerüst macht die Verwendung eines aufblasbaren Behälters mit all seinen geschilderten Nachteilen, insbesondere seines aufwendigen Aufblasens und seiner Anfälligkeit gegen mechanische Beanspruchung, entbehrlich und ermöglicht im Gegensatz dazu die Verwendung

27.08.88

4

eines Behälters 11, dessen Wanddicke so bemessen sein kann, daß er auch robusten Beanspruchungen standhält.

Das in der Zeichnung dargestellte Ausführungsbeispiel des neuerungsgemäßen Schwimmbeckens kann im Rahmen der Neuerungen selbstverständlich in vielfältiger Weise modifiziert werden. So ist es selbstverständlich möglich, anstelle der gezeigten kreisrunden Form des Schwimmbeckens eine rechteckige oder quadratische oder aber auch eine beliebige andere Form zu realisieren. Desgleichen ist es auch nicht zwingend notwendig, die Teile 15, 16 und 17 mit kreisrundem Rohrquerschnitt auszubilden, vielmehr könnten auch andere Querschnittsformen in Betracht gezogen werden, wenn gleich die runde Querschnittform den Vorteil hat, daß Ecken und Kanten weitgehend vermieden werden.

Das Dreiweg-Verbindungsglied 15 wird zweckmäßig so ausgebildet, daß es mit den Enden seines querverlaufenden horizontalen Teils 18 innenseitig in die horizontalen Trag- und Versteifungselemente 16 hineintragt, wogegen sein vertikales Rohrteil 19 so wie in Figur 2 gezeigt, das vertikale Stützrohrelement 17 außenseitig übergreifen oder aber ebenfalls innenseitig in dieses hineingreifen kann. Desweiteren könnte vorgesehen werden, das Mittelstück des horizontalen Teils 18 verdickt auszubilden bzw. die seitlichen Enden mit einem stufenförmigen Absatz an das Mittelstück anschließen zu lassen, so daß einerseits das Mittelstück mit gleichen Querschnittsabmessungen wie die horizontalen Tragelemente 16 versehen sein könnte, andererseits für den die Enden des Teils 18 übergreifenden Teil der Tragelemente 16 ein Anschlag gegeben wäre. Selbstverständlich werden die ein- bzw.

8810857

27.08.88

5

Übergreifenden Enden der Teile 18 und 19 so bemessen, daß eine ausreichend sichere Verbindung gewährleistet ist. Zusätzlich könnte auch noch vorgesehen werden, daß die Enden der Tragrohre 16 für den Eingriff der Winkelverstärkungen 20 geschlitzt werden. Dies hätte zwar zur Folge, daß die Teile orientiert zusammengesteckt werden müßten, bei der sehr einfachen Ausbildung der Teile wäre dies jedoch kaum von Nachteil.

Als Material für das Schwimmbecken kommen bevorzugt entsprechend geeignete bekannte Kunststoffe in Betracht, für die Teile des Traggerüstes könnten ebenso aber auch andere Materialien Verwendung finden, beispielsweise Leichtmetalle wie genügend feste Aluminiumlegierungen oder dergleichen.

Schließlich ist zu erwähnen, daß die Abmessungen der Teile des Schwimmbeckens selbstverständlich auch so gewählt werden, daß sie der Größe des Schwimmbeckens bzw. der in dieses einzufüllenden Wassermenge entsprechen bzw. die erforderliche Festigkeit sicherstellt ist.

8810857

27.08.88

6

SCHUTZANSPRÜCHE

1. Transportables zusammensetzbares Schwimmbecken,
gekennzeichnet durch folgende Merkmale

- a) einen Behälter (11) mit einem hohlen oberen Rand (12) und einen hohlen unteren Rand (13), die beide mit einer Anzahl von in Abständen voneinander angeordneten Öffnungen (14) versehen sind,
- b) eine Anzahl von Dreiweg-Verbindungselementen (15), angeordnet in den Öffnungen (14) des oberen und den unteren hohlen Randes (12) bzw. (13) und ausgebildet mit einem querverlaufenden Rohrteil (18) und einem mit diesem verbundenen und sich mittig senkrecht dazu erstreckenden Rohrteil (19),
- c) eine Anzahl von in dem hohlen oberen und unteren Rand (12) bzw. (13) angeordneten und mittels der querverlaufenden Rohrteile (18) der Dreiweg-Verbindungselemente (15) miteinander verbundenen Tragrohr-elementen (16),
- d) eine Anzahl von Stützrohrelementen (17), angeordnet zwischen und verbunden mit dem Rohrteil (19) je eines sich im oberen und im unteren hohlen Rand (12) bzw. (13) des Behälters (11) angeordneten Dreiweg-Verbindungselementes (15).

2. Transportables zusammensetzbares Schwimmbecken
nach Anspruch 1, dadurch gekennzeichnet, daß zwischen
den Rohrteilen (18) und (19) der Dreiweg-Verbindungs-
elemente (15) Verstärkungswinkel (20) angeordnet

8810857

07.08.88

7

sind.

3. Transportables zusammensetzbares Schwimmbecken nach Anspruch 1 oder 2, dadurch gekennzeichnet, daß die Rohrteile (16, 17, 18, 19) kreisringförmigen Querschnitt aufweisen.

4. Transportables zusammensetzbares Schwimmbecken nach einem der Ansprüche 1 bis 3, dadurch gekennzeichnet, daß die Rohrteile (16, 18) kreisförmig gebogen sind.

8810057

BAD ORIGINAL



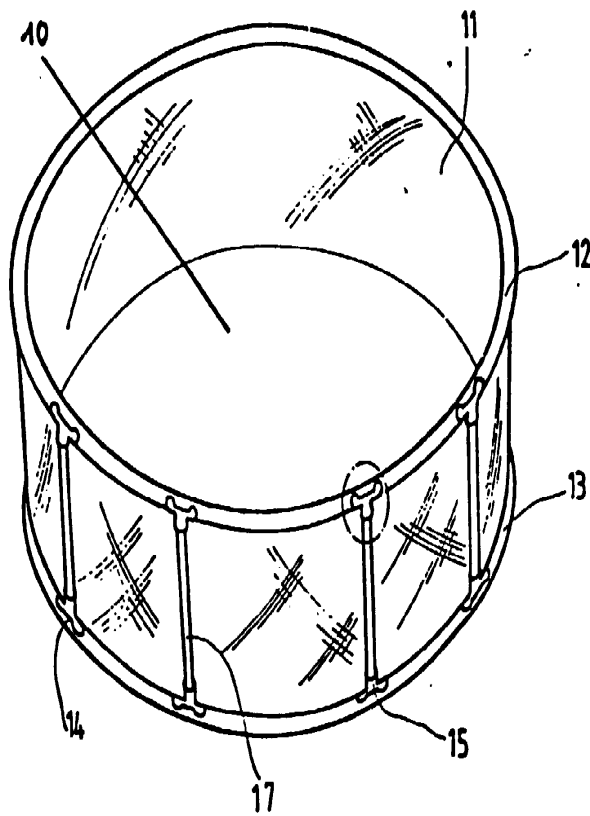


FIG-1

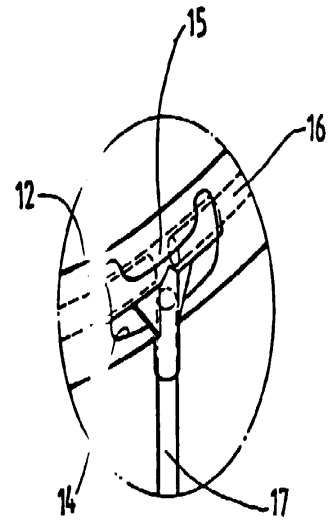


FIG-2

27-08-88

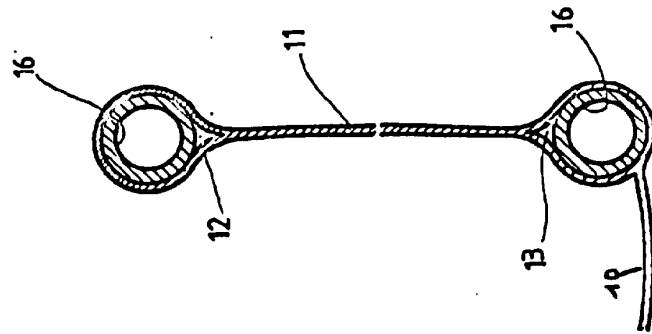


FIG-4

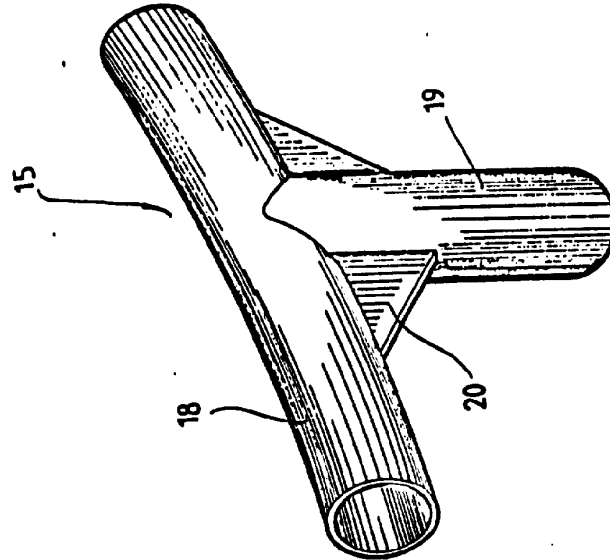


FIG-3

8810657

Publication Number: DE 19904335 A1

Publication Date: Aug 05, 1999

Abstract

A frame is provided for the suspension of a flexible bath for filling with water. The horizontal bearers (2) are divided into individual sections (8,7) with devices for connecting them together, so that the dismantled sides with their packing have the smallest possible dimensions. The devices for the connection of the sections of the bearers are of the insert type. One section (7) has an end piece of reduced diameter, which can be inserted in an end piece of the other section (8). Alternatively, the individual sections can have the same diameter throughout and the connecting devices are formed as bushes insertable in the end pieces of two sections.



⑮ **BUNDESREPUBLIK
DEUTSCHLAND**



**DEUTSCHES
PATENT- UND
MARKENAMT**

⑫ **Offenlegungsschrift**
⑩ **DE 199 04 335 A 1**

⑤① Int. Cl.⁶:
E 04 H 4/04

⑳ Aktenzeichen: 199 04 335.3
㉔ Anmeldetag: 3. 2. 99
㉕ Offenlegungstag: 5. 8. 99

DE 199 04 335 A 1

③① Unionspriorität:
00304 U 04. 02. 98 ES

㉗ Anmelder:
Torrente Industrial S.L., Benaguacil, Valencia, ES

㉘ Vertreter:
Grünecker, Kinkeldey, Stockmair & Schwanhäusser,
Anwaltssozietät, 80538 München

㉚ Erfinder:
Aguilar de Kegel, Dimas, Godella, Valencia, ES

Die folgenden Angaben sind den vom Anmelder eingereichten Unterlagen entnommen

⑤④ Zerlegbares Schwimm- oder Planschbecken

⑤⑦ Eine Anzahl senkrechter Stützen und waagerechter Träger sind an ihren Enden über Armaturen miteinander verbindbar, um ein Gestell für die Aufhängung einer mit Wasser zu füllenden flexiblen Wanne zu bilden. Die Träger sind in einzelne, mit Einrichtungen für die Verbindung miteinander versehene Abschnitte unterteilt, so daß das zerlegte Becken mit seiner Verpackung geringstmögliche Abmessungen aufweist. Die Einrichtungen zum Verbinden der Abschnitte miteinander sind vorzugsweise als Steckverbinder ausgebildet.

DE 199 04 335 A 1

Die Erfindung bezieht sich auf ein zerlegbares Schwimm- oder Planschbecken.

Ein Ziel der Erfindung ist die Schaffung eines solchen Beckens, welches in zerlegtem und in einem Behältnis verpacktem Zustand möglichst kleine Abmessungen aufweist, um damit die Lagerung des zerlegten und verpackten Beckens sowie auch seinen Transport vom Hersteller zu Verkaufsstellen und von dort zu einzelnen Kunden zu erleichtern.

Ein weiteres Ziel der Erfindung ist die Schaffung von Verbindungsarmaturen, welche zum Verbinden von Profilen mit kreisförmigem, quadratischem oder anders gestaltetem Querschnitt einsetzbar sind.

Es sind zerlegbare Schwimm- oder Planschbecken bekannt, welche ein aus senkrechten Stützen und waagerechten Trägern gebildetes Gestell als Aufhängung für eine mit Wasser zu füllende flexible Wanne aufweisen.

Diese Becken haben den Nachteil, daß die waagerechten Träger eine beträchtliche Länge aufweisen und dementsprechend Verpackungen von großen Abmessungen benötigen, was zu beträchtlichen Schwierigkeiten bei der Lagerung dem Produkts sowie auch beim Transport desselben führt und die Verwendung von genormten Paletten z. B. für internationale Transporte ausschließt.

Um die genannten Ziele zu erreichen und die vorstehend erläuterten Mängel zu beseitigen, ist bei einem zerlegbaren Schwimm- oder Planschbecken der eingangs genannten Art gemäß der Erfindung vorgesehen, daß die waagerechten Träger in einzelne, mit Einrichtungen für ihre Verbindung miteinander versehene Abschnitte unterteilt sind, so daß das zerlegte Becken mit seiner Verpackung geringstmögliche Abmessungen aufweist.

Die Einrichtungen für die Verbindung der Abschnitte miteinander sind vorzugsweise als Steckverbindungen ausgebildet, wobei der eine Abschnitt ein ausreichend langes Endstück verringerten Durchmessers aufweist, welches in ein Endstück des anderen Abschnitts einsteckbar ist. Dadurch hat der aus den, Abschnitten zusammengefügte Träger im wesentlichen die gleiche Steifigkeit wie ein einstückiger Träger von entsprechender Länge, es ergibt sich jedoch der Vorteil, daß die Abmessungen des zerlegten Beckens in seiner Verpackung beträchtlich verringert sind.

In einer anderen Ausführungsform ist für die Steckverbindung eine in einander zugewandte Endstücke zweier Abschnitte einsteckbare Buchse vorgesehen.

Die Armaturen für die Verbindung der Träger mit den Stützen sind an der Innenseite vorzugsweise mit sich längs erstreckenden, radial einwärts stehenden Stegen gleicher Höhe versehen, so daß es möglich ist, Profile mit kreisförmigem, quadratischem oder sonstwie gestaltetem Querschnitt einzustecken.

Unabhängig davon, ob für die Stützen und Träger des Gestells Profile mit kreisförmigem, quadratischem oder sonstwie gestaltetem Querschnitt verwendet werden, finden in jedem Falle die Steckverbindungen zwischen den Abschnitten der Träger Verwendung, so daß die Abmessungen des zerlegten Beckens stets beträchtlich kleiner sind als im Falle eines herkömmlichen Schwimmbeckens mit einstückig ausgebildeten Trägern.

Im folgenden sind Ausführungsbeispiele der Erfindung anhand der Zeichnungen erläutert. Es zeigen:

Fig. 1 eine Schrägansicht eines zerlegbaren Schwimm- oder Planschbeckens in einer Ausführungsform der Erfindung in aufgebaumtem Zustand, mit einem Ausschnitt zur Darstellung einer Steckverbindung zwischen zwei Abschnitten eines Trägers,

Fig. 2 eine Längsschnittansicht der Steckverbindung zwischen zwei Abschnitten eines Trägers des in **Fig. 1** dargestellten Beckens,

Fig. 3 eine Querschnittansicht einer Verbindungsarmatur im Gestell des Beckens mit einem eingesteckten Profil kreisförmigen Querschnitts,

Fig. 4 eine **Fig. 3** entsprechende Schnittansicht einer Armatur mit einem eingesteckten Profil quadratischen Querschnitts,

Fig. 5 eine Schrägansicht einer Buchse zum Herstellen einer Steckverbindung in einer anderen Ausführungsform der Erfindung, und

Fig. 6 eine Längsschnittansicht einer mit Hilfe der Buchse nach **Fig. 5** hergestellten Steckverbindung zweier Abschnitte.

Ein in einer Ausführungsform der Erfindung in **Fig. 1** dargestelltes zerlegbares Schwimm- oder Planschbecken hat ein Gestell aus senkrechten Stützen **1** und waagerechten Trägern **2**, welche durch Einstecken ihrer jeweiligen Endstücke in Verbindungsarmaturen **3** miteinander verbunden sind.

Vor dem Zusammenfügen der Stützen **1** und Träger **2** sind die Träger **2** in eine schlauchartige Hohlnaht **4** an den oberen Rändern einer flexiblen Wanne **5** eingezogen, so daß dann das aus den Stützen **1**, den Trägern **2** und den Armaturen **3** gebildete Gestell das Gewicht der Wanne **5** und des in diese eingefüllten Wassers **6** trägt.

Soweit bisher beschrieben, ist der Aufbau des zerlegbaren Schwimm- oder Planschbeckens bekannt. Ein besonderes Merkmal der Erfindung besteht nun darin, daß jeder Träger **2** in mehrere, über Steckverbindungen miteinander verbindbare Abschnitte unterteilt ist. Im dargestellten Beispiel setzt sich jeder Träger **2** aus zwei Abschnitten **7** und **8** zusammen.

Von diesen hat der eine Abschnitt **7** ein ausreichend langes Endstück **9** verringerten Durchmessers, welches in satter Passung in ein Endstück des anderen Abschnitts **8** einsteckbar ist, um eine Steckverbindung **10** zu bilden, welche dem so zusammengesetzten Träger **2** eine Steifigkeit verleiht, welche im wesentlichen der eines einstückigen Trägers entspricht. Die äußeren Endstücke der Abschnitte **7** und **8** sind in gewohnter Weide in die Armaturen **3** eingesteckt.

In anderen Ausführungsformen können die Träger **2** zwar in mehr als zwei über Steckverbindungen miteinander verbindbare Abschnitte unterteilt sein, die dargestellte Unterteilung in zwei Abschnitte **7** und **8** erbringt jedoch bereits eine ausreichende Verringerung der Abmessungen des zerlegten Beckens entsprechend dem eingangs genannten Ziel der Erfindung.

Die Steckverbindung zwischen den Abschnitten **7** und **8** findet Anwendung bei Abschnitten mit kreisförmigem, quadratischem oder sonstwie gestaltetem Querschnitt.

Gemäß einem weiteren Merkmal der Erfindung sind die Verbindungsarmaturen **3** an der Innenseite mit sich längs erstreckenden, radial einwärts ragenden Stegen **11** gleicher Höhe versehen. Diese Stege **11** ermöglichen eine Verbindung mit Trägern **2** sowohl von kreisförmigem als auch von quadratischem oder sonstwie gestaltetem Querschnitt, wie in **Fig. 3** und **4** dargestellt, wobei ein Träger **12** von quadratischem Querschnitt gegen Verdrehen um seine Achse gesichert ist.

In einer anderen Ausführungsform finden Trägerabschnitte **8** von durchgehend gleichbleibendem Durchmesser Verwendung, welche über in ihre einander zugewandten Endstücke eingesteckte Buchse **13** miteinander verbunden sind, wie in **Fig 5** und **6** dargestellt.

Patentansprüche

1. Zerlegbares Schwimm- oder Planschbecken mit einer Anzahl von senkrechten Stützen und waagerechten Trägern, welche an ihren Enden mittels Armaturen verbindbar sind und ein Gestell für die Aufhängung einer mit Wasser zu füllenden flexiblen Wanne bilden, **dadurch gekennzeichnet**, daß die waagerechten Träger (2) in einzelne, mit Einrichtungen für die Verbindung miteinander versehene Abschnitte (7, 8) unterteilt sind, so daß das zerlegte Becken mit seiner Verpackung geringstmögliche Abmessungen aufweist. 5 10
2. Zerlegbares Schwimm- oder Planschbecken nach Anspruch 1, dadurch gekennzeichnet, daß die Einrichtungen für die Verbindung der Abschnitte (7, 8) der Träger (2) miteinander als Steckverbindungen ausgebildet sind. 15
3. Zerlegbares Schwimm- oder Planschbecken nach Anspruch 2, dadurch gekennzeichnet, daß ein Abschnitt (7) ein Endstück (9) verringerten Durchmessers aufweist, welches in ein Endstück des anderen Abschnitts (8) einsteckbar ist. 20
4. Zerlegbares Schwimm- oder Planschbecken nach Anspruch 1, dadurch gekennzeichnet, daß jedem Träger (2) in zwei einzelne Abschnitte (7, 8) unterteilt ist. 25
5. Zerlegbares Schwimm- oder Planschbecken nach Anspruch 1, dadurch gekennzeichnet, daß die Armaturen (3) in ihren Verbindungsbereichen an der Innenseite mit sich längs erstreckenden, radial einwärts stehenden Stegen (11) gleicher Höhe versehen sind, so daß Träger (2) mit kreisförmigem Querschnitt sowie auch Träger (12) mit quadratischem oder anderem Querschnitt darin einsteckbar sind. 30
6. Zerlegbares Schwimm- oder Planschbecken nach Anspruch 1, dadurch gekennzeichnet, daß die einzelnen Abschnitte (8) durchgehend gleichen Durchmesser aufweisen und daß die Verbindungseinrichtungen als in die Endstücke zweier Abschnitte einsteckbare Buchsen (13) ausgebildet sind. 35 40

Hierzu 3 Seite(n) Zeichnungen

45

50

55

60

65

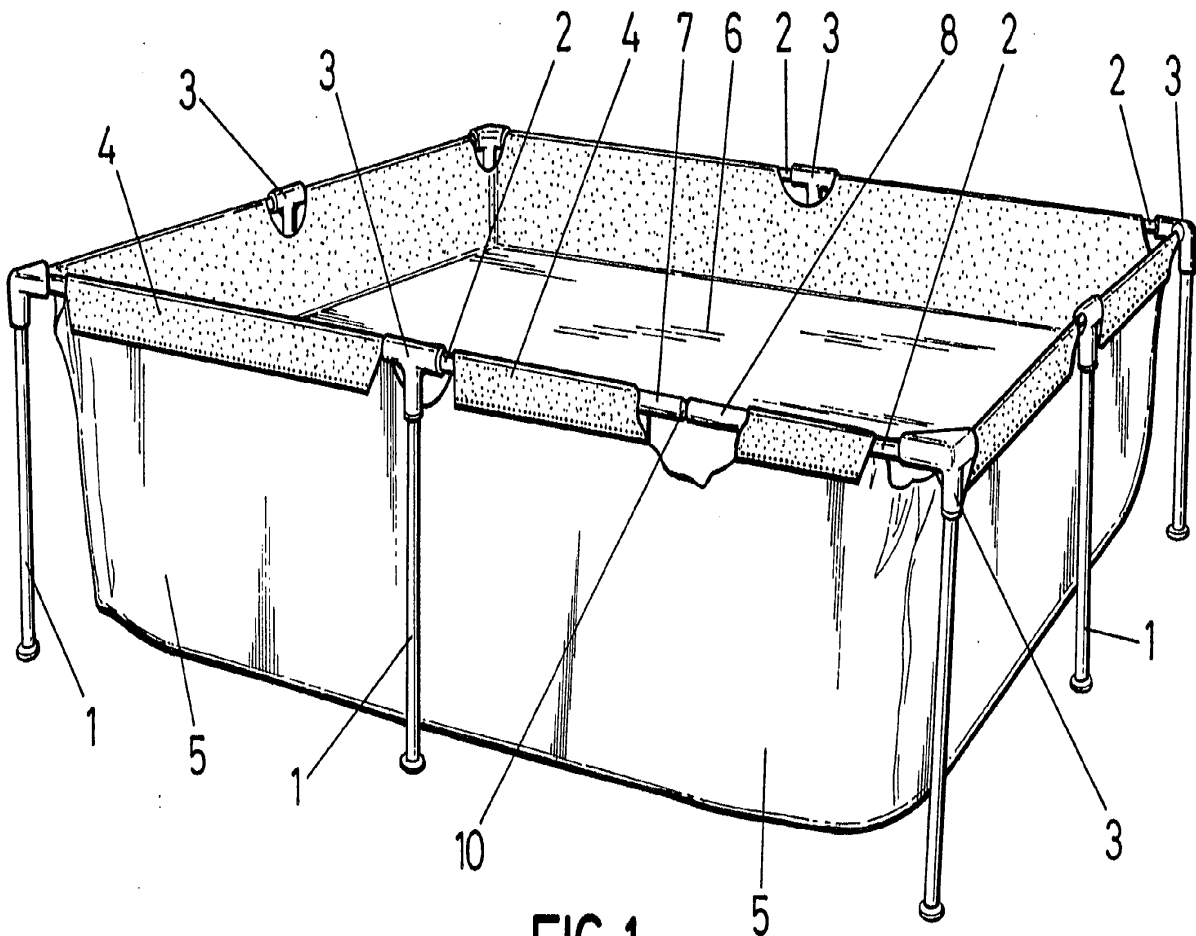


FIG. 1

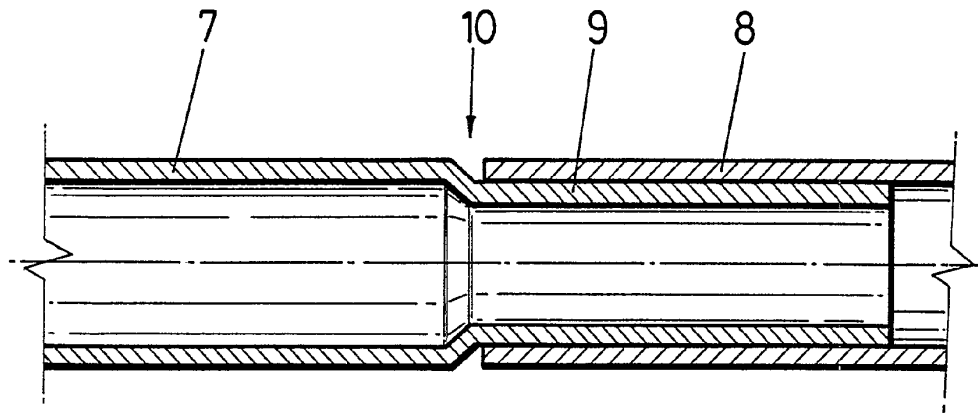


FIG. 2

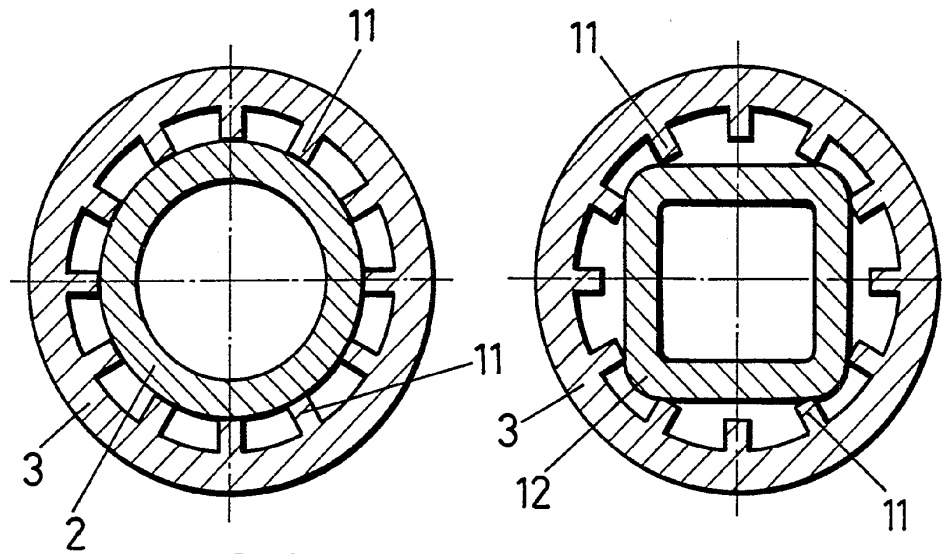


FIG. 3

FIG. 4

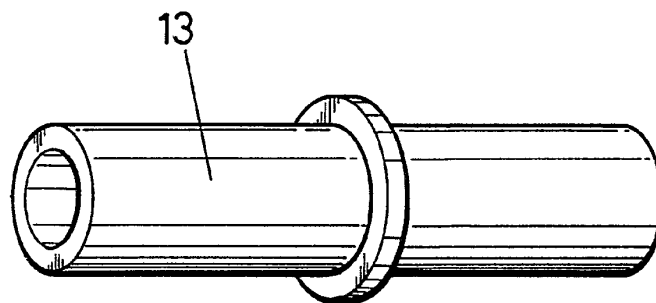


FIG. 5

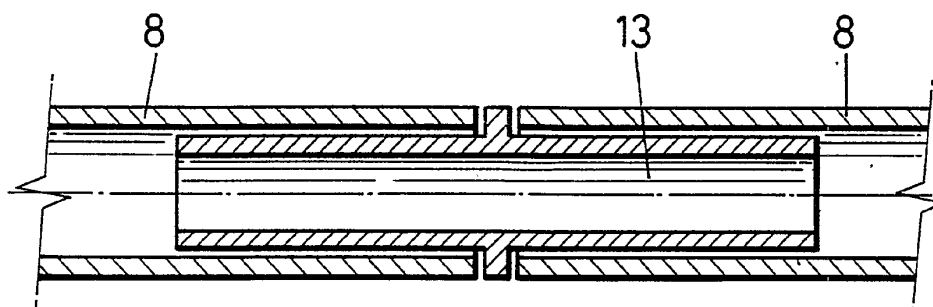


FIG. 6

Electronic Acknowledgement Receipt	
EFS ID:	45866443
Application Number:	16220484
International Application Number:	
Confirmation Number:	3890
Title of Invention:	JOINT FOR ABOVE GROUND POOL FRAME
First Named Inventor/Applicant Name:	Hua Hsiang Lin, deceased
Customer Number:	27268
Filer:	Zi Yie/Melissa Russell
Filer Authorized By:	Zi Yie
Attorney Docket Number:	IRC-0042-02-US
Receipt Date:	03-JUN-2022
Filing Date:	14-DEC-2018
Time Stamp:	14:03:13
Application Type:	U.S. National Stage under 35 USC 371

Payment information:

Submitted with Payment	no
------------------------	----

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	IDS_16220484_1.pdf	1272872	no	4
			7e27fb7985cb87441ba63e9a91ff1aeaac4c e405		

Warnings:

Information:					
2	Non Patent Literature	1_194295_1471220.pdf	221443	no	7
			7954ddc098e7f4c3051825ba92102b75227fafb3		
Warnings:					
Information:					
3	Foreign Reference	1_DE8810857U1_1469547.pdf	733496	no	18
			6d6d8be50b98bfd78a926df7bd4e6d379afd5947		
Warnings:					
Information:					
4	Foreign Reference	2_DE19904335A1_1468685.pdf	323108	no	7
			5d6f8d02af437715bc8d0afddc70b5db9bf1e1cb		
Warnings:					
Information:					
Total Files Size (in bytes):			2550919		
<p>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</p> <p><u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p>					

Doc code: IDS

Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-22)

Approved for use through 05/31/2024. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16220484
	Filing Date	2018-12-14
	First Named Inventor	Hua Hsiang Lin
	Art Unit	3754
	Examiner Name	CRANE, LAUREN ASHLEY
	Attorney Docket Number	IRC-0042-02-US

U.S.PATENTS						Remove
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	D453553	S	2002-02-12	MAERZ HART	
	2	D454205	S	2002-03-05	SPICER WADE L	
	3	D481110	S	2003-10-21	SNYDER et al.	
	4	D592492	S	2009-05-19	WERSCHMIDT GARY	
	5	D599446	S	2009-09-01	PRICE et al.	
	6	D676942	S	2013-02-26	KLUSS et al.	
	7	D718853	S	2014-12-02	LEE STEVEN DAVID	
	8	D771779	S	2016-11-15	SCIFRES et al.	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		16220484	
	Filing Date		2018-12-14	
	First Named Inventor		Hua Hsiang Lin	
	Art Unit		3754	
	Examiner Name		CRANE, LAUREN ASHLEY	
	Attorney Docket Number		IRC-0042-02-US	

	9	D805165	S	2017-12-12	DEAN et al.	
	10	D874021	S	2020-01-28	HUANG et al.	
	11	D905832	S	2020-12-22	GRAY ERIC	
	12	D926295	S	2021-07-27	ZHANG JIANYONG	

If you wish to add additional U.S. Patent citation information please click the Add button.

Add

U.S.PATENT APPLICATION PUBLICATIONS

Remove

Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear
	1	20010037620	A1	2001-11-08	CHOI SOO-HONG	
	2	20170356206	A1	2017-12-14	HUANG SHUIYONG	
	3	20200141143	A1	2020-05-07	HUANG et al.	
	4	20200332544	A1	2020-10-22	HUANG et al.	
	5	20210324648	A1	2021-10-21	HUANG et al.	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		16220484	
	Filing Date		2018-12-14	
	First Named Inventor	Hua Hsiang Lin		
	Art Unit	3754		
	Examiner Name	CRANE, LAUREN ASHLEY		
	Attorney Docket Number	IRC-0042-02-US		

	6	20210348409	A1	2021-11-11	CHEN et al.
--	---	-------------	----	------------	-------------

If you wish to add additional U.S. Published Application citation information please click the Add button.

FOREIGN PATENT DOCUMENTS

Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ² i	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	T ⁵
	1							

If you wish to add additional Foreign Patent Document citation information please click the Add button.

NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T ⁵
	1	PlumbingSupply.com, "Incredible Selection of PVC Fittings, Sch.40 PVC fittings and Sch.80 PVC Adapters," The Wayback Machine - https://web.archive.org/web/20180701150048/https://www.plumbingsupply.com , (Copyrights) 1995-2018 PlumbingSupply.com, 127 pages	

If you wish to add additional non-patent literature document citation information please click the Add button.

EXAMINER SIGNATURE

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16220484
	Filing Date	2018-12-14
	First Named Inventor	Hua Hsiang Lin
	Art Unit	3754
	Examiner Name	CRANE, LAUREN ASHLEY
	Attorney Docket Number	IRC-0042-02-US

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

☒ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Zi Yie/	Date (YYYY-MM-DD)	2022-06-13
Name/Print	Zi Yie	Registration Number	80066

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Patent Application Fee Transmittal				
Application Number:		16220484		
Filing Date:		14-Dec-2018		
Title of Invention:		JOINT FOR ABOVE GROUND POOL FRAME		
First Named Inventor/Applicant Name:		Hua Hsiang Lin, deceased		
Filer:		Zi Yie/Melissa Russell		
Attorney Docket Number:		IRC-0042-02-US		
Filed as Large Entity				
Filing Fees for U.S. National Stage under 35 USC 371				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
SUBMISSION- INFORMATION DISCLOSURE STMT	1806	1	260	260
Total in USD (\$)				260

Electronic Acknowledgement Receipt	
EFS ID:	45934414
Application Number:	16220484
International Application Number:	
Confirmation Number:	3890
Title of Invention:	JOINT FOR ABOVE GROUND POOL FRAME
First Named Inventor/Applicant Name:	Hua Hsiang Lin, deceased
Customer Number:	27268
Filer:	Zi Yie/Melissa Russell
Filer Authorized By:	Zi Yie
Attorney Docket Number:	IRC-0042-02-US
Receipt Date:	13-JUN-2022
Filing Date:	14-DEC-2018
Time Stamp:	13:37:56
Application Type:	U.S. National Stage under 35 USC 371

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	\$260
RAM confirmation Number	E20226CD38141444
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Non Patent Literature	1_29768907_1472855.pdf	10861899	no	127
			af8e43979c9d591d5f7bd4c36791fbb5e9fa b32f		
Warnings:					
Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	IDS_16220484_1.pdf	1283120	no	5
			455924bb25358ae7592a6cb55f7b9ed986f a8202		
Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	37755	no	2
			63a36be35b7e6c3c665dbbdfdf1ec14e749d be0c3		
Warnings:					
Information:					
Total Files Size (in bytes):			12182774		
<p>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</p> <p><u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p>					

Doc code: IDS

Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-22)

Approved for use through 05/31/2024. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16220484
	Filing Date	2018-12-14
	First Named Inventor	Hua Hsiang Lin
	Art Unit	3754
	Examiner Name	CRANE, LAUREN ASHLEY
	Attorney Docket Number	IRC-0042-02-US

U.S.PATENTS							Remove	
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear		
	1	D930802	S	2021-09-14	HUANG et al.			
If you wish to add additional U.S. Patent citation information please click the Add button.							Add	
U.S.PATENT APPLICATION PUBLICATIONS							Remove	
Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear		
	1							
If you wish to add additional U.S. Published Application citation information please click the Add button.							Add	
FOREIGN PATENT DOCUMENTS							Remove	
Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²ⁱ	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T ⁵
	1							
If you wish to add additional Foreign Patent Document citation information please click the Add button.								Add
NON-PATENT LITERATURE DOCUMENTS								Remove
Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.						T ⁵

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		16220484
	Filing Date		2018-12-14
	First Named Inventor	Hua Hsiang Lin	
	Art Unit	3754	
	Examiner Name	CRANE, LAUREN ASHLEY	
	Attorney Docket Number	IRC-0042-02-US	

	1		
If you wish to add additional non-patent literature document citation information please click the Add button <input type="button" value="Add"/>			
EXAMINER SIGNATURE			
Examiner Signature		Date Considered	
*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.			
<small> ¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached. </small>			

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16220484
	Filing Date	2018-12-14
	First Named Inventor	Hua Hsiang Lin
	Art Unit	3754
	Examiner Name	CRANE, LAUREN ASHLEY
	Attorney Docket Number	IRC-0042-02-US

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Robert Null/	Date (YYYY-MM-DD)	2022-07-26
Name/Print	Robert Null	Registration Number	40,746

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Acknowledgement Receipt	
EFS ID:	46268556
Application Number:	16220484
International Application Number:	
Confirmation Number:	3890
Title of Invention:	JOINT FOR ABOVE GROUND POOL FRAME
First Named Inventor/Applicant Name:	Hua Hsiang Lin, deceased
Customer Number:	27268
Filer:	Robert D. Null./Melissa Russell
Filer Authorized By:	Robert D. Null.
Attorney Docket Number:	IRC-0042-02-US
Receipt Date:	26-JUL-2022
Filing Date:	14-DEC-2018
Time Stamp:	10:53:06
Application Type:	U.S. National Stage under 35 USC 371

Payment information:

Submitted with Payment	no				
File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	IDS_16220484_1.pdf	1272579	no	4
			a8ab17484aeab4b9eacd3b047c8df32dc9829335		
Warnings:					

Information:	
Total Files Size (in bytes):	1272579
<p>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</p> <p><u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p>	

Doc code: IDS

Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-22)

Approved for use through 05/31/2024. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16220484
	Filing Date	2018-12-14
	First Named Inventor	Hua Hsiang Lin
	Art Unit	3754
	Examiner Name	CRANE, LAUREN ASHLEY
	Attorney Docket Number	IRC-0042-02-US

U.S.PATENTS							Remove	
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear		
	1	1884410		1932-10-25	VINCENT JESSE G			
	2	3424178		1969-01-28	YAZAKI YOSHIMI			
	3	5927363	A	1999-07-27	OLSEN TODD C			
	4	D455950	S	2002-04-23	UNWIN et al.			
If you wish to add additional U.S. Patent citation information please click the Add button.							Add	
U.S.PATENT APPLICATION PUBLICATIONS							Remove	
Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear		
	1	20020064420	A1	2002-05-30	LIN WEN-PIN			
If you wish to add additional U.S. Published Application citation information please click the Add button.							Add	
FOREIGN PATENT DOCUMENTS							Remove	
Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T ⁵

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		16220484
	Filing Date		2018-12-14
	First Named Inventor	Hua Hsiang Lin	
	Art Unit	3754	
	Examiner Name	CRANE, LAUREN ASHLEY	
	Attorney Docket Number	IRC-0042-02-US	

	1						
--	---	--	--	--	--	--	--

If you wish to add additional Foreign Patent Document citation information please click the Add button

NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T ⁵
--------------------	---------	---	----------------

	1		
--	---	--	--

If you wish to add additional non-patent literature document citation information please click the Add button

EXAMINER SIGNATURE

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16220484
	Filing Date	2018-12-14
	First Named Inventor	Hua Hsiang Lin
	Art Unit	3754
	Examiner Name	CRANE, LAUREN ASHLEY
	Attorney Docket Number	IRC-0042-02-US

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).



See attached certification statement.

☒ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Robert Null/	Date (YYYY-MM-DD)	2022-08-04
Name/Print	Robert Null	Registration Number	40,746

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Patent Application Fee Transmittal				
Application Number:		16220484		
Filing Date:		14-Dec-2018		
Title of Invention:		JOINT FOR ABOVE GROUND POOL FRAME		
First Named Inventor/Applicant Name:		Hua Hsiang Lin, deceased		
Filer:		Robert D. Null./Chiquita Bryant		
Attorney Docket Number:		IRC-0042-02-US		
Filed as Large Entity				
Filing Fees for U.S. National Stage under 35 USC 371				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
SUBMISSION- INFORMATION DISCLOSURE STMT	1806	1	260	260
Total in USD (\$)				260

Electronic Acknowledgement Receipt	
EFS ID:	46339584
Application Number:	16220484
International Application Number:	
Confirmation Number:	3890
Title of Invention:	JOINT FOR ABOVE GROUND POOL FRAME
First Named Inventor/Applicant Name:	Hua Hsiang Lin, deceased
Customer Number:	27268
Filer:	Robert D. Null./Melissa Russell
Filer Authorized By:	Robert D. Null.
Attorney Docket Number:	IRC-0042-02-US
Receipt Date:	04-AUG-2022
Filing Date:	14-DEC-2018
Time Stamp:	17:32:26
Application Type:	U.S. National Stage under 35 USC 371

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	\$260
RAM confirmation Number	E202284H32490735
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	IDS_16220484_1.pdf	1272744	no	4
			78d5d49530ae30dd008942a9985adaa6f13c2dd1		
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	38020	no	2
			99de8ed4e16cc1ec88427869711a2c9ccc4326c1		
Warnings:					
Information:					
Total Files Size (in bytes):			1310764		
<p>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</p> <p><u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p>					



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/220,484	12/14/2018	Hua Hsiang Lin, deceased	IRC-0042-02-US	3890
27268 7590 08/10/2022 FAEGRE DRINKER BIDDLE & REATH LLP 300 NORTH MERIDIAN STREET SUITE 2500 INDIANAPOLIS, IN 46204			EXAMINER CRANE, LAUREN ASHLEY	
			ART UNIT 3754	PAPER NUMBER
			NOTIFICATION DATE 08/10/2022	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

intear@faegredrinker.com



UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Application Number: 16/220,484
Filing Date: 14 Dec 2018
Appellant(s): Intex Marketing Ltd.

Alyssa R Eckerley
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 4/5/2022.

(1) Grounds of Rejection to be Reviewed on Appeal

The ground(s) of rejection set forth in the Office action dated 11/5/2021 from which the appeal is taken have been modified by the appeal conference dated 11/5/2021. A list of rejections withdrawn by the examiner (if any) is included under the subheading "WITHDRAWN REJECTIONS." New grounds of rejection (if any) are provided under the subheading "NEW GROUNDS OF REJECTION."

WITHDRAWN REJECTIONS

The following grounds of rejection are not presented for review on appeal because they have been withdrawn by the examiner.

1. Claim 20 is/are rejected under 35 U.S.C. 103 as being unpatentable over Lee (US Patent Publication 2002/0042948) in view of Hake (US Patent 2014/0325751) as applied to claim 14 above and further in view of Bennett et al (US Patent Publication 2004/0118844 herein after Bennett). Lee shows the method of claim 14, and further shows wherein the vertical joint portion (131) of the frame joint is coupled to the vertical frame member (110), and wherein a height of the hole in the liner is less than a distance between the first and third coupling assemblies, Fig.2. Lee fails to show a third coupling assembly. Bennett teaches a fluid storage tank. The device includes a frame having a vertical frame member (120) with a third coupling assembly. It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to a third coupling assembly in order to ensure the vertical frame member was securely attached to the frame.

2. Claims 21-22 is/are rejected under 35 U.S.C. 103 as being unpatentable over Lee (US Patent Publication 2002/0042948) in view of Hake (US Patent 2014/0325751) as applied to claim 1 above and further in view Huang (US Patent 20170356206).

3. Regarding Claim 21, Lee shows the frame joint of claim 1, but fails to show wherein the vertical joint portion (32) includes at least one internal vertical reinforcing rib. Huang teaches a pool frame. A vertical joint portion (32) includes at least one internal vertical reinforcing rib (50). It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to an internal vertical reinforcing rib in order to add structural support to the joint.

4. Regarding Claim 22, Lee shows the frame joint of claim 1, but fails to show at least one of the first horizontal joint portion and the second horizontal joint portion includes an internal horizontal reinforcing rib. Huang teaches a pool frame. At least one of the first horizontal joint portion (31) and the second horizontal joint portion (31) includes an internal horizontal reinforcing rib (50). It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to an internal horizontal reinforcing rib in order to add structural support to the joint.

Claims 19 and 32 is/are rejected under 35 U.S.C. 103 as being unpatentable over Lee (US Patent Publication 2002/0042948) in view of Hake (US Patent 2014/0325751).

Regarding Claim 19, Lee shows the method of claim 14, wherein a width of the hole in the liner exceeds a width between the first and second coupling assemblies, Fig.9.

Regarding Claim 32, Lee shows the frame joint of claim 1, and further shows wherein the first coupling assembly (134) and the second coupling assembly (134) are actuatable from an exterior of the frame joint along a vertical direction (because the assemblies are able to be attached to a support vertically; Fig.4).

These rejections have been withdrawn. These claims are now in condition for allowance.

(2) Response to Argument

Appellant argues on pages 2-4 of the Appeal Brief, that Lee fails to show a vertical portion that has a width that accounts for a majority or 50% of a width between the first and second coupling assemblies of the first and second horizontal joint portions by relying on the drawings of Lee. The Office disagrees. Appellant arguments pertaining to reliance on the drawings to show a specific width have been found to be not persuasive, since the Examiner did not rely on the drawings. Instead the Examiner discusses that Lee shows that the vertical joint portion does account for a portion of the width between the first and second coupling assemblies of the first and second horizontal joint portions, but is silent regarding the percentage the width of the vertical joint portion accounts for the width between the first and second coupling assemblies of the first and second horizontal joint portions. Appellant has not disclosed that having the width of the vertical joint portion accounting for a portion of the width between the first and second coupling assemblies solves any stated problem or is for any particular purpose. Moreover, it appears that the width of the vertical joint portion of Lee, or appellant's invention, would perform equally well with the width of the first and second

coupling assemblies. Appellant's paragraph 25 of the originally filed specification states the width of the vertical join may account for 50-80% or more of the width between the pins of the coupling assemblies not the coupling assemblies themselves. The claim requires the width of the vertical joint portion accounts for at least 50% of the width between the first and second coupling assemblies of the first and second horizontal joint portions no the width between the pins.

Appellant argues on page 4 of the Appeal Brief that claims 2, 3, and 5 require limitation related to relative width of the vertical portion of the joint to the total width of joint and/or the width between the coupling assemblies. These limitations are not taught by Lee in view Hake because the ratio depicted in the drawings is at a maximum of 34% and therefore does not meet in the limitations required by the claims. The Examiner disagrees. Lee is silent regarding the percentage of the width of the vertical joint portion accounts for a portion of the total width of the frame joint. Appellant has not disclosed that having the width of the vertical joint portion accounting for a portion of the total width of the frame joint solves any stated problem or is for any particular purpose. Moreover, it appears that the width of the vertical joint portion of Lee, or appellant's invention, would perform equally well with the width of the frame joint. Accordingly, it would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to have modified Lee such that wherein the width of the vertical joint portion accounts for a portion of a total width of the frame joint because such a modification would have been considered a mere design consideration which fails to patentably distinguish over Lee. According to Appellants own specification (paragraph

25) the width of the vertical portion can for any percentage of the width between the two pins of the coupling assembly not just the coupling assembly.

Appellant argue on page 3 of the Appeal Brief that Appellant has stated a problem to be solved by having the width of the vertical joint portion accounting for a majority of a portion of the width between the first and second coupling assemblies to allow the joint may be minimized such that the size of the corresponding hole in the pool liner may also be minimized which may improve the appearance and water containment of the pool as stated in paragraphs 23 and 24 of the originally filed specification. The Office disagrees. While the specification states the t-shaped joint may be minimized such that the corresponding hole of the liner may also be minimize, the claims require the joint to take up the majority of the space between the couplies assemblies and that would maximized the width of the t-shaped joint not minimize it. Further the Appellant argues that the relative width of the vertical portion allows exposure of the pins of the coupling assemblies for allowing subsequent disassembly without having to manipulate the pool liner to reach said coupling assemblies. The Examiner disagrees. The claims are directed toward the width of the vertical joint portion in relation to the coupling assemblies and not to the pins.

Appellant argues on pages 5 and 6 of the brief that Obitts is directed to adjustable length cranes, crutch, walkers and the like and is therefore considered nonanalogous art. The Examiner disagrees that Obitts is nonanalogous art. Lee shows a first and second coupling assemblies (132) and a spring pin (150) that engages a corresponding recess of the respective horizontal frame member (120). Lee fails to show a helical spring. Obitts is directed toward a cane that includes two telescoping segments

(12,24) along with a helical spring (170) and a pin biased outward through a hole (14).

According to MPEP 2141.019(a) in order for a reference to be considered analogous art the reference must be is in the same field of endeavor of the claimed invention or the reference is reasonably pertinent to the problem faced by the inventor. In this case Obitts solves the same problem as Lee. Both need a biased pin to allow two telescoping pieces to be secured together through a pin.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/LAUREN A CRANE/
Primary Examiner, Art Unit 3754

Conferees:

/DAVID P ANGWIN/
Supervisory Patent Examiner, Art Unit 3754

/CANDICE D WILSON/
RQAS, OPQA

{ 3 }

Requirement to pay appeal forwarding fee. In order to avoid dismissal of the instant appeal in any application or ex parte reexamination proceeding, 37 CFR 41.45 requires payment of an appeal forwarding fee within the time permitted by 37 CFR 41.45(a), unless appellant had timely paid the fee for filing a brief required by 37 CFR 41.20(b) in effect on March 18, 2013.

Doc code: IDS

Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-22)

Approved for use through 05/31/2024. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16220484
	Filing Date	2018-12-14
	First Named Inventor	Hua Hsiang Lin
	Art Unit	3754
	Examiner Name	Lauren Ashley Crane
	Attorney Docket Number	IRC-0042-02-US

U.S.PATENTS						Remove
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	1786613		1930-12-30	Hooper	
	2	6477721		2002-11-12	Lee	
	3	3874132		1975-04-01	Mendelow	
	4	6595713		2003-07-22	Wilson	
	5	3595180		1971-07-27	Swoyer	
	6	3864048		1975-02-04	Parker	
	7	4356933		1982-11-02	Connolly	
	8	4890343		1990-01-02	Schlags	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		16220484	
	Filing Date		2018-12-14	
	First Named Inventor	Hua Hsiang Lin		
	Art Unit	3754		
	Examiner Name	Lauren Ashley Crane		
	Attorney Docket Number	IRC-0042-02-US		

	9	D908849		2021-01-26	Decaria	
	10	D925011		2021-07-13	Parihar	
	11	D945871		2022-03-15	MacDonald	

If you wish to add additional U.S. Patent citation information please click the Add button.

U.S.PATENT APPLICATION PUBLICATIONS

Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20170089085		2017-03-30	Liu	

If you wish to add additional U.S. Published Application citation information please click the Add button.

FOREIGN PATENT DOCUMENTS

Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ² i	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T ⁵
	1	204531509	CN		2015-08-05	Shanghai Bestway & Material Corp.	English Abstract Submitted	×
	2	205777703	CN		2016-12-07	Shanghai Bestway Inflatables & Mat Corp.	English Abstract Submitted	☒
	3	200968073	CN		2007-10-31	Intex Ind Xiamen Co. Ltd.	English Abstract Submitted	☒

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		16220484
	Filing Date		2018-12-14
	First Named Inventor	Hua Hsiang Lin	
	Art Unit	3754	
	Examiner Name	Lauren Ashley Crane	
	Attorney Docket Number	IRC-0042-02-US	

	4	2766083	CN		2006-03-22	Shanghai Bestway Inflatables	English Abstract Submitted	☒
	5	209040623	CN		2019-06-28	Intex Ind Xiamen Co. Ltd.	English Abstract Submitted	☒

If you wish to add additional Foreign Patent Document citation information please click the Add button

NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T ⁵
	1		

If you wish to add additional non-patent literature document citation information please click the Add button

EXAMINER SIGNATURE

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16220484
	Filing Date	2018-12-14
	First Named Inventor	Hua Hsiang Lin
	Art Unit	3754
	Examiner Name	Lauren Ashley Crane
	Attorney Docket Number	IRC-0042-02-US

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/William S. Meyers/	Date (YYYY-MM-DD)	2022-08-15
Name/Print	William S. Meyers	Registration Number	42884

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.



Espacenet

Bibliographic data: CN204531509 (U) — 2015-08-05

Ground forebay and be used for ground forebay braced frame

Inventor(s): LIU FENG ± (LIU FENG)

Applicant(s): SHANGHAI BESTWAY INFLATABLES & MATERIAL CORP ±
(SHANGHAI BESTWAY INFLATABLES & MATERIAL CORP)

Classification: - **international:** E04H4/04; E04H4/14
- **cooperative:** E04H4/0056 (EP, US); E04H2004/0068 (US)

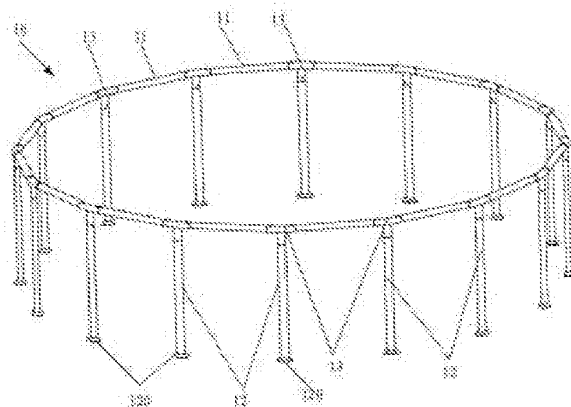
Application number: CN20152065126U 20150129

Priority number(s): CN20152065126U 20150129

Also published as: US2016222686 (A1) US2017009475 (A1)

Abstract of CN204531509 (U)

The utility model provides a ground forebay and be used for ground forebay braced frame, an automobile emergency starting power supply which comprises an outer shell. Horizontal support spare and every the vertical bracing piece all has oval cross section, and the pond inside lining, fix extremely said braced frame, said pond inside lining by braced frame supports and forms the pond main part for store the water in the pond. The utility model discloses the braced frame cross



section that adopts partly at least of ground forebay is the oval-shaped pipe, because the shape of cross section of elliptical tube symmetry, the return bend processing degree of difficulty is little for the tubulation degree of difficulty reduces, has effectively improved stability, is favorable to the quality management and control. Simultaneously, it is little that the bian guanyu of elliptical tube connects the fit clearance, and mechanical stress is big and stability is strong. In addition, the bian guanyu of elliptical tube adopts bolt connection between connecting, and this kind of connected mode is more firm, and intensity is better.



(21) 申请号 201520065126.7

(22) 申请日 2015.01.29

(73) 专利权人 上海荣威塑胶工业有限公司

地址 201812 上海市嘉定区曹安路 3065 号

(72) 发明人 刘峰

(74) 专利代理机构 上海专利商标事务所有限公
司 31100

代理人 陈亮

(51) Int. Cl.

E04H 4/04(2006.01)

E04H 4/14(2006.01)

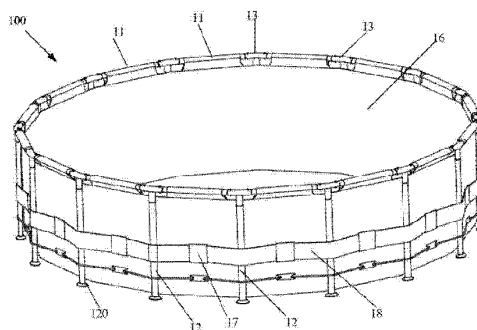
权利要求书4页 说明书12页 附图18页

(54) 实用新型名称

地上水池及用于地上水池的支撑框架

(57) 摘要

本实用新型提供了一种地上水池及用于地上水池的支撑框架,所述地上水池包括:支撑框架,包括一系列水平支撑件和垂直支撑件,每个所述水平支撑件和每个所述垂直支撑件均具有椭圆形横截面;以及水池内衬,固定至所述支撑框架,所述水池内衬由所述支撑框架支撑形成水池主体,用于储存水池内的水。本实用新型地上水池的支撑框架至少一部分采用横截面为椭圆形的管子,由于椭圆管的横截面形状对称,弯管加工难度小,使得制管难度降低,有效提高了稳定性,有利于品质管控。同时,椭圆管的边管与接头配合间隙小,机械应力大且稳定性强。另外,椭圆管的边管与接头之间采用插销连接,这种连接方式更加牢固,强度更好。



1. 一种地上水池, 其特征在于, 所述地上水池包括:

支撑框架, 包括一系列水平支撑件和垂直支撑件, 每个所述水平支撑件和每个所述垂直支撑件均具有椭圆形横截面; 以及

水池内衬, 固定至所述支撑框架, 所述水池内衬由所述支撑框架支撑形成水池主体, 用于储存水池内的水。

2. 如权利要求 1 所述的地上水池, 其特征在于, 所述支撑框架还包括多个 T 型接头, 用于使所述水平支撑件和所述垂直支撑件联接在一起, 所述 T 型接头包括水平管状部件和垂直管状部件, 所述垂直管状部件横向于所述水平管状部件, 每个所述水平管状部件和每个所述垂直管状部件均具有椭圆形横截面。

3. 如权利要求 2 所述的地上水池, 其特征在于, 所述多个 T 型接头依次使两个相应的所述水平支撑件联接在一起, 以形成大致圆形的环形结构。

4. 如权利要求 2 所述的地上水池, 其特征在于, 所述垂直管状部件与相应的所述垂直支撑件联接。

5. 如权利要求 3 所述的地上水池, 其特征在于, 所述环形结构为椭圆形。

6. 如权利要求 3 所述的地上水池, 其特征在于, 所述水平管状部件的第一端可拆装地连接至相应的第一水平支撑件的端部, 所述水平管状部件的第二端可拆装地连接至相应的第二水平支撑件的端部, 相应的所述第一水平支撑件和相应的所述第二水平支撑件通过固定件连接至所述水平管状部件的第一端和所述水平管状部件的第二端, 所述固定件位于对应附连点的近侧。

7. 如权利要求 6 所述的地上水池, 其特征在于, 所述固定件为固定销, 所述固定销构造成为穿过第一组定位孔和相应的第二组定位孔, 所述第一组定位孔设置在所述水平管状部件的第一端和所述水平管状部件的第二端, 相应的所述第二组定位孔设置在相应的所述水平支撑件的端部, 所述固定销使所述水平管状部件和相应的所述水平支撑件锁定在一起。

8. 如权利要求 4 所述的地上水池, 其特征在于, 所述垂直管状部件通过弹簧负载闭锁件可拆装地连接至相应的所述垂直支撑件, 所述弹簧负载闭锁件与所述垂直支撑件的端部联接, 所述闭锁件构造成为与设置在所述垂直管状部件的开口端处的孔卡合。

9. 如权利要求 8 所述的地上水池, 其特征在于, 所述弹簧负载闭锁件包括销座, 所述销座用于容纳弹性元件和定位销, 所述销座装配在所述垂直支撑件的一端的内部, 并构造成为使得所述定位销由所述弹性元件向外偏置, 以卡合所述孔, 所述定位销使所述垂直管状部件和所述垂直支撑件锁定在一起。

10. 如权利要求 1 所述的地上水池, 其特征在于, 所述地上水池还包括多个张力支撑装置和张力支撑带, 所述张力支撑装置联接至所述水池主体的外表面, 其中每个所述张力支撑装置联接于两个相邻的所述垂直支撑件之间的外表面, 所述张力支撑带交互地穿过所述张力支撑装置, 且位于所述垂直支撑件上, 环绕所述水池主体的外表面, 以保持使所述垂直支撑件贴靠所述水池主体。

11. 如权利要求 10 所述的地上水池, 其特征在于, 所述张力支撑带设置在所述水池主体上的高度约等于所述水池主体的高度的 1/3 处。

12. 如权利要求 1 所述的地上水池, 其特征在于, 所述地上水池还包括多个支承基部, 所述支承基座联接于所述垂直支撑件的底端。

13. 一种地上水池,其特征在于,所述地上水池包括:

支撑框架,包括一系列水平支撑件、连接器和U型支撑件,每个所述水平支撑件和每个所述连接器均具有圆形横截面,所述U型支撑件具有椭圆形横截面;以及

水池内衬,固定至所述支撑框架,所述水池内衬通过所述支撑框架支撑形成水池主体,用于储存水池内的水。

14. 如权利要求13所述的地上水池,其特征在于,所述水平支撑件由多个所述连接器串联在一起形成环形结构。

15. 如权利要求13所述的地上水池,其特征在于,多个所述连接器均为L型。

16. 如权利要求14所述的地上水池,其特征在于,所述地上水池还包括联接件,所述联接件联接于所述U型支撑件的自由端,其中所述联接件使所述U型支撑件可拆装地连接至所述环形结构,并以倾斜的方式支撑所述环形结构。

17. 如权利要求14所述的地上水池,其特征在于,所述环形结构形成矩形或多边形。

18. 如权利要求16所述的地上水池,其特征在于,所述U型支撑件的各自由端具有缩小直径部分,所述缩小直径部分具有间隔开的第一组闭锁孔和第二组闭锁孔。

19. 如权利要求18所述的地上水池,其特征在于,所述联接件还包括:

柔性V型销,包括间隔开的第一对凸块和第二对凸块;以及

中空壳体,包括一对孔口,所述柔性销设置在所述U型支撑件的缩小直径部分内,以使所述第一对凸块延伸穿过所述第二组闭锁孔与所述一对孔口卡合,所述第二对凸块延伸穿过所述第一组闭锁孔。

20. 如权利要求19所述的地上水池,其特征在于,所述壳体为具有椭圆形横截面的管子,所述管子的椭圆形横截面与所述U型支撑件的横截面对应。

21. 如权利要求14所述的地上水池,其特征在于,所述地上水池还包括多个支撑带,所述支撑带联接至且设置于所述水池主体的底部,每个所述支撑带联接在所述水池主体的底部和相应所述U型支撑件的水平部分之间。

22. 如权利要求21所述的地上水池,其特征在于,每个所述支撑带包括套管,用于使所述U型支撑件的水平部分穿过。

23. 一种用于地上水池的支撑框架,其特征在于,所述框架包括:

多个水平支撑件,每个所述水平支撑件具有椭圆形横截面;以及

多个垂直支撑件,联接于所述多个水平支撑件,每个所述垂直支撑件具有椭圆形横截面;

其中水池内衬能固定至所述支撑框架,并且通过所述支撑框架支撑形成水池主体,用于储存水池内的水。

24. 如权利要求23所述的支撑框架,其特征在于,所述支撑框架还包括多个T型接头,用于使所述水平支撑件和所述垂直支撑件联接在一起,所述T型接头包括水平管状部件和垂直管状部件,所述垂直管状部件横向于所述水平管状部件,每个所述水平管状部件和每个所述垂直管状部件均具有椭圆形横截面。

25. 如权利要求24所述的支撑框架,其特征在于,所述多个T型接头依次使两个相应的所述水平支撑件联接在一起,以形成大致圆形的环形结构。

26. 如权利要求24所述的支撑框架,其特征在于,所述垂直管状部件与相应的所述垂

直支撑件联接。

27. 如权利要求 25 所述的支撑框架,其特征在于,所述环形结构为椭圆形。

28. 如权利要求 25 所述的支撑框架,其特征在于,所述水平管状部件的第一端可拆装地连接至相应的第一水平支撑件的端部,所述水平管状部件的第二端可拆装地连接至相应的第二水平支撑件的端部,相应的所述第一水平支撑件和相应的所述第二水平支撑件通过固定件连接至所述水平管状部件的第一端和所述水平管状部件的第二端,所述固定件位于对应附连点的近侧。

29. 如权利要求 28 所述的支撑框架,其特征在于,所述固定件为固定销,所述固定销构造穿过第一组定位孔和相应的第二组定位孔,所述第一组定位孔设置在所述水平管状部件的第一端和所述水平管状部件的第二端,所述第二组定位孔设置在相应的所述水平支撑件的端部,所述固定销使所述水平管状部件和相应的所述水平支撑件锁定在一起。

30. 如权利要求 26 所述的支撑框架,其特征在于,所述垂直管状部件通过弹簧负载闭锁件可拆装地连接至相应的所述垂直支撑件,所述弹簧负载闭锁件与所述垂直支撑件的端部联接,所述闭锁件构造与设置在所述垂直管状部件的开口端处的孔卡合。

31. 如权利要求 30 所述的支撑框架,其特征在于,所述弹簧负载闭锁件包括销座,所述销座用于容纳弹性元件和定位销,所述销座装配在所述垂直支撑件的一端的内部,并构造使得所述定位销由所述弹性元件向外偏置,以卡合所述孔,所述定位销使所述垂直管状部件和所述垂直支撑件锁定在一起。

32. 如权利要求 23 所述的支撑框架,其特征在于,所述地上水池还包括多个张力支撑装置和张力支撑带,所述张力支撑装置联接至所述水池主体的外表面,其中每个所述张力支撑装置联接于两个相邻的所述垂直支撑件之间的外表面,所述张力支撑带交互地穿过所述张力支撑装置,且位于所述垂直支撑件上,环绕所述水池主体的外表面,以保持使所述垂直支撑件贴靠所述水池主体。

33. 如权利要求 32 所述的支撑框架,其特征在于,所述张力支撑带设置在所述水池主体上的高度约等于所述水池主体的高度的 1/3 处。

34. 如权利要求 23 所述的支撑框架,其特征在于,所述地上水池还包括多个支承基部,所述支承基座联接于所述垂直支撑件的底端。

35. 一种用于地上水池的支撑框架,其特征在于,所述框架包括:

多个水平支撑件,每个所述水平支撑件具有圆形横截面;

多个连接器,用于使相应的所述水平支撑件联接在一起,每个连接器为 L 型,且具有圆形横截面;以及

多个 U 型支撑件,每个 U 型支撑件具有椭圆形横截面;

其中水池内衬能固定至所述支撑框架,并且通过所述支撑框架支撑形成水池主体,用于储存水池内的水。

36. 如权利要求 35 所述的支撑框架,其特征在于,所述水平支撑件由多个所述连接器串联在一起形成环形结构。

37. 如权利要求 36 所述的支撑框架,其特征在于,所述地上水池还包括联接件,所述联接件联接于所述 U 型支撑件的自由端,其中所述联接件使所述 U 型支撑件可拆装地连接至所述环形结构,并以倾斜的方式支撑所述环形结构。

38. 如权利要求 36 所述的支撑框架,其特征在于,所述环形结构形成矩形或多边形。

39. 如权利要求 35 所述的支撑框架,其特征在于,所述 U 型支撑件的各自由端具有缩小直径部分,所述缩小直径部分具有间隔开的第一组闭锁孔和第二组闭锁孔。

40. 如权利要求 39 所述的支撑框架,其特征在于,所述联接件还包括:

柔性 V 型销,包括间隔开的第一对凸块和第二对凸块;以及

中空壳体,包括一对孔口,所述柔性销设置在所述 U 型支撑件的缩小直径部分内,以使得所述第一对凸块延伸穿过所述第二组闭锁孔与所述一对孔口卡合,所述第二对凸块延伸穿过所述第一组闭锁孔。

41. 如权利要求 40 所述的支撑框架,其特征在于,所述壳体为具有椭圆形横截面的管子,所述管子的椭圆形横截面与所述 U 型支撑件的横截面对应。

42. 如权利要求 35 所述的支撑框架,其特征在于,所述地上水池还包括多个支撑带,所述支撑带联接至且设置于所述水池主体的底部,每个所述支撑带联接在所述水池主体的底部和相应所述 U 型支撑件的水平部分之间。

43. 如权利要求 42 所述的支撑框架,其特征在于,每个所述支撑带包括套管,用于使所述 U 型支撑件的水平部分穿过。

地上水池及用于地上水池的支撑框架

技术领域

[0001] 本实用新型涉及水池领域，特别涉及一种地上水池。

背景技术

[0002] 地上水池是一种安装在室外空地上使用的休闲娱乐产品，例如可以将其安装在家里的院子里或其他空地上，供成人和儿童一同玩耍。地上水池由于安装方便，使用效果好而广受人们的喜爱。

[0003] 目前，地上水池主要包括支架水池和充气水池两类。在支架水池中，其结构和形式多种多样。其中，圆形支架水池是最为典型的地上水池，其主要通过一系列的水平支撑件、垂直支撑件和水池内衬构成。水平支撑将依次通过连接件连接形成圆形结构，垂直支撑件支撑所述圆形结构形成一个支撑框架，再将水池内衬固定在所述支撑框架上形成一个水池主体。这样的水池主体即可实现储存水的地上水池。这种结构的支架水池在充满水之后，水体对于水池主体的压力会很大，这就意味着支撑框架需要承受非常大的压力。

[0004] 然而，传统圆形支架水池的支撑框架所采用的水平支撑件、垂直支撑件以及连接件大多为 D 型管。在实际运用中，D 型管具有如下诸多缺点：由于 D 型管的横截面的形状不对称，使得其制管工艺难度较大，生产工艺难管控。D 型管为不缩口结构，其边管与接头配合间隙较大，导致整体稳定性较差。D 型管的管子形状不对称，其圆弧角较难切割成型，而且相应的制造成本较高，这就造成接头弯管的加工难度较大。另外，D 型管之间的连接方式采用单点扣紧的方式连接，其连接的牢固度和强度较差。因此，由上述 D 型管安装形成的支撑框架的承压能力较低，对于地上水池的性能造成了极大的隐患。

[0005] 综上所述，地上水池的支撑框架的承压性能会直接影响到整个地上水池的稳定性，容易发生水池倒塌和人员受伤的事故。

实用新型内容

[0006] 本实用新型要解决的技术问题是为了克服现有技术中地上水池的支撑框架承压能力差的缺陷，提供一种地上水池。

[0007] 本实用新型是通过下述技术方案来解决上述技术问题的：一种地上水池，其特点在于，所述地上水池包括：支撑框架，包括一系列水平支撑件和垂直支撑件，每个所述水平支撑件和每个所述垂直支撑件均具有椭圆形横截面；以及

[0008] 水池内衬，固定至所述支撑框架，所述水池内衬由所述支撑框架支撑形成水池主体，用于储存水池内的水。

[0009] 较佳地，所述支撑框架还包括多个 T 型接头，用于使所述水平支撑件和所述垂直支撑件联接在一起，所述 T 型接头包括水平管状部件和垂直管状部件，所述垂直管状部件横向于所述水平管状部件，每个所述水平管状部件和每个所述垂直管状部件均具有椭圆形横截面。

[0010] 较佳地，所述多个 T 型接头依次使两个相应的所述水平支撑件联接在一起，以形

成大致圆形的环形结构。

[0011] 较佳地,所述垂直管状部件与相应的所述垂直支撑件联接。

[0012] 较佳地,所述环形结构为椭圆形。

[0013] 较佳地,所述水平管状部件的第一端可拆装地连接至相应的第一水平支撑件的端部,所述水平管状部件的第二端可拆装地连接至相应的第二水平支撑件的端部,相应的所述第一水平支撑件和相应的所述第二水平支撑件通过固定件连接至所述水平管状部件的第一端和所述水平管状部件的第二端,所述固定件位于对应附连点的近侧。

[0014] 较佳地,所述固定件为固定销,所述固定销构造穿过第一组定位孔和相应的第二组定位孔,所述第一组定位孔设置在所述水平管状部件的第一端和所述水平管状部件的第二端,相应的所述第二组定位孔设置在相应的所述水平支撑件的端部,所述固定销使所述水平管状部件和相应的所述水平支撑件锁定在一起。

[0015] 较佳地,所述垂直管状部件通过弹簧负载闭锁件可拆装地连接至相应的所述垂直支撑件,所述弹簧负载闭锁件与所述垂直支撑件的端部联接,所述闭锁件构造与设置在所述垂直管状部件的开口端处的孔卡合。

[0016] 较佳地,所述弹簧负载闭锁件包括销座,所述销座用于容纳弹性元件和定位销,所述销座装配在所述垂直支撑件的一端的内部,并构造使得所述定位销由所述弹性元件向外偏置,以卡合所述孔,所述定位销使所述垂直管状部件和所述垂直支撑件锁定在一起。

[0017] 较佳地,所述地上水池还包括多个张力支撑装置和张力支撑带,所述张力支撑装置联接至所述水池主体的外表面,其中每个所述张力支撑装置联接于两个相邻的所述垂直支撑件之间的外表面,所述张力支撑带交互地穿过所述张力支撑装置,且位于所述垂直支撑件上,环绕所述水池主体的外表面,以保持使所述垂直支撑件贴靠所述水池主体。

[0018] 较佳地,所述张力支撑带设置在所述水池主体上的高度约等于所述水池主体的高度的 1/3 处。

[0019] 较佳地,所述地上水池还包括多个支承基部,所述支承基座联接于所述垂直支撑件的底端。

[0020] 本实用新型还提供了一种地上水池,其特点在于,所述地上水池包括;

[0021] 支撑框架,包括一系列水平支撑件、连接器和 U 型支撑件,每个所述水平支撑件和每个所述连接器均具有圆形横截面,所述 U 型支撑件具有椭圆形横截面;以及

[0022] 水池内衬,固定至所述支撑框架,所述水池内衬通过所述支撑框架支撑形成水池主体,用于储存水池内的水。

[0023] 较佳地,所述水平支撑件由多个所述连接器串联在一起形成环形结构。

[0024] 较佳地,多个所述连接器均为 L 型。

[0025] 较佳地,所述地上水池还包括联接件,所述联接件联接于所述 U 型支撑件的自由端,其中所述联接件使所述 U 型支撑件可拆装地连接至所述环形结构,并以倾斜的方式支撑所述环形结构。

[0026] 较佳地,所述环形结构形成矩形或多边形。

[0027] 较佳地,所述 U 型支撑件的各自由端具有缩小直径部分,所述缩小直径部分具有间隔开的第一组闭锁孔和第二组闭锁孔。

[0028] 较佳地,所述联接件还包括:柔性 V 型销,包括间隔开的第一对凸块和第二对凸

块;以及

[0029] 中空壳体,包括一对孔口,所述柔性销设置在所述U型支撑件的缩小直径部分内,以使得所述第一对凸块延伸穿过所述第二组闭锁孔与所述一对孔口卡合,所述第二对凸块延伸穿过所述第一组闭锁孔。

[0030] 较佳地,所述壳体为具有椭圆形横截面的管子,所述管子的椭圆形横截面与所述U型支撑件的横截面相对应。

[0031] 较佳地,所述地上水池还包括多个支撑带,所述支撑带联接至且设置于所述水池主体的底部,每个所述支撑带联接在所述水池主体的底部和相应所述U型支撑件的水平部分之间。

[0032] 较佳地,每个所述支撑带包括套管,用于使所述U型支撑件的水平部分穿过。

[0033] 本实用新型还提供了一种用于地上水池的支撑框架,其特点在于,所述框架包括:

[0034] 多个水平支撑件,每个所述水平支撑件具有椭圆形横截面;以及

[0035] 多个垂直支撑件,联接于所述多个水平支撑件,每个所述垂直支撑件具有椭圆形横截面;

[0036] 其中水池内衬能固定至所述支撑框架,并且通过所述支撑框架支撑形成水池主体,用于储存水池内的水。

[0037] 较佳地,所述支撑框架还包括多个T型接头,用于使所述水平支撑件和所述垂直支撑件联接在一起,所述T型接头包括水平管状部件和垂直管状部件,所述垂直管状部件横向于所述水平管状部件,每个所述水平管状部件和每个所述垂直管状部件均具有椭圆形横截面。

[0038] 较佳地,所述多个T型接头依次使两个相应的所述水平支撑件联接在一起,以形成大致圆形的环形结构。

[0039] 较佳地,所述垂直管状部件与相应的所述垂直支撑件联接。

[0040] 较佳地,所述环形结构为椭圆形。

[0041] 较佳地,所述水平管状部件的第一端可拆装地连接至相应的第一水平支撑件的端部,所述水平管状部件的第二端可拆装地连接至相应的第二水平支撑件的端部,相应的所述第一水平支撑件和相应的所述第二水平支撑件通过固定件连接至所述水平管状部件的第一端和所述水平管状部件的第二端,所述固定件位于对应附连点的近侧。

[0042] 较佳地,所述固定件为固定销,所述固定销构造成穿过第一组定位孔和相应的第二组定位孔,所述第一组定位孔设置在所述水平管状部件的第一端和所述水平管状部件的第二端,所述第二组定位孔设置在相应的所述水平支撑件的端部,所述固定销使所述水平管状部件和相应的所述水平支撑件锁定在一起。

[0043] 较佳地,所述垂直管状部件通过弹簧负载闭锁件可拆装地连接至相应的所述垂直支撑件,所述弹簧负载闭锁件与所述垂直支撑件的端部联接,所述闭锁件构造成与设置在所述垂直管状部件的开口端处的孔卡合。

[0044] 较佳地,所述弹簧负载闭锁件包括销座,所述销座用于容纳弹性元件和定位销,所述销座装配在所述垂直支撑件的一端的内部,并构造成使得所述定位销由所述弹性元件向外偏置,以卡合所述孔,所述定位销使所述垂直管状部件和所述垂直支撑件锁定在一起。

[0045] 较佳地,所述地上水池还包括多个张力支撑装置和张力支撑带,所述张力支撑装置联接至所述水池主体的外表面,其中每个所述张力支撑装置联接于两个相邻的所述垂直支撑件之间的外表面,所述张力支撑带交互地穿过所述张力支撑装置,且位于所述垂直支撑件上,环绕所述水池主体的外表面,以保持使所述垂直支撑件贴靠所述水池主体。

[0046] 较佳地,所述张力支撑带设置在所述水池主体上的高度约等于所述水池主体的高度的 1/3 处。

[0047] 较佳地,所述地上水池还包括多个支承基部,所述支承基座联接于所述垂直支撑件的底端。

[0048] 本实用新型还提供了一种用于地上水池的支撑框架,其特点在于,所述框架包括:多个水平支撑件,每个所述水平支撑件具有圆形横截面;

[0049] 多个连接器,用于使相应的所述水平支撑件联接在一起,每个连接器为 L 型,且具有圆形横截面;以及

[0050] 多个 U 型支撑件,每个 U 型支撑件具有椭圆形横截面;

[0051] 其中水池内衬能固定至所述支撑框架,并且通过所述支撑框架支撑形成水池主体,用于储存水池内的水。

[0052] 较佳地,所述水平支撑件由多个所述连接器串联在一起形成环形结构。

[0053] 较佳地,所述地上水池还包括联接件,所述联接件联接于所述 U 型支撑件的自由端,其中所述联接件使所述 U 型支撑件可拆装地连接至所述环形结构,并以倾斜的方式支撑所述环形结构。

[0054] 较佳地,所述环形结构形成矩形或多边形。

[0055] 较佳地,所述 U 型支撑件的各自由端具有缩小直径部分,所述缩小直径部分具有间隔开的第一组闭锁孔和第二组闭锁孔。

[0056] 较佳地,所述联接件还包括:柔性 V 型销,包括间隔开的第一对凸块和第二对凸块;以及

[0057] 中空壳体,包括一对孔口,所述柔性销设置在所述 U 型支撑件的缩小直径部分内,以使得所述第一对凸块延伸穿过所述第二组闭锁孔与所述一对孔口卡合,所述第二对凸块延伸穿过所述第一组闭锁孔。

[0058] 较佳地,所述壳体为具有椭圆形横截面的管子,所述管子的椭圆形横截面与所述 U 型支撑件的横截面相对应。

[0059] 较佳地,所述地上水池还包括多个支撑带,所述支撑带联接至且设置于所述水池主体的底部,每个所述支撑带联接在所述水池主体的底部和相应所述 U 型支撑件的水平部分之间。

[0060] 较佳地,每个所述支撑带包括套管,用于使所述 U 型支撑件的水平部分穿过。

[0061] 本实用新型的积极进步效果在于:本实用新型地上水池的支撑框架至少一部分采用横截面为椭圆形的管子,由于椭圆管的横截面形状对称,弯管加工难度小,使得制管难度降低,有效提高了稳定性,有利于品质管控。同时,椭圆管的边管与接头配合间隙小,机械应力大且稳定性强。另外,椭圆管的边管与接头之间采用特制的插销连接,这种连接方式更加牢固,强度更好。因此采用椭圆管制成的支撑框架具有更好的承压性能,提高了地上水池的整体稳定性,使其具有很好的安全性能。

附图说明

- [0062] 图 1 为本实用新型地上水池中支撑框架的实施例一的立体图。
- [0063] 图 2 为本实用新型地上水池中支撑框架的实施例一的主视图。
- [0064] 图 3 为本实用新型地上水池中支撑框架的实施例一的俯视图。
- [0065] 图 4 为本实用新型地上水池中支撑框架的水平支撑杆、垂直支撑杆及 T 型接头的连接结构示意图一。
- [0066] 图 5 为本实用新型地上水池中支撑框架的水平支撑杆、垂直支撑杆及 T 型接头的连接结构示意图二。
- [0067] 图 6 为本实用新型地上水池中支撑框架的水平支撑杆与 T 型接头的连接结构示意图。
- [0068] 图 7 为本实用新型地上水池中支撑框架的用于连接垂直支撑件和 T 型接头的弹簧负载闭锁件的立体图。
- [0069] 图 8 为本实用新型地上水池中支撑框架的用于连接垂直支撑件和 T 型接头的弹簧负载闭锁件的主视图。
- [0070] 图 9 为本实用新型地上水池中支撑框架的用于连接垂直支撑件和 T 型接头的弹簧负载闭锁件的侧视图。
- [0071] 图 10 为本实用新型地上水池中支撑框架的用于连接垂直支撑件和 T 型接头的弹簧负载闭锁件的俯视图。
- [0072] 图 11 为本实用新型地上水池中支撑框架的用于连接垂直支撑件和 T 型接头的弹簧负载闭锁件的分解示意图。
- [0073] 图 12 为本实用新型地上水池的实施例一的立体图。
- [0074] 图 13 为本实用新型地上水池中支撑框架的实施例二的立体图。
- [0075] 图 14 为本实用新型地上水池中支撑框架的实施例二的俯视图。
- [0076] 图 15 为本实用新型地上水池中支撑框架的实施例二的主视图。
- [0077] 图 16 为本实用新型地上水池中支撑框架的实施例二的侧视图。
- [0078] 图 17 为本实用新型地上水池中支撑框架的水平支撑件和 U 型支撑件的连接结构的分解示意图。
- [0079] 图 18 为本实用新型地上水池中支撑框架的水平支撑件的立体图。
- [0080] 图 19 为本实用新型地上水池中支撑框架的水平支撑件的主视图。
- [0081] 图 20 为本实用新型地上水池中支撑框架的 U 型支撑件的立体图。
- [0082] 图 21 为本实用新型地上水池中支撑框架的 U 型支撑件的主视图。
- [0083] 图 22 为本实用新型地上水池中支撑框架的 U 型支撑件联接于水平支撑件的连接结构示意图。
- [0084] 图 23 为本实用新型地上水池中支撑框架的相邻两个水平支撑件之间的连接结构示意图。
- [0085] 图 24 为本实用新型地上水池中支撑框架的用于连接水平支撑件的定位件的立体图。
- [0086] 图 25 为本实用新型地上水池中支撑框架的用于连接水平支撑件的定位件的主视

图。

[0087] 图 26 为本实用新型地上水池中支撑框架的用于连接水平支撑件的定位件的俯视图。

[0088] 图 27 为本实用新型地上水池中支撑框架的用于连接水平支撑件的定位件的侧视图。

[0089] 图 28 为本实用新型地上水池的实施例二的立体图。

[0090] 图 29 为本实用新型地上水池中支撑框架的实施例三的立体图。

[0091] 图 30 为图 29 中 A 部分的放大图。

[0092] 图 31 为本实用新型地上水池中支撑框架的实施例三的主视图。

[0093] 图 32 为本实用新型地上水池中支撑框架的实施例三的侧视图。

[0094] 图 33 为本实用新型地上水池中支撑框架的实施例三的俯视图。

[0095] 图 34 为本实用新型地上水池的实施例三的立体图。

[0096] 图 35 为本实用新型地上水池中支撑框架的实施例四的结构示意图。

具体实施方式

[0097] 下面结合附图给出本实用新型的较佳实施例,以详细说明本实用新型的技术方案。

[0098] 实施例一:

[0099] 图 1 为本实用新型地上水池中支撑框架的实施例一的立体图。图 2 为本实用新型地上水池中支撑框架的实施例一的主视图。图 3 为本实用新型地上水池中支撑框架的实施例一的俯视图。

[0100] 如图 1 至图 3 所示,本实施例公开了一种用于地上水池的支撑框架 10,支撑框架 10 包括多个水平支撑件 11 和多个垂直支撑件 12。其中,每个水平支撑件 11 具有椭圆形横截面,每个垂直支撑件 12 具有椭圆形横截面,并且垂直支撑件 12 联接于多个水平支撑件 11。优选地,支撑框架 10 还包括多个 T 型接头 13,其主要用于将水平支撑件 11 和垂直支撑件 12 联接在一起。

[0101] 图 4 为本实用新型地上水池中支撑框架的水平支撑杆、垂直支撑杆及 T 型接头的连接结构示意图一。图 5 为本实用新型地上水池中支撑框架的水平支撑杆、垂直支撑杆及 T 型接头的连接结构示意图二。图 6 为本实用新型地上水池中支撑框架的水平支撑杆与 T 型接头的连接结构示意图。

[0102] 如图 4 至图 6 所示,T 型接头 13 包括水平管状部件 130 和垂直管状部件 131,且垂直管状部件 131 横向地设置在水平管状部件 130 上。特别优选地,垂直管状部件 131 与水平管状部件 130 之间为横向垂直的。此处,水平管状部件 130 和垂直管状部件 131 均具有椭圆形横截面。

[0103] 其中,多个 T 型接头 13 通过水平管状部件 130 依次使两个相邻的水平支撑件 11 联接在一起,从而使得多个水平支撑件 11 相互联接形成大致为圆形的环形结构(如图 3 所示)。具体地说,如图 4 和图 5 所示,每一 T 型接头 13 的水平管状部件 130 的第一端 132 以可拆装的方式连接至相应的第一水平支撑件 110 的端部 112,而水平管状部件 130 的第二端 133 同样也以可拆装的方式连接至相应的第二水平支撑件 111 的端部 113。此处,相应的

第一水平支撑件 110 和相应的第二水平支撑件 111 分别通过一个固定件连接至水平管状部件 130 的第一端 132 和水平管状部件 130 的第二端 133, 并且为了保证联接的稳定性与牢固度, 需要将所述固定件设置在对应附连点的近侧。

[0104] 进一步具体地, 所述固定件可以优选为固定销 14。如图 4 至图 6 所示, 在水平管状部件 130 的第一端 132 和第二端 133 上开设有第一组定位孔 134, 在相应的第一水平支撑件 110 的端部 112 和第二水平支撑件 111 的端部 113 上开设有第二组定位孔 114。当 T 型接头 13 的水平管状部件 130 的第一端 132 和第二端 133 分别与第一水平支撑件 110 的端部 112 和第二水平支撑件 111 的端部 113 对接时, 使得第一组定位孔 134 和第二组定位孔 114 相应地对准, 然后将固定销 14 穿过第一组定位孔 134 和相应的第二组定位孔 114 (如图 6 所示), 从而使得 T 型接头 13 的水平管状部件 130 和相应的水平支撑件 (此处为第一水平支撑件 110 和第二水平支撑件 111) 锁定 (例如卡锁) 在一起。另外, 在固定销 14 与水平管状部件 130 之间加设垫片 140, 可以有效地减小固定销 14 与水平管状部件 130 之间的磨损及增加两者之间的稳固性。

[0105] 同时, T 型接头 13 的垂直管状部件 131 与相应的垂直支撑件 12 联接。进一步具体地, 如图 4 和图 5 所示, 每一 T 型接头 13 的垂直管状部件 131 通过弹簧负载闭锁件 15 采用可拆装地方式连接至相应的垂直支撑件 12。在进行连接时, 将弹簧负载闭锁件 15 与垂直支撑件 12 的端部 121 联接, 此处端部 121 的开口端处设有孔 122, 将弹簧负载闭锁件 15 设置在垂直管状部件 131 的端部 121 内, 并与孔 122 卡合锁紧。

[0106] 图 7 为本实用新型地上水池中支撑框架的用于连接垂直支撑件和 T 型接头的弹簧负载闭锁件的立体图。图 8 为本实用新型地上水池中支撑框架的用于连接垂直支撑件和 T 型接头的弹簧负载闭锁件的主视图。图 9 为本实用新型地上水池中支撑框架的用于连接垂直支撑件和 T 型接头的弹簧负载闭锁件的侧视图。图 10 为本实用新型地上水池中支撑框架的用于连接垂直支撑件和 T 型接头的弹簧负载闭锁件的俯视图。图 11 为本实用新型地上水池中支撑框架的用于连接垂直支撑件和 T 型接头的弹簧负载闭锁件的分解示意图。

[0107] 如图 7 至图 11 所示, 弹簧负载闭锁件 15 包括销座 150。此处销座 150 主要用于容纳弹性元件 151 和定位销 152。销座 150 具有中空的圆环形外壁 153, 沿圆环形外壁 153 的一端向外凸出设置一个容纳腔 154, 弹性元件 151 安装在容纳腔 154, 使得定位销 152 的一端穿设在容纳腔 154 内与弹性元件 151 相抵, 另一端向外偏置。圆环形外壁 153 的形状与垂直支撑件 12 的端部 121 的横截面形状相匹配 (如图 4 和图 5 所示)。当弹簧负载闭锁件 15 装配至垂直支撑件 12 的端部 121 内时, 将销座 150 的圆环形外壁 153 嵌设入垂直支撑件 12 的端部 121 的内部, 使得定位销 152 在弹性元件 151 的弹力作用下卡入垂直支撑件 12 的端部 121 上的孔 122 内。T 型接头 13 的垂直管状部件 131 的端部开口处设有孔 135, 将垂直管状部件 131 与垂直支撑件 12 的端部 121 对接, 使得垂直管状部件 131 上的孔 135 与垂直支撑件 12 上的孔 122 对准, 从而使得定位销 152 穿过孔 135, 这样即可通过定位销 152 使 T 型接头 13 的垂直管状部件 131 和垂直支撑件 12 锁定 (例如卡锁) 在一起。

[0108] 图 12 为本实用新型地上水池的实施例一的立体图。如图 12 所示, 根据上述支撑框架的结构, 本实施例提供了一种采用上述支撑框架结构的地上水池 100, 其包括支撑框架 10 (如图 1 所示) 和水池内衬 16, 水池内衬 16 固定至支撑框架 10 上, 通过整个支撑框架 10 的支撑形成用于储存水的水池主体。优选地可以将水池内衬 16 的上部套设在水平支撑件

11 上,水池内衬 16 的周边贴靠在垂直支撑件 12 上。

[0109] 另外,为了进一步固定水池内衬 16,地上水池 100 还包括了多个张力支撑装置 17 和张力支撑带 18,将张力支撑装置 17 联接在水池主体的外表面。优选地,每个张力支撑装置 17 联接于两个相邻的垂直支撑件 12 之间的所述水池主体的外表面,张力支撑带 18 交互地穿过张力支撑装置 17,并且位于垂直支撑件 12 上,环绕所述水池主体的外表面,以保持使得垂直支撑件 12 贴靠所述水池主体,从而提高所述水池主体的张紧力。特别优选地,张力支撑带 18 设置在所述水池主体上的高度约等于所述水池主体的高度的 1/3 处,可以有效地加固所述水池主体的下部结构,使其具有更大的承压力。此外,地上水池 100 还包括多个支承基座 120,将支承基座 120 联接于垂直支撑件 12 的底端,用于增加地上水池 100 的整体稳固性。

[0110] 实施例二:

[0111] 图 13 为本实用新型地上水池中支撑框架的实施例二的立体图。图 14 为本实用新型地上水池中支撑框架的实施例二的俯视图。图 15 为本实用新型地上水池中支撑框架的实施例二的主视图。图 16 为本实用新型地上水池中支撑框架的实施例二的侧视图。

[0112] 如图 13 至图 16 所示,本实施例公开了另一种用于地上水池的支撑框架 20,其包括多个水平支撑件 21、多个连接器 22 和多个 U 型支撑件 23。每个水平支撑件 21 具有圆形横截面。连接器 22 用于使相应的水平支撑件 21 联接在一起,并且每个连接器 22 具有圆形横截面。U 型支撑件 23 的自由端与相应的水平支撑件 21 连接,且每个 U 型支撑件 23 具有椭圆形横截面。水平支撑件 21 由多个连接器 22 串联在一起形成环形结构,此处连接器 22 可优选为 L 型,使得所述环形结构形成为矩形。当然,连接器 22 也可以为其他形状,例如 V 型,使得所述环形结构形成为多边形。本实施例中以所述环形结构为矩形为例。

[0113] 图 17 为本实用新型地上水池中支撑框架的水平支撑件和 U 型支撑件的连接结构的分解示意图。如图 17 所示,当所述环形结构为矩形或多边形时,所述矩形或多边形的侧边由水平支撑件 21 两两依次串联形成,所述矩形的侧边拐角部分通过 L 型连接器 22 连接水平支撑件 21 形成。此外,每一水平支撑件 21 与相应的 U 型支撑件 23 连接。其中,水平支撑件 21 之间通过定位件 25 相互固定,同样水平支撑件 21 与连接器 22 之间也通过定位件 25 相互固定,而 U 型支撑件 23 与水平支撑件 21 之间需要通过联接件 24 相互连接固定。

[0114] 图 18 为本实用新型地上水池中支撑框架的水平支撑件的立体图。图 19 为本实用新型地上水池中支撑框架的水平支撑件的主视图。如图 18 和图 19 所示,进一步具体地,水平支撑件 21 的一端 211 设置为缩小直径的部分,并在一端 211 上开设有第一孔 212,水平支撑件 21 的另一端 213 开设有第二孔 215。另外在水平支撑件 21 的杆件表面上开设有连接口 214,用于连接 U 型支撑件 23。

[0115] 图 20 为本实用新型地上水池中支撑框架的 U 型支撑件的立体图。图 21 为本实用新型地上水池中支撑框架的 U 型支撑件的主视图。如图 20 和图 21 所示,U 型支撑件 23 的各自由端具有缩小直径部分 231,在缩小直径部分 231 上分别具有间隔开的第一组闭锁孔 232 和第二组闭锁孔 233。

[0116] 图 22 为本实用新型地上水池中支撑框架的 U 型支撑件联接于水平支撑件的连接结构示意图。如图 22 所示,结合图 17,联接件 24 联接于 U 型支撑件 23 的自由端的缩小直径部分 231 内,通过联接件 24 使 U 型支撑件 23 采用可拆装的方式连接至所述环形结构,并

且 U 型支撑件 23 以倾斜的方式支撑所述环形结构,例如 U 型支撑件 23 沿所述环形结构向外倾斜 30° 。进一步具体地,联接件 24 包括柔性 V 型销 241 和中空壳体 242,其中柔性 V 型销 241 上设有相互间隔开的第一对凸块 243 和第二对凸块 244。中空壳体 242 上包括一对孔口 245,将中空壳体 242 套设在 U 型支撑件 23 的缩小直径部分 231 外部,使得第一组闭锁孔 232 和第二组闭锁孔 233 分别与对应的孔口 245 对准。柔性 V 型销 241 设置在 U 型支撑件 23 的缩小直径部分 231 内,以使得第一对凸块 243 延伸穿过第二组闭锁孔 233 与对应的孔口 245 卡合,第二对凸块 244 延伸穿过第一组闭锁孔 232,这样即可通过联接件 24 使 U 型支撑件 23 和水平支撑件 21 锁定(例如卡锁)在一起。此处,中空壳体 242 为具有椭圆形横截面的管子,所述管子的椭圆形横截面与 U 型支撑件 23 的横截面相对应,从而使得 U 型支撑件 23 与水平支撑件 21 之间连接更加地牢固。

[0117] 图 23 为本实用新型地上水池中支撑框架的相邻两个水平支撑件之间的连接结构示意图。如图 23 所示,结合图 17 至图 19,所述矩形或多边形的支撑框架的侧边由水平支撑件 21 通过定位件 25 两两依次串联形成。定位件 25 套设在其中一水平支撑件 21 的一端 211 的缩小直径部分上,另一相邻水平支撑件 21 的另一端 213 套设在定位件 25 的外部,使得两个相邻的水平支撑件 21 之间相互固定。

[0118] 图 24 为本实用新型地上水池中支撑框架的用于连接水平支撑件的定位件的立体图。图 25 为本实用新型地上水池中支撑框架的用于连接水平支撑件的定位件的主视图。图 26 为本实用新型地上水池中支撑框架的用于连接水平支撑件的定位件的俯视图。图 27 为本实用新型地上水池中支撑框架的用于连接水平支撑件的定位件的侧视图。

[0119] 如图 24 至图 27 所示,结合图 17 至图 19,定位件 25 为一中空套件 251,其具有圆形横截面的管子,所述管子的圆形横截面与水平支撑件 21 的缩小直径部分的横截面相对应。定位件 25 的一端具有环形凸台 252,环形凸台 252 的横截面与水平支撑件 21 的横截面相对于。定位件 25 的另一端设有锁紧扣 253。在进行相邻两个水平支撑件 21 的连接时,定位件 25 的一端套设在其中一水平支撑件 21 的一端 211 的缩小直径部分上,另一相邻水平支撑件 21 的另一端 213 套设在定位件 25 的外部,其锁紧扣 253 穿过水平支撑件 21 的另一端 213 上的第二孔 215,这样就可以实现两个相邻的水平支撑件 21 之间的锁紧。

[0120] 同理,L 型连接器 22 与相应的水平支撑件 21 也通过定位件 25 相互锁紧固定。其具体实施方式为:定位件 25 的一端套设在 L 型连接器 22 的端部,水平支撑件 21 的另一端 213 套设在定位件 25 上,使得锁紧扣 253 穿过水平支撑件 21 的另一端 213 上的第二孔 215,即实现水平支撑件 21 与 L 型连接器 22 的相互锁紧(图中未示)。

[0121] 图 28 为本实用新型地上水池的实施例二的立体图。如图 28 所示,根据上述支撑框架的结构,本实施例提供了一种采用上述支撑框架结构的地上水池 200,其包括支撑框架 20(如图 13 所示)和水池内衬 26,水池内衬 26 固定至支承框架 20 上,通过整个支撑框架 20 的支撑形成用于储存水的水池主体。优选地可以将水池内衬 26 的上部套设在水平支撑件 21 上,水池内衬 26 的周边贴靠在 U 型支撑件 23 上。

[0122] 另外,为了进一步固定水池内衬 26,地上水池 200 还包括了多个支撑带 27,支撑带 27 联接至且设置于所述水池主体的底部,每个支撑带 27 联接在所述水池主体的底部和相应的 U 型支撑件 23 的水平部分之间。特别地,为了进一步提高支撑带 27 的支撑力度,每个支撑带 27 包括套管 271,U 型支撑件 23 的水平部分穿过支撑带 27 的套管 271,将整个支撑

带 27 绷紧。

[0123] 实施例三：

[0124] 图 29 为本实用新型地上水池中支撑框架的实施例三的立体图。图 30 为图 29 中 A 部分的放大图。图 31 为本实用新型地上水池中支撑框架的实施例三的主视图。图 32 为本实用新型地上水池中支撑框架的实施例三的侧视图。图 33 为本实用新型地上水池中支撑框架的实施例三的俯视图。

[0125] 如图 29 至图 33 所示，本实施例公开了又一种用于地上水池的支撑框架 30，其包括多个水平支撑件 31、多个垂直支撑件 32 和多个 U 型支撑件 34。其中，每个水平支撑件 31 具有椭圆形横截面，每个垂直支撑件 32 具有椭圆形横截面，并且垂直支撑件 32 联接于多个水平支撑件 31。

[0126] 支撑框架 30 还包括多个 T 型接头 33，其主要用于将水平支撑件 31 和垂直支撑件 32 联接在一起。T 型接头 33 包括水平管状部件 330 和垂直管状部件 331，且垂直管状部件 331 横向地设置在水平管状部件 330 上。特别优选地，垂直管状部件 331 与水平管状部件 330 之间为横向垂直的。此处，水平管状部件 330 和垂直管状部件 331 均具有椭圆形横截面。多个 T 型接头 33 通过水平管状部件 330 依次使两个相邻的水平支撑件 31 联接在一起。同时，至少有部分相邻的水平支撑件 31 之间通过定位件 35 串联。这样通过 T 型接头 33 和定位件 35 可以使得多个水平支撑件 31 相互联接形成大致为椭圆形的环形结构。

[0127] 具体地说，如图 30 所示，每一 T 型接头 33 的水平管状部件 330 的两端 332 以可拆装的方式连接至相应的水平支撑件 31 的端部。此处，相应的水平支撑件 31 分别通过一个固定件连接至水平管状部件 330 的两端 332，并且为了保证联接的稳定性与牢固度，需要将所述固定件设置在对应附连点的近侧。同时，T 型接头 33 的垂直管状部件 331 与相应的垂直支撑件 32 联接。每一 T 型接头 33 的垂直管状部件 331 通过弹簧负载闭锁件采用可拆装地方式连接至相应的垂直支撑件 32。

[0128] 值得注意的是，本实施例中 T 型接头 33 的结构与实施例一中 T 型接头 13 相同，T 型接头 33 联接于水平支撑件 31 和垂直支撑件 32 的连接方式与实施例一中相应的连接方式相同。本实施例中定位件 35 的结构与实施例二中定位件 25 相同，定位件 35 与水平支撑件 31 的连接方式与实施例一中相应的连接方式相同，此处均不再赘述。

[0129] 另外，U 型支撑件 34 通过联接件采用可拆装的方式连接至所述环形结构，并且 U 型支撑件 34 以倾斜的方式支撑所述环形结构，例如 U 型支撑件 34 沿所述环形结构向外倾斜 30° 。也就是说，U 型支撑件 34 的自由端与相应的水平支撑件 31 联接，且每个 U 型支撑件 34 具有椭圆形横截面。值得注意的是，本实施例中 U 型支撑件 34 的结构与实施例二中 U 型支撑件 23 相同，U 型支撑件 34 联接于水平支撑件 31 的连接方式与实施例二中相应的连接方式相同，此处不再赘述。

[0130] 图 34 为本实用新型地上水池的实施例三的立体图。如图 34 所示，根据上述支撑框架的结构，本实施例提供了一种采用上述支撑框架结构的地上水池 300，其包括支撑框架 30（如图 29 所示）和水池内衬 36，水池内衬 36 固定至支撑框架 30 上，通过整个支撑框架 30 的支撑形成用于储存水的水池主体。优选地可以将水池内衬 36 的上部套设在水平支撑件 31 上，水池内衬 36 的周边贴靠在垂直支撑件 32 上。

[0131] 为了进一步固定水池内衬 36，地上水池 300 还包括了多个张力支撑装置 37 和张

力支撑带 38, 将张力支撑装置 37 联接在水池主体的外表面。优选地, 每个张力支撑装置 37 联接于两个相邻的垂直支撑件 32 之间的所述水池主体的外表面, 张力支撑带 38 交互地穿过张力支撑装置 37, 并且位于垂直支撑件 32 上, 环绕所述水池主体的外表面, 以保持使得垂直支撑件 32 靠近所述水池主体, 从而提高所述水池主体的张紧力。特别优选地, 张力支撑带 38 设置在所述水池主体上的高度约等于所述水池主体的高度的 $1/3$ 处, 可以有效地加固所述水池主体的下部结构, 使其具有更大的承压力。此外, 地上水池 300 还包括多个支承基部 320, 将支承基座 320 联接于垂直支撑件 32 的底端, 用于增加地上水池 300 的整体稳固性。

[0132] 另外, 地上水池 300 还包括了多个支撑带 39, 支撑带 39 联接至且设置于所述水池主体的底部, 每个支撑带 39 联接在所述水池主体的底部和相应的 U 型支撑件 34 的水平部分之间。特别地, 为了进一步提高支撑带 39 的支撑力度, 每个支撑带 39 包括套管 391, U 型支撑件 34 的水平部分穿过支撑带 39 的套管 391, 将整个支撑带 39 绷紧。

[0133] 实施例四:

[0134] 图 35 为本实用新型地上水池中支撑框架的实施例四的结构示意图。如图 35 所示, 本实施例公开了又一种用于地上水池的支撑框架 40, 本实施例的结构与实施例三基本相同, 其不同之处在于: 支撑框架 40 包括多个水平支撑件 41、多个弧形支撑件 42、多个垂直支撑件 (图中未示) 和多个 U 型支撑件 44。其中, 每个水平支撑件 41、每个弧形支撑件 42、每个 U 型支撑件 44 及所述垂直支撑件均具有椭圆形横截面, 并且所述垂直支撑件联接于多个弧形支撑件 42, U 型支撑件 44 以倾斜地方式联接于水平支撑件 41 上。

[0135] 支撑框架 40 还包括多个 T 型接头 43, T 型接头 43 包括水平管状部件和垂直管状部件, 且所述垂直管状部件横向地设置在所述水平管状部件上。特别优选地, 所述垂直管状部件与所述水平管状部件之间为横向垂直的。此处, 所述水平管状部件和所述垂直管状部件均具有椭圆形横截面。多个 T 型接头 43 通过所述水平管状部件依次使两个相邻的弧形支撑件 42 联接在一起。同时, 水平支撑件 41 之间通过定位件 45 串联。这样通过 T 型接头 43 和定位件 45 可以使得多个水平支撑件 41 和多个弧形支撑件 42 相互联接形成椭圆形的环形结构。

[0136] 值得注意的是, 本实施例中 T 型接头 43 的结构与实施例一中 T 型接头 13 相同, T 型接头 43 联接于弧形支撑件 42 和所述垂直支撑件的连接方式与实施例一中相应的连接方式相同。本实施例中定位件 45 的结构与实施例二中定位件 25 相同, 定位件 45 与水平支撑件 41 的连接方式与实施例一中相应的连接方式相同。本实施例中 U 型支撑件 44 的结构与实施例二中 U 型支撑件 23 相同, U 型支撑件 44 联接于水平支撑件 41 的连接方式与实施例二中相应的连接方式相同, 此处均不再赘述。

[0137] 综上所述, 本实用新型地上水池通过对支撑框架的结构进行改进, 实现了更加稳固且承压能力更强的地上水池结构。其中, 支撑框架的至少一部分采用横截面为椭圆形的管子, 由于椭圆管的横截面形状对称, 使得制管难度降低, 有效提高了稳定性。椭圆管的边管与接头配合间隙小, 机械应力大且稳定性强。另外, 椭圆管的边管与接头之间采用特制的插销连接, 这种连接方式更加牢固, 强度更好。因此本实用新型地上水池具有更好的承压性能, 提高了整体稳定性和安全性能。

[0138] 虽然以上描述了本实用新型的具体实施方式, 但是本领域的技术人员应当理解,

这些仅是举例说明,本实用新型的保护范围是由所附权利要求书限定的。本领域的技术人员在不背离本实用新型的原理和实质的前提下,可以对这些实施方式作出多种变更或修改,但这些变更和修改均落入本实用新型的保护范围。

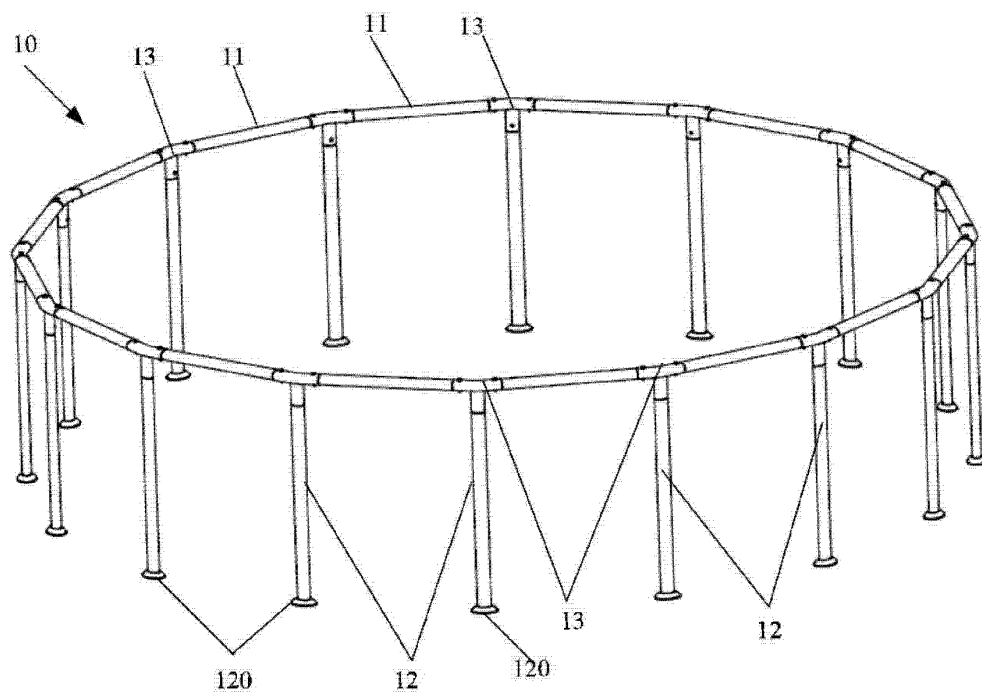


图 1

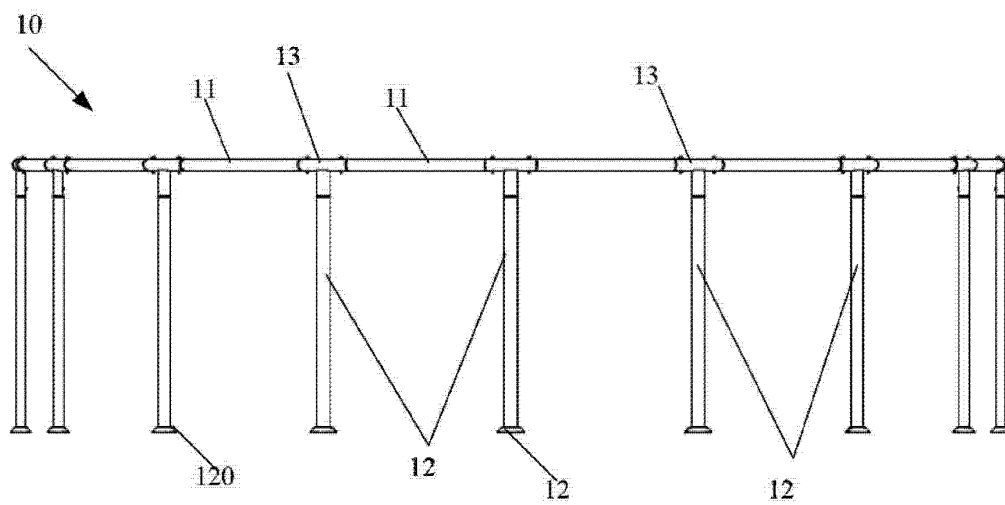


图 2

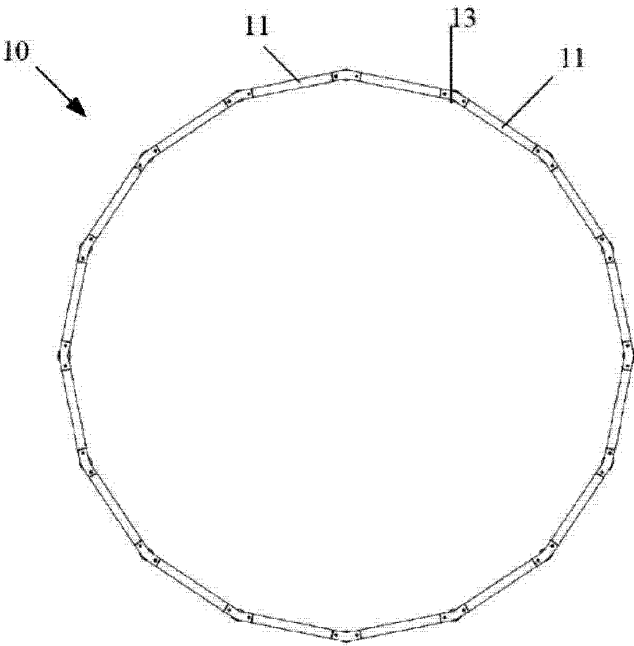


图 3

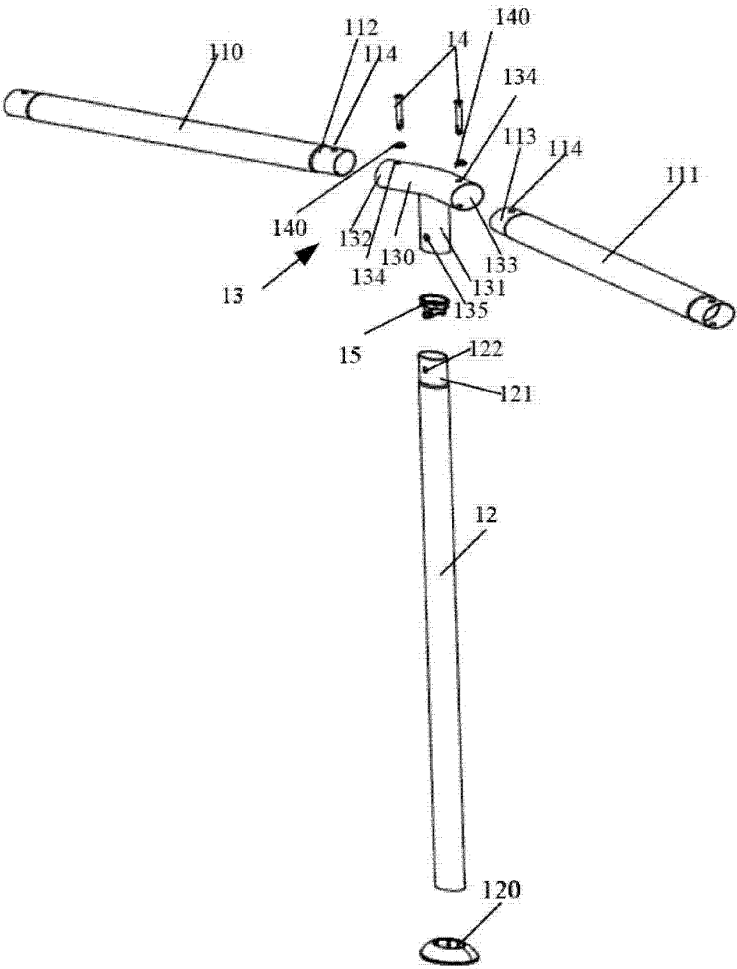


图 4

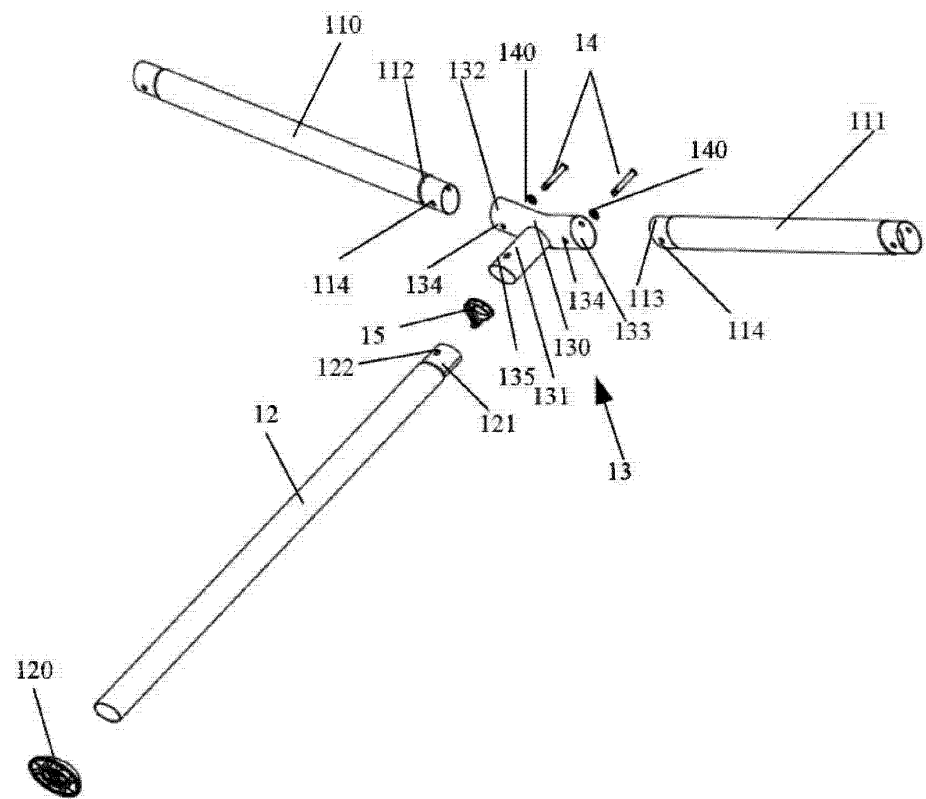


图 5

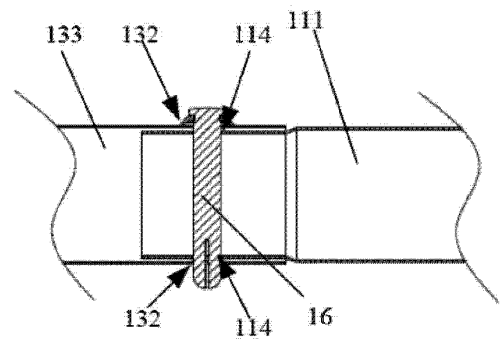


图 6

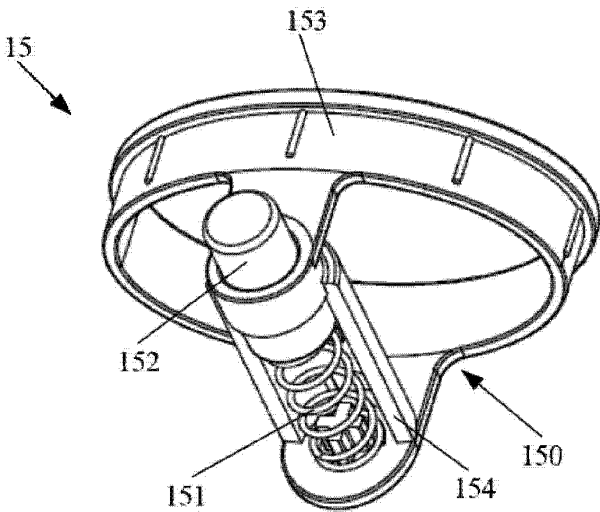


图 7

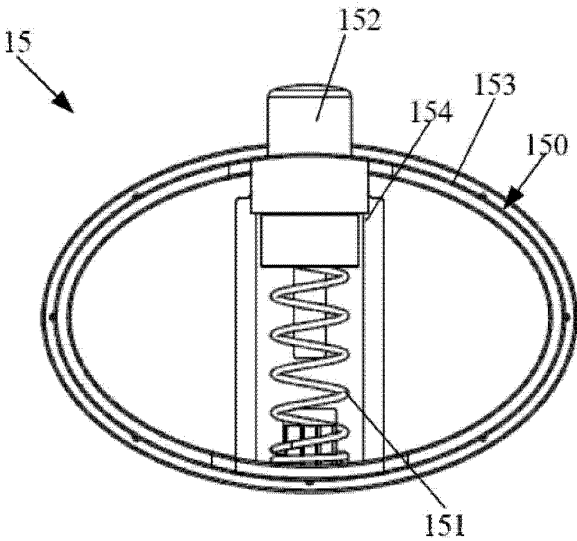


图 8

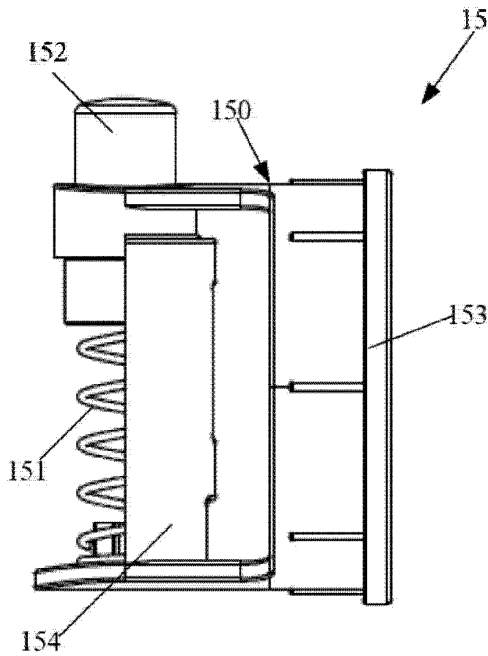


图 9

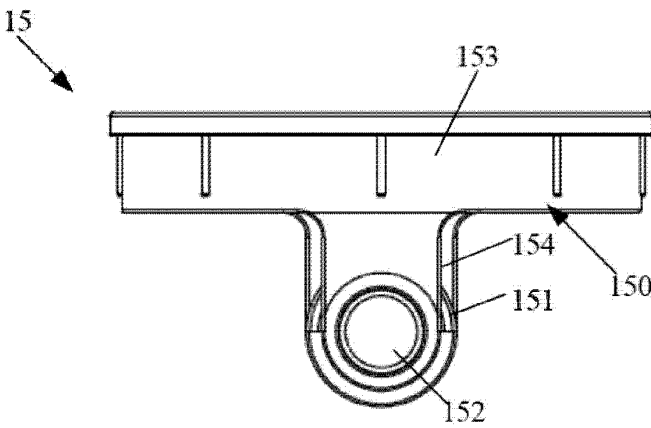


图 10

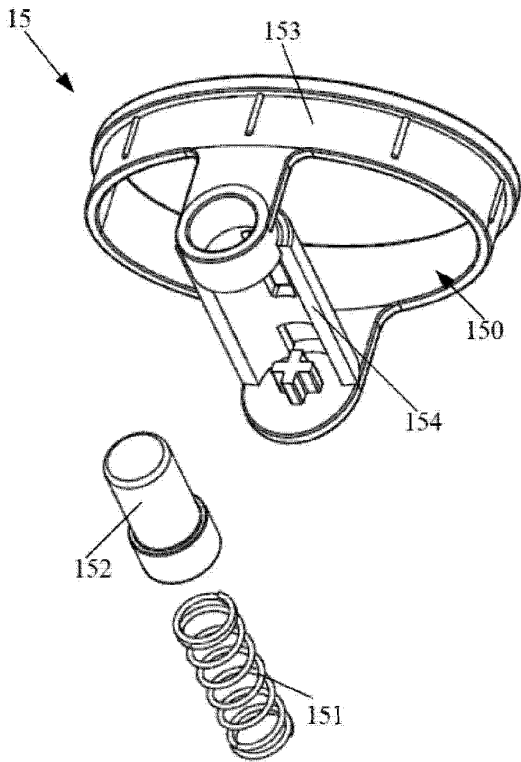


图 11

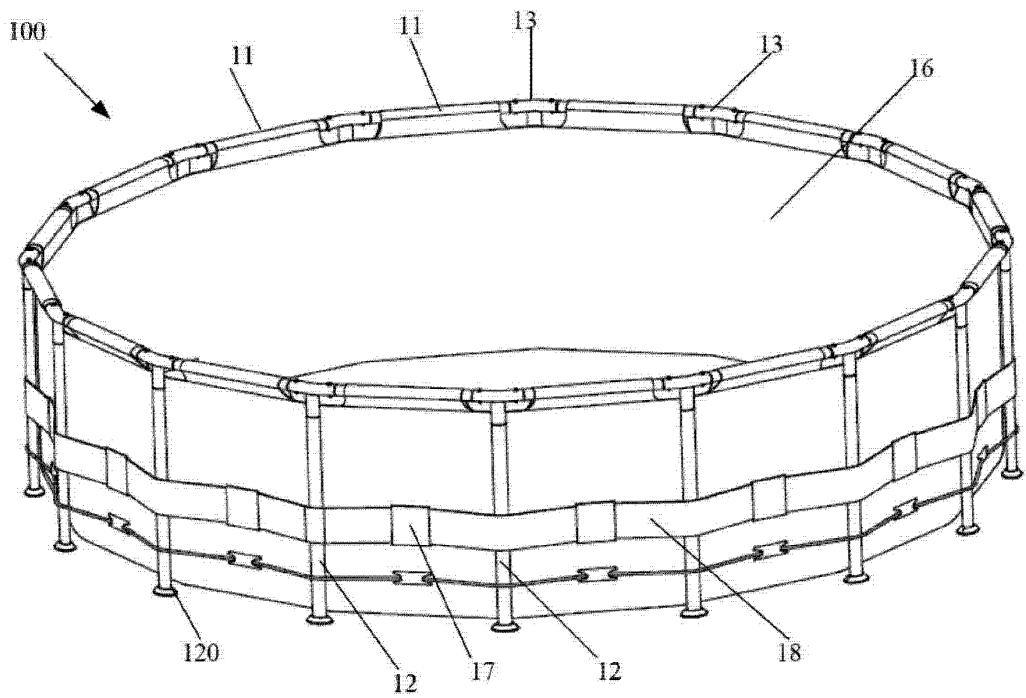


图 12

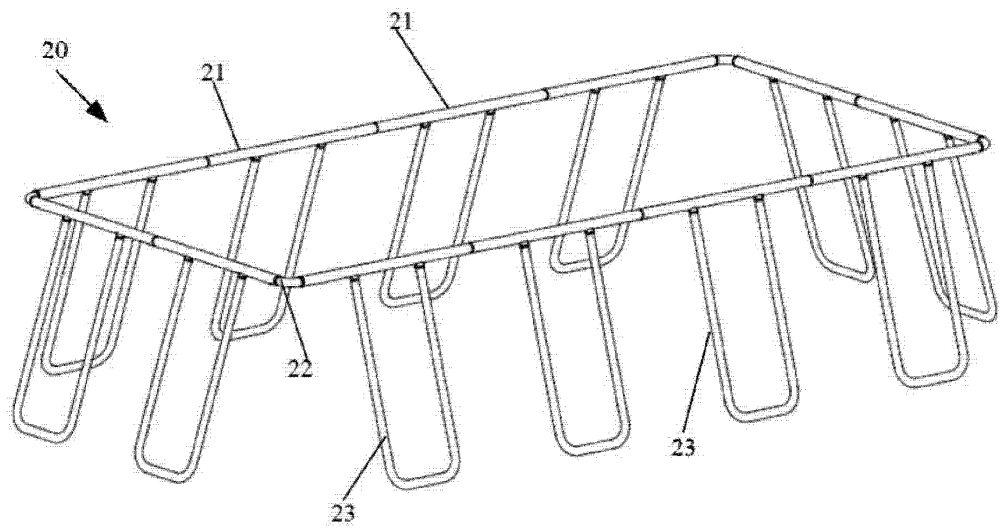


图 13

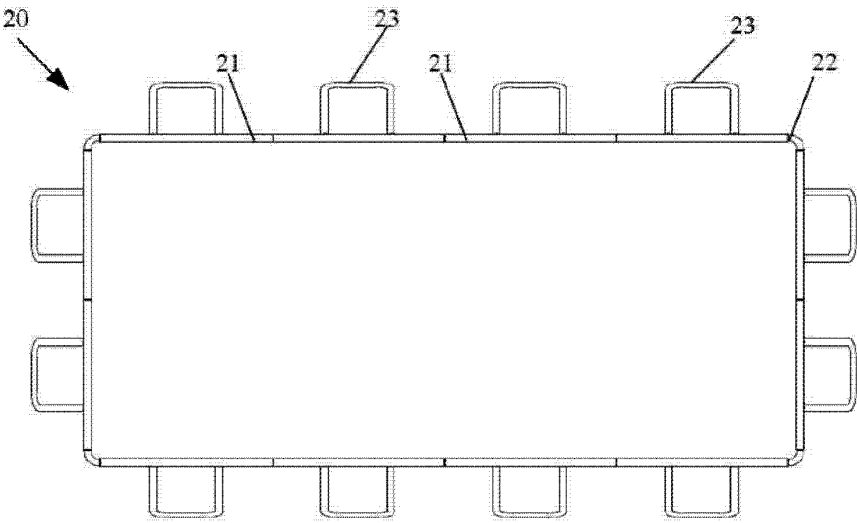


图 14

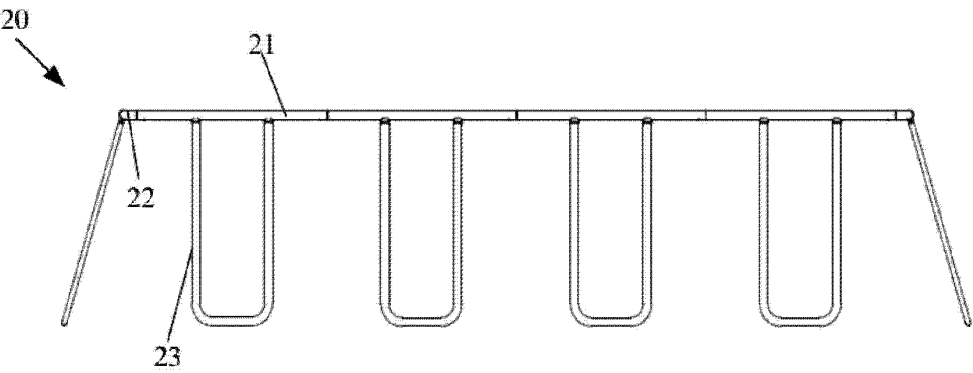


图 15

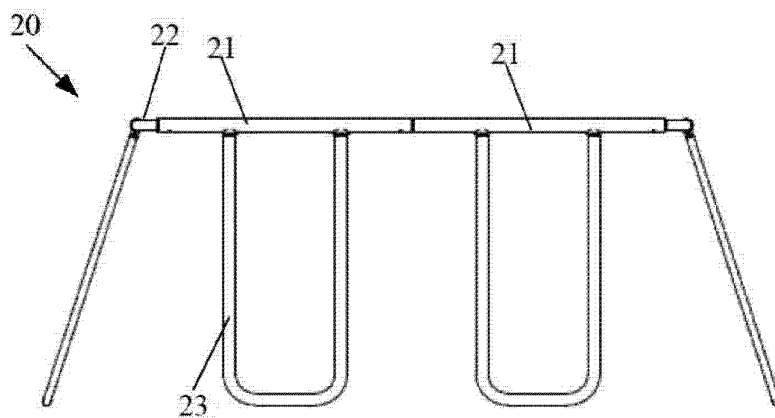


图 16

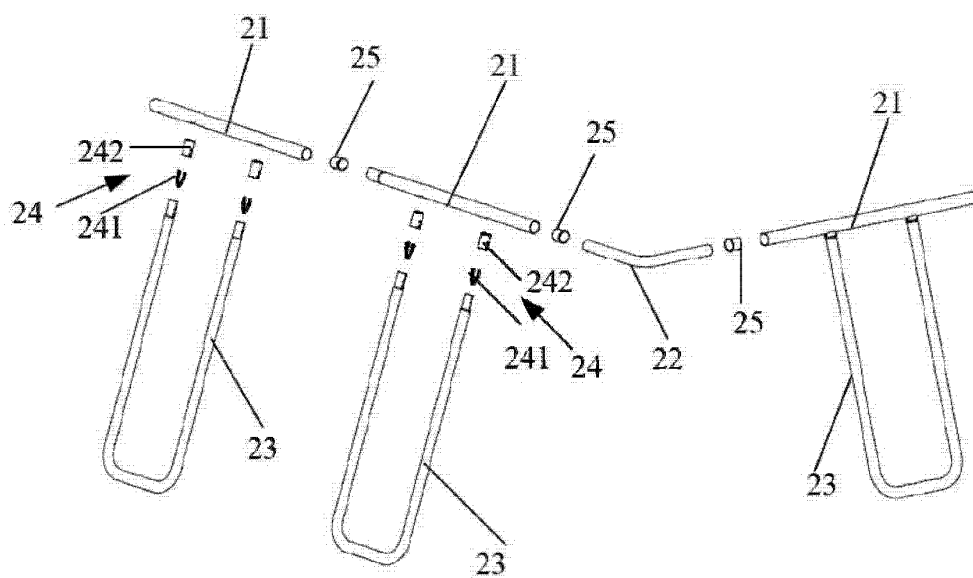


图 17

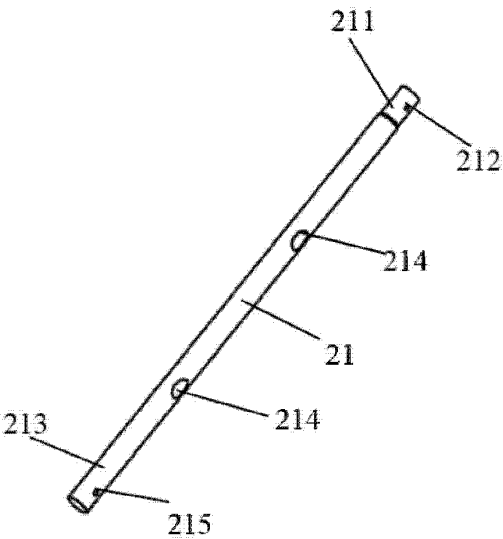


图 18

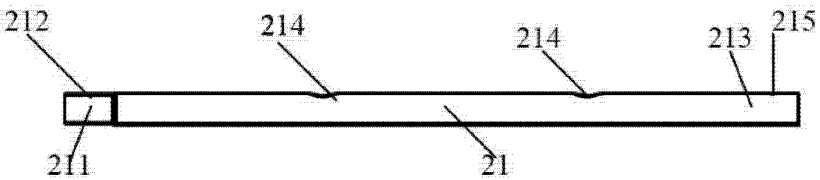


图 19

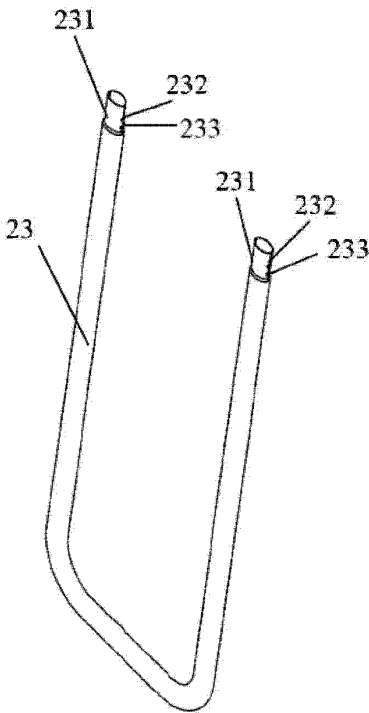


图 20

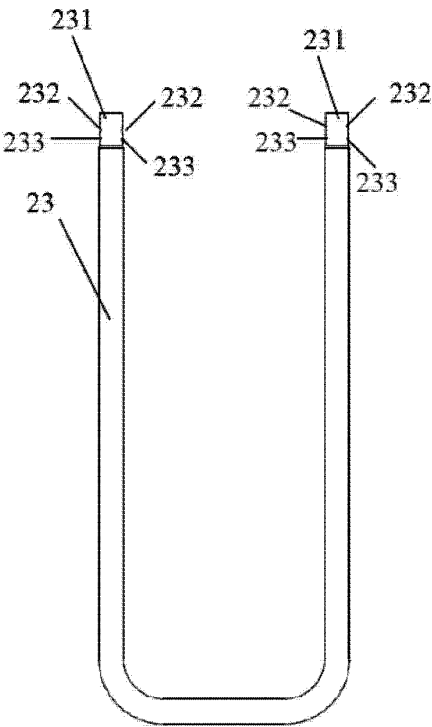


图 21

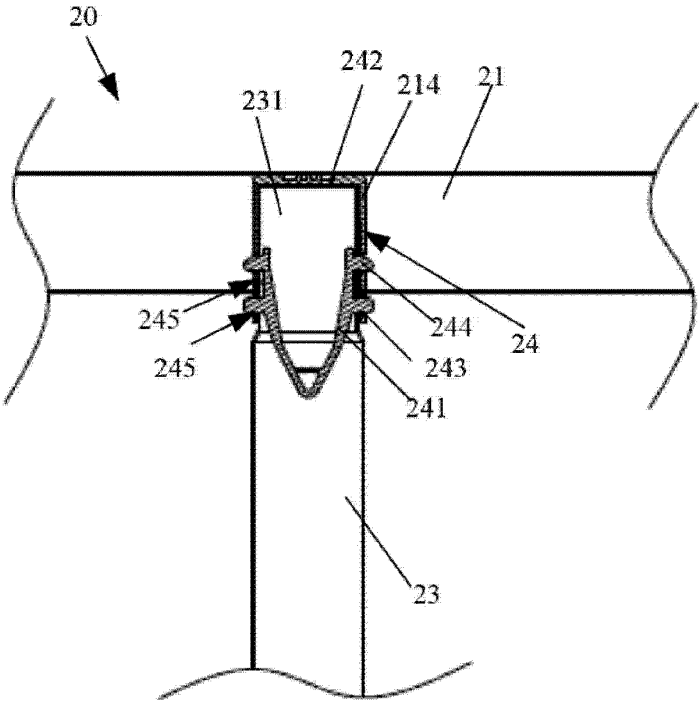


图 22

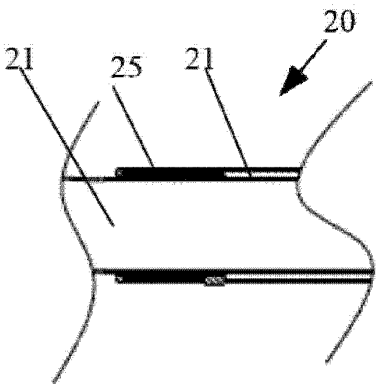


图 23

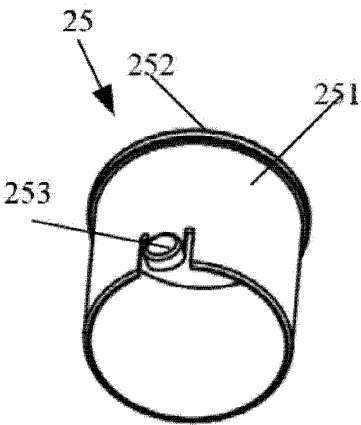


图 24

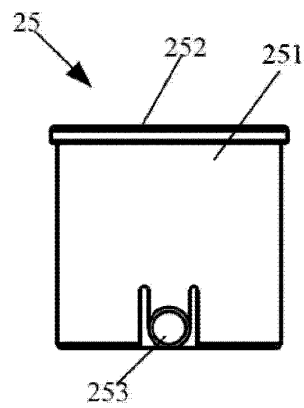


图 25

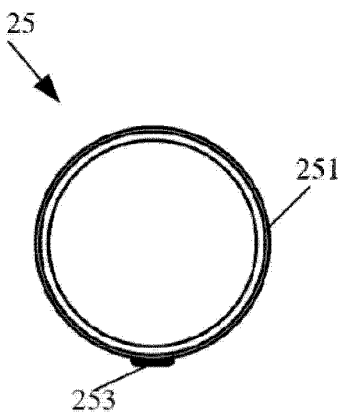


图 26

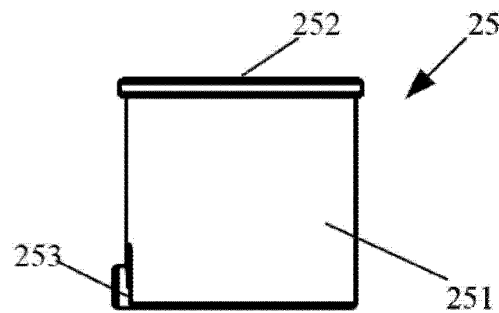


图 27

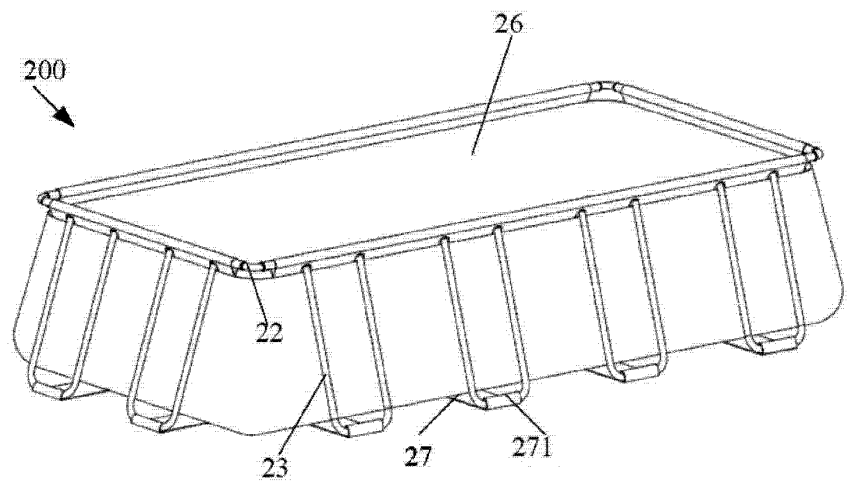


图 28

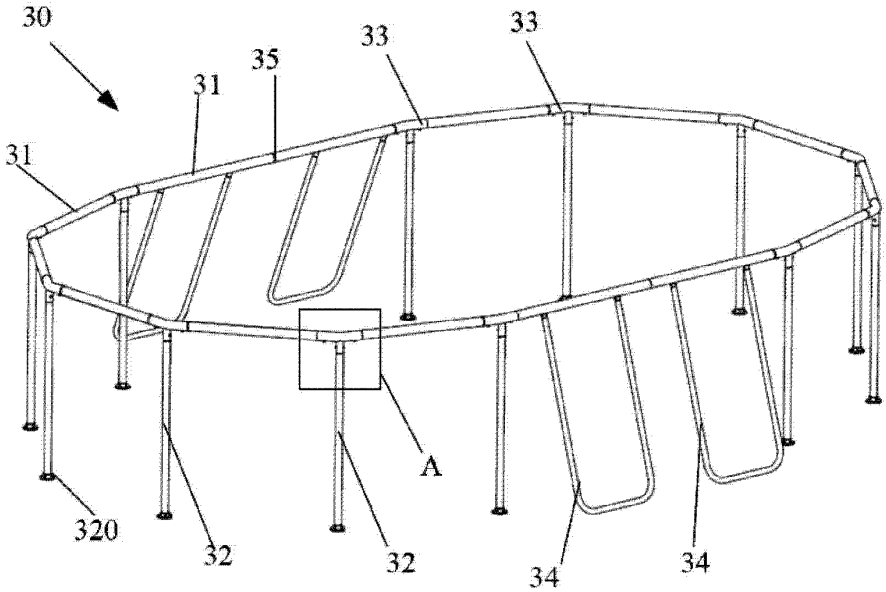


图 29

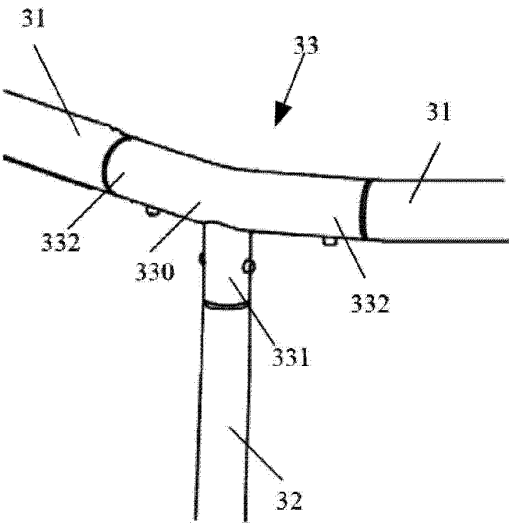


图 30

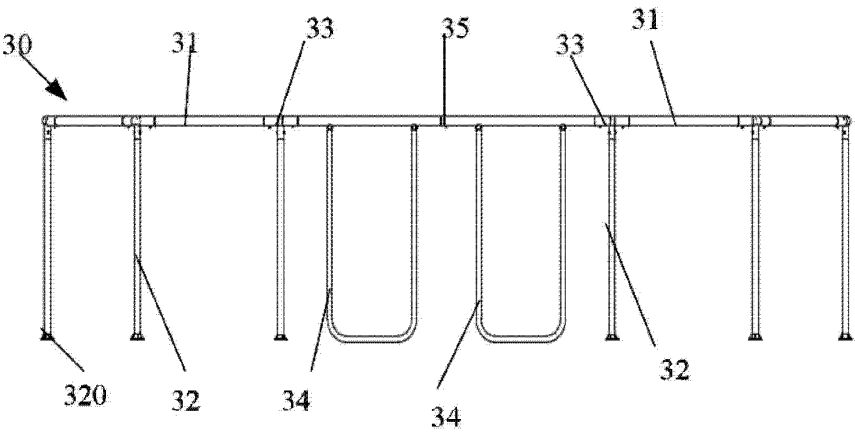


图 31

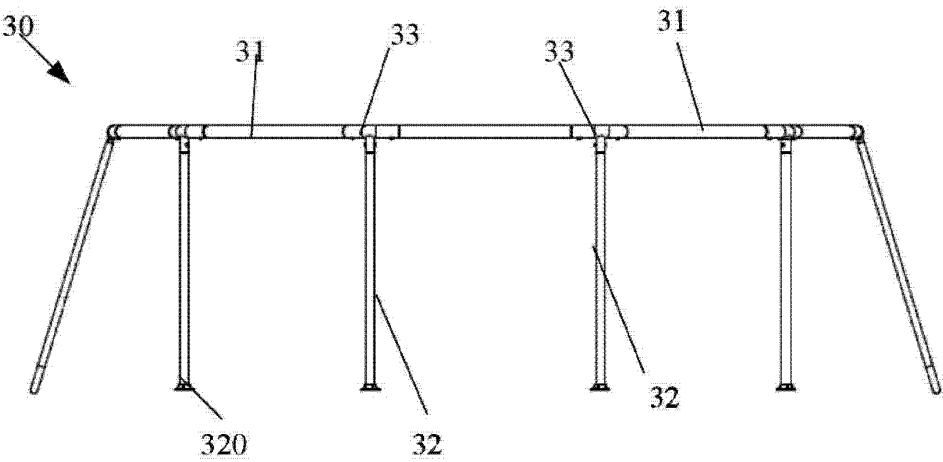


图 32

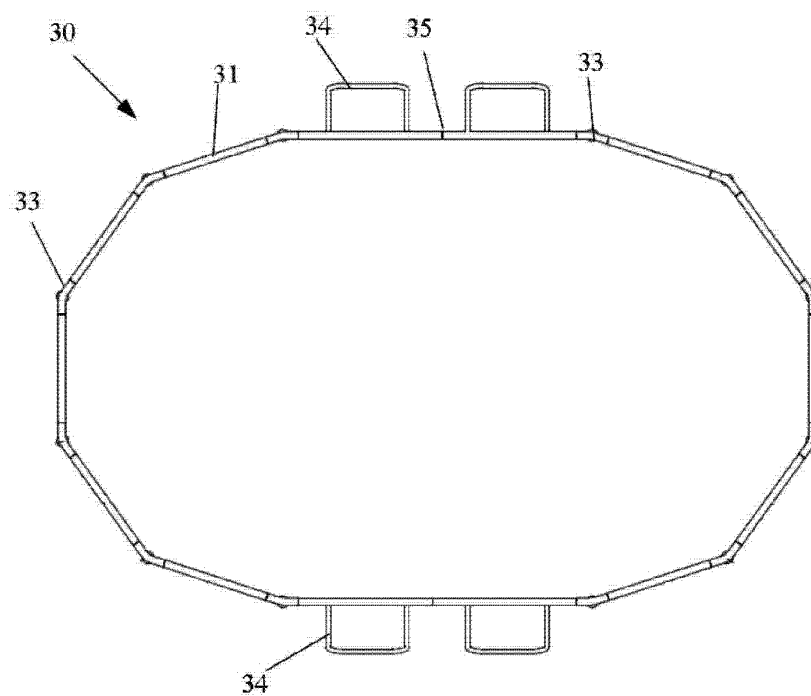


图 33

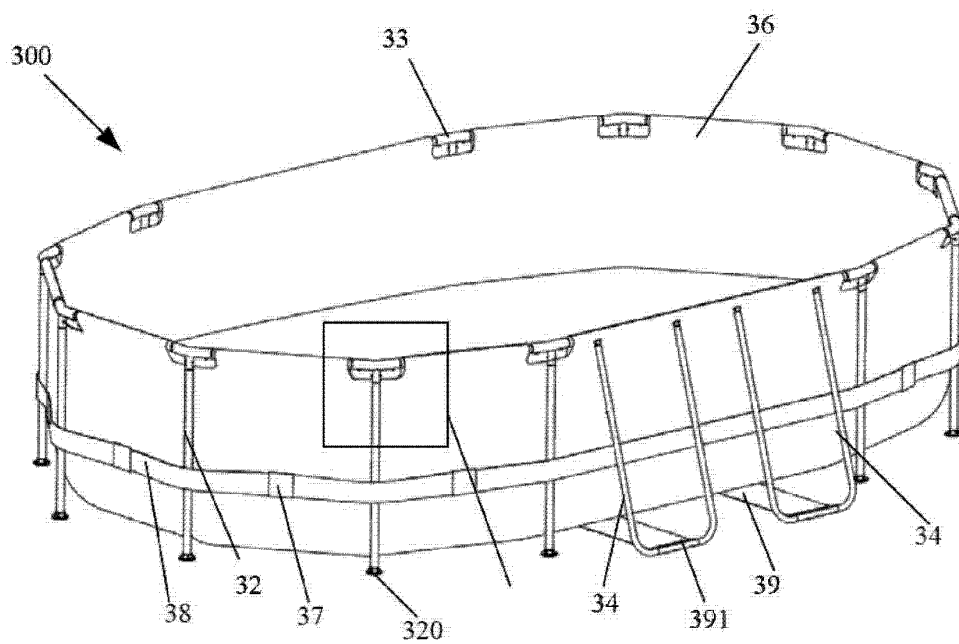


图 34

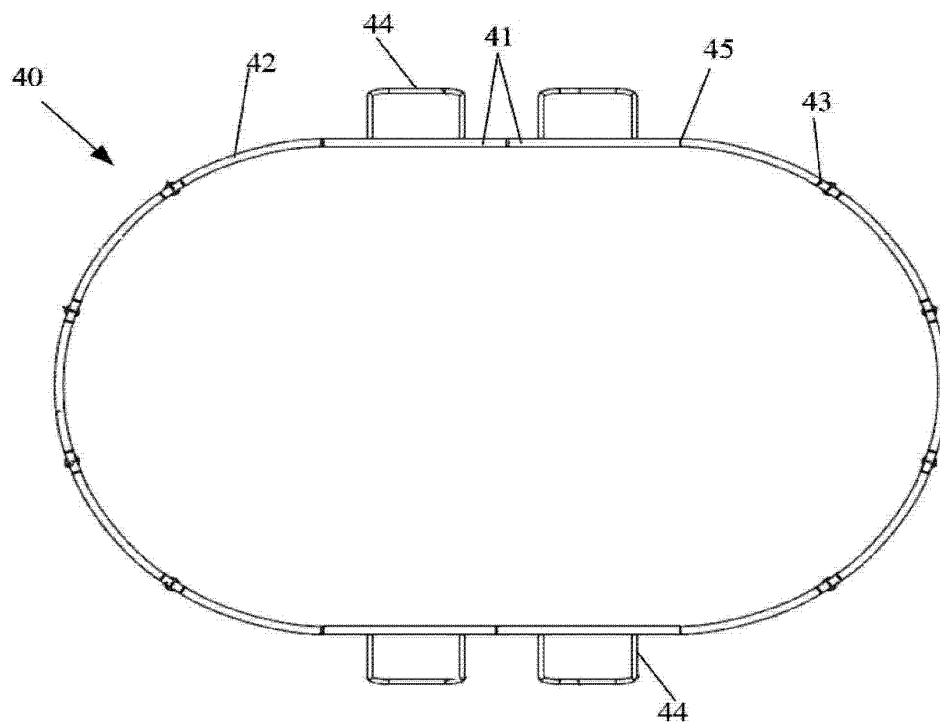


图 35



Espacenet

Bibliographic data: CN205777703 (U) — 2016-12-07

Take support pond of sheath

Inventor(s): HUANG SHUIYONG ± (黄水勇)

Applicant(s): SHANGHAI BESTWAY INFLATABLES & MAT CORP ± (上海荣威塑胶工业有限公司)

Classification: - international: E04H4/04
- cooperative: E04H4/0056 (EP, US)

Application number: CN201620554727U 20160608

Priority number(s): CN201620554727U 20160608

Also published as: EP3255226 (A1) EP3255226 (B1) US10246891 (B2) US2017356206 (A1)

Abstract of CN205777703 (U)

The utility model provides a take support pond of sheath, it includes: the support frame comprises a plurality of interconnect's holder member, the pond inside lining includes bottom of the pool and the pool wall of being connected and upwards extending with the outward flange of bottom of the pool, the top edge of pool wall is hung and is located on the support frame, and locate the inboard of support frame to an and at least sheath, the sheath sets up at least two holder member's combination department. The utility model discloses take support pond of sheath simple structure, low cost and convenient assembling. It is mainly in the junction of the horizontal limit in support pond pipe and T venturi tube joint to and set up the sheath respectively in the junction that stay tube and T venturi tube connect, can overcome prior art effectively in support pond in assembling process or in the use, between horizontal limit pipe connects with the T venturi tube and the stay tube connect with the T venturi tube between frequent friction

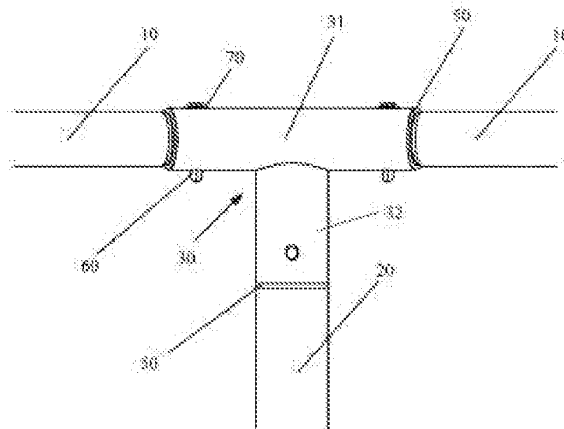


Fig. 3

result in the horizontal limit to manage and the coating of the stay tube surface rusty defect of messenger's body of wearing and tearing easily.

(19)中华人民共和国国家知识产权局



(12)实用新型专利



(10)授权公告号 CN 205777703 U

(45)授权公告日 2016.12.07

(21)申请号 201620554727.9

(22)申请日 2016.06.08

(73)专利权人 上海荣威塑胶工业有限公司

地址 201812 上海市嘉定区上海市曹安路
3065号

(72)发明人 黄水勇

(74)专利代理机构 上海专利商标事务所有限公
司 31100

代理人 陈亮

(51)Int.Cl.

E04H 4/04(2006.01)

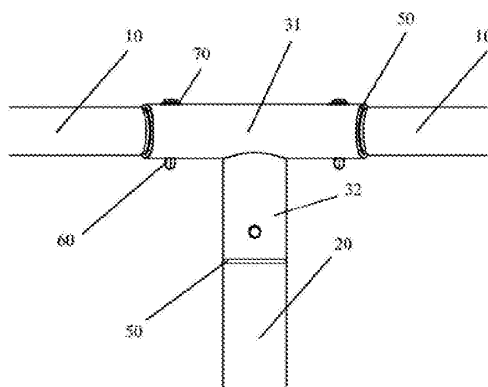
权利要求书2页 说明书6页 附图10页

(54)实用新型名称

带护套的支架水池

(57)摘要

本实用新型提供了一种带护套的支架水池，其包括：支撑架，由多个相互连接的支架部件组成；水池内衬，包括池底和与池底的外边缘连接且向上延伸的池壁，所述池壁的上边缘挂设于所述支撑架上，且设于所述支撑架的内侧，以及至少一护套，所述护套设置在至少两个所述支架部件的结合处。本实用新型带护套的支架水池结构简单、成本低廉且装配方便。其主要在支架水池的水平边管和T形管接头的连接处，以及在支撑管和T形管接头的连接处分别设置了护套，可以有效地克服现有技术中支架水池在装配过程中或使用过程中，水平边管与T形管接头之间以及支撑管与T形管接头之间频繁摩擦容易导致水平边管和支撑管外表面的涂层磨损使管体生锈的缺陷。



CN 205777703 U

1. 一种带护套的支架水池, 其特征在于, 所述带护套的支架水池包括:
支撑架, 由多个相互连接的支架部件组成;
水池内衬, 包括池底和与池底的外边缘连接且向上延伸的池壁, 所述池壁的上边缘挂设于所述支撑架上, 且设于所述支撑架的内侧, 以及
至少一护套, 所述护套设置在至少两个所述支架部件的结合处。
2. 如权利要求1所述的带护套的支架水池, 其特征在于, 所述支架部件包括:
多个水平边管, 每一所述水平边管的两端分别设有连接部;
多个支撑管, 每一所述支撑管的上端设有连接部; 以及
多个T形管接头, 所述T形管接头包括水平部和与水平部相连接的垂直部;
其中, 所述多个水平边管的连接部分别插入相邻的所述T形管接头的水平部的两端以形成上框架结构, 所述支撑管的连接部插入所述T形管接头的垂直部的下端以支撑所述上框架结构, 所述护套设于所述水平边管的连接部与所述T形管接头的水平部两端的连接处, 所述多个水平边管穿设于所述池壁上边缘的套管中。
3. 如权利要求2所述的带护套的支架水池, 其特征在于, 所述护套还设于所述支撑管的连接部与所述T形管接头的下端的连接处。
4. 如权利要求2所述的带护套的支架水池, 其特征在于, 所述护套至少部分设于所述T形管接头的水平部两端的内表面与所述水平边管的连接部的外表面之间。
5. 如权利要求3所述的带护套的支架水池, 其特征在于, 所述护套至少部分设于所述T形管接头的垂直部下端的内表面与所述支撑管的连接部的外表面之间。
6. 如权利要求3所述的带护套的支架水池, 其特征在于, 所述水平边管的连接部上设有至少一个第一固定孔, 所述支撑管的连接部上设有至少一个第二固定孔, 所述T形管接头的水平部的两端和所述T形管接头的垂直部的下端设有至少一个第三固定孔。
7. 如权利要求6所述的带护套的支架水池, 其特征在于, 所述护套包括:
护套本体, 为中空管型结构;
所述护套本体的管壁上设有至少一个第四固定孔。
8. 如权利要求7所述的带护套的支架水池, 其特征在于, 所述护套还包括至少一个环形结构, 所述至少一个环形结构设于所述护套本体的外表面上。
9. 如权利要求7所述的带护套的支架水池, 其特征在于, 所述第四固定孔的边缘设有向内伸展的环形固定环, 所述固定环至少部分穿设于所述第一固定孔的内侧。
10. 如权利要求8所述的带护套的支架水池, 其特征在于, 所述环形结构为环形凸筋, 所述环形凸筋与所述护套本体连接且高于所述护套本体的外表面。
11. 如权利要求8所述的带护套的支架水池, 其特征在于, 所述环形结构为O型圈。
12. 如权利要求11所述的带护套的支架水池, 其特征在于, 所述护套本体的外表面设有至少一个环形凹槽, 所述O型圈至少部分嵌设于所述环形凹槽内, 且所述O型圈高出所述护套本体的外表面。
13. 如权利要求7所述的带护套的支架水池, 其特征在于, 所述护套本体的第一端设有向外延伸的第一环形限位环, 连接所述护套本体的外表面。
14. 如权利要求13所述的带护套的支架水池, 其特征在于, 所述护套本体的第二端设有向内延伸的第二环形限位环, 连接所述护套本体的内表面。

15. 如权利要求4所述的带护套的支架水池,其特征在于,所述护套包括:
护套本体,为中空的管型结构;
伸展部,所述伸展部的上端与所述护套本体的下端连接,且所述伸展部自上而下的尺寸逐步递增。
16. 如权利要求15所述的带护套的支架水池,其特征在于,所述护套本体的管壁上设有至少一个第四固定孔。
17. 如权利要求6所述的带护套的支架水池,其特征在于,所述支架部件还包括多个插销,所述插销穿设于所述水平边管的第一固定孔、T形管接头水平部上的第三固定孔和所述护套的第四固定孔中,以使所述水平边管、所述T形管接头和所述护套对应地相互固定连接。
18. 如权利要求17所述的带护套的支架水池,其特征在于,所述插销穿设于所述支撑管的连接部上的第二固定孔、所述T形管接头垂直部上的第三固定孔和所述护套的第四固定孔中,以使所述支撑管、T形管接头和所述护套对应地相互固定连接。
19. 如权利要求18所述的带护套的支架水池,其特征在于,所述插销包括:
插销本体,为圆柱体,下端设有至少两个分叉,
顶盖,设于所述插销本体的顶部,具有向外伸展的边缘,以及
凸点,设于所述两个分叉末端的外侧。
20. 如权利要求19所述的带护套的支架水池,其特征在于,所述插销还包括碗形挡水片,所述挡水片设有通孔,所述插销本体穿设于所述通孔中,且所述碗形挡水片设于所述插销的顶盖与所述T形管接头水平部的外表面之间。
21. 如权利要求2所述的带护套的支架水池,其特征在于,所述水平边管、所述支撑管和所述T形管接头的截面为圆形、椭圆形、D形的其中之一。

带护套的支架水池

技术领域

[0001] 本实用新型涉及地上水池,特别涉及一种带护套的支架水池。

背景技术

[0002] 在水池领域中,地上水池具有许多不同的类型,其中包括支架水池。

[0003] 图1为支架水池的结构示意图。如图1所示,现有技术中的支架水池通常包括钢管制成的水平边管10、支撑管20和连接水平边管10及支撑管20的T形管接头30以及水池内衬40。

[0004] 其中,水平边管10和支撑管20都是以端部插入T形管接头30的方式装配成一体。为了达到防锈的目的,水平边管10、支撑管20和T形管接头30的外表面一般都有防锈涂层,例如环氧树脂、漆等。在水平边管10、支撑管20插入T形管接头30的过程中,防锈涂层很容易因为相互间的摩擦使防锈涂层损坏,从而导致水平边管10、支撑管20和T形管接头30生锈。

[0005] 支架水池在使用过程中,水池的晃动也会使水平边管10、支撑管20和T形管接头30的结合处产生摩擦损坏防锈涂层。

[0006] 此外,水平边管10、支撑管20插入T形管接头30后相互之间存在有间隙,雨水和水池在使用过程中溅出的水容易从间隙流入到管体的内部,造成管体生锈。

实用新型内容

[0007] 本实用新型要解决的技术问题是为了克服现有技术中支架水池的各个部件之间的连接处容易产生摩擦,损坏防锈涂层的缺陷,提供一种带护套的支架水池。

[0008] 本实用新型是通过下述技术方案来解决上述技术问题的:一种带护套的支架水池,其特点在于,所述带护套的支架水池包括:

[0009] 支撑架,由多个相互连接的支架部件组成;

[0010] 水池内衬,包括池底和与池底的外边缘连接且向上延伸的池壁,所述池壁的上边缘挂设于所述支撑架上,且设于所述支撑架的内侧,以及

[0011] 至少一护套,所述护套设置在至少两个所述支架部件的结合处。

[0012] 较佳地,所述支架部件包括:

[0013] 多个水平边管,每一所述水平边管的两端分别设有连接部;

[0014] 多个支撑管,每一所述支撑管的上端设有连接部;以及

[0015] 多个T形管接头,所述T形管接头包括水平部和与水平部相连接的垂直部;

[0016] 其中,所述多个水平边管的连接部分别插入相邻的所述T形管接头的水平部的两端以形成上框架结构,所述支撑管的连接部插入所述T形管接头的垂直部的下端以支撑所述上框架结构,所述护套设于所述水平边管的连接部与所述T形管接头的水平部两端的连接处所述多个水平边管穿设于所述池壁上边缘的套管中。

[0017] 较佳地,所述护套还设于所述支撑管的连接部与所述T形管接头的下端的连接处。

[0018] 较佳地,所述护套至少部分设于所述T形管接头的水平部两端的内表面与所述水

平边管的连接部的外表面之间。

[0019] 较佳地,所述护套至少部分设于所述T形管接头的垂直部下端的内表面与所述支撑管的连接部的外表面之间。

[0020] 较佳地,所述水平边管的连接部上设有至少一个第一固定孔,所述支撑管的连接部上设有至少一个第二固定孔,所述T形管接头的水平部的两端和所述T形管接头的垂直部的下端设有至少一个第三固定孔。

[0021] 较佳地,所述护套包括:

[0022] 护套本体,为中空的管理结构;

[0023] 所述护套本体的管壁上设有至少一个第四固定孔。

[0024] 较佳地,所述护套还包括至少一个环形结构,所述至少一个环形结构设于所述护套本体的外表面上。

[0025] 较佳地,所述第四固定孔的边缘设有向内伸展的环形固定环,所述固定环至少部分穿设于所述第一固定孔的内侧。

[0026] 较佳地,所述环形结构为环形凸筋,所述环形凸筋与所述护套本体连接且高于所述护套本体的外表面。

[0027] 较佳地,所述环形结构为O型圈。

[0028] 较佳地,所述护套本体的外表面设有至少一个环形凹槽,所述O型圈至少部分嵌设于所述环形凹槽内,且所述O型圈高出所述护套本体的外表面。

[0029] 较佳地,所述护套本体的第一端设有向外延伸的第一环形限位环,连接所述护套本体的外表面。

[0030] 较佳地,所述护套本体的第二端设有向内延伸的第二环形限位环,连接所述护套本体的内表面。

[0031] 较佳地,所述护套包括:

[0032] 护套本体,为中空的管理结构;

[0033] 伸展部,所述伸展部的上端与所述护套本体的下端连接,且所述伸展部自上而下的尺寸逐步递增。

[0034] 较佳地,所述护套本体的管壁上设有至少一个第四固定孔。

[0035] 较佳地,所述支架部件还包括多个插销,所述插销穿设于所述水平边管的第一固定孔、T形管接头水平部上的第三固定孔和所述护套的第四固定孔中,以使所述水平边管、所述T形管接头和所述护套对应地相互固定连接。

[0036] 较佳地,所述插销穿设于所述支撑管的连接部上的第二固定孔、所述T形管接头垂直部上的第三固定孔和所述护套的第四固定孔中,以使所述支撑管、T形管接头和所述护套对应地相互固定连接。

[0037] 较佳地,所述插销包括:

[0038] 插销本体,为圆柱体,下端设有至少两个分叉,

[0039] 顶盖,设于所述插销本体的顶部,具有向外伸展的边缘,以及

[0040] 凸点,设于所述两个分叉末端的外侧。

[0041] 较佳地,所述插销还包括碗形挡水片,所述挡水片设有通孔,所述插销本体穿设于所述通孔中,且所述碗形挡水片设于所述插销的顶盖与所述T形管接头水平部的外表面之

间。

[0042] 较佳地,所述水平边管、所述支撑管和所述T形管接头的截面为圆形、椭圆形、D形的其中之一。

[0043] 本实用新型的积极进步效果在于:

[0044] 本实用新型带护套的支架水池结构简单、成本低廉且装配方便。其主要在支架水池的水平边管和T形管接头的连接处,以及在支撑管和T形管接头的连接处分别设置了护套,可以有效地克服现有技术中支架水池在装配过程中或使用过程中,水平边管与T形管接头之间以及支撑管与T形管接头之间频繁摩擦容易导致水平边管和支撑管外表面的涂层磨损使管体生锈的缺陷。

[0045] 此外,在护套上设置有一个或多个环形结构,其可以阻挡水从水平边管、支撑管和T形管接头之间的间隙流入管体内部,有效地防止管体生锈,能大大延长支架水池的使用寿命。

附图说明

[0046] 本实用新型上述的以及其他的特征、性质和优势将通过下面结合附图和实施例的描述而变的更加明显,在附图中相同的附图标记始终表示相同的特征,其中:

[0047] 图1为支架水池的结构示意图。

[0048] 图2为本实用新型带护套的支架水池组装后的局部示意图一。

[0049] 图3为本实用新型带护套的支架水池组装后的局部示意图二。

[0050] 图4为本实用新型带护套的支架水池中各部件的爆炸示意图一。

[0051] 图5为本实用新型带护套的支架水池中各部件的爆炸示意图二。

[0052] 图6为本实用新型带护套的支架水池的实施例一中护套的立体图。

[0053] 图7为本实用新型带护套的支架水池的实施例一中护套的主视图。

[0054] 图8为本实用新型带护套的支架水池的实施例一中护套的右视图。

[0055] 图9为本实用新型带护套的支架水池的实施例一中护套的俯视图。

[0056] 图10为本实用新型带护套的支架水池的实施例一中水平边管和T形管接头连接处的剖视图。

[0057] 图11为本实用新型带护套的支架水池的实施例二中护套的立体图。

[0058] 图12为本实用新型带护套的支架水池的实施例二中护套的分解示意图。

[0059] 图13为本实用新型带护套的支架水池的实施例二中水平管和T形管接头连接处的剖视图。

[0060] 图14为本实用新型带护套的支架水池的实施例三中护套的立体图。

[0061] 图15为本实用新型带护套的支架水池的实施例三中护套的主视图。

[0062] 图16为本实用新型带护套的支架水池的实施例三中护套的右视图。

[0063] 图17为本实用新型带护套的支架水池的实施例三中护套的俯视图。

[0064] 图18为本实用新型带护套的支架水池的实施例三中T形管接头和支撑管连接处的剖视图。

具体实施方式

[0065] 为了让本实用新型的上述目的、特征和优点能更明显易懂,以下结合附图对本实用新型的具体实施方式作详细说明。

[0066] 现在将详细参考附图描述本实用新型的实施例。现在将详细参考本实用新型的优选实施例,其示例在附图中示出。在任何可能的情况下,在所有附图中将使用相同的标记来表示相同或相似的部分。此外,尽管本实用新型中所使用的术语是从公知公用的术语中选择的,但是本实用新型说明书中所提及的一些术语可能是申请人按他或她的判断来选择的,其详细含义在本文的描述的相关部分中说明。此外,要求不仅仅通过所使用的实际术语,而是还要通过每个术语所蕴含的意义来理解本实用新型。

[0067] 实施例一:

[0068] 图1为支架水池的结构示意图。图2为本实用新型带护套的支架水池组装后的局部示意图一。图3为本实用新型带护套的支架水池组装后的局部示意图二。图4为本实用新型带护套的支架水池中各部件的爆炸示意图一。图5为本实用新型带护套的支架水池中各部件的爆炸示意图二。

[0069] 如图1至图5所示,本实用新型公开了一种带护套的支架水池,其包括支撑架、水池内衬40和至少一护套50。其中,所述支撑架由多个相互连接的支架部件组成。水池内衬40包括池底42和与池底42的外边缘连接且向上延伸的池壁41,池壁41的上边缘挂设于设在所述支撑架上,且设于所述支撑架的内侧,而护套50设置在至少两个所述支架部件的结合处。

[0070] 优选地,所述支架部件包括多个水平边管10、多个支撑管20和多个T形管接头30。其中,每一水平边管10的两端分别设有连接部11,每一支撑管20的上端设有连接部21。T形管接头30包括水平部31以及与水平部31相连接的垂直部32。

[0071] 其中,多个水平边管10的连接部11分别插入相邻的T形管接头30的水平部31的两端以形成闭合的上框架结构,支撑管20的连接部21插入T形管接头30的垂直部32的下端以支撑所述上框架结构,护套50设于水平边管10的连接部11与T形管接头30的水平部31两端的连接处,所述多个水平边管穿设于所述池壁上边缘的套管中。

[0072] 此外,护套50还设于支撑管20的连接部21与T形管接头30的下端的连接处。这里的护套50至少部分地设于T形管接头30的水平部31两端的内表面与水平边管10的连接部的外表面之间。护套50至少部分设于T形管接头30的垂直部32下端的内表面与支撑管20的连接部21的外表面之间。

[0073] 进一步具体地,在水平边管10的连接部11上设有至少一个第一固定孔12,在支撑管20的连接部21上设有至少一个第二固定孔22,T形管接头30的水平部31的两端和T形管接头30的垂直部32的下端设有至少一个第三固定孔33。

[0074] 图6为本实用新型带护套的支架水池的实施例一中护套的立体图。图7为本实用新型带护套的支架水池的实施例一中护套的主视图。图8为本实用新型带护套的支架水池的实施例一中护套的右视图。图9为本实用新型带护套的支架水池的实施例一中护套的俯视图。

[0075] 如图6至图9所示,护套50包括护套本体51,护套本体51优选地设置为中空的管型结构,在护套本体51的管壁上设有至少一个第四固定孔52。

[0076] 同时,护套50还包括至少一个环形结构,所述至少一个环形结构设于护套本体51的外表面上。第四固定孔52的边缘设有向外伸展的环形固定环521,固定环521至少部分穿

设于第一固定孔12的内侧。当水平边管10的连接部11插入护套50时,环形固定环521嵌入第一固定孔12内,可以防止护套50滑动或旋转。

[0077] 优选地,所述环形结构采用多个环形凸筋53,环形凸筋53与护套本体51连接且高于护套本体51的外表面,环形凸筋53可以阻挡水进入水平边管10连接部11外表面与T形管接头30内表面之间的间隙,防止管体内部受潮生锈。

[0078] 图10为本实用新型带护套的支架水池的实施例一中水平边管和T形管接头连接处的剖视图。

[0079] 如图10所示,所述支架部件还包括多个插销60,将插销60穿设在水平边管10的第一固定孔11、T形管接头30水平部31上的第三固定孔33和护套50的第四固定孔52中,以使水平边管10、T形管接头30和护套50对应地相互固定连接。

[0080] 同样,插销60也可以穿设在支撑管20的连接部21上的第二固定孔22、T形管接头30垂直部32上的第三固定孔33和护套50的第四固定孔52中,以使支撑管20、T形管接头30和护套50对应地相互固定连接。

[0081] 进一步优选地,插销60包括插销本体61、顶盖62和凸点63。其中,插销本体61为圆柱体,下端设有至少两个分叉64。顶盖62设置在插销本体61的顶部,具有向外伸展的边缘。凸点63设置在两个分叉64末端的外侧。

[0082] 另外,插销60还包括碗形挡水片70,在挡水片70上设置通孔,使得插销本体61穿设于所述通孔中,且碗形挡水片70设于插销60的顶盖62与水平边管10的外表面之间,碗形挡水片70可选择采用有弹性的PVC或橡胶等材料。

[0083] 特别地,在护套本体51的第一端设有向外延伸的第一环形限位环54,连接护套本体51的外表面。护套本体51的第二端设有向内延伸的第二环形限位环55,连接护套本体51的内表面。第一环形限位环54可以限定护套50和T形管接头30装配位置。第二环形限位环55可以限定水平边管10的连接部11与护套50的装配位置。

[0084] 上述结构中,水平边管10、支撑管20和T形管接头30的径向截面优选为圆形、椭圆形、D形的其中之一。

[0085] 实施例二:

[0086] 图11为本实用新型带护套的支架水池的实施例二中护套的立体图。图12为本实用新型带护套的支架水池的实施例二中护套的分解示意图。图13为本实用新型带护套的支架水池的实施例二中水平管和T形管接头连接处的剖视图。

[0087] 如图11至图13所示,本实施例的结构与实施一的结构基本相同,其不同之处在于:护套50上的环形结构优选为O型圈57。具体地,在护套本体51的外表面设置至少一个环形凹槽56,将O型圈57至少部分地嵌设于环形凹槽56内,且使得O型圈57高出于护套本体51的外表面,同样,O型圈57也可以阻挡水进入水平边管10连接部11外表面与T形管接头30内表面之间的间隙,防止管体内部受潮生锈。

[0088] 实施例三:

[0089] 图14为本实用新型带护套的支架水池的实施例三中护套的立体图。图15为本实用新型带护套的支架水池的实施例三中护套的主视图。图16为本实用新型带护套的支架水池的实施例三中护套的右视图。图17为本实用新型带护套的支架水池的实施例三中护套的俯视图。图18为本实用新型带护套的支架水池的实施例三中T形管接头和支撑管连接处的剖

视图。

[0090] 如图11至图13所示,本实施例的结构与实施例一的结构基本相同,其不同之处在于:支撑管20和T形管接头30之间采用另一种结构形式的护套。具体地说,护套50包括护套本体51和伸展部58。其中,护套本体51为中空的管型结构。伸展部58的上端与护套本体51的下端连接,且伸展部58自上而下的尺寸逐步递增。在具体实施中可以在护套本体51的管壁上设有至少一个第四固定孔(未图示)。在此结构上,通过插销60穿过护套本体51上的第四固定孔和T形管接头30的垂直部32的第三固定孔33将支撑管20和T形管接头30固定为一体。在图18的实施例中,插销10为设置在支撑管内的弹销。在具体实施中,可以选择其它结构的插销。

[0091] 综上所述,本实用新型带护套的支架水池结构简单、成本低廉且装配方便。其主要在支架水池的水平边管和T形管接头的连接处,以及在支撑管和T形管接头的连接处分别设置了护套,可以有效地克服现有技术中支架水池在装配过程中或使用过程中,水平边管与T形管接头之间以及支撑管与T形管接头之间频繁摩擦容易导致水平边管和支撑管外表面的涂层磨损使管体生锈的缺陷。

[0092] 此外,在护套上设置有一个或多个环形结构,其可以阻挡水从水平边管、支撑管和T形管接头之间的间隙流入管体内部,有效地防止管体受潮生锈,能大大延长支架水池的使用寿命。

[0093] 虽然以上描述了本实用新型的具体实施方式,但是本领域的技术人员应当理解,这些仅是举例说明,本实用新型的保护范围是由所附权利要求书限定的。本领域的技术人员在不背离本实用新型的原理和实质的前提下,可以对这些实施方式作出多种变更或修改,但这些变更和修改均落入本实用新型的保护范围。

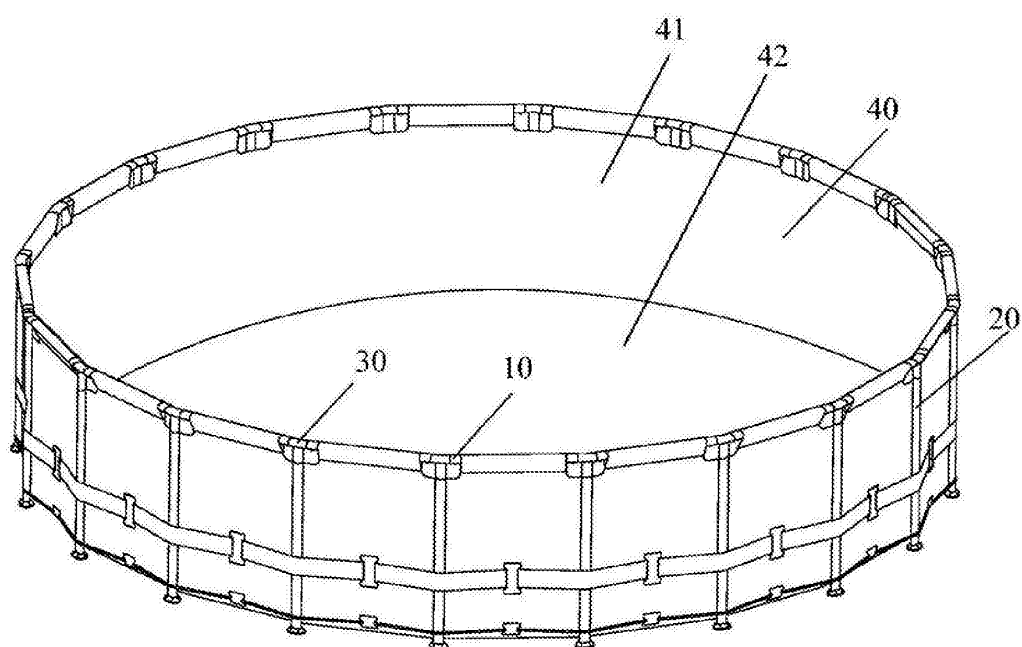


图1

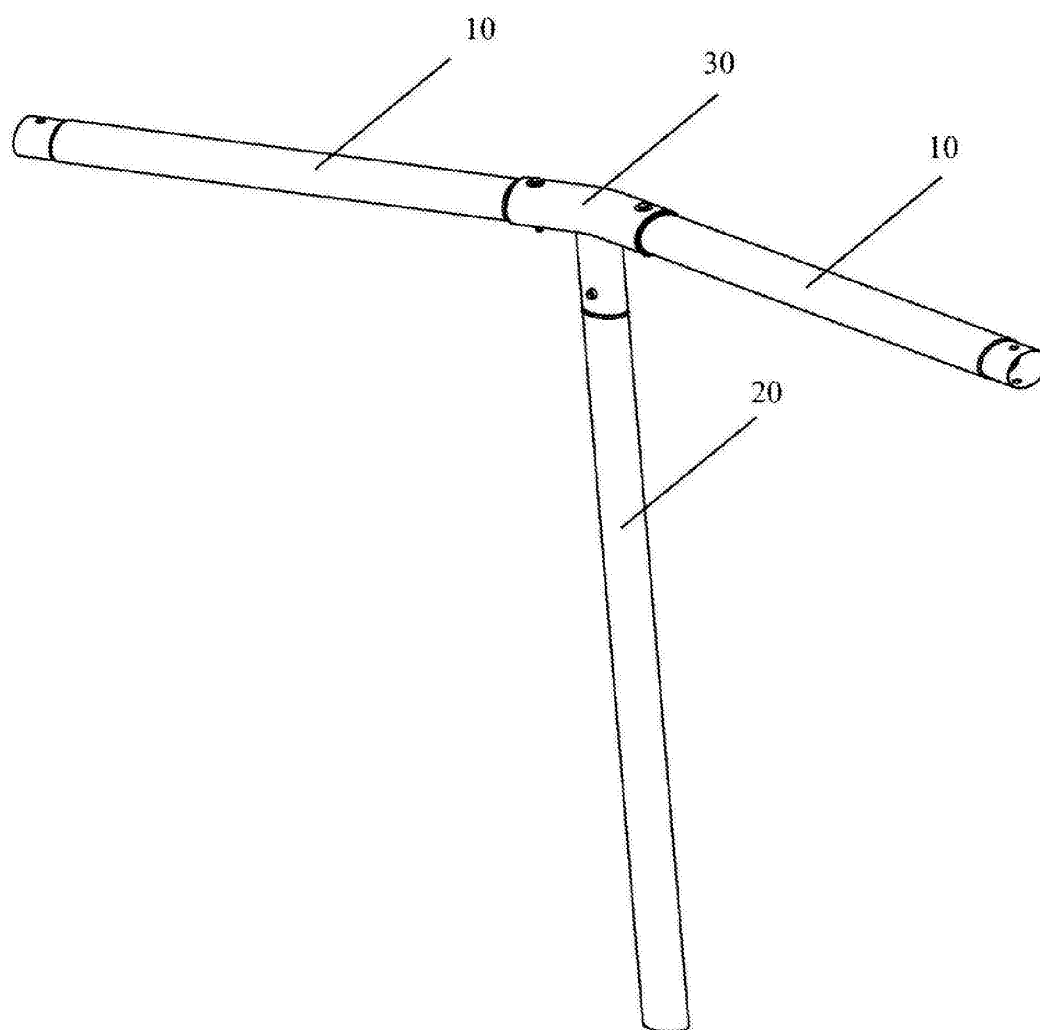


图2

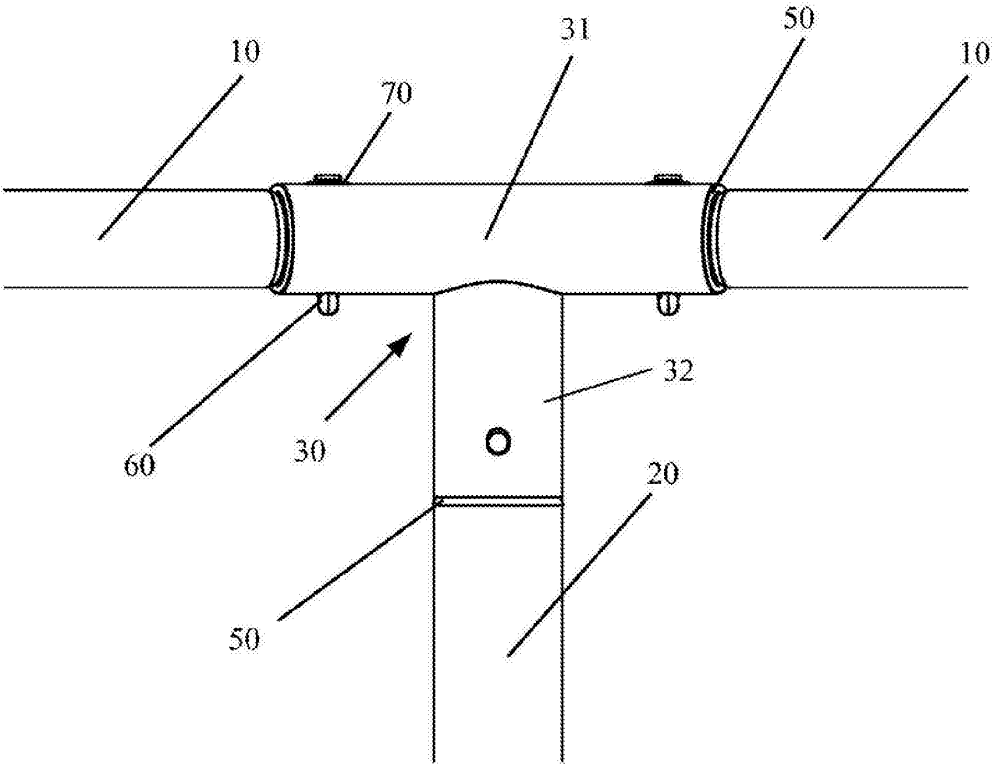


图3

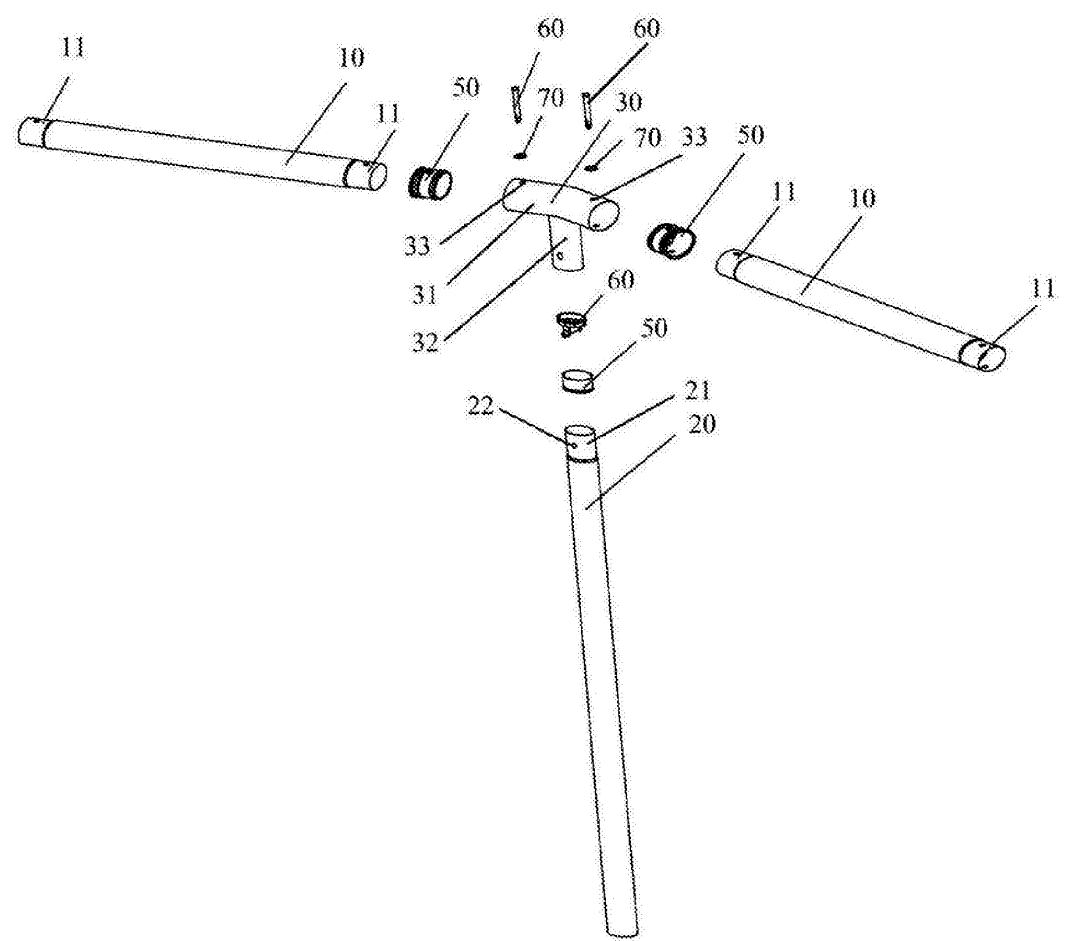


图4

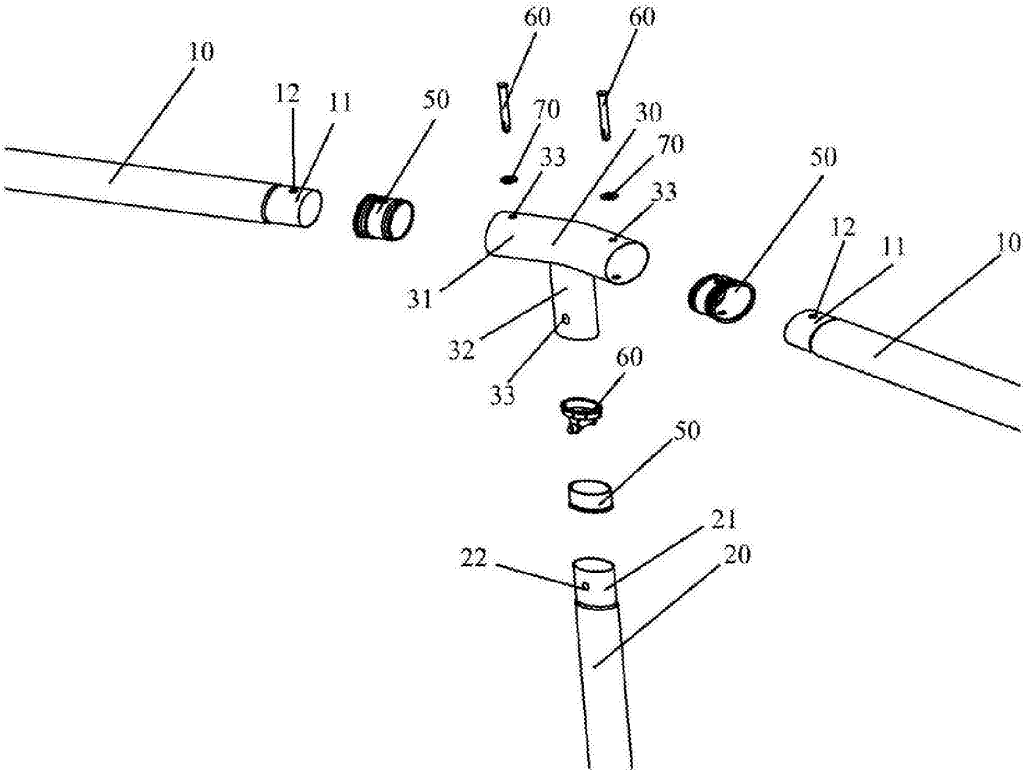


图5

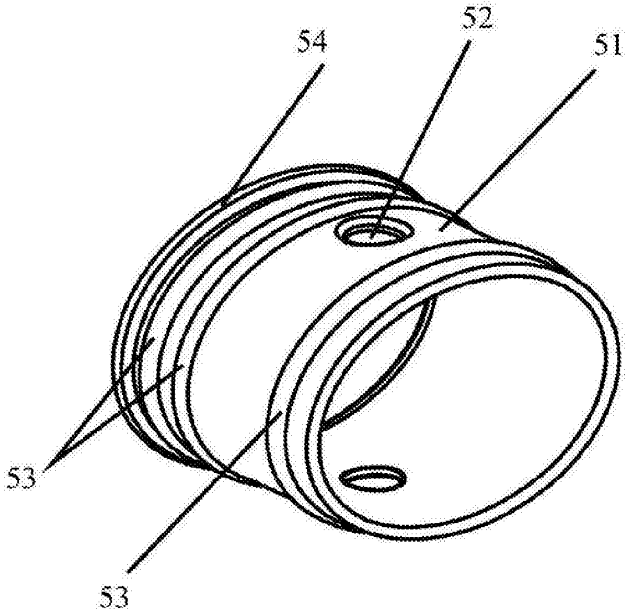


图6

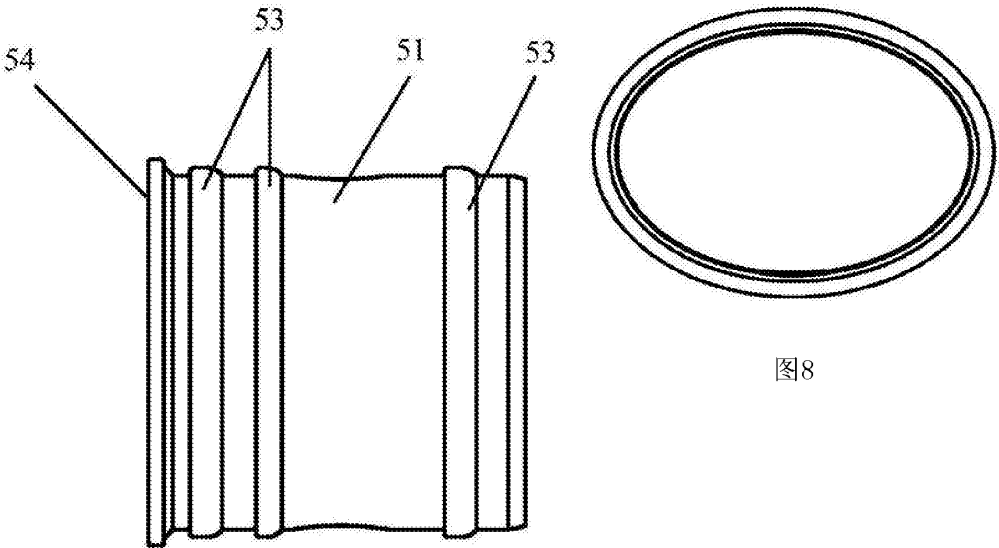


图8

图7

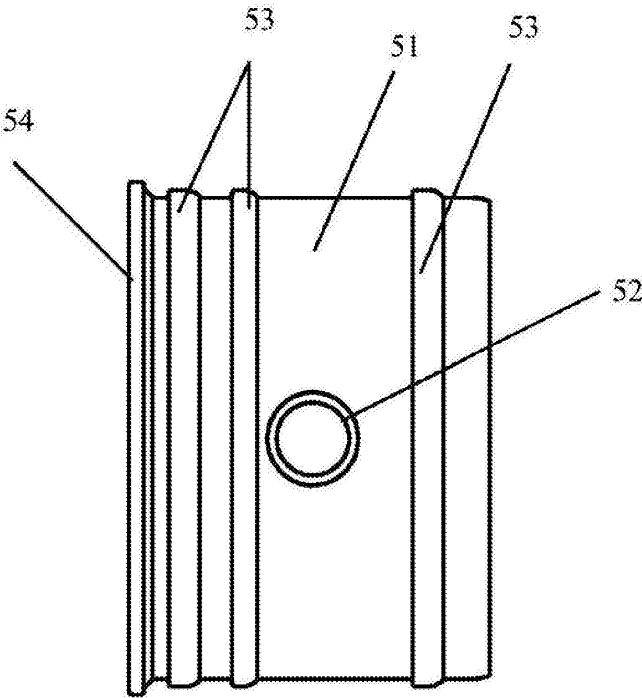


图9

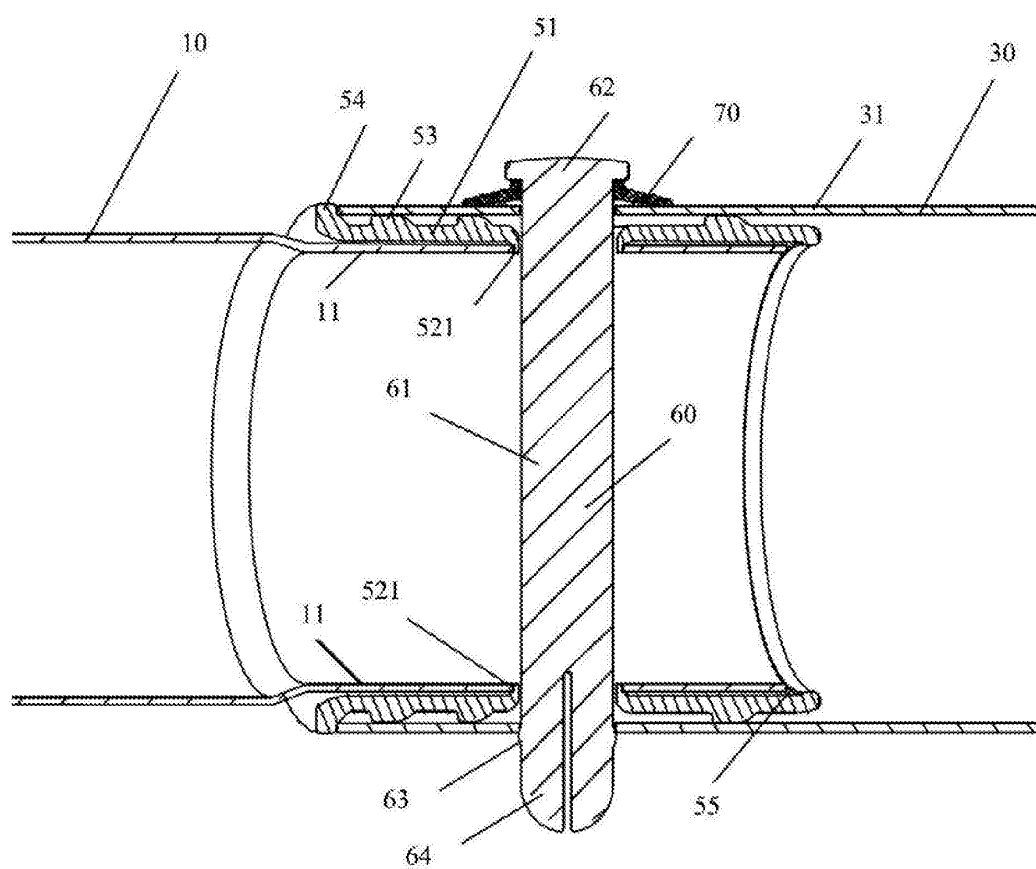


图10

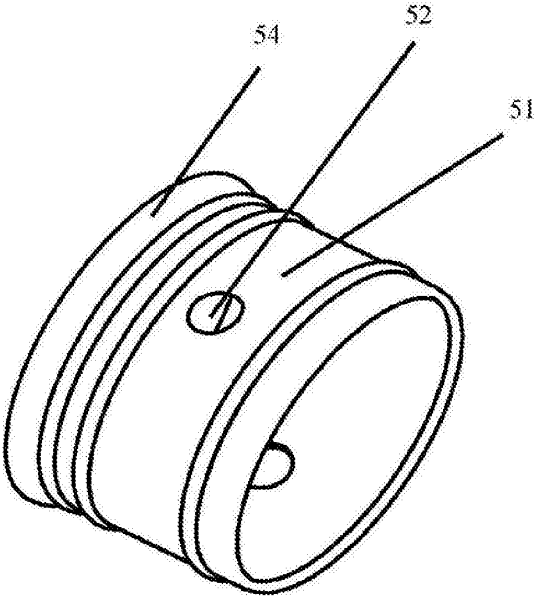


图11

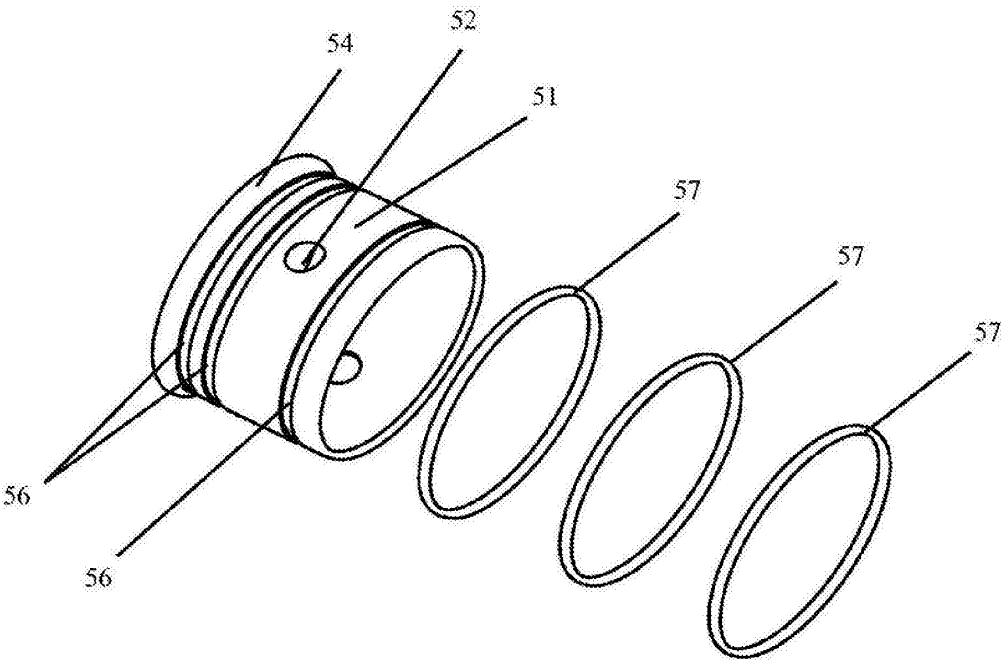


图12

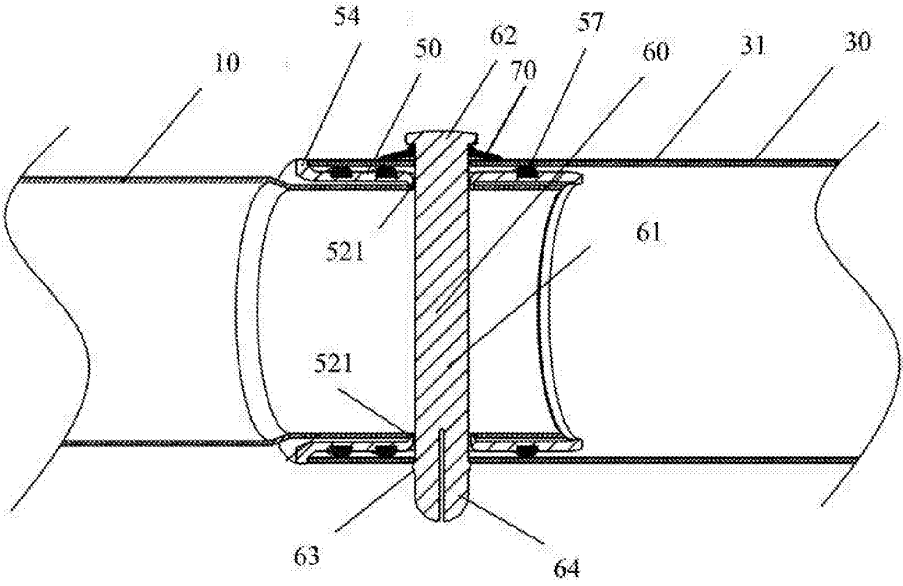


图13

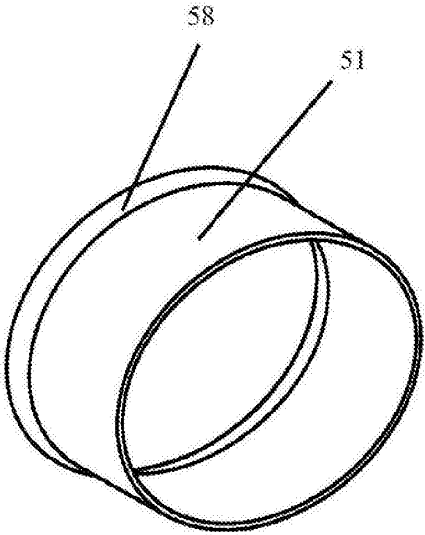


图14

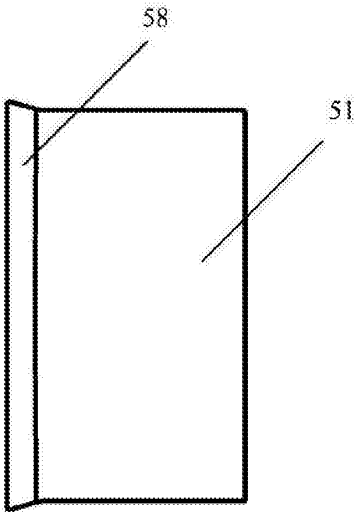


图15

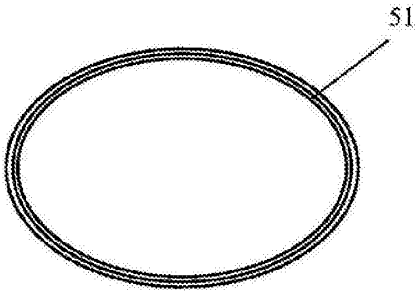


图16

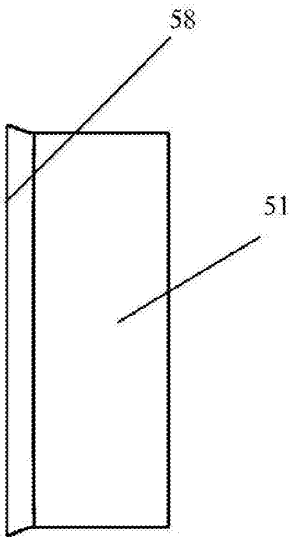


图17

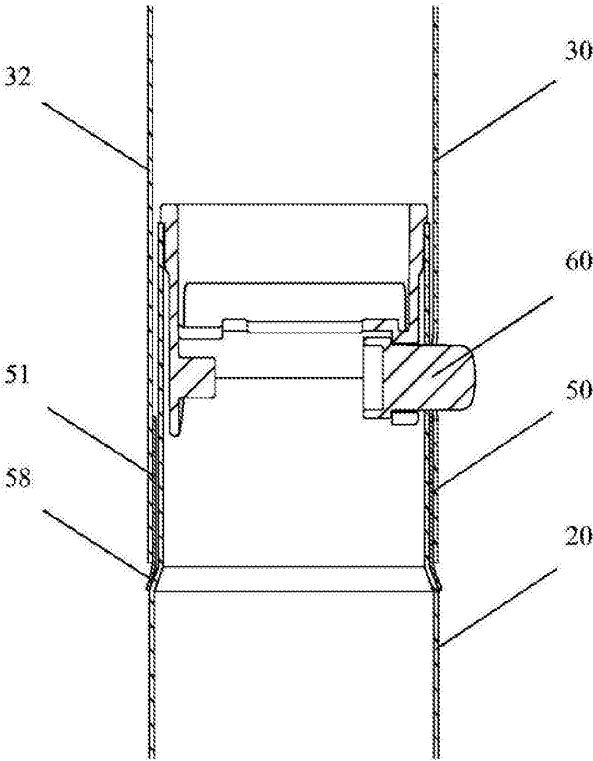


图18



Espacenet

Bibliographic data: CN200968073 (Y) — 2007-10-31

Improvement of pipe structural on side of pipe support swimming pools

Inventor(s): LIN HUAXIANG LI [CN] ± (HUAXIANG,LI LIN)

Applicant(s): INTEX IND XIAMEN CO LTD [CN] ± (INTEX INDUSTRIES (XIAMEN) CO., LTD)

Classification: - **international:** *E04H4/00; E04H4/14*
- **cooperative:**

Application number: CN20062087313U 20060724

Priority number(s): CN20062087313U 20060724

Abstract of CN200968073 (Y)

The utility model discloses an improvement of boundary tube of a pipe frame swimming pool. The pipe frame includes a circular pipe frame as well as a swimming pool arranged in the circular pipe frame. The circular pipe frame includes a plurality of steel boundary tubes, the steel boundary tubes are interconnected in series or interconnected through a coupling head into an endless belt, and the top surface of the boundary tube is flat. The beneficial effects of the technic proposal are that the top surface of the boundary tube is flat, not only increasing the steel supporting strength of the tube frame, but also with easy usage and attractive appearance.

[19] 中华人民共和国国家知识产权局



[12] 实用新型专利说明书

专利号 ZL 200620087313.6

[51] Int. Cl.

E04H 4/00 (2006.01)

E04H 4/14 (2006.01)

[45] 授权公告日 2007 年 10 月 31 日

[11] 授权公告号 CN 200968073Y

[22] 申请日 2006.7.24

[21] 申请号 200620087313.6

[73] 专利权人 明达实业(厦门)有限公司

地址 361022 福建省厦门市海沧新阳工业区
翁角路 858 号

[72] 设计人 林华乡 李 蓝

[74] 专利代理机构 厦门市首创君合专利事务所有限
公司

代理人 李雁翔

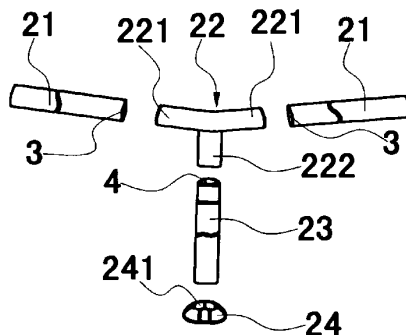
权利要求书 1 页 说明书 5 页 附图 3 页

[54] 实用新型名称

一种管架游泳池边管结构的改进

[57] 摘要

本实用新型公开了一种管架游泳池边管结构的改进,管架游泳池包括一环形管架及一设于环形管架内的游泳池,该环形管架包括若干根钢性边管,若干边管之间串接成或通过联接头串接成环行带,所述的边管顶面为平面。本技术方案的有益效果是:边管顶面为平面,则不但增加管架钢性支撑强度,而且使用方便、美观。



1. 一种管架游泳池边管结构的改进，管架游泳池包括一环形管架及一设于环形管架内的游泳池，该环形管架包括若干根钢性边管，若干边管之间串接成或通过联接头串接成环行带，其特征是：所述的边管顶面为平面。

2. 根据权利要求 1 所述的一种管架游泳池边管结构的改进，其特征是：所述的边管横截面为侧 D 字型，而且 D 字型的平面朝上。

3. 根据权利要求 2 所述的一种管架游泳池边管结构的改进，其特征是：所述的环形管架还包括若干个脚架，脚架顶端可装拆地支撑环行带。

4. 根据权利要求 3 所述的一种管架游泳池边管结构的改进，其特征是：所述的游泳池外侧周面设有若干个袖套；边管套接于对应的袖套内。

5. 根据权利要求 3 所述的一种管架游泳池边管结构的改进，其特征是：所述的边管第一端设成后插接部、第二端设成前被插接部，边管的第一端的后插接部可装拆地插接于相邻边管的第二端的前被插接部，另匹配有一可锁接后插接部和前被插接部的或松开该锁接的第三锁接装置。

6. 根据权利要求 3 或 5 所述的一种管架游泳池边管结构的改进，其特征是：所述的联接头具有两个水平被插接部；边管端部可装拆地插接于联接头的水平被插接部，另匹配有一设在边管端部和水平被插接部之间的可锁接边管端部和水平被插接部或松开该锁接的第一锁接装置；其中，联接头顶面为齐平于边管顶面的平面。

7. 根据权利要求 6 所述的一种管架游泳池边管结构的改进，其特征是：所述的水平被插接部横截面为匹配于边管横截面侧 D 字型。

8. 根据权利要求 6 所述的一种管架游泳池边管结构的改进，其特征是：所述的联接头具有下被插接部；脚管底端可支撑定位于地面，脚管顶端可装拆地插接于下被插接部；另匹配有设在脚管顶端和下被插接部之间的可锁接脚管顶端和下被插接部或松开该锁接的第二锁接装置。

9. 根据权利要求 5 所述的一种管架游泳池边管结构的改进，其特征是：所述的边管底面设有下被插接槽；脚管底端可支撑定位于地面，脚管顶端可装拆地插接于下被插接槽；另匹配有设在边管和下被插接槽之间的可锁接脚管顶端和下被插接槽或松开该锁接的第四锁接装置。

10. 根据权利要求 9 所述的一种管架游泳池边管结构的改进，其特征是：所述的每一脚管还匹配有一拉带，拉带一端固接于脚管底端，另一端固接于游泳池，脚架倾斜支撑游泳池。

一种管架游泳池边管结构的改进

所属技术领域

本实用新型涉及一种游泳池，特别是涉及一种管架游泳池边管结构的改进。

背景技术

现有管架游泳池包括一环形管架及一设于环形管架内的游泳池：该环形管架包括若干根钢性边管、若干个脚架，若干边管之间串接成或通过联接头串接成环行带，脚架顶端可装拆地支撑环行带；该游泳池包括一块联接于环形管架的环行带内的不透水布；环形管架和不透水布配合形成游泳池基体。现有的边管横截面都采用圆形，则必然就存在有如下的缺点：顶面为圆弧面，用户使用不方便、不美观。

实用新型内容

为了克服现有管架游泳池所存在的使用不方便、不美观的不足，本实用新型提供一种管架游泳池边管结构的改进，其不但增加管架钢性支撑强度，而且使用方便、美观。

本实用新型解决其技术问题所采用的技术方案是：一种管架游泳池边管结构的改进，管架游泳池包括一环形管架及一设于环形管架内的游泳池，该环形管架包括若干根钢性边管，若干边管之间串接成或通过联接头串接成环行带，所述的边管顶面为平面。本技术方案的有益效果是：边管顶面为平面，则不但增加管架钢性支撑强度，而且使用方便、美观。

所述的边管横截面为侧D字型，而且D字型的平面朝上。本技术特征的有益效果是：边管横截面为侧D字型，则不但边管顶面光滑美观，而且增强管架联接承受力。

所述的环形管架还包括若干个脚架，脚架顶端可装拆地支撑环行带。本技术特征的有益效果是：环行带由若干个脚架支撑，支撑牢固；环行带和地面之间的距离等于脚架。

所述的管架游泳池外侧周面设有若干个袖套；边管套接于对应的袖套内。本技术特征的有益效果是：不但可以定位好边管，而且便于装拆。

所述的边管两端均伸出袖套。本技术特征的有益效果是：便于装拆。

所述的边管第一端设成后插接部、第二端设成前被插接部，边管的第一端的后插接部可装拆地插接于相邻边管的第二端的前被插接部，另匹配有一可锁接后插接部和前被插接部的或松开该锁接的第三锁接装置。

所述的联接头具有两个水平被插接部；边管端部可装拆地插接于联接头的水平被插接部，另匹配有一设在边管端部和水平被插接部之间的可锁接边管端部和水平被插接部或松开该锁接的第一锁接装置；其中，联接头顶面为齐平于边管顶面的平面。本技术特征的有益效果是：其一，联接头和边管之间的联接为可装拆插接，联接牢固，便于装拆；其二，设有第一锁接装置，锁接方便快捷、便于装拆；联接头顶面为齐平于边管顶面的平面，美观。

所述的水平被插接部横截面为匹配于边管横截面侧D字型。本技术特征的有益效果是：管架顶面光滑美观。

所述的联接头具有下被插接部；脚管底端可支撑定位于地面，脚管顶端可装拆地插接于下被插接部；另匹配有设在脚管顶端和下被插接部之间的可锁接脚管顶端和下被插接部或松开该锁接的第二锁接装置。本技术特征的有益效果是：脚管和联接头之间可装拆，拆卸后占用空间小；装拆方便。

所述的边管底面设有下被插接槽；脚管底端可支撑定位于地面，脚管顶端可装拆地插接于下被插接槽；另匹配有设在边管和下被插接槽之间的可锁接脚管顶端和下被插接槽或松开该锁接的第四锁接装置。

所述的每一脚管还匹配有一拉带，拉带一端固接于脚管底端，另一端固接于游泳池，脚架倾斜支撑游泳池。本技术特征的有益效果是：可牢固定位脚管，牢固支撑游泳池。

所述的第一锁接装置包括一固接于边管端部内的第一固接座、一开设于水平被插接部的第一通孔、一开设于边管端部的第一让位孔，第一固接座内设有一在弹力作用下可伸露出第一固接座外，穿过第一让位孔并插接于第一通孔的第一弹销。本技术特征的有益效果是：按下第一弹销即可松开锁接，使用方便，装拆方便快捷。

所述的第二锁接装置包括一固接于脚管顶端内的第二固接座、一开设于下被插接部的第二通孔、一开设于脚管顶端的第二让位孔，第二固接座内设有一在弹力作用下可伸露出第二固接座外，穿过第二让位孔并插接于第二通孔的第二弹销。本技术特征的有益效果是：按下第二弹销即可松开锁接，使用方便，装拆方便快捷。

所述的第三锁接装置包括一固接于后插接部内的弹簧销、一开设于前被插接部的第三通孔、一开设于后插接部的第三让位孔，弹簧销上设有在弹力作用下可穿过第三让位孔并插接于第三通孔的第三弹销。

本技术方案的有益效果是：边管顶面为平面，则不但增加管架刚性支撑强度，而且使用方便、美观。

附图说明

下面结合附图和实施例对本实用新型进一步说明。

图 1 是本实用新型的实施例一的管架游泳池的立体示意图。

图 2 是本实用新型的实施例一的管架游泳池的边管和联接头之间的立体分解示意图。

图 3 是本实用新型的实施例一的管架游泳池的联接头、第一锁接装置的立体分解示意图。

图 4 是本实用新型的实施例一的管架游泳池的边管套接于袖套的立体示意图。

图 5 是本实用新型的实施例二的管架游泳池的立体示意图。

具体实施方式

实施例一

一种管架游泳池边管结构的改进，如图 1 所示，管架游泳池包括一环形管架 2 及一设于环形管架 2 内的游泳池 1，该环形管架 2 包括若干刚性边管 21、可串次装接若干边管 21 的联接头 22 及若干个脚管 23。本实施例中，游泳池 1 为类圆柱形；游泳池 1 设有进水嘴和放水嘴；另匹配有过滤器 5，过滤器具有进水管及放水管，其分别可装拆地密封联接进水嘴和放水嘴以对游泳池 1 的水过滤，该技术为现有技术在此不做进一步描述。

如图 4 所示，游泳池 1 外侧周面上外周缘设有若干个袖套 11，袖套 11 的个数和边管 21 的个数相同。边管 21 套接于对应的袖套 11 内，而且边管 21 两端均伸出袖套 11。

如图 2、3 所示，边管 21 为刚性弧形杆，边管 21 横截面为侧 D 字型，而且 D 字型的平面朝上，弧面朝下。边管 21 两端部内均固设有第一锁接装置 3，边管 21 两端部均开设有第一让位孔。第一锁接装置 3 包括一固接于边管 21 端部内的第一固接座 31、一开设于第一固接座 31 内的腹大口小的第一容置槽、一设于第一容置槽内的成上大小阶梯状的第一弹销 32、一设于第一容置槽内的第一弹簧 33，第一弹簧 33 套接第一弹销 32 的细杆并抵介第一弹销 32 阶梯面和第一容置槽内侧面之间，第一弹销 32 细杆在第一弹簧 33 弹力作用下伸出第一容置槽的开口、边管 21 的第一让位孔。根据需要第一弹销 32 端部设置成锥形。

如图 2、3 所示，联接头 22 具有两个对称设置的水平被插接部 221、一个下被插接部 222，联接头 22 顶面为齐平于边管顶面的平面，水平被插接部 221 横截面为匹配于边管横截面的侧 D 字形。。水平被插接部 221 上开设有第一通孔 2211，边

管 21 端部插接于水平被插接部 221, 而且在第一弹簧 33 弹力作用下第一弹销 32 细杆插接于第一通孔 2211, 以锁接边管 21 端部和联接头 22。由于第一弹销 32 端部设置成锥形, 则将边管 21 端部直接插接于水平被插接部 221 内即可自动锁接, 便于装配。若干个边管 21 和若干个联接头 22 配合形成刚性的环形带。

若干个脚管 23 可装拆地支撑环形带。脚管 23 顶端可装拆地插接于下被插接部 222。

脚管 23 顶端内固设有第二锁接装置 4, 脚管 23 顶端开设有第二让位孔。第二锁接装置 4 包括一固接于脚管 23 顶端的第二固接座 41、一开设于第二固接座 41 内的腹大口小的第二容置槽、一设于第二容置槽内的成上大下小阶梯状的第二弹销 42、一设于第二容置槽内的第二弹簧 43, 第二弹簧 43 套接第二弹销 42 细杆并抵介第二弹销 42 阶梯面和第二容置槽内侧面之间, 第二弹销 42 细杆在第二弹簧 43 弹力作用下伸出第二容置槽的开口、脚管 23 的第二让位孔。根据需要第二弹销 42 端部设置成锥形。

下被插接部 222 上开设有第二通孔 2221, 脚管 23 顶端插接于下被插接部 222, 而且在第二弹簧 43 弹力作用下第二弹销 42 细杆插接于第二通孔 2221, 以锁接脚管 23 和联接头 22。由于第二弹销 42 端部设置成锥形, 则将脚管 23 顶端直接插接于下被插接部 222 内即可自动锁接, 便于装配。

每个脚管 23 底端都固设有一脚座 24。脚座 24 上设有一匹配于脚管 23 底端的上被插接部 241, 脚管 23 底端可装拆地插接于脚座 24 的上被插接部 241 内, 脚座 24 抵靠于地面。

本实施例中管架游泳池的装配过程包括: 1、打开管架游泳池; 2、将边管 21 套接于袖套 11 内, 并使边管 21 两端均伸出袖套 11; 3、装配并锁接边管 21 和联接头 22 的水平被插接部 221; 4、装配脚座 224 和脚管 223; 5、装配并锁接脚管 223 和联接头 22 的下被插接部 222; 6、注水。

实施例二

一种管架游泳池边管结构的改进, 如图 5 所示, 管架游泳池包括一环形管架 2 及一设于环形管架 2 内的游泳池 1, 该环形管架 2 包括若干刚性边管 21、可串次装接若干边管 21 的联接头 22 及若干个脚管 23。本实施例中, 游泳池 1 为类长方体形; 游泳池 1 设有进水嘴和放水嘴; 另匹配有过滤器 5, 过滤器具有进水管及放水管, 其分别可装拆地密封联接进水嘴和放水嘴以对游泳池 1 的水过滤, 该技术为现有技术在此不做进一步描述。

游泳池 1 外侧周面上外周缘设有若干个袖套，袖套的个数和边管的个数相同。边管套接于对应的袖套内，而且边管两端均伸露出袖套。

边管均为刚性直管，边管横截面为侧 D 字型，而且 D 字型的平面朝上，弧面朝下。边管分成前长边管、中长边管、后长边管、左短边管、中短边管及右短边管。

前长边管前端固设有一套环，前长边管后端设成后插接部；后长边管后端固设有一套环，后长边管前端设成前被插接部。左短边管左端也固设有一套环，左短边管右端设成右被插接部；右短边管右端也固设有一套环，右短边管左端设成左插接部。

中长边管的前端设成前被插接部，后端设成后插接部，另匹配有一可锁接后插接部和前被插接部的或松开该锁接的第三锁接装置，其包括一固接于后插接部内的弹簧销、一开设于前被插接部的第三通孔、一开设于后插接部的第三让位孔，弹簧销上设有在弹力作用下可穿过第三让位孔并插接于第三通孔的第三弹销，通过第三锁接装置锁接前被插接部和后插接部，进而固定前长边管、中长边管和后长边管。

中短边管的左端设成左插接部，右端设成右被插接部，另匹配有一可锁接左插接部和右被插接部的或松开该锁接的第五锁接装置，其结构和第三锁接装置结构相同，通过第五锁接装置锁接右被插接部和左插接部，进而固定前左短边管、中短边管及右短边管。

四个联接头 22，每个联接头 22 都包括一成直角的角接头、两固设于角接头端部的导滑塞。后长边管、左短边管、中短边管及右短边管：成直角布置的两边管之间联接有联接头 22。角接头的导滑塞可装拆地插接固接于套环。使得前长边管、中长边管、后长边管、左短边管、中短边管、右短边管及联接头构成矩形环形带。

边管底下开设有两个被插接槽，每个边管底下都匹配有一个 U 形脚架 6。U 形脚架 6 两顶端可装拆插接固接于边管底下的两个被插接槽。U 形脚架 6 顶端和被插接槽之间设置有可锁接 U 形脚架 6 顶端和被插接槽的或松开该锁接的第四锁接装置。每个 U 形脚架 6 上均包括有一拉带 7，拉带一端固接于 U 形脚架 6 底杆，另一端固接于游泳池 1，从而固定 U 形脚架 6 并使 U 形脚架 6 倾斜支撑游泳池 1。

以上所述，仅为本实用新型较佳实施例而已，故不能以此限定本实用新型实施的范围，即依本实用新型申请专利范围及说明书内容所作的等效变化与修饰，皆应仍属本实用新型专利涵盖的范围内。

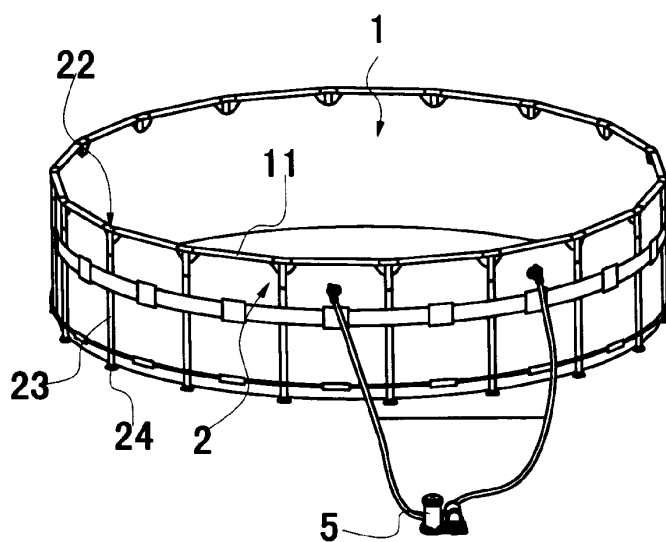


图 1

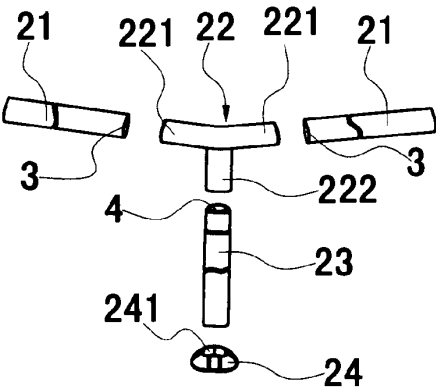


图2

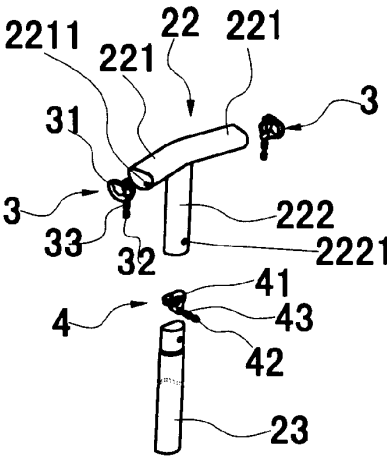


图3

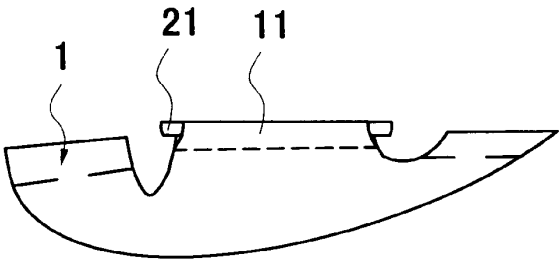


图4

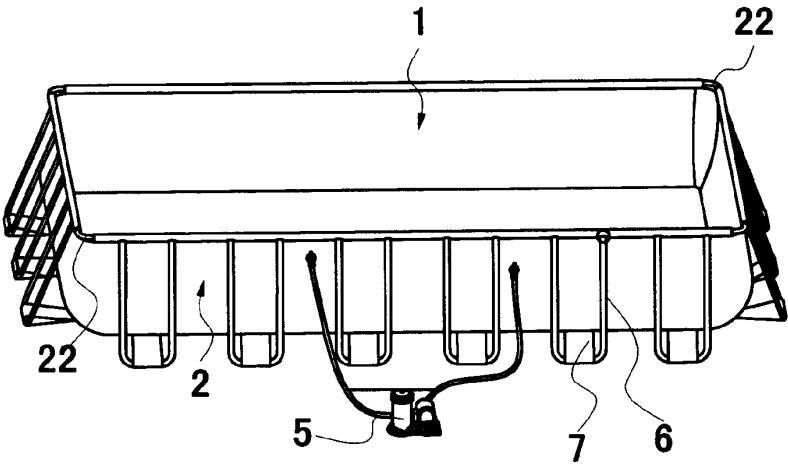


图5



Espacenet

Bibliographic data: CN2766083 (Y) — 2006-03-22

Connection pin for water tank steel tube support

Inventor(s): LIU FENG [CN] ± (FENG LIU)

Applicant(s): SHANGHAI BESTWAY INFLATABLES & [CN] ± (SHANGHAI BESTWAY INFLATABLES & MATERIAL CORP)

Classification: - international: *F16B7/00*
- cooperative:

Application number: CN20052039036U 20050117

Priority number(s): CN20052039036U 20050117

Abstract of CN2766083 (Y)

The utility model relates to a connecting pin for a steel pipe supporting frame of a water pond. The utility model mainly comprises a pin and a water-proof shim. The utility model is characterized in that the lower end of the pin is in a circular head shape, and the lower part of the pin can be divided into two branches, wherein the outside of the two branches is respectively provided with a convex point. The water-proof shim is in a bowl shape, and the pin can thread through the water-proof shim and a connecting circular hole of a steel pipe. Then, two convex points of the pin are mutually butted with the edge at the lower end of the connecting circular hole of the steel pipe. The utility model has the advantages that the structure is provided with the water-proof shim, and the pin can easily be inserted and extracted of the water-proof shim; because the thickness of the branches is enlarged, the pin can not be easily broken and bended; the lower end of the pin is in a circular-head shape, which can prevent from hurting a user.

[19] 中华人民共和国国家知识产权局

[51] Int. Cl.
F16B 7/00 (2006.01)



[12] 实用新型专利说明书

专利号 ZL 200520039036.7

[45] 授权公告日 2006 年 3 月 22 日

[11] 授权公告号 CN 2766083Y

[22] 申请日 2005.1.17

[21] 申请号 200520039036.7

[73] 专利权人 上海荣威塑胶工业有限公司

地址 201812 上海市曹安路 3065 号

[72] 设计人 刘 峰

[74] 专利代理机构 上海市华诚律师事务所

代理人 李 平

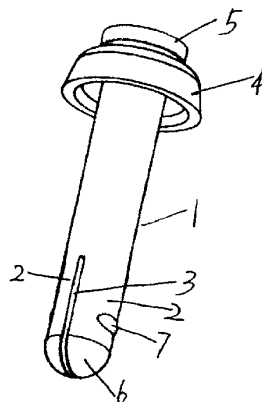
权利要求书 1 页 说明书 4 页 附图 3 页

[54] 实用新型名称

水池钢管支架的连接插销

[57] 摘要

一种水池钢管支架的连接插销，构成主要包括：插销和防水垫片，其特征在于插销的下端为圆头形状，并在下部分割成两个分叉，两个分叉的外侧各设有一凸点。防水垫片为碗形形状，插销穿过防水垫片、穿过钢管的连接圆孔，插销的两个凸点与钢管的连接圆孔的下端边缘相抵。本实用新型的优点是本结构设有防水垫片，插销插入和拔出容易，分叉的厚度增大使插销不易折断及折弯，插销的下端为圆头形状避免对使用者造成伤害。



- 1、 一种水池钢管支架的连接插销，主要包括一类似铆钉的圆柱体插销，圆柱体的直径与钢管的连接圆孔直径相配合，插销的顶端为圆形顶盖，其直径大于圆柱体的直径，和一防水垫片，其特征在于：所述插销的下端为圆头形状，并从中间将圆柱体的下部割成两个分叉，两个分叉的外侧各设有一凸点，由橡胶或塑料制成的防水垫片为碗形状，外径大于钢管的连接圆孔直径，中间设有与插销匹配的圆孔，插销穿过防水垫片和钢管的连接圆孔，插销的两个凸点与钢管的连接圆孔的下端边缘相抵。
- 2、 根据权利要求 1 所述的一种水池钢管支架的连接插销，其特征在于所述插销的两个分叉上的凸点形状可以为圆形或椭圆形，该两个凸点的高度之和小于两个分叉之间的间距，两个分叉之间的间距为插销圆柱体本体直径的 $1/10 \sim 3/10$ 。

水池钢管支架的连接插销

技术领域

本实用新型涉及一种水池钢管支架的连接插销，特别是一种 PVC 材料制作的水池钢管支架的连接插销。

背景技术

现在市场上的矩形或多边形钢管支架 PVC 水池，钢管支架通常是由边管、T 形接头、垂直支撑管组成的，钢管表面一般都经过喷漆或喷塑处理。其中边管的两端加工成有一定长度的缩口，边管在与 T 形接头连接时边管的收缩部位插入 T 形接头，然后插入插销，使两者固定。插销通常采用有一定弹性的塑料制成，它的外形类似于铆钉，插销的下端设有两个分叉，两个分叉间的距离较宽，两个分叉上设有一圈圆台状或钩状的限位倒扣，参见图 7。当插销插入钢管连接圆孔，插销的两边分叉向内弯曲使插销能够通过钢管连接圆孔，插销穿过钢管连接圆孔之后两边分叉回弹复位，圆台状或钩状的限位倒扣卡在钢管连接圆孔下端边缘起到限位的作用。但这种插销存在着以下缺陷：1 这种插销两个分叉间的距离较大，使得两个分叉比较单薄，水池装满水之后 T 形接头和边管对插销有很大的剪切力，容易造成分叉折弯或折断；2 整圈的圆台倒扣较宽，造成插销插入和拔出都比较困难；3 插销头部较尖锐，容易对使用者造成伤害；4 没有防水装置，水容易流入钢管内部造成钢管的锈蚀。

发明内容

为了克服上述已有技术中的缺陷,本实用新型设计出一种水池钢管支架的连接插销。本实用新型的主要包括一类似铆钉的圆柱体插销,圆柱体的直径与钢管的连接圆孔直径相配合,插销的顶端为圆形顶盖,其直径大于圆柱体的直径,和一防水垫片,其特征在于:所述插销的下端为圆头形状,并从中间将圆柱体的下部分割成两个分叉,两个分叉的外侧各设有一凸点,凸点形状可以为圆形或者椭圆形,该两个凸点的高度之和小于两个分叉之间的间距,两个分叉之间的分割间距以允许两个分叉上的凸点受方向内挤压造成两个分叉弯曲变形而使插销能顺畅地通过钢管的连接圆孔为宜,两个分叉之间的间距为插销圆柱体本体直径的 $1/10 \sim 3/10$ 。由橡胶或塑料制成的防水垫片为碗形形状,外径大于钢管的连接圆孔直径,中间设有与插销匹配的圆孔,插销穿过防水垫片、穿过钢管的连接圆孔,插销的两个凸点与钢管的连接圆孔的下端边缘相抵。

本实用新型的优点是本结构设有防水垫片,插销卡口改为凸点插入和拔出容易,分叉的厚度增大使插销不易折断及折弯,插销的下端为圆头形状避免对使用者造成伤害。

附图说明

图1 本实用新型的插销、防水垫片结构示意图

图2 本实用新型的插销结构示意图

图3 本实用新型的防水垫片结构示意图

图4 本实用新型的连接示意图

图5 本实用新型的连接剖视图

图 6 本实用新型的连接剖视图

图 7 现有技术的插销连接剖视图

1 插销、 2 分叉、 3 分割口、 4 防水垫片、 5 圆形顶盖、 6 圆头、 7 凸点、 8 钢管、 9 T 形接头

具体实施方式

下面结合附图进一步说明本实用新型的实施例:

参见图 1、图 2, 插销 1 为一类似铆钉的圆柱体, 圆柱体的直径与钢管的连接圆孔直径相配合, 插销 1 的顶端为圆形顶盖 5, 其直径大于圆柱体的直径, 插销 1 用有一定弹性的塑料或其它材料制作, 插销 1 下端为圆头 6, 插销 1 的下部从中间将圆柱体的三分之一分割成两个分叉 2, 两个分叉 2 的外侧各设有一凸点 7, 凸点 7 形状可以为圆形、椭圆形或者其它形状。该两个凸点的高度之和小于两个分叉之间的间距, 两个分叉 2 之间的分割口 3 的宽度为以允许两个分叉上的凸点受力向内挤压造成两个分叉 2 弯曲变形而使插销 1 能顺畅地通过钢管的连接圆孔为宜, 一般为两个分叉之间的间距为插销圆柱体本体直径的 $1/10 \sim 3/10$ 。

参见图 3、图 4、图 5、图 6, 防水垫片 4 为软 PVC 或其它柔性的橡胶或塑料等适宜的材料制成, 防水垫片 4 的形状为碗形, 外径大于钢管的圆孔直径, 中间有与插销 1 匹配的圆孔。碗形的防水垫片 4 在垂直方向受压变形使碗形防水垫片的内表面紧紧贴合在钢管表面, 由于插销 1 上的两个凸点 7 的限位作用阻止了碗形防水垫片 4 的反弹。这样可以使防水垫片 4 对钢管 8 有良好的防水作用, 防止水从钢管 8 的连接圆孔中流入钢管内部。

当钢管 8 在与 T 形接头 9 连接时, 钢管 8 的收缩部位插入 T 形接头 9,

然后插入插销 1，插销 1 受到垂直方向向下的力，并迫使插销分叉 2 外表面上的凸点 7 受力向内挤压造成两个分叉 2 弯曲变形而使插销 1 能顺畅地通过钢管的连接圆孔。两个分叉 2 有足够的厚度保证在长期受到钢管的剪切力和多次插拔的情况下而不被折断。插销 1 贯穿插入钢管 8 以后，两个凸点 7 回弹复位起到限位固定的作用，防止插销 1 松动脱落。

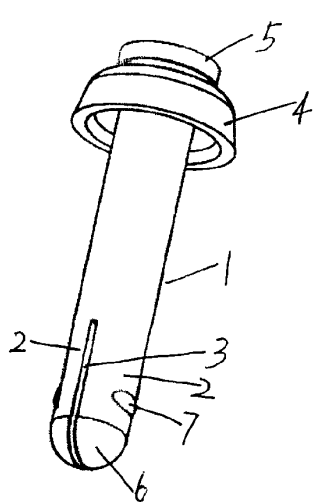


图 1

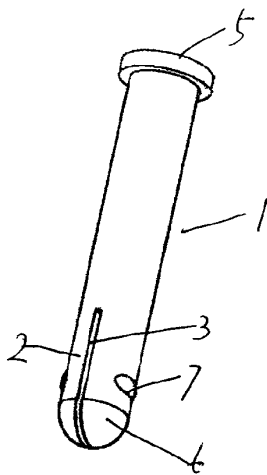


图 2

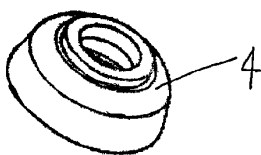


图 3

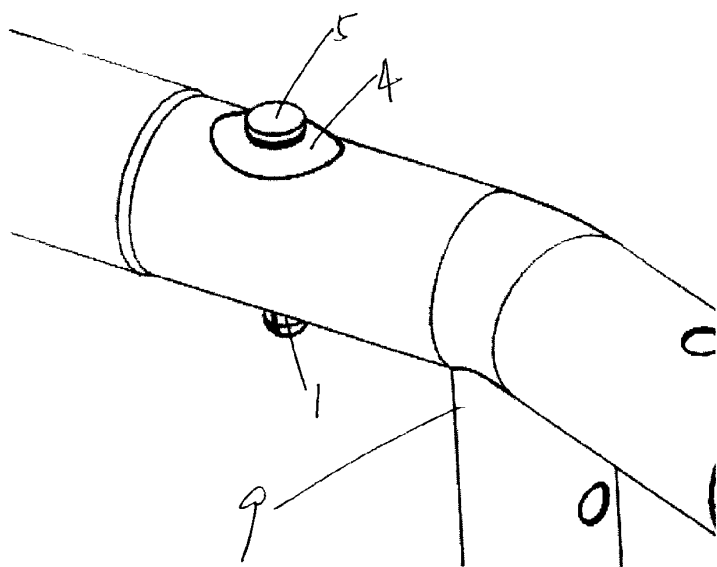


图 4

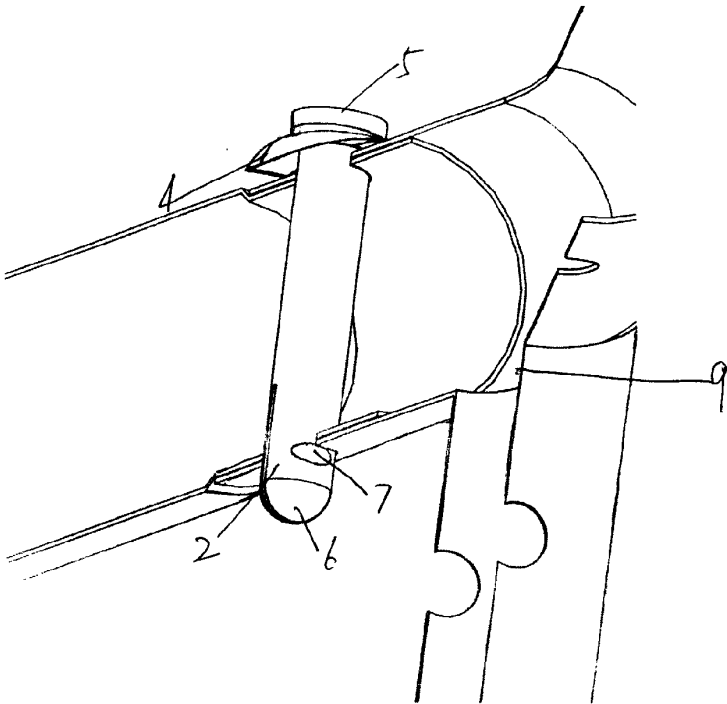


图 5

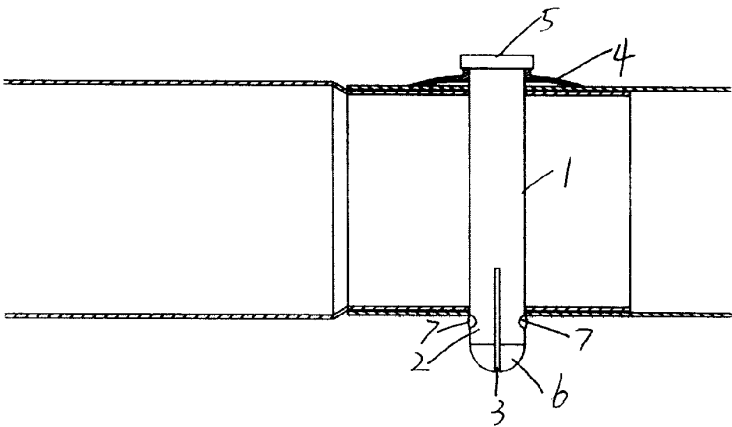


图 6

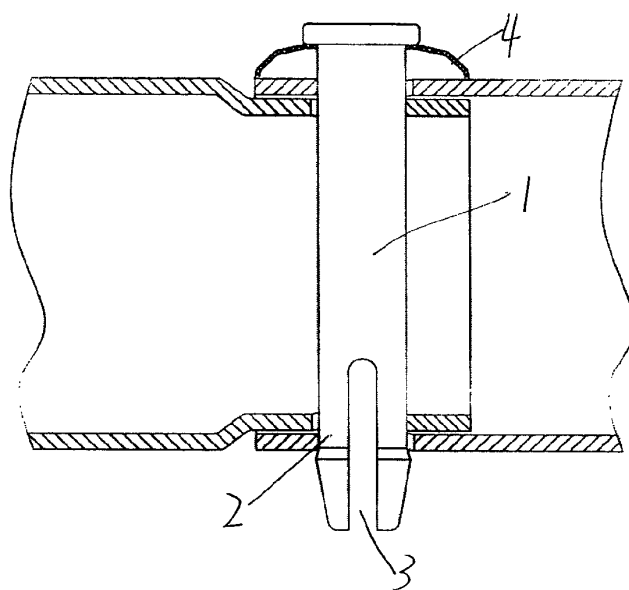


图 7



Espacenet

Bibliographic data: CN209040623 (U) — 2019-06-28

Annular pool

Inventor(s): HUANG ZHIXIONG; TAN AIMING; XU YAOYUAN ± (黄志雄; 谭艾明; 许耀元)

Applicant(s): INTEX IND XIAMEN CO LTD ± (明达实业(厦门)有限公司)

Classification: - **international:** E04H4/00; E04H4/14
- **cooperative:**

Application number: CN201821354959U 20180822

Priority number(s): CN201821354959U 20180822

Abstract of CN209040623 (U)

The utility model provides an annular pool. The pool comprises a pool body, a plurality of side pipes and a plurality of elastic pins, the plurality of corner joints, the plurality of U-shaped foot tubes, the plurality of V-shaped foot tube springs and the plurality of drawstrings, the side tubes and the corner joints are mutually connected through mutual matching of the elastic pins and the connecting holes, the side tubes are connected and matched together end to end through the elastic pins and form an annular structure through the corner joints, and oversleeves are arranged on the pool body and penetrate through the oversleeves to form the pool with the pool body. The U-shaped foot tubes are matched with the side tubes through the V-shaped foot tube springs, the U-shaped foot tubes support the pool body in an inclined supporting mode, one ends of the pull belts are fixed to the bottom of the pool, the other ends of the pull belts penetrate through horizontal tubes at the bottoms of the U-shaped foot tubes, and the pull belts are tightened. The annular pool has the advantages of being easy to disassemble and assemble, high in safety performance and high in stability performance.



(21)申请号 201821354959.5

(22)申请日 2018.08.22

(73)专利权人 明达实业(厦门)有限公司

地址 361022 福建省厦门市海沧区翁角路
858号

(72)发明人 黄志雄 谭艾明 许耀元

(74)专利代理机构 厦门福贝知识产权代理事务
所(普通合伙) 35235

代理人 郝学江

(51)Int.Cl.

E04H 4/00(2006.01)

E04H 4/14(2006.01)

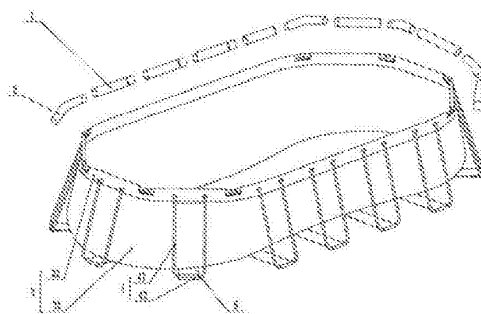
权利要求书1页 说明书3页 附图2页

(54)实用新型名称

一种环形水池

(57)摘要

本实用新型给出了一种环形水池,包括水池体、多个边管、多个弹销,多个角接头,多个U形脚管,多个V形脚管弹簧和多个拉带,边管和角接头通过弹销与连接孔的相互配合来相互连接,边管通过弹销首尾连接配合在一起,并且通过角接头形成环状结构,水池体上设有袖套,边管穿过袖套与水池体形成水池。U形脚管通过V形脚管弹簧与边管配合,U形脚管以斜支撑的方式支撑所述水池体,拉带一端固定于水池底部,另一端穿过U形脚管底部水平管,使拉带绷紧。本实用新型所述的环形水池具有拆装简单、安全性能高和稳定性强的特点。



1. 一种环形水池, 其特征在于, 包括水池体、多个边管、多个弹销, 多个角接头, 所述边管的一端具有缩小的径向尺寸, 并设有销孔, 所述弹销置于销孔内, 所述边管的另一端设有连接孔, 所述边管通过所述弹销与所述连接孔的相互配合来相互连接, 所述边管通过所述弹销首尾连接配合在一起, 并且通过所述角接头形成环状结构, 所述水池体上设有袖套, 所述边管穿过所述袖套与所述水池体形成水池。

2. 根据权利要求1所述的环形水池, 其特征在于所述角接头的一端具有缩小的径向尺寸, 并设有销孔, 所述弹销置于所述销孔内, 所述角接头的另一端设有连接孔, 所述角接头通过所述弹销与所述连接孔的相互配合来与所述边管相互连接。

3. 根据权利要求1所述的环形水池, 其特征在于, 还包括多个U形脚管、多个脚管套、多个V形脚管弹簧, 所述U形脚管臂管顶部设有两对销孔, 所述脚管套上设有相对应的两对销孔, 所述脚管套能够通过V形脚管弹销与所述U形脚管连接在一起。

4. 根据权利要求3所述的环形水池, 其特征在于所述U形脚管包括两根臂管和一根水平管, 所述两根臂管顶端具有缩小的径向尺寸, 与所述脚管套的内腔相耦合。

5. 根据权利要求3所述的环形水池, 其特征在于所述水池体袖套和所述边管上设有与脚管套配合的孔位, 所述脚管套嵌入所述边管孔内, 所述U形脚管的臂管插入所述脚管套中, 以斜支撑的方式支撑所述水池体, 所述U形脚管与地面成 60° 。

6. 根据权利要求3所述的环形水池, 其特征在于, 还包括多个拉带, 所述拉带一端固定于所述水池底部, 另一端穿过所述U形脚管底部水平管, 使所述拉带绷紧。

一种环形水池

技术领域

[0001] 本实用新型涉及一种地上水池,尤其是一种环形水池。

背景技术

[0002] 地上水池是日前十分流行的游乐设施,因其可以安装在室外空地上或者家里的院子里,供成人和儿童娱乐,受到许多家庭的喜爱。支架水池是目前市面上比较常见的地上水池,传统的这类水池主要由支撑架和水池体两部分构成,支撑架一般由多跟支撑管、脚管和T形三通接头通过连接构成,水池体一般采用柔性增强PVC胶布材质。目前市场上的支架水池安装和拆卸较为繁琐、支架支撑力不强,水池在充水后,水位越深,水压越大,水池体向外膨胀,脚管容易发生移位,造成水池体倾倒,此结构因素会直接影响到整个支架水池的稳定性,存在安全隐患,容易发生水池倒塌造成人身安全事故。

实用新型内容

[0003] 有鉴于此,本实用新型针对现有技术的不足,提出了一种拆装便捷、稳定性能强和安全系数高的环形水池。

[0004] 为实现上述目的,本实用新型提出了一种环形水池,包括水池体、多个边管、多个弹销,多个角接头,边管的一端具有缩小的径向尺寸,并设有销孔,弹销置于销孔内,边管的另一端设有连接孔,边管通过弹销与连接孔的相互配合来相互连接,边管通过弹销首尾连接配合在一起,并且通过角接头形成环状结构,水池体上设有袖套,边管穿过袖套与水池体形成水池。

[0005] 优选地,角接头的一端具有缩小的径向尺寸,并设有销孔,弹销置于销孔内,角接头的另一端设有连接孔,角接头通过弹销与连接孔的相互配合来与边管相互连接。

[0006] 优选地,该环形水池还包括多个U形脚管、多个脚管套、多个V形脚管弹簧,U形脚管臂管顶部设有两对销孔,脚管套上设有相对应的两对销孔,脚管套能够通过V形脚管弹销与U形脚管连接在一起。

[0007] 优选地,U形脚管包括两根臂管和一根水平管,两臂管顶端具有缩小的径向尺寸,与脚管套的内腔相耦合。

[0008] 优选地,水池体袖套和所述边管上设有与脚管套配合的孔位,脚管套嵌入边管孔内,U形脚管的臂管插入边管的孔内的脚管套中,以斜支撑的方式支撑所述水池体,U形脚管与地面成60°。

[0009] 优选地,该环形水池还包括多个拉带,拉带一端固定于水池底部,另一端穿过U形脚管底部水平管,使拉带绷紧。

[0010] 本实用新型的环形水池通过弹销使各边管配合,使其拆装便捷,利用U形脚管的斜支撑和拉带的作用,使其不易发生滑移,稳定性能强,安全系数高。本实用新型的环形水池设计结构简单、使用方便,美观,方便生产和组装,利于推广使用。

附图说明

- [0011] 下面结合附图对本实用新型的具体实施方式作进一步详细说明。
- [0012] 图1是本实用新型的环形水池的外观结构示意图；
- [0013] 图2是本实用新型的环形水池的边管的结构示意图；
- [0014] 图3是本实用新型的环形水池的U形脚管与脚管套配合的爆炸图。

具体实施方式

[0015] 为使本实用新型实施例的目的、技术方案和优点更加清楚，下面将结合本实用新型实施例中的附图，对本实用新型实施例中的技术方案进行清楚、完整地描述。

[0016] 下面详细描述本实用新型的实施例，实施例的示例在附图中示出，其中自始至终相同或类似的标号表示相同或类似的元件或具有相同或类似功能的元件。下面通过参考附图描述的实施例是示例性的，旨在用于解释本实用新型，而不能理解为对本实用新型的限制。

[0017] 如图1所示，本实用新型揭示了一种环形水池，其包括多个边管1、多个角接头2、水池体3、多个U形脚管4和拉带5，其中水池体3包括水池主体31和袖套32，U形脚管4包括臂管41和水平管42。如图2所示，边管1的一端具有缩小的径向尺寸，并设有销孔11，弹销6置于边管1缩小的径向尺寸一端内，且弹销6上的定位销61穿过销孔11，边管1的另一端设有连接孔12，前一边管的销孔11与后一边管的销孔12相对应，通过弹销6的定位销61连接配合在一起，边管1中部还设有两个孔13，用以嵌入脚管套7。

[0018] 如图3所示，U形脚管4两臂管41顶端具有缩小的径向尺寸，并设有两对销孔411，脚管套7上设有相对应的两对销孔71，V形脚管弹销8置于U形脚管4臂管内，V形脚管弹销8上的两对定位销81穿过对应的销孔411，U形脚管4臂管顶端可以插入脚管套7的内腔中，脚管套7上的两对销孔71与销孔411相对，且定位销81同时穿过销孔411和销孔81，使U形脚管4与脚管套7固定。

[0019] 在具体示例中，角接头2与边管1有相同的结构，一端具有缩小的径向尺寸，并设有销孔，弹销6置于销孔内，另一端设有连接孔，角接头可通过弹销与连接孔的相互配合来与边管相互连接，形成环状结构。边管1和角接头2穿过水池体3的袖套32，利用弹销6首尾相接，与水池主体31连接形成水池。可替代的，角接头和边管的连接方式可以有除了弹销之外的其他形式，例如，使用插销的方式把角接头和边管连接起来。

[0020] 其中，在具体示例中，边管1上设有与脚管套7配合的孔位13，脚管套7嵌入边管孔13内，U形脚管4插入边管1上的孔位13中的脚管套7内，通过V型弹销8固定，U形脚管4与地面成60°，以斜支撑的方式支撑水池体3。

[0021] 另外，在具体示例中，拉带5一端固定于水池主体31底部，另一端穿过U形脚管4底部水平管42，拉带处于绷紧状态，可以有效的防止U形脚管4滑移，进一步提高水池的稳定性。

[0022] 由此可见，本实用新型的环形水池通过弹销使各边管配合，边管的拆装更加便捷，利用U形脚管的斜支撑和拉带绷紧的作用下，U形脚管不易发生滑移，稳定性能强，安全系数高。本实用新型的环形水池设计结构简单、使用方便，美观，方便生产和组装，利于推广使用。

[0023] 显然,本领域技术人员在不偏离本实用新型的精神和范围的情况下可以作出对本实用新型的实施例的各种修改和改变。以该方式,如果这些修改和改变处于本实用新型的权利要求及其等同形式的范围内,则本实用新型还旨在涵盖这些修改和改变。词语“包括”不排除未在权利要求中列出的其它元件或步骤的存在。某些措施记载在相互不同的从属权利要求中的简单事实不表明这些措施的组合不能被用于获利。权利要求中的任何附图标记不应当被认为限制范围。

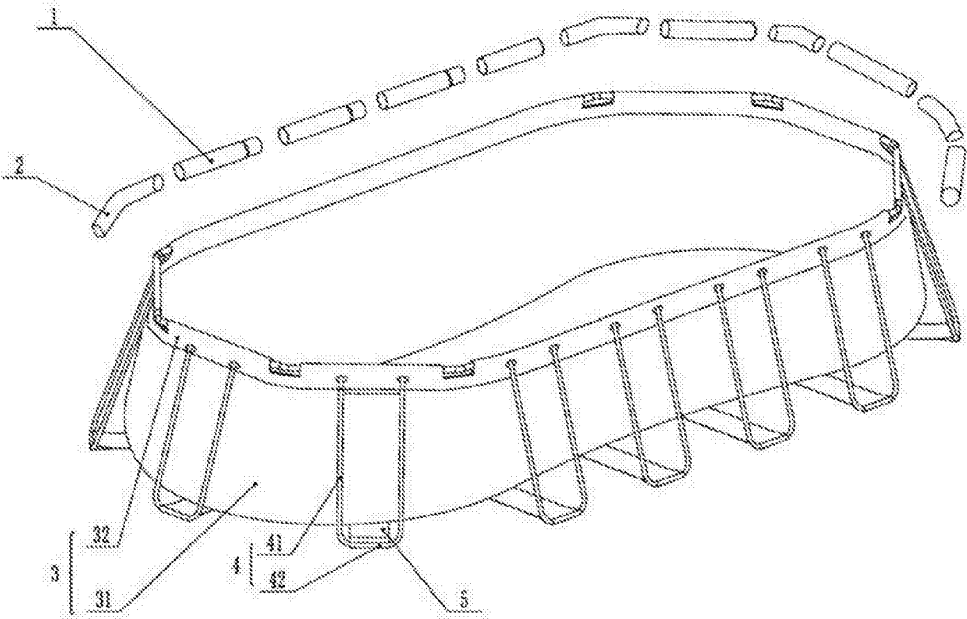


图1

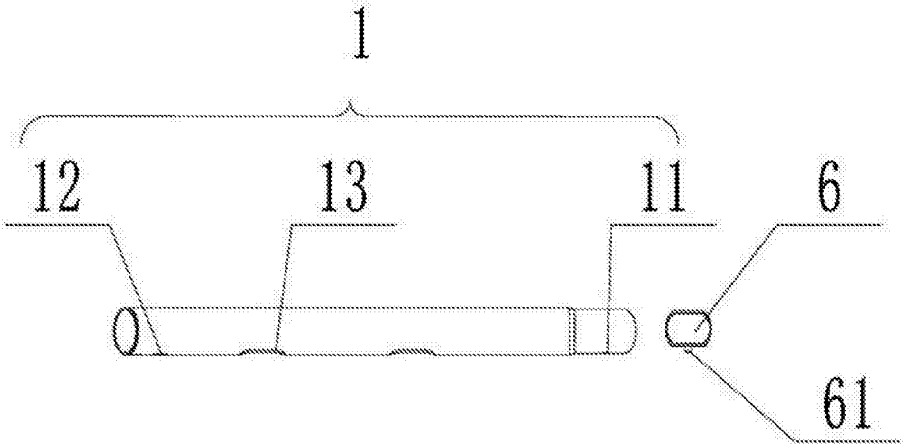


图2

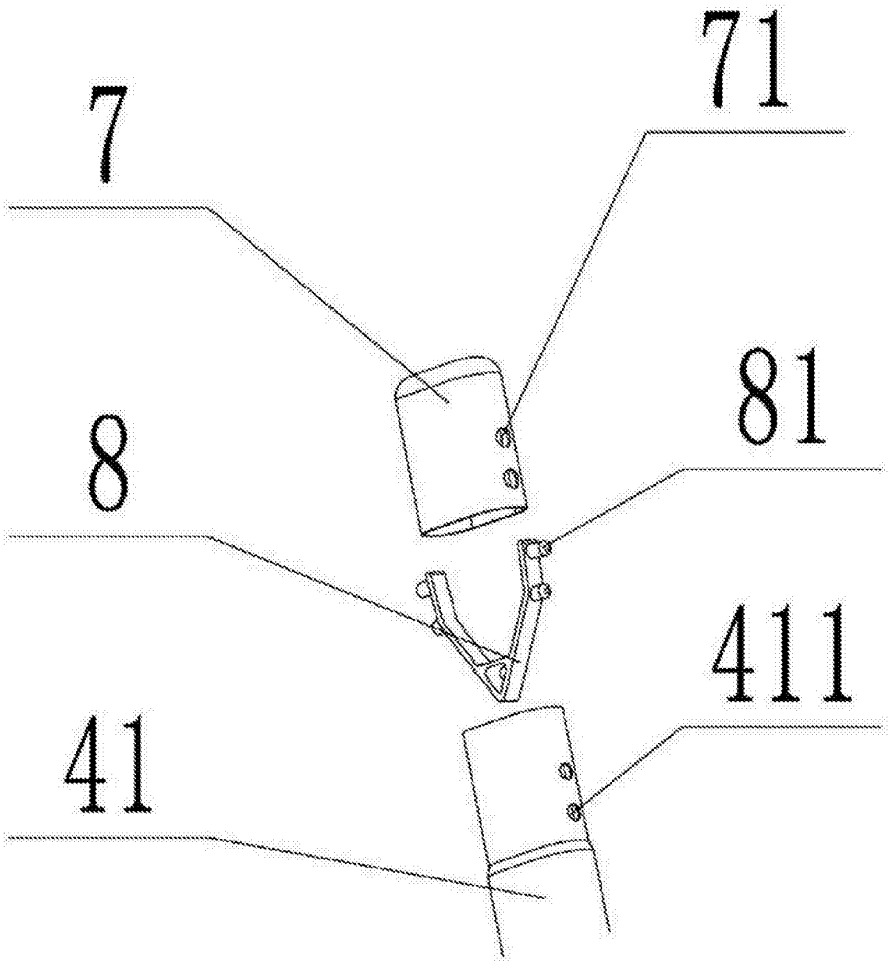


图3

Electronic Acknowledgement Receipt	
EFS ID:	46413068
Application Number:	16220484
International Application Number:	
Confirmation Number:	3890
Title of Invention:	JOINT FOR ABOVE GROUND POOL FRAME
First Named Inventor/Applicant Name:	Hua Hsiang Lin, deceased
Customer Number:	27268
Filer:	William Stephen Meyers.
Filer Authorized By:	
Attorney Docket Number:	IRC-0042-02-US
Receipt Date:	15-AUG-2022
Filing Date:	14-DEC-2018
Time Stamp:	19:46:15
Application Type:	U.S. National Stage under 35 USC 371

Payment information:

Submitted with Payment	no				
File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	IRC_0042_02_US_IDS.pdf	1264095	no	5
			7ee82bda1520ee09f74e2ff50f6d0d3b19e47b24		
Warnings:					

Information:					
2	Foreign Reference	CN204531509.pdf	2501598	no	37
			558c74e04f71760c490274be06f169c59b42d1fc		
Warnings:					
Information:					
3	Foreign Reference	CN205777703.pdf	1038270	no	21
			d2ac9ef6d225af76f1fb66bdba5e88167501f08a		
Warnings:					
Information:					
4	Foreign Reference	CN200968073.pdf	507619	no	11
			90f7a06225ec604f57ffaaba40e4864dd9416a9		
Warnings:					
Information:					
5	Foreign Reference	CN2766083.pdf	309312	no	10
			ab9af873f31c0f9ebe6eadfcf79c13cc0948134b		
Warnings:					
Information:					
6	Foreign Reference	CN209040623.pdf	402255	no	8
			0ef0822269c853bf978bf357367c785da0f279ad		
Warnings:					
Information:					
Total Files Size (in bytes):			6023149		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/220,484	12/14/2018	Hua Hsiang Lin, deceased	IRC-0042-02-US	3890
27268	7590	08/17/2022		
FAEGRE DRINKER BIDDLE & REATH LLP 300 NORTH MERIDIAN STREET SUITE 2500 INDIANAPOLIS, IN 46204			EXAMINER CRANE, LAUREN ASHLEY	
			ART UNIT 3754	PAPER NUMBER
			NOTIFICATION DATE 08/17/2022	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

intear@faegredrinker.com



UNITED STATES DEPARTMENT OF COMMERCE
U.S. Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450

APPLICATION NO./ CONTROL NO.	FILING DATE	FIRST NAMED INVENTOR/ PATENT IN REEXAMINATION	ATTORNEY DOCKET NO.
16/220,484	12/14/2018	Lin, deceased et al.	IRC-0042-02-US

FAEGRE DRINKER BIDDLE & REATH LLP 300 NORTH MERIDIAN STREET SUITE 2500 INDIANAPOLIS, IN 46204		EXAMINER	
		LAUREN A CRANE	
		ART UNIT	PAPER
		3754	20220815

DATE MAILED: _____

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner for Patents

The IDS have been considered.

/LAUREN A CRANE/
Primary Examiner, Art Unit 3754

PTO-90C (Rev.04-03)

Doc code: IDS

Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-22)

Approved for use through 05/31/2024. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16220484
	Filing Date	2018-12-14
	First Named Inventor	Hua Hsiang Lin
	Art Unit	3754
	Examiner Name	CRANE, LAUREN ASHLEY
	Attorney Docket Number	IRC-0042-02-US

U.S. PATENTS							Remove	
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1	5083327		1992-01-28	GILLEBAARD HENDRIK C			
If you wish to add additional U.S. Patent citation information please click the Add button.							Add	
U.S. PATENT APPLICATION PUBLICATIONS							Remove	
Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1	20220034113	A1	2022-02-03	HUANG et al.			
If you wish to add additional U.S. Published Application citation information please click the Add button.							Add	
FOREIGN PATENT DOCUMENTS							Remove	
Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²ⁱ	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	T ⁵
	1	8810857	DE	U1	1988-10-13	CHIANG-HSIUNG, LIU, TAIPEH/T'AI-PEI, TW		×
	2	19904335	DE	A1	1999-08-05	TORRENTE IND	English Abstract Submitted	☐
If you wish to add additional Foreign Patent Document citation information please click the Add button.							Add	
NON-PATENT LITERATURE DOCUMENTS							Remove	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		16220484
	Filing Date		2018-12-14
	First Named Inventor	Hua Hsiang Lin	
	Art Unit	3754	
	Examiner Name	CRANE, LAUREN ASHLEY	
	Attorney Docket Number	IRC-0042-02-US	

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T ⁵
	1	European Search Report for EP Patent Application No. 19862486.8, Issued on April 26, 2022, 7 pages.	

If you wish to add additional non-patent literature document citation information please click the Add button

EXAMINER SIGNATURE

Examiner Signature	/LAUREN A CRANE/	Date Considered	08/02/2022
--------------------	------------------	-----------------	------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		16220484
	Filing Date		2018-12-14
	First Named Inventor	Hua Hsiang Lin	
	Art Unit	3754	
	Examiner Name	CRANE, LAUREN ASHLEY	
	Attorney Docket Number	IRC-0042-02-US	

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Zi Yie/	Date (YYYY-MM-DD)	2022-06-03
Name/Print	Zi Yie	Registration Number	80066

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16220484
	Filing Date	2018-12-14
	First Named Inventor	Hua Hsiang Lin
	Art Unit	3754
	Examiner Name	CRANE, LAUREN ASHLEY
	Attorney Docket Number	IRC-0042-02-US

U.S. PATENTS							Remove	
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1							
If you wish to add additional U.S. Patent citation information please click the Add button.							Add	
U.S. PATENT APPLICATION PUBLICATIONS							Remove	
Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1							
If you wish to add additional U.S. Published Application citation information please click the Add button.							Add	
FOREIGN PATENT DOCUMENTS							Remove	
Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²ⁱ	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	T ⁵
	1	201502321	CL		2015-08-19	CORRAL SANTELICES HERNAN CLAUDIO		
If you wish to add additional Foreign Patent Document citation information please click the Add button.							Add	
NON-PATENT LITERATURE DOCUMENTS							Remove	
Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.						T ⁵

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16220484
	Filing Date	2018-12-14
	First Named Inventor	Hua Hsiang Lin
	Art Unit	3754
	Examiner Name	CRANE, LAUREN ASHLEY
	Attorney Docket Number	IRC-0042-02-US

1	
---	--

If you wish to add additional non-patent literature document citation information please click the Add button

EXAMINER SIGNATURE

Examiner Signature	/LAUREN A CRANE/	Date Considered	08/15/2022
--------------------	------------------	-----------------	------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16220484
	Filing Date	2018-12-14
	First Named Inventor	Hua Hsiang Lin
	Art Unit	3754
	Examiner Name	CRANE, LAUREN ASHLEY
	Attorney Docket Number	IRC-0042-02-US

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

☒ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/William S. Meyers/	Date (YYYY-MM-DD)	2022-02-21
Name/Print	William S. Meyers	Registration Number	42,884

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

Doc code: IDS

Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-22)

Approved for use through 05/31/2024. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16220484
	Filing Date	2018-12-14
	First Named Inventor	Hua Hsiang Lin
	Art Unit	3754
	Examiner Name	CRANE, LAUREN ASHLEY
	Attorney Docket Number	IRC-0042-02-US

U.S.PATENTS						Remove
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	1884410		1932-10-25	VINCENT JESSE G	
	2	3424178		1969-01-28	YAZAKI YOSHIMI	
	3	5927363	A	1999-07-27	OLSEN TODD C	
	4	D455950	S	2002-04-23	UNWIN et al.	

If you wish to add additional U.S. Patent citation information please click the Add button.

Add

U.S.PATENT APPLICATION PUBLICATIONS						Remove
Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20020064420	A1	2002-05-30	LIN WEN-PIN	

If you wish to add additional U.S. Published Application citation information please click the Add button.

Add

FOREIGN PATENT DOCUMENTS								Remove
Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T ⁵

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		16220484
	Filing Date		2018-12-14
	First Named Inventor	Hua Hsiang Lin	
	Art Unit	3754	
	Examiner Name	CRANE, LAUREN ASHLEY	
	Attorney Docket Number	IRC-0042-02-US	

	1						
--	---	--	--	--	--	--	--

If you wish to add additional Foreign Patent Document citation information please click the Add button

NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T ⁵
	1		

If you wish to add additional non-patent literature document citation information please click the Add button

EXAMINER SIGNATURE

Examiner Signature	/LAUREN A CRANE/	Date Considered	08/15/2022
--------------------	------------------	-----------------	------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16220484
	Filing Date	2018-12-14
	First Named Inventor	Hua Hsiang Lin
	Art Unit	3754
	Examiner Name	CRANE, LAUREN ASHLEY
	Attorney Docket Number	IRC-0042-02-US

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☒ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Robert Null/	Date (YYYY-MM-DD)	2022-08-04
Name/Print	Robert Null	Registration Number	40,746

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16220484
	Filing Date	2018-12-14
	First Named Inventor	Hua Hsiang Lin
	Art Unit	3754
	Examiner Name	CRANE, LAUREN ASHLEY
	Attorney Docket Number	IRC-0042-02-US

U.S.PATENTS							Remove	
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear		
	1	D930802	S	2021-09-14	HUANG et al.			
If you wish to add additional U.S. Patent citation information please click the Add button.							Add	
U.S.PATENT APPLICATION PUBLICATIONS							Remove	
Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear		
	1							
If you wish to add additional U.S. Published Application citation information please click the Add button.							Add	
FOREIGN PATENT DOCUMENTS							Remove	
Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²ⁱ	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T ⁵
	1							
If you wish to add additional Foreign Patent Document citation information please click the Add button.								Add
NON-PATENT LITERATURE DOCUMENTS								Remove
Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.						T ⁵

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		16220484
	Filing Date		2018-12-14
	First Named Inventor	Hua Hsiang Lin	
	Art Unit	3754	
	Examiner Name	CRANE, LAUREN ASHLEY	
	Attorney Docket Number	IRC-0042-02-US	

1	
---	--

If you wish to add additional non-patent literature document citation information please click the Add button

EXAMINER SIGNATURE

Examiner Signature	/LAUREN A CRANE/	Date Considered	08/02/2022
--------------------	------------------	-----------------	------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16220484
	Filing Date	2018-12-14
	First Named Inventor	Hua Hsiang Lin
	Art Unit	3754
	Examiner Name	CRANE, LAUREN ASHLEY
	Attorney Docket Number	IRC-0042-02-US

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Robert Null/	Date (YYYY-MM-DD)	2022-07-26
Name/Print	Robert Null	Registration Number	40,746

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

Doc code: IDS

Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-22)

Approved for use through 05/31/2024. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16220484
	Filing Date	2018-12-14
	First Named Inventor	Hua Hsiang Lin
	Art Unit	3754
	Examiner Name	CRANE, LAUREN ASHLEY
	Attorney Docket Number	IRC-0042-02-US

U.S.PATENTS						Remove
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear
	1	D453553	S	2002-02-12	MAERZ HART	
	2	D454205	S	2002-03-05	SPICER WADE L	
	3	D481110	S	2003-10-21	SNYDER et al.	
	4	D592492	S	2009-05-19	WERSCHMIDT GARY	
	5	D599446	S	2009-09-01	PRICE et al.	
	6	D676942	S	2013-02-26	KLUSS et al.	
	7	D718853	S	2014-12-02	LEE STEVEN DAVID	
	8	D771779	S	2016-11-15	SCIFRES et al.	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		16220484	
	Filing Date		2018-12-14	
	First Named Inventor	Hua Hsiang Lin		
	Art Unit	3754		
	Examiner Name	CRANE, LAUREN ASHLEY		
	Attorney Docket Number	IRC-0042-02-US		

	9	D805165	S	2017-12-12	DEAN et al.	
	10	D874021	S	2020-01-28	HUANG et al.	
	11	D905832	S	2020-12-22	GRAY ERIC	
	12	D926295	S	2021-07-27	ZHANG JIANYONG	

If you wish to add additional U.S. Patent citation information please click the Add button.

Add

U.S.PATENT APPLICATION PUBLICATIONS

Remove

Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear
	1	20010037620	A1	2001-11-08	CHOI SOO-HONG	
	2	20170356206	A1	2017-12-14	HUANG SHUIYONG	
	3	20200141143	A1	2020-05-07	HUANG et al.	
	4	20200332544	A1	2020-10-22	HUANG et al.	
	5	20210324648	A1	2021-10-21	HUANG et al.	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		16220484	
	Filing Date		2018-12-14	
	First Named Inventor	Hua Hsiang Lin		
	Art Unit	3754		
	Examiner Name	CRANE, LAUREN ASHLEY		
	Attorney Docket Number	IRC-0042-02-US		

	6	20210348409	A1	2021-11-11	CHEN et al.	
--	---	-------------	----	------------	-------------	--

If you wish to add additional U.S. Published Application citation information please click the Add button.

FOREIGN PATENT DOCUMENTS

Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	T ⁵
	1							

If you wish to add additional Foreign Patent Document citation information please click the Add button.

NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T ⁵
	1	PlumbingSupply.com, "Incredible Selection of PVC Fittings, Sch.40 PVC fittings and Sch.80 PVC Adapters," The Wayback Machine - https://web.archive.org/web/20180701150048/https://www.plumbingsupply.com , (Copyrights) 1995-2018 PlumbingSupply.com, 127 pages	

If you wish to add additional non-patent literature document citation information please click the Add button.

EXAMINER SIGNATURE

Examiner Signature	/LAUREN A CRANE/	Date Considered	08/15/2022
--------------------	------------------	-----------------	------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		16220484
	Filing Date		2018-12-14
	First Named Inventor	Hua Hsiang Lin	
	Art Unit	3754	
	Examiner Name	CRANE, LAUREN ASHLEY	
	Attorney Docket Number	IRC-0042-02-US	

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

☒ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Zi Yie/	Date (YYYY-MM-DD)	2022-06-13
Name/Print	Zi Yie	Registration Number	80066

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16220484
	Filing Date	2018-12-14
	First Named Inventor	Hua Hsiang Lin
	Art Unit	3754
	Examiner Name	CRANE, LAUREN ASHLEY
	Attorney Docket Number	IRC-0042-02-US

U.S. PATENTS							Remove	
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1							
If you wish to add additional U.S. Patent citation information please click the Add button.							Add	
U.S. PATENT APPLICATION PUBLICATIONS							Remove	
Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1							
If you wish to add additional U.S. Published Application citation information please click the Add button.							Add	
FOREIGN PATENT DOCUMENTS							Remove	
Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²ⁱ	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	T ⁵
	1	206477627	CN	U	2017-09-08	SHANGHAI BESTWAY INFLATABLES & MAT CORP	English Abstract Submitted	
	2	207673066	CN	U	2018-07-31	INTEX IND XIAMEN CO LTD	English Abstract Submitted	
If you wish to add additional Foreign Patent Document citation information please click the Add button.							Add	
NON-PATENT LITERATURE DOCUMENTS							Remove	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		16220484
	Filing Date		2018-12-14
	First Named Inventor	Hua Hsiang Lin	
	Art Unit	3754	
	Examiner Name	CRANE, LAUREN ASHLEY	
	Attorney Docket Number	IRC-0042-02-US	

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T ⁵
	1		

If you wish to add additional non-patent literature document citation information please click the Add button

EXAMINER SIGNATURE

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16220484
	Filing Date	2018-12-14
	First Named Inventor	Hua Hsiang Lin
	Art Unit	3754
	Examiner Name	CRANE, LAUREN ASHLEY
	Attorney Docket Number	IRC-0042-02-US

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Robert Null/	Date (YYYY-MM-DD)	2022-08-25
Name/Print	Robert Null	Registration Number	40,746

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Publication Number: CN 206477627 U

Publication Date: Sep 08, 2017

Abstract

The utility model provides a ground forebay and pond support, wherein the pond support includes: a plurality of support piece connect gradually and form the annular along a circumference, a plurality of the 2nd support piece follow circumference distributes and supports all a support piece, connect, connect adjacent two a support piece, and adjacent two the 2nd support piece between the support piece, wherein, it is plastics to connect the part that contacts with at least one support piece. In this technical scheme, shake the measured time at the pond support, plastics can take place to be out of shape, and are less to rust preventives's wearing and tearing, prevent that rust preventives is impaired to come off. Rust preventives can maintain the long period and not drop, and this is effectively avoided taking place the corrosion between joint and the corresponding support piece to, the pond support has longer life.

(19)中华人民共和国国家知识产权局



(12)实用新型专利



(10)授权公告号 CN 206477627 U

(45)授权公告日 2017.09.08

(21)申请号 201720162610.0

(22)申请日 2017.02.22

(73)专利权人 上海荣威塑胶工业有限公司

地址 201812 上海市嘉定区曹安公路3065号

(72)发明人 黄水勇

(74)专利代理机构 北京集佳知识产权代理有限公司 11227

代理人 万铁占 吴敏

(51)Int.Cl.

E04H 4/04(2006.01)

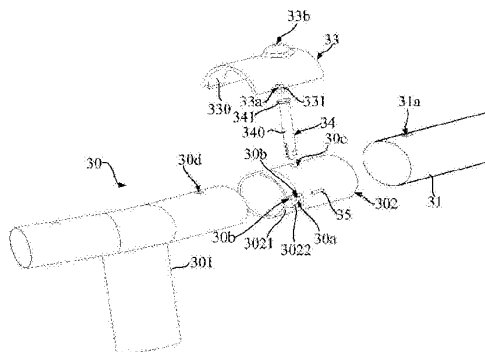
权利要求书3页 说明书9页 附图6页

(54)实用新型名称

地上水池和水池支架

(57)摘要

一种地上水池和水池支架,其中水池支架包括:若干第一支撑件,沿一周向依次连接而形成环形;若干第二支撑件,沿所述周向分布并支撑所有所述第一支撑件;接头,连接相邻两个所述第一支撑件、及相邻两个所述第一支撑件之间的第二支撑件,其中,所述接头与至少一个支撑件接触的部分为塑料。在本技术方案中,在水池支架晃动时,塑料可以发生变形,对防锈材料的磨损较小,防止防锈材料受损脱落。防锈材料可以维持较长时间而不脱落,这有效避免接头与相应支撑件之间发生锈蚀,从而,水池支架具有较长的使用寿命。



CN 206477627 U

1. 一种地上水池, 其特征在于, 包括: 水池支架及水池内衬;
所述水池支架包括:
若干第一支撑件, 沿一周向依次连接而形成环形;
若干第二支撑件, 沿所述周向分布并支撑所有所述第一支撑件;
接头, 连接相邻两个所述第一支撑件、及相邻两个所述第一支撑件之间的第二支撑件,
其中, 所述接头与其中至少一个支撑件接触的部分为塑料;
所述水池内衬包括: 池底、及沿所述周向排布且连接所述池底的池壁, 所述水池内衬支撑在所述水池支架内侧。
2. 如权利要求1所述的地上水池, 其特征在于, 所述接头为塑料接头。
3. 如权利要求2所述的地上水池, 其特征在于, 所述接头包括:
内管; 外管, 环绕所述内管, 且与所述内管定义一环形插槽;
所述第一支撑件和第二支撑件分别插入各自对应的所述插槽内。
4. 如权利要求3所述的地上水池, 其特征在于, 还包括:
连接件, 穿过所述内管、外管及插入所述内管和外管之间的对应支撑件, 以连接所述接头及所述对应支撑件。
5. 如权利要求1所述的地上水池, 其特征在于, 所述接头包括:
接头本体, 所述接头通过所述接头本体连接相邻两个所述第一支撑件、及相邻两个所述第一支撑件之间的第二支撑件;
塑料层, 作为所述接头与所述至少一个支撑件接触的部分, 位于所述接头本体及相应支撑件之间。
6. 如权利要求5所述的地上水池, 其特征在于, 所述塑料层为塑料衬套, 所述塑料衬套与所述接头本体形成面接触, 且所述塑料衬套与所述相应支撑件形成面接触。
7. 如权利要求6所述的地上水池, 其特征在于, 所述塑料衬套具有:
突出部, 沿所述塑料衬套的轴向, 所述突出部面对所述相应支撑件。
8. 如权利要求7所述的地上水池, 其特征在于, 至少一个所述第一支撑件作为所述相应支撑件, 所述水池支架还包括:
防水盖, 至少位于所述第一支撑件背对第二支撑件的一侧, 从所述第一支撑件一侧延伸至所述突出部一侧。
9. 如权利要求8所述的地上水池, 其特征在于, 所述防水盖具有:
止挡部, 沿所述塑料衬套的轴向, 所述止挡部位于所述突出部远离所述第一支撑件的一侧, 且面对所述突出部。
10. 如权利要求8所述的地上水池, 其特征在于, 还包括:
连接件, 依次穿过所述防水盖、第一支撑件及接头, 固定连接所述防水盖、第一支撑件及接头。
11. 如权利要求10所述的地上水池, 其特征在于, 所述连接件包括:
杆部, 依次穿过所述防水盖、第一支撑件及接头;
支撑部, 位于所述杆部一端且支撑于所述防水盖上;
所述杆部的另一端卡设于所述第一支撑件和接头内。
12. 如权利要求11所述的地上水池, 其特征在于, 所述连接件还包括:

至少两个爪部,呈夹角连接于所述杆部的另一端,且呈张紧状态地卡设于所述第一支撑件和接头内。

13.如权利要求10所述的地面水池,其特征在于,所述连接件和所述防水盖为一体成型。

14.如权利要求8所述的地面水池,其特征在于,沿所述塑料衬套的周向,所述防水盖的两端与所述突出部固定连接。

15.如权利要求5所述的地面水池,其特征在于,在所述接头本体与至少一个支撑件面对面的两个面中,至少一个面附着有塑料涂层,所述塑料涂层作为所述塑料层。

16.如权利要求1所述的地面水池,其特征在于,还包括:

防水盖,至少位于所述第一支撑件背对第二支撑件的一侧,从所述第一支撑件一侧延伸至所述接头一侧。

17.一种水池支架,其特征在于,包括:

若干第一支撑件,沿一周向依次连接而形成环形;

若干第二支撑件,沿所述周向分布并支撑所有所述第一支撑件;

接头,连接相邻两个所述第一支撑件、及相邻两个所述第一支撑件之间的第二支撑件,其中,所述接头与至少一个支撑件接触的部分为塑料。

18.如权利要求17所述的水池支架,其特征在于,所述接头为塑料接头。

19.如权利要求18所述的水池支架,其特征在于,所述接头包括:

内管;外管,环绕所述内管,且与所述内管定义一环形插槽;

所述第一支撑件和第二支撑件分别插入对应的所述环形插槽内。

20.如权利要求19所述的水池支架,其特征在于,还包括:

连接件,穿过所述内管、外管及所述内管和外管之间的对应支撑件,以连接所述接头及所述对应支撑件。

21.如权利要求17所述的水池支架,其特征在于,所述接头包括:

接头本体,所述接头通过所述接头本体连接相邻两个所述第一支撑件、及相邻两个所述第一支撑件之间的第二支撑件;

塑料层,作为所述接头与所述至少一个支撑件接触的部分,位于所述接头本体及相应支撑件之间。

22.如权利要求21所述的水池支架,其特征在于,所述塑料层为塑料衬套,所述塑料衬套与所述接头本体形成面接触且所述塑料衬套与所述相应支撑件形成面接触。

23.如权利要求22所述的水池支架,其特征在于,所述塑料衬套具有:

突出部,沿所述塑料衬套的轴向,所述突出部面对所述相应支撑件。

24.如权利要求23所述的水池支架,其特征在于,至少一个所述第一支撑件作为所述相应支撑件,所述水池支架还包括:

防水盖,至少位于所述第一支撑件背对第二支撑件的一侧,从所述第一支撑件一侧延伸至所述突出部一侧。

25.如权利要求24所述的水池支架,其特征在于,所述防水盖包括:

止挡部,沿所述塑料衬套的轴向,所述止挡部位于所述突出部远离所述第一支撑件的一侧,且面对所述突出部。

26. 如权利要求24所述的水池支架,其特征在于,还包括:
连接件,依次穿过所述防水盖、第一支撑件及接头,固定连接所述防水盖、第一支撑件及接头。
27. 如权利要求26所述的水池支架,其特征在于,所述连接件包括:
杆部,依次穿过所述防水盖、第一支撑件及接头;
支撑部,位于所述杆部一端且支撑于所述防水盖;
所述杆部的另一端卡设于所述第一支撑件和接头内。
28. 如权利要求27所述的水池支架,其特征在于,所述连接件还包括:
至少两个爪部,呈夹角连接于所述杆部的另一端,且呈张紧状态地卡设于所述第一支撑件和接头内。
29. 如权利要求26所述的水池支架,其特征在于,所述连接件和所述防水盖为一体成型。
30. 如权利要求24所述的水池支架,其特征在于,沿所述塑料衬套的周向,所述防水盖的两端与所述突出部固定连接。
31. 如权利要求21所述的水池支架,其特征在于,在所述接头本体与至少一个支撑件面对面的两个面中,至少一个面附着有塑料涂层,所述塑料涂层作为所述塑料层。
32. 如权利要求17所述的水池支架,其特征在于,还包括:
防水盖,至少位于所述第一支撑件背对第二支撑件的一侧,从所述第一支撑件一侧延伸至所述接头一侧。

地上水池和水池支架

技术领域

[0001] 本实用新型涉及地上水池技术领域,特别涉及一种地上水池和水池支架。

背景技术

[0002] 随着人们对于户外休闲活动的需求日益增加,可供人们戏水的产品也越来越多,其中,以地上水池最为普遍。其中,支架水池为最常见的一种地上水池种类。

[0003] 通常,支架水池包括水池支架及水池内衬。水池支架包括若干第一支撑件及第二支撑件,其中所有第一支撑件沿一周向依次连接而形成环形。所有第二支撑件沿周向分布并支撑所有第一支撑件。相邻两个第一支撑件、及相邻两个第一支撑件之间的第二支撑件通过接头连接起来,这样水池支架呈环形,水池内衬限定于其内侧,水池内衬依附于水池支架,形成地上水池。

[0004] 一般情况下,第一支撑件、第二支撑件及接头的材料为钢,且在第一支撑件、第二支撑件及接头的表面具有防锈涂层。地上水池在使用过程中,由于水池晃动,第一支撑件与接头之间、及第二支撑件与接头之间发生相互摩擦,由于钢强度大,从而造成防锈涂层脱落,进而造成第一支撑件、第二支撑件及接头发生锈蚀,水池支架的连接强度受到影响。

实用新型内容

[0005] 本实用新型解决的问题是,现有地上水池中的水池支架发生锈蚀的几率大。

[0006] 为解决上述问题,本实用新型提供一种地上水池。该地上水池包括:水池支架及水池内衬;

[0007] 所述水池支架包括:

[0008] 若干第一支撑件,沿一周向依次连接而形成环形;

[0009] 若干第二支撑件,沿所述周向分布并支撑所有所述第一支撑件;

[0010] 接头,连接相邻两个所述第一支撑件、及相邻两个所述第一支撑件之间的第二支撑件,其中,所述接头与其中至少一个支撑件接触的部分为塑料;

[0011] 所述水池内衬包括池底、及沿所述周向排布且连接所述池底的池壁,所述水池内衬支撑在所述水池支架内侧。

[0012] 可选地,所述接头为塑料接头。

[0013] 可选地,所述接头包括:

[0014] 内管;

[0015] 外管,环绕所述内管,且与所述内管定义一环形插槽;

[0016] 所述第一支撑件和第二支撑件分别插入各自对应的所述插槽内。

[0017] 可选地,地上水池还包括:

[0018] 连接件,穿过所述内管、外管及插入所述内管和外管之间的对应支撑件,以连接所述接头及所述对应支撑件。

[0019] 可选地,所述接头包括:

- [0020] 接头本体,所述接头通过所述接头本体连接相邻两个所述第一支撑件、及相邻两个所述第一支撑件之间的第二支撑件;
- [0021] 塑料层,作为所述接头与所述至少一个支撑件接触的部分,位于所述接头本体及相应支撑件之间。
- [0022] 可选地,所述塑料层为塑料衬套,所述塑料衬套与所述接头本体形成面接触且所述塑料衬套与所述相应支撑件形成面接触。
- [0023] 可选地,所述塑料衬套具有:
- [0024] 突出部,沿所述塑料衬套的轴向,所述突出部面对所述相应支撑件。
- [0025] 可选地,至少一个所述第一支撑件作为所述相应支撑件,所述水池支架还包括:
- [0026] 防水盖,至少位于所述第一支撑件背对第二支撑件的一侧,从所述第一支撑件一侧延伸至所述突出部一侧。
- [0027] 可选地,所述防水盖具有:
- [0028] 止挡部,沿所述塑料衬套的轴向,所述止挡部位于所述突出部远离所述第一支撑件的一侧,且面对所述突出部。
- [0029] 可选地,地上水池还包括:
- [0030] 连接件,依次穿过所述防水盖、第一支撑件及接头,固定连接所述防水盖、第一支撑件及接头。
- [0031] 可选地,所述连接件包括:
- [0032] 杆部,依次穿过所述防水盖、第一支撑件及接头;
- [0033] 支撑部,位于所述杆部一端且支撑于所述防水盖上;
- [0034] 所述杆部的另一端卡设于所述第一支撑件和接头内。
- [0035] 可选地,所述连接件还包括:
- [0036] 至少两个爪部,呈夹角连接于所述杆部的另一端,且呈张紧状态地卡设于所述第一支撑件和接头内。
- [0037] 可选地,所述连接件和所述防水盖为一体成型。
- [0038] 可选地,沿所述塑料衬套的周向,所述防水盖的两端与所述突出部固定连接。
- [0039] 可选地,在所述接头与至少一个支撑件面对面的两个面中,至少一个面附着有塑料涂层,所述塑料涂层作为所述塑料层。
- [0040] 可选地,地上水池还包括:
- [0041] 防水盖,至少位于所述第一支撑件背对第二支撑件的一侧,从所述第一支撑件一侧延伸至所述接头一侧。
- [0042] 本实用新型还提供一种水池支架。所述水池支架包括:
- [0043] 若干第一支撑件,沿一周向依次连接而形成环形;
- [0044] 若干第二支撑件,沿所述周向分布并支撑所有所述第一支撑件;
- [0045] 接头,连接相邻两个所述第一支撑件、及相邻两个所述第一支撑件之间的第二支撑件,其中,所述接头与至少一个支撑件接触的部分为塑料。
- [0046] 可选地,所述接头为塑料接头。
- [0047] 可选地,所述接头包括:
- [0048] 内管;

- [0049] 外管,环绕所述内管,且与所述内管定义一环形插槽;
- [0050] 所述第一支撑件和第二支撑件分别插入对应的所述插槽内。
- [0051] 可选地,所述水池支架还包括:
- [0052] 连接件,穿过所述内管、外管及所述内管和外管之间的对应支撑件,以连接所述接头及所述对应支撑件。
- [0053] 可选地,所述接头包括:
- [0054] 接头本体,所述接头通过所述接头本体连接相邻两个所述第一支撑件、及相邻两个所述第一支撑件之间的第二支撑件;
- [0055] 塑料层,作为所述接头与所述至少一个支撑件接触的部分,位于所述接头本体及相应支撑件之间。
- [0056] 可选地,所述塑料层为塑料衬套,所述塑料衬套与所述接头本体形成面接触且所述塑料衬套与所述相应支撑件形成面接触。
- [0057] 可选地,所述塑料衬套具有:
- [0058] 突出部,沿所述塑料衬套的轴向,所述突出部面对所述相应支撑件。
- [0059] 可选地,至少一个所述第一支撑件作为所述相应支撑件,所述水池支架还包括:
- [0060] 防水盖,至少位于所述第一支撑件背对第二支撑件的一侧,从所述第一支撑件一侧延伸至所述突出部一侧。
- [0061] 可选地,所述防水盖包括:
- [0062] 止挡部,沿所述塑料衬套的轴向,所述止挡部位于所述突出部远离所述第一支撑件的一侧,且面对所述突出部。
- [0063] 可选地,所述水池支架还包括:
- [0064] 连接件,依次穿过所述防水盖、第一支撑件及接头,固定连接所述防水盖、第一支撑件及接头。
- [0065] 可选地,所述连接件包括:
- [0066] 杆部,依次穿过所述防水盖、第一支撑件及接头;
- [0067] 支撑部,位于所述杆部一端且支撑于所述防水盖;
- [0068] 所述杆部的另一端卡设于所述第一支撑件和接头内。
- [0069] 可选地,所述连接件还包括:
- [0070] 至少两个爪部,呈夹角连接于所述杆部的另一端,且呈张紧状态地卡设于所述第一支撑件和接头内。
- [0071] 可选地,所述连接件和所述防水盖为一体成型。
- [0072] 可选地,沿所述塑料衬套的周向,所述防水盖的两端与所述突出部固定连接。
- [0073] 可选地,在所述接头本体与至少一个支撑件面对面的两个面中,至少一个面附着有塑料涂层,所述塑料涂层作为所述塑料层。
- [0074] 可选地,所述水池支架还包括:
- [0075] 防水盖,至少位于所述第一支撑件背对第二支撑件的一侧,从所述第一支撑件一侧延伸至所述接头一侧。
- [0076] 与现有技术相比,本实用新型的技术方案具有以下优点:
- [0077] 在接头与至少一个支撑件之间的配合处,接头与至少一个支撑件接触的部分为塑

料。塑料硬度小,在接头以及与其连接配合的支撑件之间发生相互摩擦时,塑料可以发生变形,从而对防锈材料的磨损较小,防止防锈材料受损脱落。防锈材料可以维持较长时间而不脱落,这有效避免接头与相应支撑件之间发生锈蚀,从而,水池支架具有较长的使用寿命。

[0078] 进一步地,水池支架包括防水盖。防水盖从第一支撑件一侧延伸至接头一侧。从而,防水盖能够覆盖接头与第一支撑件之间的结构缝隙,有效避免水渗入第一支撑件与接头之间,防止第一支撑件和/或接头生锈。

附图说明

- [0079] 图1是本实用新型第一实施例的地上水池的立体图;
[0080] 图2为图1中虚线框A的放大图;
[0081] 图3为本实用新型第一实施例的水池支架中接头的立体图;
[0082] 图4是本实用新型第二实施例的地上水池的立体图;
[0083] 图5是图4中虚线框B的放大图;
[0084] 图6示出了本实用新型第二实施例的水池支架中的接头和第一支撑件的连接状态;
[0085] 图7是本实用新型第二实施例的水池支架中的接头与第一支撑件的分解图;
[0086] 图8是本实用新型第三实施例的水池支架中的接头与第一支撑件的分解图;
[0087] 图9是本实用新型第三实施例的水池支架中防水盖的立体图;
[0088] 图10示出了本实用新型第四实施例的水池支架中接头结构;
[0089] 图11示出了本实用新型第五实施例的水池支架中接头结构。

具体实施方式

[0090] 本实用新型提供一种水池框架及包含该水池框架的地上水池,有效解决水池框架中各个支撑件在配合处磨损生锈的问题。

[0091] 为使本实用新型的上述目的、特征和优点能够更为明显易懂,下面结合附图对本实用新型的具体实施例做详细的说明。

[0092] 第一实施例

[0093] 图1为本实用新型第一实施例的地上水池的立体图,图2为图1中虚线框A的放大图,图3为本实用新型第一实施例的水池支架中接头的立体图。

[0094] 参照图1和图2,地上水池包括水池支架1及水池内衬2。其中,水池支架1包括若干第一支撑件11、第二支撑件12及接头13。所有第一支撑件11沿一周向F依次连接而形成环形,而所有第二支撑件12沿周向F分布并支撑所有第一支撑件11,相邻两个第一支撑件11、及相邻两个第一支撑件11之间的第二支撑件12通过接头13连接。所有第一支撑件11及第二支撑件12连接在一起形成环形的水池支架1。

[0095] 其中,水池内衬2包括池底(未示出)、及沿周向F排布且连接池底的池壁20。水池支架1呈环形,水池内衬2支撑在水池支架1内侧,水池支架1限定了水池内衬2的形状及位置。

[0096] 其中,在配合处,接头13与至少一个支撑件接触的部分为塑料,这包括:仅接头13与第一支撑件11接触的部分为塑料;或者,仅接头13与第二支撑件12接触的部分为塑料;或者,接头13与第一支撑件11之间,以及接头13与第二支撑件12这两个支撑件接触的部分均

为塑料。

[0097] 在第一实施例中,接头13为塑料接头,实现接头13与第一支撑件11之间、及接头13与第二支撑件12之间接触的部分为塑料。第一支撑件11和第二支撑件12的材料为钢,并且在支撑件表面设有防锈材料。相比于钢,塑料硬度小,在接头13以及与其连接配合的支撑件之间发生相互摩擦时,塑料可以发生变形,从而对防锈材料的磨损较小,防止防锈材料受损脱落。

[0098] 因此,在接头13与第一支撑件11之间的配合处,及在接头13与第二支撑件12之间的配合处,防锈材料可以维持较长时间而不脱落,这有效避免第一支撑件11和第二支撑件12发生锈蚀,从而,第一支撑件11、第二支撑件12及水池支架1具有较长的使用寿命。

[0099] 所述接头13的材料为塑料包括:接头13连接第一支撑件11和第二支撑件12的三个端头130为塑料接头;或者接头13使用塑料一体成型,这使得接头13全部为塑料制造。从而实现,接头13与第一支撑件11之间、以及接头13与第二支撑件12之间的接触部分为塑料。

[0100] 在一种变形例中,第一支撑件和第二支撑件具有与接头配合的连接段,第一支撑件和第二支撑件中至少连接段的材料为塑料,且接头的材料为钢;或者,第一支撑件和第二支撑件中至少连接段的材料为塑料,且接头的材料为塑料。这可以实现:接头与至少一个支撑件接触的部分为塑料。

[0101] 结合参照图3,接头13为T型接头,包括分别连接两个第一支撑件11及一个第二支撑件12的三个端头130。其中,在连接两个第一支撑件11的左右两个端头130,接头13包括内管131及外管132,其中外管132环绕内管131且与内管131定义一环形插槽13a。其中,第一支撑件11和第二支撑件12分别插入各自对应的插槽13a内,实现插接配合。

[0102] 其中,接头13的材料为塑料,内管131和外管132均为塑料制造。在第一支撑件11和第二支撑件12中,每个支撑件同时与对应的内管131和外管132接触,实现防磨损及防脱锈配合。

[0103] 此时,在第一支撑件11和第二支撑件12中,每个支撑件与对应插槽13a之间形成紧配合,实现固定连接。

[0104] 为实现更牢固连接,在接头13与第一支撑件11之间设置有第一插销14。第一插销14作为连接件,穿过内管131、外管132及插入内管131和外管132之间的对应第一支撑件11,以连接接头13及所述对应第一支撑件11。其中,内管131和外管132之间对应的第一支撑件是指:在两个第一支撑件11中,与该内管131和外管132形成插接配合的第一支撑件11。

[0105] 利用第一插销14,第一支撑件11与接头13之间形成牢固连接,所有第一支撑件11之间的连接强度较大,水池支架1的结构稳定性好。

[0106] 在接头13的左右两个端头130设有通孔13b,通孔13b形成于内管131和外管132中。相应地,第一支撑件11及第二支撑件12各自设有安装孔(图中未示出)。在第一支撑件11和第二支撑件12插入对应插槽13a内后,使安装孔与对应通孔13b对准。接着,操作第一插销14依次穿过安装孔和通孔13b,实现固定连接。

[0107] 第一插销14的其中一端具有凸头140,凸头140支撑于第一支撑件31。第一插销14的另一端连接一限位件(图中未示出),限制第一插销14窜动。

[0108] 在一种变形例中,第二支撑件和接头之间通过第一插销固定连接,此时,第一插销穿过内管、外管及插入内管和外管之间的第二支撑件。

[0109] 除了使用第一插销14作为连接件之外,在一种变形例中,连接件可以是螺钉或螺栓,将接头与对应支撑件固定连接。

[0110] 因此,在具体实施例中,水池支架可以包括连接件,连接件穿过内管、外管及插入内管和外管之间的对应支撑件,以连接接头及对应支撑件。

[0111] 第二实施例

[0112] 图4为第二实施例的地上水池的立体图,图5是图4中虚线框B的放大图,图6是第二实施例的水池支架中的接头和第一支撑件在连接状态的剖视图,图7是第二实施例的水池支架中的接头与第一支撑件的分解图。

[0113] 参照图4-图7,接头30包括接头本体301和塑料衬套302,其中塑料衬套302作为一种实施例的塑料层。接头30通过接头本体301连接相邻两个第一支撑件31、及相邻两个第一支撑件31之间的第二支撑件32。同时,塑料衬套302位于接头本体301与第一支撑件31之间,作为接头30与第一支撑件31之间接触的部分,这可以实现接头30与第一支撑件31接触的部分为塑料。从而,塑料衬套302与接头本体301形成面接触,且塑料衬套302与第一支撑件31形成面接触。

[0114] 一方面,第一支撑件31与接头本体301之间形成防磨损配合。在第一支撑件31与接头30之间发生摩擦时,塑料衬套302不会破坏第一支撑件31表面的防锈材料,在较长时间内保持第一支撑件31表面的防锈材料,防锈材料在较长时间内防止第一支撑件31生锈受损。

[0115] 另一方面,在本实施例中,接头本体301的材料可以为钢,此时塑料衬套302亦不会破坏接头本体301表面的防锈材料,有效维持接头本体301的完整性及较长使用寿命。重要的是,接头本体301的材料为钢,与第一支撑件31及第二支撑件32之间的连接强度大,避免在水池支架3晃动时发生断裂。这能够维持水池支架3的结构强度,水池支架3能够对水池内衬4提供强大支撑力。

[0116] 在本实施例中,在第二支撑件32与接头本体301之间未设置有塑料衬套。由于第一支撑件31为水平放置,在水池支架3晃动时,第一支撑件31与接头30之间更容易发生摩擦,因此至少在第一支撑件31与接头本体301之间设有塑料衬套302。

[0117] 在一种变形例中,在第二支撑件与接头本体之间设置有塑料衬套。

[0118] 综合之上实施例,塑料衬套可以作为接头与至少一个支撑件接触的部分,塑料衬套位于接头本体及相应支撑件之间。

[0119] 塑料衬套302具有突出部3021,在塑料衬套302位于相应第一支撑件31与接头本体301之间时,沿塑料衬套302的轴向,突出部3021位于第一支撑件31与接头本体301之外,并面对相应第一支撑件31。

[0120] 此时,突出部3021沿塑料衬套302的径向向外突出于塑料衬套302。

[0121] 其中,突出部3021面对第一支撑件31。一方面,在装配时,突出部3021起到定位效果,待突出部3021与相应第一支撑件31抵靠后,指示安装到位。另一方面,在水池支架3晃动时,突出部3021能够限制塑料衬套302向第一支撑件31内窜动,从而保证塑料衬套302有效且长期发挥防磨损作用。

[0122] 其中,突出部3021为环形,与塑料衬套302同轴,突出部3021抵挡限位作用更好。

[0123] 在一种变形例,在第二支撑件与接头本体之间设置有塑料衬套时,该塑料衬套的突出部面对第二支撑件。

[0124] 综合以上实施例,突出部沿塑料衬套的轴向面对相应支撑件,有效发挥抵挡限位作用。

[0125] 第一支撑件31作为相应支撑件,水池支架3还包括防水盖33。其中,防水盖33至少位于第一支撑件31背对第二支撑件32的一侧,从第一支撑件31一侧延伸至突出部3021一侧。

[0126] 防水盖33起到防水效果。由于地上水池放置于室外,雨水会渗入第一支撑件31与突出部3021之间的缝隙而增加锈蚀的机率,另外,使用过程中池水的溅出,亦会容易从所述间隙流入到塑料衬套302与第一支撑件31之间。防水盖33从第一支撑件31一侧延伸至突出部3021一侧,从而覆盖突出部3021及第一支撑件31之间的结构缝隙,有效避免水渗入第一支撑件31与突出部3021之间的缝隙,防止第一支撑件31内部生锈。

[0127] 其中,防水盖33至少位于第一支撑件31背对第二支撑件32的一侧,使得防水盖33覆盖在第一支撑件31和突出部3021的上方。此时,防水盖33沿塑料衬套的周向具有两端。这是因为,在第一支撑件31上方,也就是第一支撑件31背对第二支撑件32的一侧,落水可能会流向第一支撑件31和突出部3021之间,因此,沿塑料衬套302的周向,防水盖33无需环绕一周。

[0128] 沿塑料衬套302的周向,防水盖33具有两端。沿塑料衬套302的周向,防水盖33的两端与突出部3021固定连接。此时,防水盖33与塑料衬套302之间固定连接,而塑料衬套302限制于接头本体301与第一支撑件31之间,因此,防水盖33的位置被限制,防水盖33的位置稳定性好,从而能够长期保持防水效果。

[0129] 其中,防水盖33的两端与突出部3021通过销子35固定连接。具体地,防水盖33的两端具有第一延伸部331,第一延伸部331具有第一通孔33a。相应地,突出部3021外表面设有第二延伸部3022,第二延伸部3022具有由两侧侧壁限定的容纳槽30a。沿塑料衬套302的轴向,容纳槽30a具有两侧侧壁及形成于侧壁的第二通孔30b,第二通孔30c通向容纳槽30a,且两侧侧壁上的第二通孔30b对准。防水盖33的第一延伸部331容纳在容纳槽30a内,并且第一通孔33a与第二通孔30b对准,此时,将销子35依次穿过第一通孔33a和第二通孔30b,实现固定连接。

[0130] 防水盖33的两端与突出部3021之间的固定连接方式不限于本实施例。在一种变形例中,防水盖与突出部之间为螺钉连接或卡接等连接方式。

[0131] 在一种变形例中,防水盖沿塑料衬套的周向环绕一周。

[0132] 其中,防水盖33从第一支撑件31一侧延伸至突出部3021一侧,使得防水盖33具有覆盖第一支撑件31的一部分,及覆盖突出部3021的另一部分。

[0133] 进一步地,所述防水盖33具有止挡部330。其中,止挡部330沿塑料衬套302的轴向,止挡部330位于突出部3021远离第一支撑件31的一侧,且面对突出部3021。

[0134] 一方面,止挡部330位于突出部3021远离第一支撑件31的一侧,从而,防水盖33从第一支撑件31一侧延伸至接头30一侧,防水盖33覆盖第一支撑件31的一部分、覆盖突出部3021的一部分及覆盖接头本体301的一部分。因此,防水盖33能够阻挡水从接头本体301与突出部3021之间的缝隙渗入接头本体301与突出部3021,避免接头本体301生锈。

[0135] 另一方面,在防水盖33装配时,止挡部330起到定位效果。待止挡部330与接头本体301抵靠,指示安装到位。

[0136] 水池支架3还包括第二插销34。其中,第二插销34作为连接件,依次穿过防水盖33、第一支撑件31及接头30,固定连接防水盖33、第一支撑件31及接头30。其中,第二插销34在穿过接头30时,同时穿过接头本体301和塑料衬套302。

[0137] 此时,防水盖33通过第二插销34固定于第一支撑件31,防水盖33的稳定性较好。

[0138] 同时,接头30与第一支撑件31之间通过第二插销34固定连接,这可以使得接头30与第一支撑件31之间牢固连接,水池支架3的整体性、牢固性及稳定性较好。

[0139] 第二插销34可以包括杆部340及支撑部341。其中,杆部340依次穿过防水盖33、第一支撑件31及接头30,同时支撑部341位于杆部340一端且支撑于防水盖33。杆部340的另一端卡设于第一支撑件31和接头30内,从而第二插销34实现固定。

[0140] 与第二插销34相配合,防水盖33、第一支撑件31、塑料衬套302及接头本体301依次设有孔33b、31a、30c、30d,以供杆部340依次穿过。因此,防水盖33与第二插销34之间为两个独立部件,并连接在一起。

[0141] 第三实施例

[0142] 图8是第三实施例的水池支架中的接头与第一支撑件的分解图,图9是第三实施例的水池支架中防水盖的立体图。

[0143] 参照图8和图9,与第二实施例相比,本实施例的不同之处在于:第二插销34'和防水盖33'为一体成型。具体地,第二插销34'的其中一端与防水盖33'的内表面固定连接,且另一端卡设于第一支撑件31'和接头30'内。

[0144] 第二插销34'还包括两个爪部342。这两个爪部342呈夹角连接于杆部340'的另一端,且呈张紧状态地卡设于第一支撑件31'和接头30'内。依靠两个爪部342所形成的张力,第二插销34'的位置被限制。

[0145] 在一种变形例中,第二插销包括多于两个爪部。

[0146] 因此,第二插销可以包括至少两个爪部,这些爪部呈夹角连接于杆部的另一端,且呈张紧状态地卡设于第一支撑件和接头内。

[0147] 第四实施例

[0148] 图10示出了第四实施例的水池支架中接头结构。

[0149] 参照图10,在接头4中,接头本体40的全部表面附着有塑料涂层41,该塑料涂层41作为另一种实施例的塑料层。具体地,接头本体40的内表面及外表面均具有塑料涂层41。

[0150] 从而,接头本体40通过塑料涂层41与第一支撑件(图中未示出)之间及与第二支撑件(图中未示出)之间形成面接触。塑料涂层41使得接头4与每个支撑件接触的部分为塑料,这可以防止第一支撑件和第二支撑件表面的防锈材料被破坏,从而维持防锈效果。

[0151] 同时,接头本体40的材料为钢,接头本体40整体被塑料涂层41所覆盖,这可以防止接头本体40生锈,提升其防锈效果。

[0152] 在制作阶段,对接头本体40整体浸塑或整体作二次包塑处理,从而形成塑料涂层41。在整体浸塑或整体作二次包塑处理后,接头本体40的内表面及外表面均形成塑料涂层41。

[0153] 除此之外,在一种变形例中,接头本体仅在面向第一支撑件及第二支撑件的内表面或者外表面具有塑料涂层。

[0154] 除了在接头本体40表面附着有塑料涂层41之外,在一种变形例中,在第一支撑件

和第二支撑件表面附着有塑料涂层,并通过该塑料涂层与接头形成面接触。

[0155] 第五实施例

[0156] 图11示出了第五实施例的水池支架中接头结构。

[0157] 参照图11,接头本体50的三个端头51、52、53中,仅在每个端头面向支撑件的表面附着有塑料涂层。具体地,接头本体50在面向第一支撑件(图中未示出)的左右两个端头51、52的外表面附着有塑料涂层61,接头本体50在面向第二支撑件(图中未示出)的端头53的内表面附着有塑料涂层62。

[0158] 在制作阶段,仅对接头本体50的三个端头51、52、53中面向相应支撑件的表面进行局部浸塑或作局部二次包塑,形成塑料涂层61、62。

[0159] 在一种变形例中,在配合处,水池支架中的至少一个支撑件面向接头的表面附着有塑料涂层。

[0160] 综合多个实施例,在接头与至少一个支撑件面对面的两个面中,至少一个面附着有塑料涂层。

[0161] 虽然本实用新型披露如上,但本实用新型并非限定于此。任何本领域技术人员,在不脱离本实用新型的精神和范围内,均可作各种更动与修改,因此本实用新型的保护范围应当以权利要求所限定的范围为准。

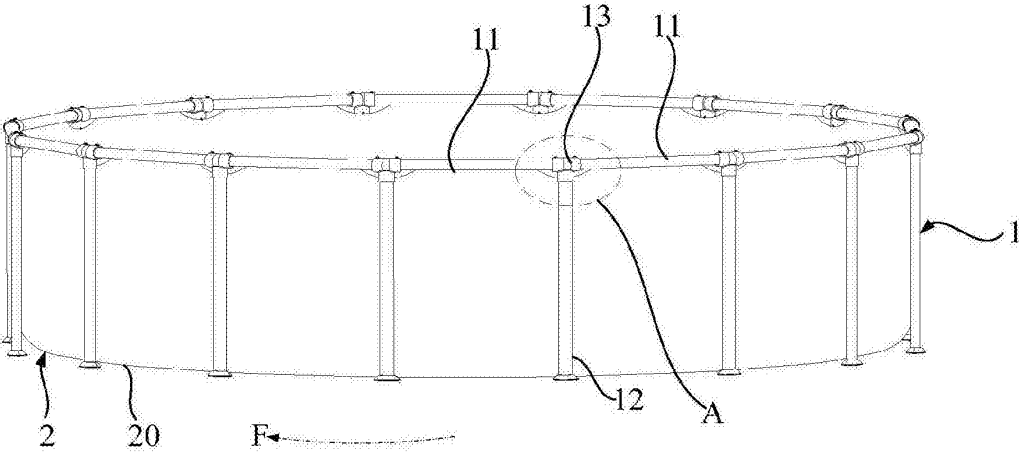


图1

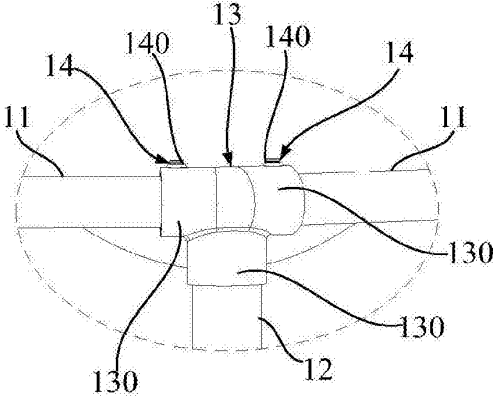


图2

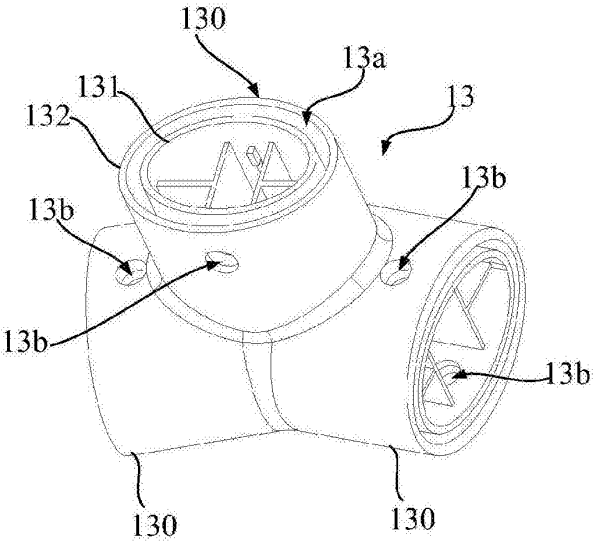


图3

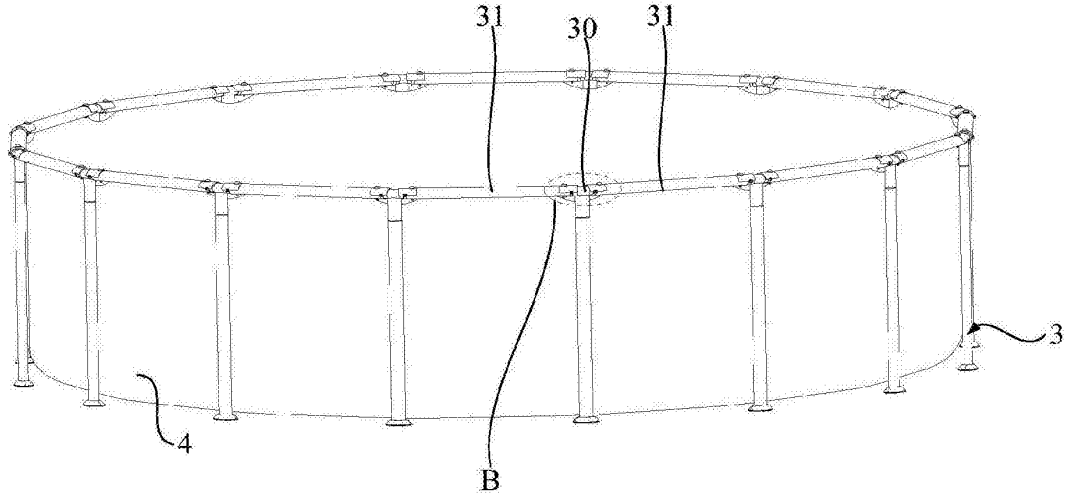


图4

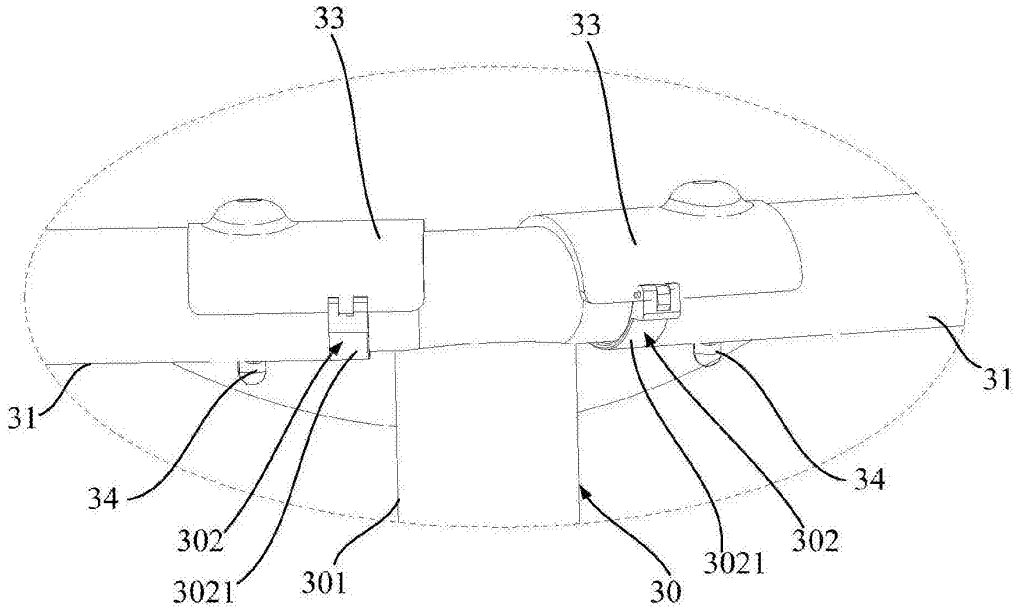


图5

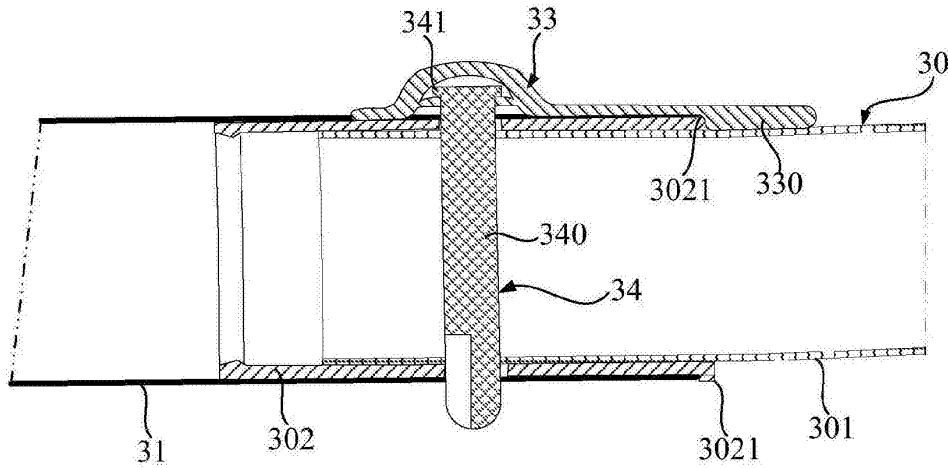


图6

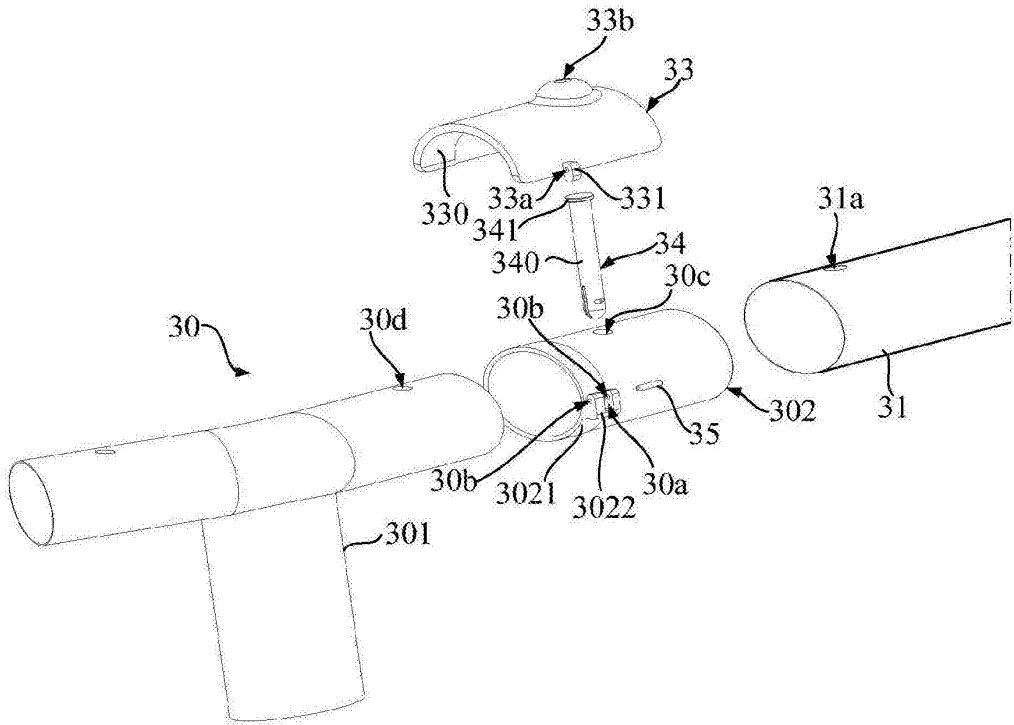


图7

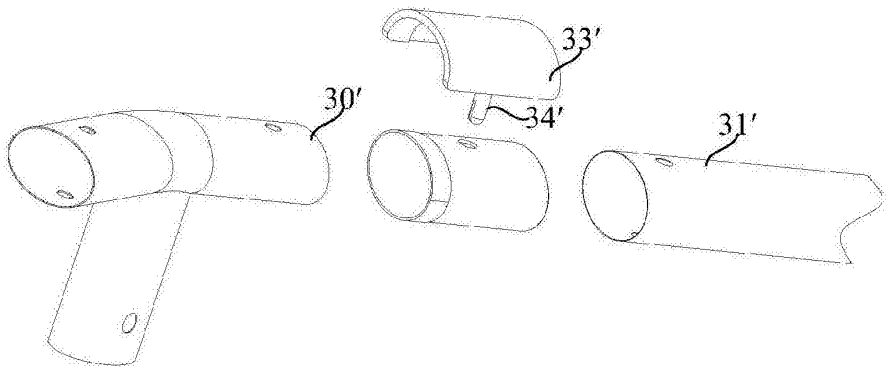


图8

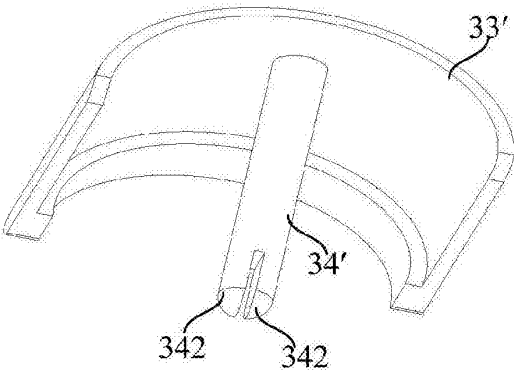


图9

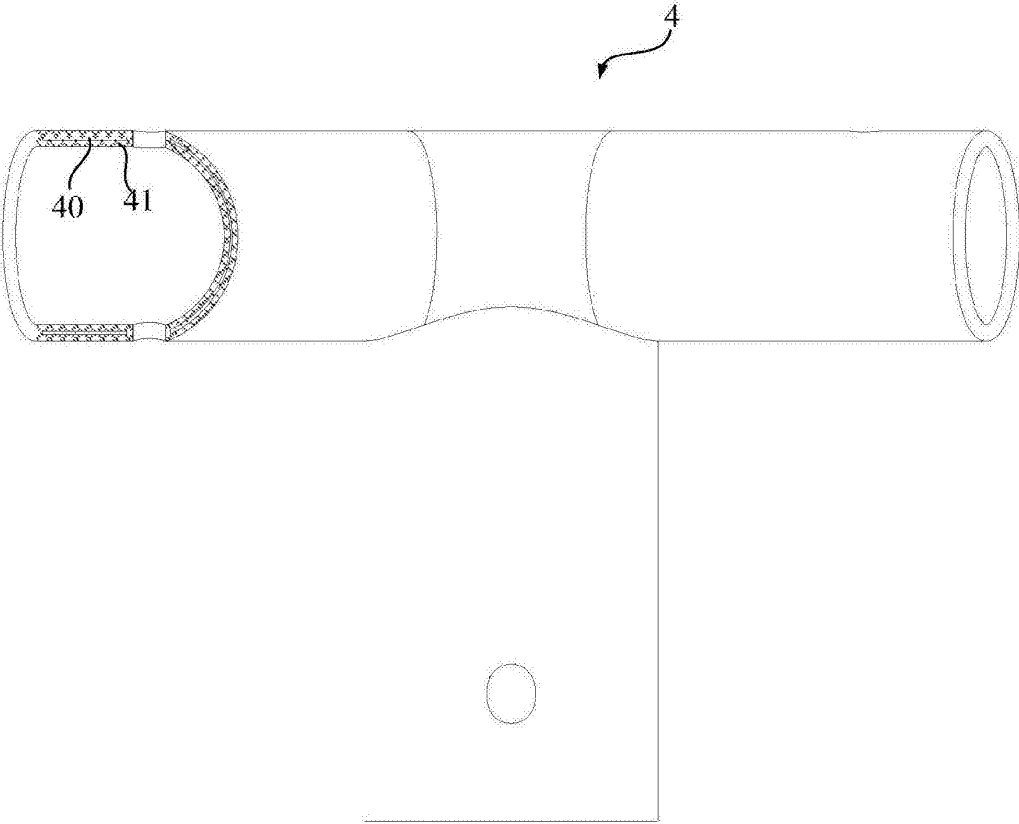


图10

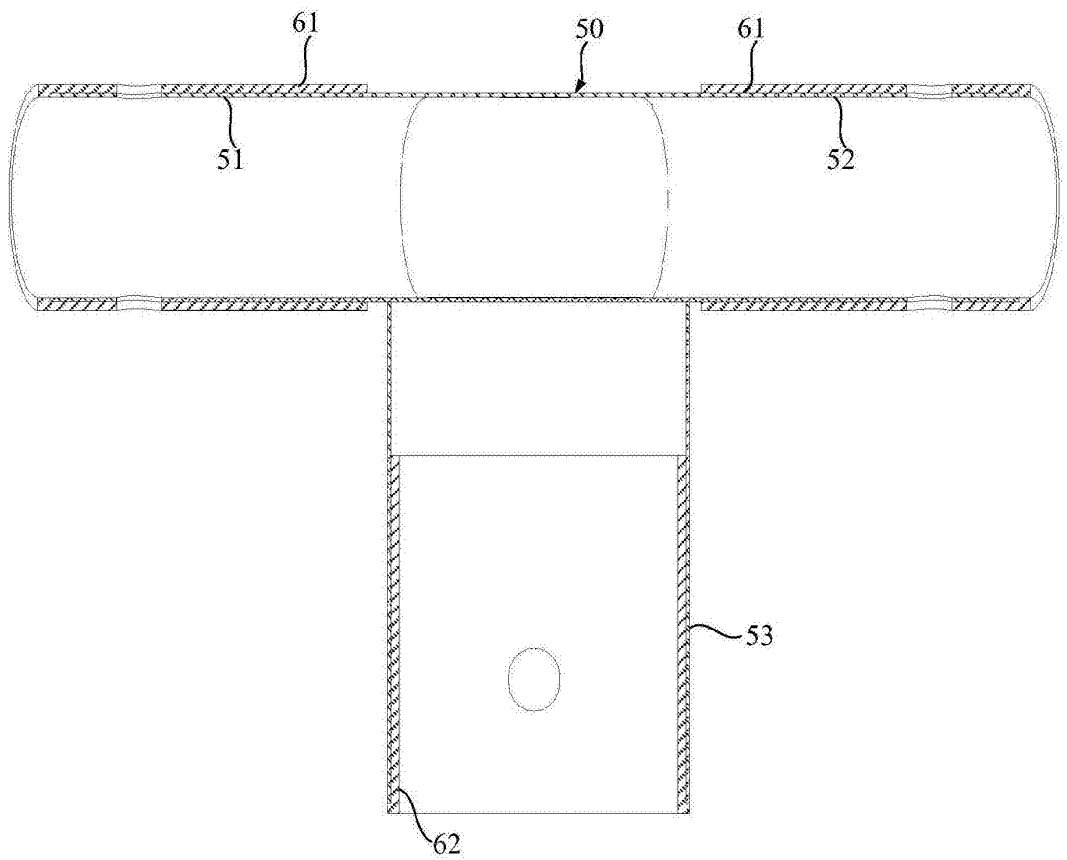


图11

Publication Number: CN 207673066 U

Publication Date: Jul 31, 2018

Abstract

The utility model relates to a connect waterproof construction, it includes waterproof area, waterproof area parcel is in the connecting portion periphery between the tubular metal resonator or between tubular metal resonator and the adapter. The utility model discloses a with waterproof area parcel in tubular metal resonator connecting portion periphery to cover the clearance that the tubular metal resonator is connected, avoid water to flow in tubular metal resonator internal corrosion tubular metal resonator by the clearance department of tubular metal resonator connecting portion, thereby it rusts to delay the tubular metal resonator, prolongs the live time of tubular metal resonator.

(19)中华人民共和国国家知识产权局



(12)实用新型专利



(10)授权公告号 CN 207673066 U

(45)授权公告日 2018.07.31

(21)申请号 201721274711.3

(22)申请日 2017.09.29

(73)专利权人 明达实业(厦门)有限公司

地址 361022 福建省厦门市海沧新阳工业
区

(72)发明人 黄志雄 谭艾明 许耀元

(74)专利代理机构 厦门市新华专利商标代理有
限公司 35203

代理人 渠述华

(51)Int.Cl.

E04H 4/00(2006.01)

E04B 1/66(2006.01)

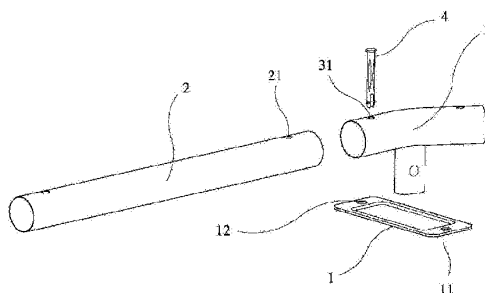
权利要求书1页 说明书2页 附图12页

(54)实用新型名称

一种接头防水结构

(57)摘要

本实用新型涉及一种接头防水结构,其包括防水带,所述防水带包裹在金属管之间或金属管与转接头之间的连接部外周。本实用新型通过将防水带包裹在金属管连接部外周,以覆盖住金属管连接的间隙,避免水由金属管连接部的间隙处流入金属管内锈蚀金属管,从而延缓金属管生锈,延长金属管的使用时间。



CN 207673066 U

1. 一种接头防水结构,其特征在于:包括防水带,所述防水带包裹在金属管之间或金属管与转接头之间的连接部外周。

2. 根据权利要求1所述的接头防水结构,其特征在于:所述金属管连接部以及转接头连接部上设有插销孔,该插销孔上穿设有插销。

3. 根据权利要求2所述的接头防水结构,其特征在于:所述防水带为片状结构,防水带的两端均设有一供插销穿过的孔。

4. 根据权利要求3所述的接头防水结构,其特征在于:所述防水带的一端还设有一定位凸柱,另一端设有一供定位凸柱穿过的孔。

5. 根据权利要求3所述的接头防水结构,其特征在于:所述防水带的两端设有相互配合的魔术贴。

6. 根据权利要求2所述的接头防水结构,其特征在于:所述防水带为管状结构,所述插销包裹在防水带内。

一种接头防水结构

技术领域

[0001] 本实用新型涉及一种防水结构,具体涉及一种接头防水结构。

背景技术

[0002] 家庭用泳池的支撑架一般由多根金属管相互连接构成,各金属管之间直接连接或者通过转接头连接。直接连接时,各金属管的连接部套接在一起;通过转接头连接时,金属管与转接头进行套接。各金属管的连接部一端会设有插销孔,然后直接采用插销穿过两金属管的插销孔来实现两钢管之间的固定连接;而转接头与金属管之间也通过插销来固定连接。

[0003] 泳池在使用时,其支撑架一般会接触到水,为了防止支撑架因接触到水而生锈,支撑架的各金属管外表面一般会涂覆保护漆。这样泳池内的水外溅到金属外表面时,水无法直接渗入金属管内。但是,水会由金属管与金属管之间的间隙流入金属管内,使得金属管内部生锈。此外,金属管的插销连接处没有任何防护,水也会由插销与插销孔之间的间隙进入到金属管内部,因金属管内部没有涂覆保护漆,所以金属管内部会发生生锈,从而影响金属管的强度,降低了金属管的使用时间。

实用新型内容

[0004] 本实用新型的目的是提供一种接头防水结构,其能够防止金属管外部的水通过金属管之间的间隙流入金属管内部,从而达到延缓金属管生锈的目的。

[0005] 为实现上述目的,本实用新型采用的技术方案是:

[0006] 一种接头防水结构,其包括防水带,所述防水带包裹在金属管之间或金属管与转接头之间的连接部外周。

[0007] 所述金属管连接部以及转接头连接部上设有插销孔,该插销孔上穿设有插销。

[0008] 所述防水带为片状结构,防水带的两端均设有一供插销穿过的孔。

[0009] 所述防水带的一端还设有一定位凸柱,另一端设有一供定位凸柱穿过的孔。

[0010] 所述防水带的两端设有相互配合的魔术贴。

[0011] 所述防水带为管状结构,所述插销包裹在防水带内。

[0012] 采用上述方案后,本实用新型通过将防水带包裹在金属管连接部外周,以覆盖住金属管连接部的间隙,即金属管之间的间隙、金属管与转接头之间的间隙以及插销与插销孔处形成的间隙,避免水由金属管连接部的间隙处流入金属管内锈蚀金属管,从而延缓金属管生锈,延长金属管的使用时间。

附图说明

[0013] 图1为本实用新型实施例一结构分解示意图;

[0014] 图2为本实用新型实施例一结构组合示意图;

[0015] 图3为本实用新型实施例一剖视图;

- [0016] 图4为本实用新型实施例二结构分解示意图；
[0017] 图5为本实用新型实施例二结构组合示意图；
[0018] 图6为本实用新型实施例二剖视图；
[0019] 图7为本实用新型实施例三结构分解示意图；
[0020] 图8为本实用新型实施例三结构组合示意图；
[0021] 图9为本实用新型实施例三剖视图；
[0022] 图10为本实用新型实施例四结构分解示意图；
[0023] 图11为本实用新型实施例四结构组合示意图；
[0024] 图12为本实用新型实施例四剖视图。

具体实施方式

[0025] 为详尽本实用新型内容,以下将列举实施例并配合说明书附图进行详述。

[0026] 本实用新型揭示了一种接头防水结构,其包括防水带1,该防水带1包裹在金属管2之间或金属管2与转接头3之间的连接部外周。

[0027] 如图1至图3所示,当金属管2之间或者金属管2与转接头3之间通过插销4进一步固定时,金属管2连接部以及转接头3连接部上设有插销孔21、31,该插销孔21、31上穿设有插销4,插销4包括头部和杆部。防水带1为片状结构,防水带1的两端均设有一供插销穿过的孔11、12,当金属管2上的插销4组装到位后,插销4的杆部部分裸露在金属管外。此时,将防水带1的一端的孔11套在插销4的杆部上,包裹金属管2连接部一圈后,防水带1另一端的孔12也套在插销4的杆部,实现防水带1的固定。

[0028] 如图4至图6所示,为保证防水带1能够稳固包裹在金属管2连接部外周,在防水带1的一端还可以增设一定位凸柱13,另一端增设一供定位凸柱13穿过的孔14。这样,防水带1包裹在金属管2外周时,防水带1通过插销4的杆部和凸柱13进行定位固定,加强了防水带的固定稳定性。

[0029] 如图7至图9所示,为加强防水带1连接的稳定型,可以在防水带1的两端设有相互配合的魔术贴15。当插销4杆部穿设在防水带1两端的孔11、12后,防水带1两端的魔术贴15相互贴合,以进一步保证防水带1在连接部外周的稳定性,保证防水带1始终紧密包裹住金属管2连接部的间隙。

[0030] 如图10至图12所示,当插销4的杆部没有露出金属管2或者杆部露出部分较短时,可以将防水带1设置为管状结构。在插销4组装前,先将防水带1套设在金属管2上,当插销4组装完成后,将防水带1移动到金属管2连接部,将插销4包裹在防水带1内,覆盖住金属管2之间的间隙以及插销4与插销孔21、31之间的间隙即可。

[0031] 本实用新型的关键在于,本实用新型通过将防水带1包裹在金属管2连接部外周,以覆盖住金属管2连接部的间隙,即金属管2之间的间隙、金属管2与转接头3之间的间隙以及插销4与插销孔21、31处形成的间隙,避免水由金属管2连接部的间隙处流入金属管2内锈蚀金属管,从而延缓金属管2生锈,延长金属管2的使用时间。

[0032] 以上所述,仅是本实用新型实施例而已,并非对本实用新型的技术范围作任何限制,故凡是依据本实用新型的技术实质对以上实施例所作的任何细微修改、等同变化与修饰,均仍属于本实用新型技术方案的范围。

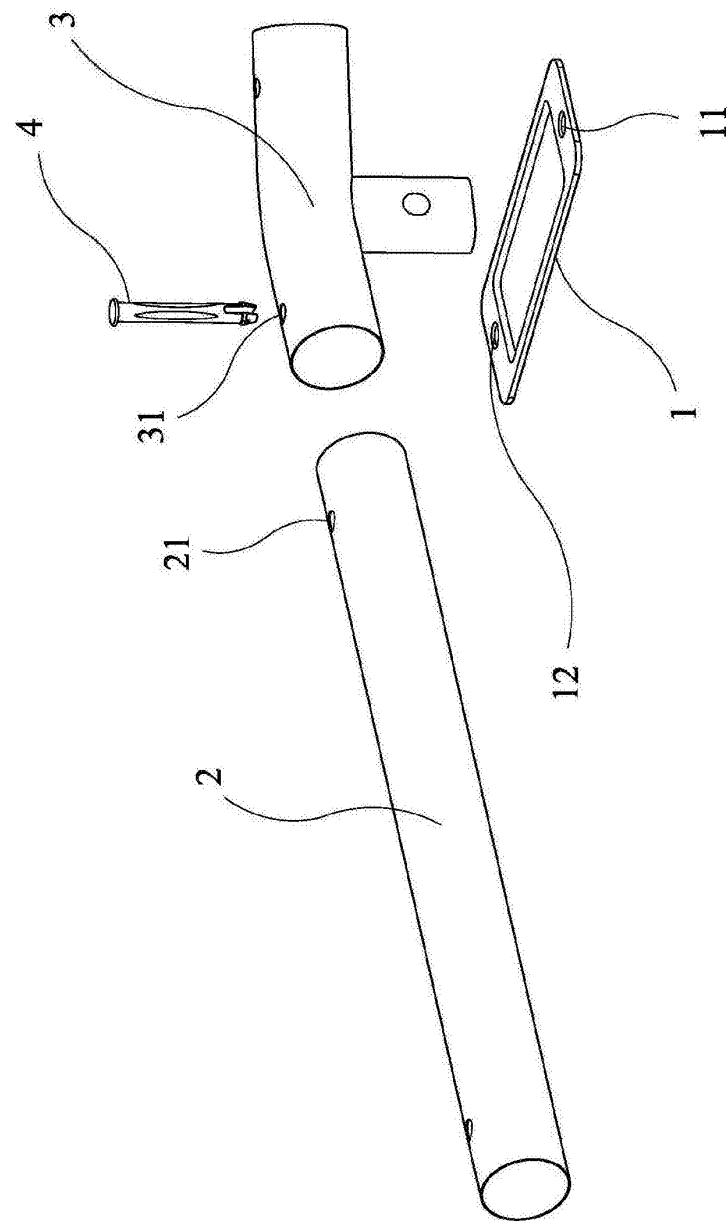


图1

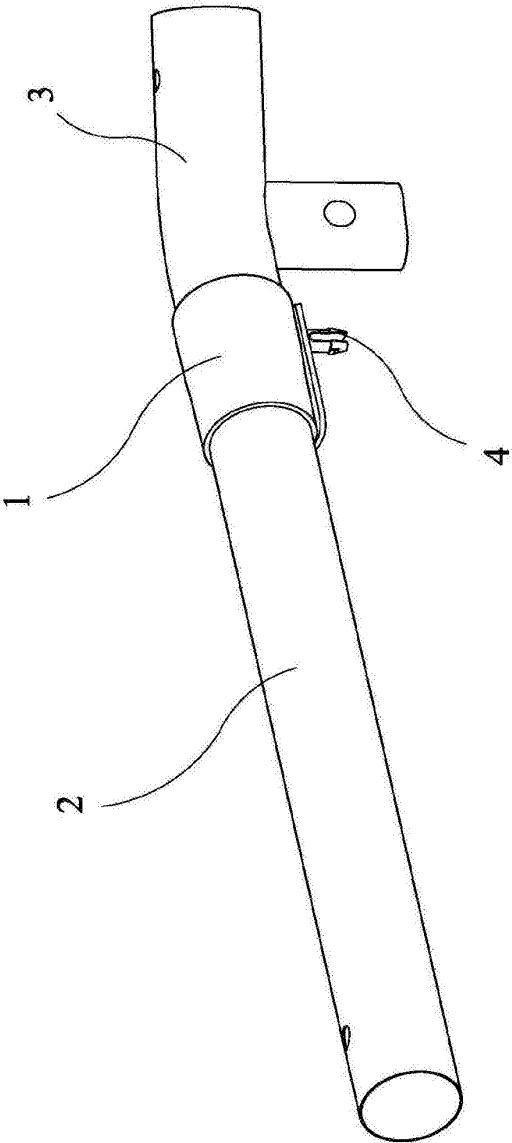


图2

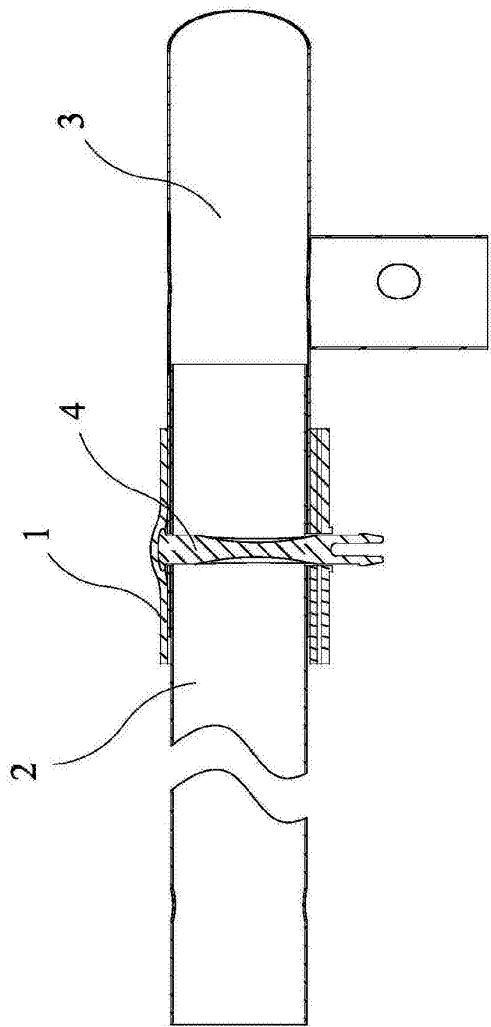


图3

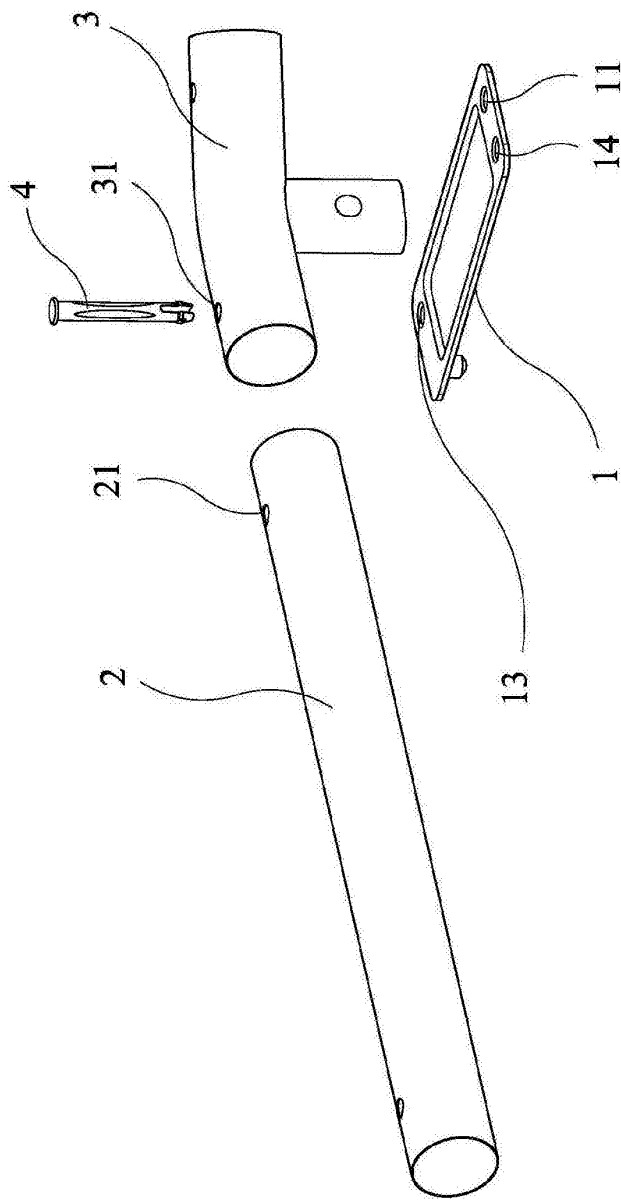


图1

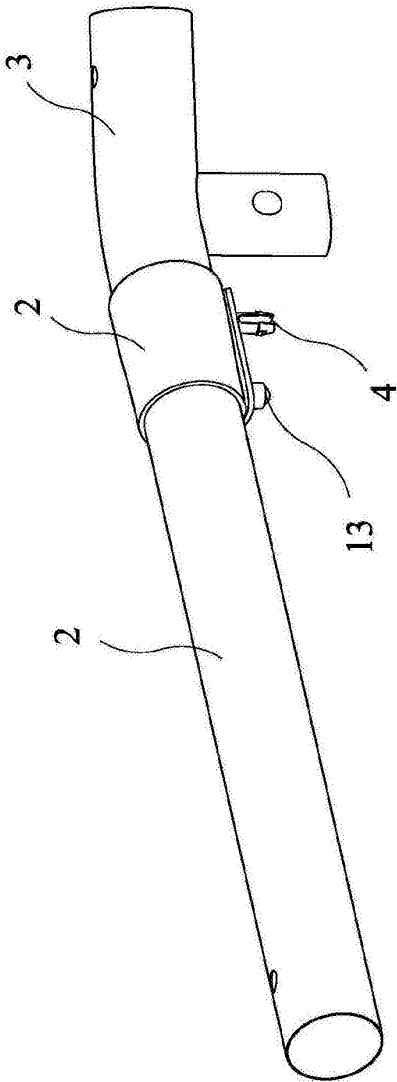


图5

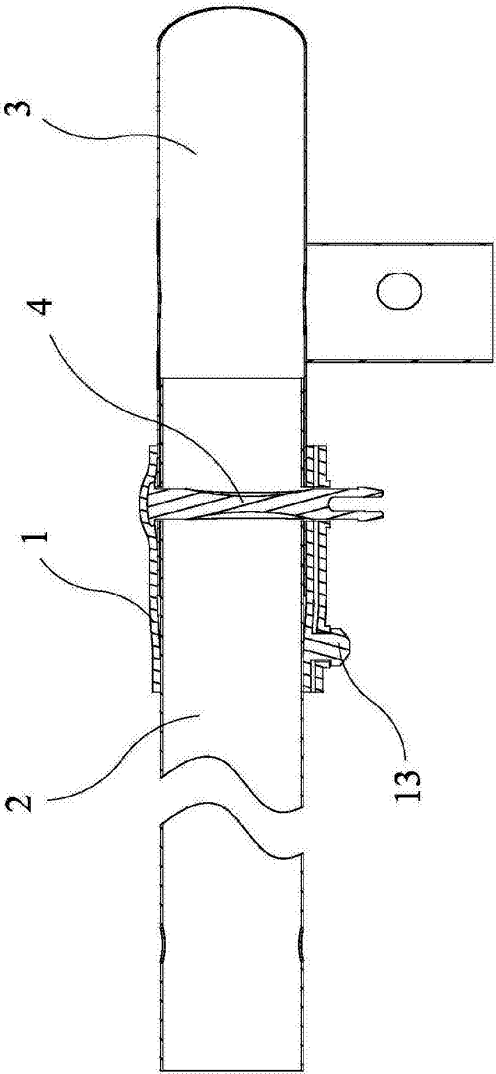


图6

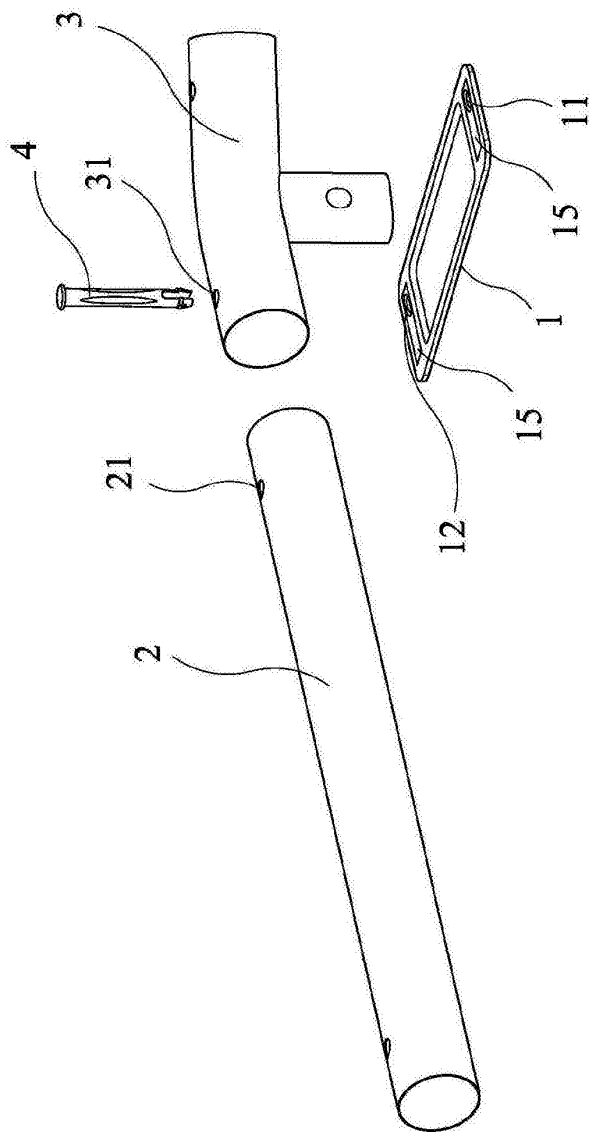


图7

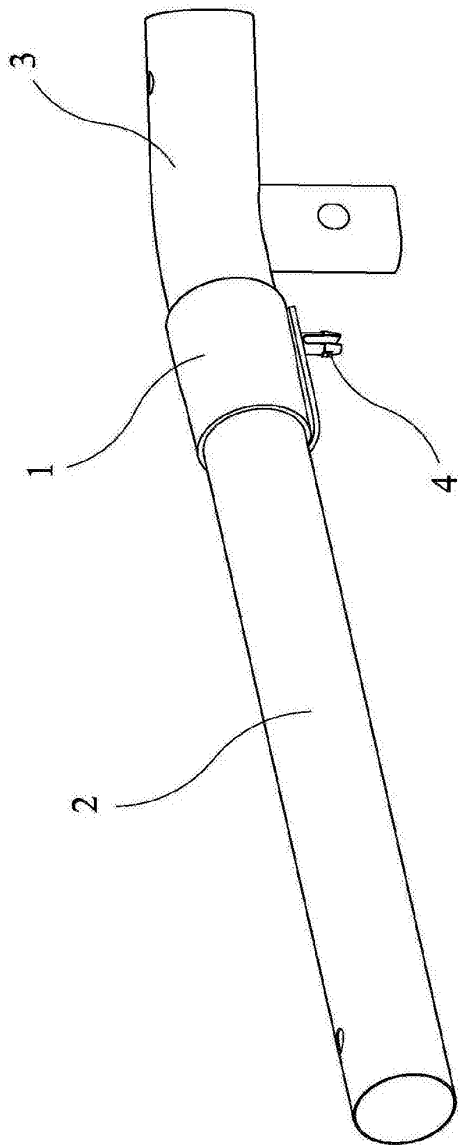


图8

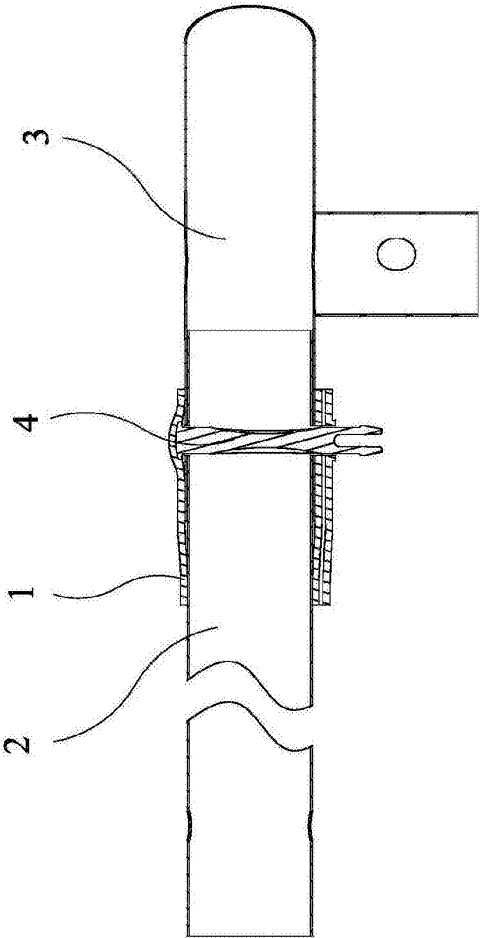


图9

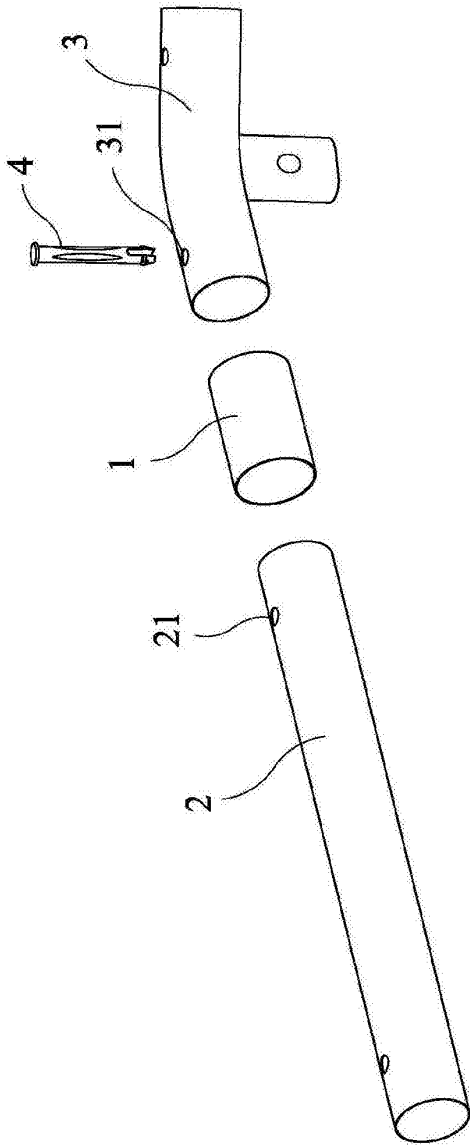


图10

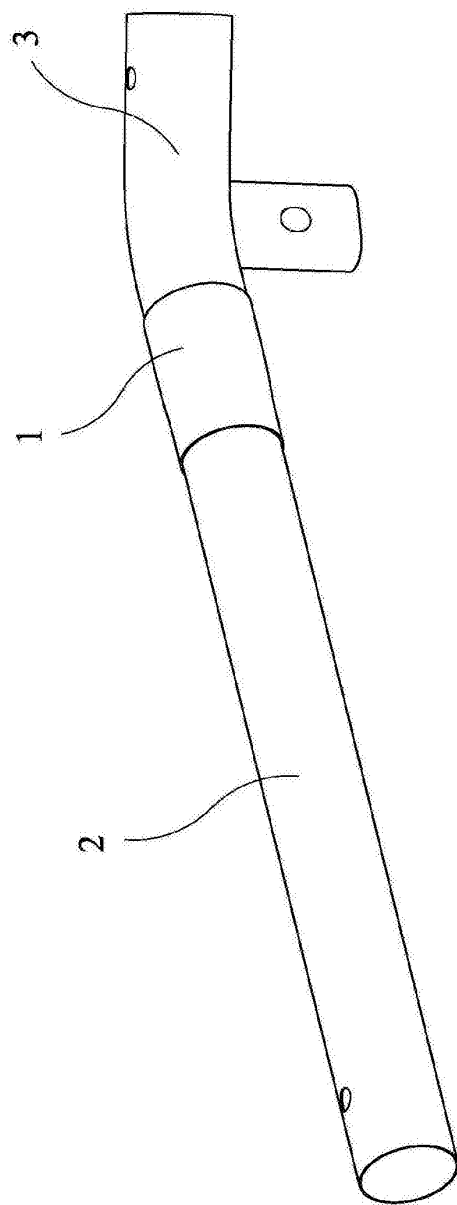


图11

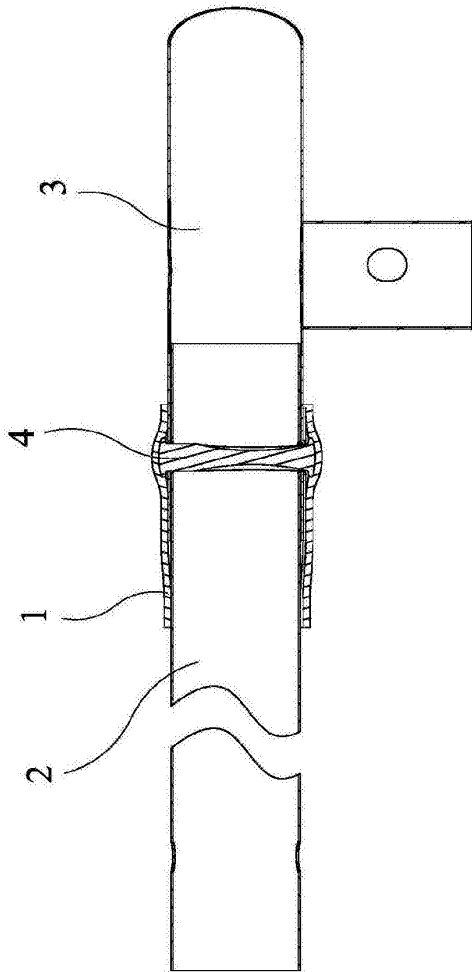


图12

Electronic Acknowledgement Receipt	
EFS ID:	46482231
Application Number:	16220484
International Application Number:	
Confirmation Number:	3890
Title of Invention:	JOINT FOR ABOVE GROUND POOL FRAME
First Named Inventor/Applicant Name:	Hua Hsiang Lin, deceased
Customer Number:	27268
Filer:	Robert D. Null./Melissa Russell
Filer Authorized By:	Robert D. Null.
Attorney Docket Number:	IRC-0042-02-US
Receipt Date:	25-AUG-2022
Filing Date:	14-DEC-2018
Time Stamp:	15:43:23
Application Type:	U.S. National Stage under 35 USC 371

Payment information:

Submitted with Payment		no			
File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	IDS_16220484_1.pdf	1272698	no	4
			3e334e5ee8afba6e2725409bf4c3050454f09670		
Warnings:					

Information:					
2	Foreign Reference	1_CN206477627U_1507242.pdf	1102458	no	20
			aaec6721bc8e0c1da4863ff59b98c0da0b675d14		
Warnings:					
Information:					
3	Foreign Reference	2_CN207673066U_1507265.pdf	443089	no	17
			60427de4d007dd62e0458aa3a031eef6c2ef0a07		
Warnings:					
Information:					
Total Files Size (in bytes):			2818245		
<p>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</p> <p><u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p>					

Doc code: IDS

Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-22)

Approved for use through 05/31/2024. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16220484
	Filing Date	2018-12-14
	First Named Inventor	Hua Hsiang Lin
	Art Unit	3754
	Examiner Name	CRANE, LAUREN ASHLEY
	Attorney Docket Number	IRC-0042-02-US

U.S.PATENTS							Remove	
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear		
	1							
If you wish to add additional U.S. Patent citation information please click the Add button.							Add	
U.S.PATENT APPLICATION PUBLICATIONS							Remove	
Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear		
	1	20220275661	A1	2022-09-01	INTEX MARKETING LTD			
If you wish to add additional U.S. Published Application citation information please click the Add button.							Add	
FOREIGN PATENT DOCUMENTS							Remove	
Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²ⁱ	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T ⁵
	1							
If you wish to add additional Foreign Patent Document citation information please click the Add button.							Add	
NON-PATENT LITERATURE DOCUMENTS							Remove	
Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.						T ⁵

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		16220484
	Filing Date		2018-12-14
	First Named Inventor	Hua Hsiang Lin	
	Art Unit	3754	
	Examiner Name	CRANE, LAUREN ASHLEY	
	Attorney Docket Number	IRC-0042-02-US	

	1		
If you wish to add additional non-patent literature document citation information please click the Add button <input type="button" value="Add"/>			
EXAMINER SIGNATURE			
Examiner Signature			Date Considered
*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.			
<small> ¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached. </small>			

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16220484
	Filing Date	2018-12-14
	First Named Inventor	Hua Hsiang Lin
	Art Unit	3754
	Examiner Name	CRANE, LAUREN ASHLEY
	Attorney Docket Number	IRC-0042-02-US

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Robert D. Null/	Date (YYYY-MM-DD)	2022-09-26
Name/Print	Robert D. Null	Registration Number	40,746

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Acknowledgement Receipt	
EFS ID:	46678909
Application Number:	16220484
International Application Number:	
Confirmation Number:	3890
Title of Invention:	JOINT FOR ABOVE GROUND POOL FRAME
First Named Inventor/Applicant Name:	Hua Hsiang Lin, deceased
Customer Number:	27268
Filer:	Robert D. Null./Melissa Russell
Filer Authorized By:	Robert D. Null.
Attorney Docket Number:	IRC-0042-02-US
Receipt Date:	26-SEP-2022
Filing Date:	14-DEC-2018
Time Stamp:	15:56:53
Application Type:	U.S. National Stage under 35 USC 371

Payment information:

Submitted with Payment	no				
File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	IRC_0042_02_US_IDS.pdf	1282300	no	4
			ea13be3d410562f1d8cab9b79040cc498249dc12		
Warnings:					

Information:	
Total Files Size (in bytes):	1282300
<p>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</p> <p><u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p>	

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875				Application or Docket Number 16/220,484		Filing Date 12/14/2018		☐ To be Mailed	
ENTITY: ☒ LARGE ☐ SMALL ☐ MICRO									
APPLICATION AS FILED - PART I									
	(Column 1)	(Column 2)							
FOR	NUMBER FILED	NUMBER EXTRA			RATE (\$)			FEE (\$)	
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A			N/A				
☐ SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A			N/A				
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A			N/A				
TOTAL CLAIMS (37 CFR 1.16(j))	minus 20 =	*			x \$100 =				
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*			x \$460 =				
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).								
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))									
* If the difference in column 1 is less than zero, enter "0" in column 2.						TOTAL			
APPLICATION AS AMENDED - PART II									
	(Column 1)	(Column 2)	(Column 3)						
AMENDMENT	10/10/2022	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE (\$)		ADDITIONAL FEE (\$)	
	Total (37 CFR 1.16(j))	* 29	Minus	** 29	= 0		x \$100 =	0	
	Independent (37 CFR 1.16(h))	* 4	Minus	*** 3	= 1		x \$480 =	480	
	☐ Application Size Fee (37 CFR 1.16(s))								
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))								
						TOTAL ADD'L FEE		480	
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE (\$)		ADDITIONAL FEE (\$)	
	Total (37 CFR 1.16(j))	*	Minus	**	=		x \$0 =		
	Independent (37 CFR 1.16(h))	*	Minus	***	=		x \$0 =		
	☐ Application Size Fee (37 CFR 1.16(s))								
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))								
						TOTAL ADD'L FEE			
* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.						LIE			
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".						/NICOLE L NICHOLSON/			
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".									
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.									

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Doc code: RCEX

Doc description: Request for Continued Examination (RCE)

PTO/SB/30EFS (01-22)

Approved for use through 05/31/2024. OMB 0851-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

**REQUEST FOR CONTINUED EXAMINATION(RCE)TRANSMITTAL
(Submitted Only via EFS-Web)**

Application Number	16220484	Filing Date	2018-12-14	Docket Number (if applicable)	IRC-0042-02-US	Art Unit	3754
First Named Inventor	Hua Hsiang Lin			Examiner Name	Lauren Ashley Crane		

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.
Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. The Instruction Sheet for this form is located at WWW.USPTO.GOV

SUBMISSION REQUIRED UNDER 37 CFR 1.114

Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

- ☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.
- ☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____
- ☐ Other _____
- ☒ Enclosed
- ☒ Amendment/Reply
- ☐ Information Disclosure Statement (IDS)
- ☐ Affidavit(s)/ Declaration(s)
- ☐ Other _____

MISCELLANEOUS

- ☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of months _____
(Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)
- ☐ Other _____

FEES

- The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.**
- ☒ The Director is hereby authorized to charge any underpayment of fees, or credit any overpayments, to
Deposit Account No 020390

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

- ☒ Patent Practitioner Signature
- Applicant Signature

Doc code: RCEX

Doc description: Request for Continued Examination (RCE)

PTO/SB/30EFS (01-22)

Approved for use through 05/31/2024. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Signature of Registered U.S. Patent Practitioner			
Signature	Robert D. Null/	Date (YYYY-MM-DD)	2022-10-10
Name	Robert D. Null	Registration Number	40746

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.: 16/220,484

Confirmation No.: 3890

Inventor(s) Hua Hsiang Lin

Filed: December 14, 2018

Title: JOINT FOR ABOVE GROUND
POOL FRAME

Art Unit: 3754

Examiner: Lauren Ashley Crane

Atty. Docket No.: IRC-0042-02-US

Customer No. 27268

AMENDMENT AND REQUEST FOR CONTINUED EXAMINATION

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Commissioner:

In response to the Final Office Action of November 5, 2021 (“Office Action”) and the Examiner’s Answer of August 10, 2022 (“Answer”), please amend the above-identified application as follows:

Amendments to the Claims are reflected in the Listing of Claims which begins on page 2 of this paper.

Remarks begin on page 8 of this paper.

A Certificate and Request for Continued Examination is submitted herewith. Should any fee be required, the Commissioner is authorized to charge Deposit Account 02-0390.

AMENDMENTS TO THE CLAIMS

Please amend the claims as set forth below. This Listing of Claims will replace all prior versions and listings of claims in the application.

Listing of Claims

1. **(Currently Amended)** A frame joint for an above ground pool frame having a first horizontal frame member, a second horizontal frame member, and a vertical frame member, the frame joint comprising:
 - a first horizontal joint portion including a first coupling assembly **including a pin** configured **engage a corresponding recess of the first horizontal frame member** to couple with the first horizontal frame member;
 - a second horizontal joint portion including a second coupling assembly **including a pin** configured **engage a corresponding recess of the second horizontal frame member** to couple with the second horizontal frame member; **[[and]]**
 - a vertical joint portion fixedly coupled to the first and second horizontal joint portions and configured to couple with the vertical frame member; **and**
 - a liner positioned around the first and second horizontal frame members, the liner defining a hole that is sized to expose the first and second coupling assemblies;
 - wherein a width of the vertical joint portion accounts for at least 50% of a width between the **pins of the** first and second coupling assemblies of the first and second horizontal joint portions.
2. (Original) The frame joint of claim 1, wherein the width of the vertical joint portion accounts for at least 40% of a total width of the frame joint.
3. (Original) The frame joint of claim 2, wherein the width of the vertical joint portion accounts for about 50% of the total width of the frame joint.
4. **(Currently Amended)** The frame joint of claim 1, wherein each of the first and second coupling assemblies **further** comprises a base**[[,]]** **and** a helical spring supported by the base,

~~and a~~ the pin of each of the first and second coupling assemblies being biased outward through a hole in the respective horizontal joint portion by the helical spring to engage ~~[[a]]~~ the corresponding recess of the respective horizontal frame member.

5. **(Currently Amended)** The frame joint of claim ~~[[4]]~~ 1, wherein the width of the vertical joint portion accounts for about 70% of ~~[[a]]~~ the width between the pins of the first and second coupling assemblies.

6. (Canceled)

7. (Previously Presented) The frame joint of claim 1, wherein a width of the frame joint exceeds a width of the hole in the liner.

8. (Previously Presented) The frame joint of claim 1, wherein a height of the frame joint exceeds a height of the hole in the liner.

9. (Previously Presented) The frame joint of claim 1, wherein:
the first horizontal joint portion is constructed of plastic;
the second horizontal joint portion is constructed of plastic; and
the vertical joint portion is being constructed of plastic.

10. (Previously Presented) The frame joint of claim 1, wherein the vertical joint portion is centered between the first and second horizontal joint portions to form a T-shaped frame joint.

11. (Previously Presented) The frame joint of claim 1, wherein the first and second horizontal joint portions cooperate to form an obtuse angle.

12. (Previously Presented) The frame joint of claim 1, wherein the vertical joint portion is integrally formed with the first and second horizontal joint portions as a single piece.

13. (Canceled)

14. **(Currently Amended)** A method of assembling an above ground pool the method comprising:

coupling a first horizontal joint portion of a frame joint to a first horizontal frame member with a first coupling assembly **including a pin configured to engage a corresponding recess of the first horizontal frame member;**

coupling a second horizontal joint portion of the frame joint to a second horizontal frame member with a second coupling assembly **including a pin configured to engage a corresponding recess of the second horizontal frame member;**

coupling a vertical joint portion of the frame joint to a vertical frame member; and
positioning a liner around the first and second horizontal frame members with a hole exposing the first and second coupling assemblies;

wherein a width of the vertical joint portion accounts for a majority of a width between the **pins of the** first and second coupling assemblies of the first and second horizontal joint portions.

15. (Original) The method of claim 14, wherein:

an external cross-section of the first horizontal joint portion matches an internal cross-section of the first horizontal frame member;

an external cross-section of the second horizontal joint portion matches an internal cross-section of the second horizontal frame member; and

an external cross-section of the vertical joint portion matches an internal cross-section of the vertical frame member.

16. (Original) The method of claim 14, wherein the first horizontal joint portion, the second horizontal joint portion, and the vertical joint portion are constructed of plastic.

17. **(Currently Amended)** The method of claim 14, wherein:

coupling the first horizontal joint portion to the first horizontal frame member comprises depressing ~~a first~~ **the pin of the first coupling assembly** into the first horizontal joint portion and releasing the ~~first~~ pin into engagement with the first horizontal frame member; and

coupling the second horizontal joint portion to the second horizontal frame member comprises depressing ~~a second~~ **the** pin **of the second coupling assembly** into the second horizontal joint portion and releasing the ~~second~~ pin into engagement with the second horizontal frame member.

18. (Canceled)

19. (Previously Presented) The method of claim 14, wherein a width of the hole in the liner exceeds a width between the first and second coupling assemblies.

20. (Previously Presented) The method of claim 14, wherein the vertical joint portion of the frame joint is coupled to the vertical frame member with a third coupling assembly, and wherein a height of the hole in the liner is less than a distance between the first and third coupling assemblies.

21. (Previously Presented) The frame joint of claim 1, wherein the vertical joint portion includes at least one internal vertical reinforcing rib.

22. (Previously Presented) The frame joint of claim 1, wherein at least one of the first horizontal joint portion and the second horizontal joint portion includes an internal horizontal reinforcing rib.

23. (Previously Presented) The frame joint of claim 1, wherein at least one of the first horizontal joint portion and the second horizontal joint portion includes an internal horizontal support member.

24. (Currently Amended) **A frame joint for an above ground pool frame having a first horizontal frame member, a second horizontal frame member, and a vertical frame member, the frame joint comprising:**
a first horizontal joint portion including a first coupling assembly to couple with the first horizontal frame member;

a second horizontal joint portion including a second coupling assembly to couple with the second horizontal frame member;

a vertical joint portion fixedly coupled to the first and second horizontal joint portions and configured to couple with the vertical frame member; and

a liner positioned around the first and second horizontal frame members, the liner defining a hole that is sized to expose the first and second coupling assemblies;

wherein a width of the vertical joint portion accounts for at least 50% of a width between the first and second coupling assemblies of the first and second horizontal joint portions; and

~~The frame joint of claim 1,~~ wherein the first horizontal joint portion comprises a first external cross-section, the first external cross-section being generally triangular.

25. (Previously Presented) The frame joint of claim 24, wherein the first external cross-section comprises rounded edges.

26. (Currently Amended) A frame joint for an above ground pool frame having a first horizontal frame member, a second horizontal frame member, and a vertical frame member, the frame joint comprising:

a first horizontal joint portion including a first coupling assembly to couple with the first horizontal frame member;

a second horizontal joint portion including a second coupling assembly to couple with the second horizontal frame member;

a vertical joint portion fixedly coupled to the first and second horizontal joint portions and configured to couple with the vertical frame member; and

a liner positioned around the first and second horizontal frame members, the liner defining a hole that is sized to expose the first and second coupling assemblies;

wherein a width of the vertical joint portion accounts for at least 50% of a width between the first and second coupling assemblies of the first and second horizontal joint portions; and

~~The frame joint of claim 1,~~ wherein the vertical ~~[[join]] joint~~ portion comprises a second external cross-section, the second external cross-section being generally triangular.

27. (Previously Presented) The frame joint of claim 26, wherein the second external cross-section comprises rounded edges.

28. (Previously Presented) The frame joint of claim 1, wherein the first and second coupling assemblies are accessible from an exterior side of the liner through the hole defined in the liner.

29. (Previously Presented) The frame joint of claim 1, wherein the first and second coupling assemblies are accessible from an exterior side of the liner through the hole defined in the liner and the first and second coupling assemblies are accessible from an interior side of the liner through the hole defined in the liner, the interior side of the liner being opposite the exterior side of the liner.

30. (Previously Presented) The frame joint of claim 1, wherein the hole of the liner simultaneously exposes the first coupling assembly and the second coupling assembly.

31. (Previously Presented) The frame joint of claim 1, wherein the hole of the liner exposes the first coupling assembly and the second coupling assembly in a resting position.

32. (Previously Presented) The frame joint of claim 1, wherein the first coupling assembly and the second coupling assembly are actuatable from an exterior of the frame joint along a vertical direction.

REMARKS

Claims 1-5, 7-12, 14-17, and 19-32 are pending in the application, wherein claims 1 and 14 are presented in independent form. With this Response, claims 1, 4, 5, 14, 17, 24 and 26 have been amended. No new matter has been added.

Allowable Subject Matter

Applicant thanks the Examiner for the indication in the Answer that claims 19-22 and 32 are in condition for allowance. The Office Action states that claims 24-26 would be allowable if re-written in independent form. Applicant has amended the claims such that claims 24 and 26 are independent and claim 25 depends from claim 24. As such, Applicant respectfully submits that claims 24-26 are now in condition for allowance.

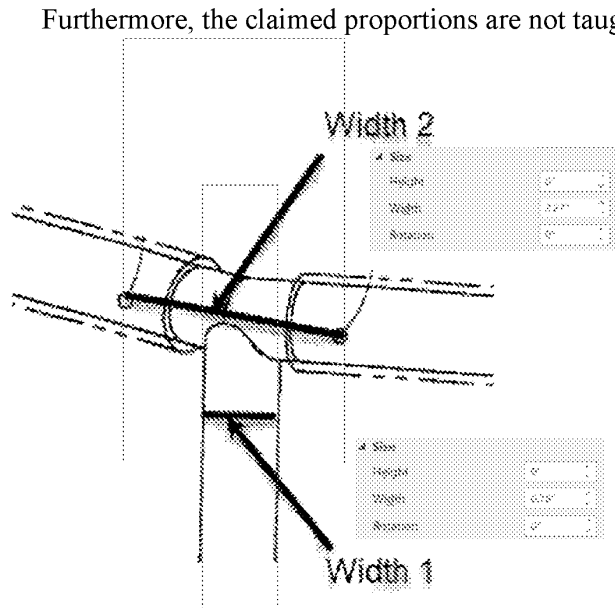
Claim Rejections – 35 U.S.C. § 103

Claims 1-3, 5, 7-12, and 14-17 stand rejected under 35 U.S.C. § 103 as being obvious over U.S. Publication No. 2002/0042948 to Lee (hereinafter “Lee”) in view of U.S. Publication No. 2014/0325751 to Hake (hereinafter “Hake”).

As amended, independent claim 1 recites, *inter alia*, “...a liner positioned around the first and second horizontal frame members, the liner defining a hole that is sized to expose the first and second coupling assemblies; wherein a width of the vertical joint portion accounts for at least 50% of a width between the pins of the first and second coupling assemblies of the first and second horizontal joint portions.” Similarly, independent claim 14 recites, *inter alia*, “positioning a liner around the first and second horizontal frame members with a hole exposing the first and second coupling assemblies; wherein a width of the vertical joint portion accounts for a majority of a width between the pins of the first and second coupling assemblies of the first and second horizontal joint portions.”

The Office Action states that Lee discloses a vertical portion that has a width accounting for a majority of a width between the first and second coupling assemblies, offering an annotated figure of Lee as evidence. Applicant respectfully submits that the drawing of Lee does not explicitly disclose the measurement of the width of the vertical joint portion relative to the first

and second coupling assemblies or relative to the pins of the first and second coupling assemblies.



relevant proportions of Lee's joint portion are measured. The provided annotated figure of Lee (left) was reproduced in Microsoft® PowerPoint® and has a width of the vertical portion ("Width 1") measuring 0.78" and a width between the first and second coupling assemblies ("Width 2") measuring 2.27", resulting a ratio of approximately 34%, which does not meet or even come near to the recited

claim limitations. Appellant respectfully submits for at least these reasons, Lee fails to meet or suggest the claimed limitations and, as such, a prima facie case of obviousness has not been established.

The Office Action further states that "Applicant has not disclosed that having the width of the vertical joint portion accounting for a portion of the width between the first and second coupling assemblies solves any stated problem or is for any particular purpose." However, at least one purpose and/or at least one stated problem and solution solved by this limitation is disclosed in paragraphs [0023]-[0024] of the present application, which Appellant has also presented in the Responses filed on September 9, 2020 and August 17, 2020 and the Amendment filed March 8, 2021. Specifically, the present disclosure states that the structure of the "joint 10 may be minimized such that the size of the corresponding hole 82 in the pool liner 8...may also be minimized[, which] may improve the appearance and water containment" of the corresponding pool (paragraph [0023]). Paragraph [0024] further explains that the relative width of the vertical portion allows exposure of the pins of the coupling assemblies for allowing subsequent disassembly without having to manipulate the pool liner to reach said coupling assemblies.

For at least the reasons provided above, it is respectfully submitted that none of Lee, Hake, or a combination thereof disclose or teach the limitations of independent claims 1 or 14, and any such rejection is improper. Appellant therefore respectfully submits that independent claims 1 and 14 and their dependent claims are distinguishable over the cited art.

Claim 4 stands rejected under 35 U.S.C. § 103 as being obvious over Lee in view of Hake as applied to claim 1 above, and further in view of U.S. Patent No. 6,079,894 to Obitts (hereinafter “Obitts”).

Claim 23 stands rejected under 35 U.S.C. § 103 as being obvious over Lee in view of U.S. Patent No. 5,143,476 to Pruis (hereinafter “Pruis”).

Claims 4 and 23 each depend from one of independent claims 1 and 14. It is respectfully submitted that for at least the reasons presented above, claims 4 and 23 are in condition for allowance. Withdrawal of the rejections is respectfully requested.

Application No. 16/220,484

Final Remarks

Applicant respectfully submits that claims 1-5, 7-12, 14-17, and 19-32 are in condition for allowance. Such action is earnestly solicited.

In the event Applicant has overlooked the need for an extension of time or payment of fee, Applicant hereby petitions therefor and authorizes that any charges be made to Deposit Account No. 02-0390, Faegre Drinker Biddle & Reath LLP.

If any questions concerning this application should arise, the Examiner is encouraged to telephone the undersigned at 317-237-8327.

Respectfully submitted,

/Robert D. Null /

Robert D. Null

Registration No. 40,746

Attorney for Applicant

Faegre Drinker Biddle & Reath LLP

300 North Meridian Street, Suite 2500

Indianapolis, Indiana 46204

Telephone: 317-237-8327

Facsimile: 317-237-1000

Date: October 10, 2022

Electronic Patent Application Fee Transmittal				
Application Number:		16220484		
Filing Date:		14-Dec-2018		
Title of Invention:		JOINT FOR ABOVE GROUND POOL FRAME		
First Named Inventor/Applicant Name:		Hua Hsiang Lin, deceased		
Filer:		Robert D. Null./Melissa Russell		
Attorney Docket Number:		IRC-0042-02-US		
Filed as Large Entity				
Filing Fees for U.S. National Stage under 35 USC 371				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
INDEPENDENT CLAIMS IN EXCESS OF 3	1614	2	480	960
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension-of-Time:				
Miscellaneous:				
RCE- 2ND AND SUBSEQUENT REQUEST	1820	1	2000	2000
Total in USD (\$)				2960

Electronic Acknowledgement Receipt	
EFS ID:	46786054
Application Number:	16220484
International Application Number:	
Confirmation Number:	3890
Title of Invention:	JOINT FOR ABOVE GROUND POOL FRAME
First Named Inventor/Applicant Name:	Hua Hsiang Lin, deceased
Customer Number:	27268
Filer:	Robert D. Null./Melissa Russell
Filer Authorized By:	Robert D. Null.
Attorney Docket Number:	IRC-0042-02-US
Receipt Date:	10-OCT-2022
Filing Date:	14-DEC-2018
Time Stamp:	16:14:22
Application Type:	U.S. National Stage under 35 USC 371

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	\$2960
RAM confirmation Number	E202200G14390681
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Request for Continued Examination (RCE)	IRC_0042_02_US_RCE.pdf	1667131	no	3
			8f5b1951a49aa76d44c12a73dea6b5c23ec56543		
Warnings:					
Information:					
2		IRC_0042_02_US_Amendment.pdf	399089	yes	11
			141776f09f73b7c67046d9bc3a92163ecffb69f4		
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Response After Final Action		1	1	
	Claims		2	7	
	Applicant Arguments/Remarks Made in an Amendment		8	11	
Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	40626	no	2
			076a2d65ea3d9b735b84d9f78ca4894837a09da3		
Warnings:					
Information:					
Total Files Size (in bytes):			2106846		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

27268 7590 10/28/2022
FAEGRE DRINKER BIDDLE & REATH LLP
300 NORTH MERIDIAN STREET
SUITE 2500
INDIANAPOLIS, IN 46204

EXAMINER

CRANE, LAUREN ASHLEY

ART UNIT PAPER NUMBER

3754

DATE MAILED: 10/28/2022

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/220,484	12/14/2018	Hua Hsiang Lin, deceased	IRC-0042-02-US	3890

TITLE OF INVENTION: JOINT FOR ABOVE GROUND POOL FRAME

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$1200	\$0.00	\$0.00	\$1200	01/30/2023

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Maintenance fees are due in utility patents issuing on applications filed on or after Dec. 12, 1980. It is patentee's responsibility to ensure timely payment of maintenance fees when due. More information is available at www.uspto.gov/PatentMaintenanceFees.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

27268 7590 10/28/2022
FAEGRE DRINKER BIDDLE & REATH LLP
300 NORTH MERIDIAN STREET
SUITE 2500
INDIANAPOLIS, IN 46204

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

(Typed or printed name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/220,484	12/14/2018	Hua Hsiang Lin, deceased	IRC-0042-02-US	3890

TITLE OF INVENTION: JOINT FOR ABOVE GROUND POOL FRAME

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$1200	\$0.00	\$0.00	\$1200	01/30/2023

EXAMINER	ART UNIT	CLASS-SUBCLASS
CRANE, LAUREN ASHLEY	3754	004-506000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/AIA/122 or PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/AIA/47 or PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,

1 _____

(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

2 _____

3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. Fees submitted: ☐ Issue Fee ☐ Publication Fee (if required) ☐ Advance Order - # of Copies _____

4b. Method of Payment: (Please first reapply any previously paid fee shown above)

☐ Electronic Payment via EFS-Web ☐ Enclosed check ☐ Non-electronic payment by credit card (Attach form PTO-2038)

☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. _____

5. **Change in Entity Status** (from status indicated above)

☐ Applicant certifying micro entity status. See 37 CFR 1.29

☐ Applicant asserting small entity status. See 37 CFR 1.27

☐ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____

Date _____

Typed or printed name _____

Registration No. _____



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/220,484	12/14/2018	Hua Hsiang Lin, deceased	IRC-0042-02-US	3890
27268 7590 10/28/2022 FAEGRE DRINKER BIDDLE & REATH LLP 300 NORTH MERIDIAN STREET SUITE 2500 INDIANAPOLIS, IN 46204			EXAMINER CRANE, LAUREN ASHLEY	
			ART UNIT 3754	PAPER NUMBER
DATE MAILED: 10/28/2022				

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.** Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	Application No. 16/220,484	Applicant(s) Lin, deceased et al.	
	Examiner LAUREN A CRANE	Art Unit 3754	AIA (FITF) Status Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the RCE filed on 10/10/2022.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

3. ☒ The allowed claim(s) is/are See Continuation Sheet. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to **PPHfeedback@uspto.gov**.

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
Certified copies:
a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892) 2. ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____. 3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material _____. 4. ☐ Interview Summary (PTO-413), Paper No./Mail Date. _____.	5. ☒ Examiner's Amendment/Comment 6. ☒ Examiner's Statement of Reasons for Allowance 7. ☐ Other _____.
---	---

/LAUREN A CRANE/ Primary Examiner, Art Unit 3754	
---	--

Continuation of 3. The allowed claim(s) is/are: 1-5,7-12,14-17 and 19-32

Notice of Pre-AIA or AIA Status

1. The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

Allowable Subject Matter

2. Claims 1-5, 7-12, 14-17, 19-32 are allowed.

3. The following is an examiner's statement of reasons for allowance:

4. Regarding claim 1, the combination including limitation the first horizontal and second horizontal frame member including a pin and a width of the vertical joint portion accounts for at least 50% of a width between the pins of the first and second coupling assemblies of the first and second horizontal joint portions in the invention as claimed is neither disclosed nor rendered obvious by the prior art.

5. Regarding claim 14, the combination including limitation the first horizontal and second horizontal frame member including a pin and a recesses and wherein a width of the vertical joint portion accounts for a majority of a width between the pins of the first and second coupling assemblies of the first and second horizontal joint portions in the invention as claimed is neither disclosed nor rendered obvious by the prior art.

6. Regarding claim 24, the combination including limitation the first horizontal joint portion comprises a first external cross-section, the first external cross-section being generally triangular in the invention as claimed is neither disclosed nor rendered obvious by the prior art.

7. Regarding claim 26, the combination including limitation wherein the vertical joint portion comprises a second external cross-section, the second external cross-section

being generally triangular. in the invention as claimed is neither disclosed nor rendered obvious by the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAUREN ASHLEY CRANE whose telephone number is (571)270-5198. The examiner can normally be reached Mondays & Tuesdays 8 am - 4pm.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at <http://www.uspto.gov/interviewpractice>.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Angwin can be reached on 571-270-3735. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of published or unpublished applications may be obtained from Patent Center. Unpublished application information in Patent Center is available to registered users. To file and manage patent submissions in Patent Center, visit: <https://patentcenter.uspto.gov>. Visit <https://www.uspto.gov/patents/apply/patent-center> for more information about Patent Center and

Application/Control Number: 16/220,484
Art Unit: 3754

Page 4

<https://www.uspto.gov/patents/docx> for information about filing in DOCX format. For additional questions, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/LAUREN A CRANE/
Primary Examiner, Art Unit 3754

<i>Search Notes</i> 	Application/Control No. 16/220,484	Applicant(s)/Patent Under Reexamination Lin, deceased et al.
	Examiner LAUREN A CRANE	Art Unit 3754

CPC - Searched*		
Symbol	Date	Examiner
F16B7/17	04/14/2020	LC
E04H4/0056	11/03/2020	LC

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner
4	654	04/14/2020	LC
4	506	11/03/2020	

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner
Text search of F16B7/14	11/03/2020	LC
Forward backward search of tagged art	11/03/2020	LC
Search of Tagged Art	04/06/2021	LC
Search of Tagged Art	11/02/2021	LC

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner
	Keyword Search	10/18/2022	LC

/LAUREN A CRANE/ Primary Examiner, Art Unit 3754	
---	--

Issue Classification 	Application/Control No. 16/220,484	Applicant(s)/Patent Under Reexamination Lin, deceased et al.
	Examiner LAUREN A CRANE	Art Unit 3754

CPC						
Symbol					Type	Version
F16B	/	7	/	14	F	2013-01-01
E04H	/	4	/	0056	I	2013-01-01
F16B	/	7	/	042	I	2013-01-01
F16B	/	7	/	0446	I	2013-01-01
A63C	/	19	/	02	I	2013-01-01
E04H	/	4	/	14	I	2013-01-01

CPC Combination Sets					
Symbol		Type	Set	Ranking	Version
	/				

NONE (Assistant Examiner)		Total Claims Allowed: 29	
/LAUREN A CRANE/ Primary Examiner, Art Unit 3754 (Primary Examiner)		18 October 2022 (Date)	O.G. Print Claim(s) 1
			O.G. Print Figure 1

U.S. Patent and Trademark Office

Part of Paper No.: 20221017

Issue Classification 	Application/Control No. 16/220,484	Applicant(s)/Patent Under Reexamination Lin, deceased et al.
	Examiner LAUREN A CRANE	Art Unit 3754

INTERNATIONAL CLASSIFICATION			
CLAIMED			
F16B		7	14
NON-CLAIMED			

US ORIGINAL CLASSIFICATION	
CLASS	SUBCLASS
4	506

CROSS REFERENCES(S)						
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)					

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	29	
/LAUREN A CRANE/ Primary Examiner, Art Unit 3754	18 October 2022	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1

Issue Classification 	Application/Control No. 16/220,484	Applicant(s)/Patent Under Reexamination Lin, deceased et al.
	Examiner LAUREN A CRANE	Art Unit 3754

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47															
CLAIMS															
Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	1	9	10	16	19	25	28								
2	2	10	11	17	20	26	29								
3	3	11	12	18	21	27	30								
4	4		13	19	22	28	31								
5	5	12	14	20	23	29	32								
	6	13	15	21	24										
6	7	14	16	22	25										
7	8	15	17	23	26										
8	9		18	24	27										

NONE (Assistant Examiner) _____ (Date) _____		Total Claims Allowed: 29	
/LAUREN A CRANE/ Primary Examiner, Art Unit 3754 (Primary Examiner) _____ (Date) 18 October 2022		O.G. Print Claim(s) 1	O.G. Print Figure 1

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16220484
	Filing Date	2018-12-14
	First Named Inventor	Hua Hsiang Lin
	Art Unit	3754
	Examiner Name	CRANE, LAUREN ASHLEY
	Attorney Docket Number	IRC-0042-02-US

U.S. PATENTS							Remove	
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1							
If you wish to add additional U.S. Patent citation information please click the Add button.							Add	
U.S. PATENT APPLICATION PUBLICATIONS							Remove	
Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1	20220275661	A1	2022-09-01	INTEX MARKETING LTD			
If you wish to add additional U.S. Published Application citation information please click the Add button.							Add	
FOREIGN PATENT DOCUMENTS							Remove	
Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²ⁱ	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	T ⁵
	1							
If you wish to add additional Foreign Patent Document citation information please click the Add button.							Add	
NON-PATENT LITERATURE DOCUMENTS							Remove	
Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.						T ⁵

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		16220484
	Filing Date		2018-12-14
	First Named Inventor	Hua Hsiang Lin	
	Art Unit	3754	
	Examiner Name	CRANE, LAUREN ASHLEY	
	Attorney Docket Number	IRC-0042-02-US	

	1	
--	---	--

If you wish to add additional non-patent literature document citation information please click the Add button

EXAMINER SIGNATURE

Examiner Signature	/LAUREN A CRANE/	Date Considered	10/18/2022
--------------------	------------------	-----------------	------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		16220484
	Filing Date		2018-12-14
	First Named Inventor	Hua Hsiang Lin	
	Art Unit	3754	
	Examiner Name	CRANE, LAUREN ASHLEY	
	Attorney Docket Number	IRC-0042-02-US	

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Robert D. Null/	Date (YYYY-MM-DD)	2022-09-26
Name/Print	Robert D. Null	Registration Number	40,746

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

Receipt date: 08/25/2022

Doc code: IDS

Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-22)

Approved for use through 05/31/2024. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16220484
	Filing Date	2018-12-14
	First Named Inventor	Hua Hsiang Lin
	Art Unit	3754
	Examiner Name	CRANE, LAUREN ASHLEY
	Attorney Docket Number	IRC-0042-02-US

U.S.PATENTS							Remove	
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear		
	1							
If you wish to add additional U.S. Patent citation information please click the Add button.							Add	
U.S.PATENT APPLICATION PUBLICATIONS							Remove	
Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear		
	1							
If you wish to add additional U.S. Published Application citation information please click the Add button.							Add	
FOREIGN PATENT DOCUMENTS							Remove	
Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²ⁱ	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T ⁵
	1	206477627	CN	U	2017-09-08	SHANGHAI BESTWAY INFLATABLES & MAT CORP	English Abstract Submitted	
	2	207673066	CN	U	2018-07-31	INTEX IND XIAMEN CO LTD	English Abstract Submitted	
If you wish to add additional Foreign Patent Document citation information please click the Add button.							Add	
NON-PATENT LITERATURE DOCUMENTS							Remove	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

Receipt date: 08/25/2022

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		16220484
	Filing Date		2018-12-14
	First Named Inventor	Hua Hsiang Lin	
	Art Unit	3754	
	Examiner Name	CRANE, LAUREN ASHLEY	
	Attorney Docket Number	IRC-0042-02-US	

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T ⁵
	1		

If you wish to add additional non-patent literature document citation information please click the Add button

EXAMINER SIGNATURE

Examiner Signature	/LAUREN A CRANE/	Date Considered	10/18/2022
--------------------	------------------	-----------------	------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**
(Not for submission under 37 CFR 1.99)

Application Number	16220484
Filing Date	2018-12-14
First Named Inventor	Hua Hsiang Lin
Art Unit	3754
Examiner Name	CRANE, LAUREN ASHLEY
Attorney Docket Number	IRC-0042-02-US

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Robert Null/	Date (YYYY-MM-DD)	2022-08-25
Name/Print	Robert Null	Registration Number	40,746

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

PE2E SEARCH - Search History (Prior Art)

There are no Prior Art searches to show.

PE2E SEARCH - Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	British Equivalents	Time Stamp
N50	1	(frame joint horizontal frame member pins 50% recess vertical joint portion).clms.	(US-PGPUB; USPAT)	AND	ON	ON	2022/10/18 02:54 PM

Doc code: IDS

Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-22)

Approved for use through 05/31/2024. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16220484
	Filing Date	2018-12-14
	First Named Inventor	Hua Hsiang Lin
	Art Unit	3754
	Examiner Name	Lauren Ashley Crane
	Attorney Docket Number	IRC-0042-02-US

U.S. PATENTS						Remove
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear
	1	1786613		1930-12-30	Hooper	
	2	6477721		2002-11-12	Lee	
	3	3874132		1975-04-01	Mendelow	
	4	6595713		2003-07-22	Wilson	
	5	3595180		1971-07-27	Swoyer	
	6	3864048		1975-02-04	Parker	
	7	4356933		1982-11-02	Connolly	
	8	4890343		1990-01-02	Schlags	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		16220484	
	Filing Date		2018-12-14	
	First Named Inventor		Hua Hsiang Lin	
	Art Unit		3754	
	Examiner Name		Lauren Ashley Crane	
	Attorney Docket Number		IRC-0042-02-US	

	9	D908849		2021-01-26	Decaria	
	10	D925011		2021-07-13	Parihar	
	11	D945871		2022-03-15	MacDonald	

If you wish to add additional U.S. Patent citation information please click the Add button.

Add

U.S.PATENT APPLICATION PUBLICATIONS

Remove

Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20170089085		2017-03-30	Liu	

If you wish to add additional U.S. Published Application citation information please click the Add button.

Add

FOREIGN PATENT DOCUMENTS

Remove

Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ² i	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T ⁵
	1	204531509	CN		2015-08-05	Shanghai Bestway & Material Corp.	English Abstract Submitted	×
	2	205777703	CN		2016-12-07	Shanghai Bestway Inflatables & Mat Corp.	English Abstract Submitted	☒
	3	200968073	CN		2007-10-31	Intex Ind Xiamen Co. Ltd.	English Abstract Submitted	☒

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		16220484
	Filing Date		2018-12-14
	First Named Inventor	Hua Hsiang Lin	
	Art Unit	3754	
	Examiner Name	Lauren Ashley Crane	
	Attorney Docket Number	IRC-0042-02-US	

4	2766083	CN	2006-03-22	Shanghai Bestway Inflatables	English Abstract Submitted	☒
5	209040623	CN	2019-06-28	Intex Ind Xiamen Co. Ltd.	English Abstract Submitted	☒

If you wish to add additional Foreign Patent Document citation information please click the Add button

NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T ⁵
	1		

If you wish to add additional non-patent literature document citation information please click the Add button

EXAMINER SIGNATURE

Examiner Signature	/LAUREN A CRANE/	Date Considered	10/18/2022
--------------------	------------------	-----------------	------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		16220484
	Filing Date		2018-12-14
	First Named Inventor	Hua Hsiang Lin	
	Art Unit	3754	
	Examiner Name	Lauren Ashley Crane	
	Attorney Docket Number	IRC-0042-02-US	

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/William S. Meyers/	Date (YYYY-MM-DD)	2022-08-15
Name/Print	William S. Meyers	Registration Number	42884

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

Bibliographic Data

Application No: 16/220,484

Foreign Priority claimed: ☒ Yes ☐ No

35 USC 119 (a-d) conditions met: ☒ Yes ☐ No ☒ Met After Allowance

Verified and Acknowledged:
Examiner's Signature Initials

Title:

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
12/14/2018	004	3754	
RULE			

APPLICANTS

Intex Marketing Ltd., Tortola, VIRGIN ISLANDS, BRITISH

INVENTORS

Hua Hsiang Lin, deceased, Fujian, CHINA

Yaw Yuan Hsu, Fujian, CHINA

CONTINUING DATA

This application is a 371 of PCT/US2017/037892 06/16/2017

FOREIGN APPLICATIONS

CHINA CN201620598406.9 06/17/2016

CHINA CN201630270359.0 06/22/2016

CHINA CN201621039473.3 09/06/2016

IF REQUIRED, FOREIGN LICENSE GRANTED**

03/06/2019

STATE OR COUNTRY

CHINA

ADDRESS

FILING FEE RECEIVED

\$1,720



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/220,484	12/14/2018	Hua Hsiang Lin, deceased	IRC-0042-02-US	3890
27268 7590 11/10/2022 FAEGRE DRINKER BIDDLE & REATH LLP 300 NORTH MERIDIAN STREET SUITE 2500 INDIANAPOLIS, IN 46204			EXAMINER CRANE, LAUREN ASHLEY	
			ART UNIT 3754	PAPER NUMBER
			NOTIFICATION DATE 11/10/2022	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

intear@faegredrinker.com

Corrected Notice of Allowability	Application No. 16/220,484	Applicant(s) Lin, deceased et al.	
	Examiner LAUREN A CRANE	Art Unit 3754	AIA (FITF) Status Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the RCE filed on 10/10/2022.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

3. ☒ The allowed claim(s) is/are 1-5,7-12 and 19-32. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a) ☒ All b) ☐ Some* c) ☐ None of the:

1. ☒ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. _____.

3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892) 2. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____ 3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material _____ 4. ☐ Interview Summary (PTO-413), Paper No./Mail Date. _____	5. ☐ Examiner's Amendment/Comment 6. ☒ Examiner's Statement of Reasons for Allowance 7. ☐ Other _____
--	---

/LAUREN A CRANE/ Primary Examiner, Art Unit 3754	
---	--

Notice of Pre-AIA or AIA Status

1. The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

Allowable Subject Matter

1. Claims 1-5, 7-12, 14-17, 19-32 are allowed.
2. The following is an examiner's statement of reasons for allowance:
3. Regarding claim 1, the combination including limitation the first horizontal and second horizontal frame member including a pin and a width of the vertical joint portion accounts for at least 50% of a width between the pins of the first and second coupling assemblies of the first and second horizontal joint portions in the invention as claimed is neither disclosed nor rendered obvious by the prior art.
4. Regarding claim 14, the combination including limitation the first horizontal and second horizontal frame member including a pin and a recesses and wherein a width of the vertical joint portion accounts for a majority of a width between the pins of the first and second coupling assemblies of the first and second horizontal joint portions in the invention as claimed is neither disclosed nor rendered obvious by the prior art.
5. Regarding claim 24, the combination including limitation the first horizontal joint portion comprises a first external cross-section, the first external cross-section being generally triangular in the invention as claimed is neither disclosed nor rendered obvious by the prior art.
6. Regarding claim 26, the combination including limitation wherein the vertical joint portion comprises a second external cross-section, the second external cross-section

being generally triangular. in the invention as claimed is neither disclosed nor rendered obvious by the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAUREN ASHLEY CRANE whose telephone number is (571)270-5198. The examiner can normally be reached Mondays & Tuesdays 8 am - 4pm.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at <http://www.uspto.gov/interviewpractice>.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Angwin can be reached on 571-270-3735. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of published or unpublished applications may be obtained from Patent Center. Unpublished application information in Patent Center is available to registered users. To file and manage patent submissions in Patent Center, visit: <https://patentcenter.uspto.gov>. Visit <https://www.uspto.gov/patents/apply/patent-center> for more information about Patent Center and

Application/Control Number: 16/220,484
Art Unit: 3754

Page 4

<https://www.uspto.gov/patents/docx> for information about filing in DOCX format. For additional questions, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/LAUREN A CRANE/
Primary Examiner, Art Unit 3754

<i>Search Notes</i> 	Application/Control No. 16/220,484	Applicant(s)/Patent Under Reexamination Lin, deceased et al.
	Examiner LAUREN A CRANE	Art Unit 3754

CPC - Searched*		
Symbol	Date	Examiner
F16B7/17	04/14/2020	LC
E04H4/0056	11/03/2020	LC

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner
4	654	04/14/2020	LC
4	506	11/03/2020	

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner
Text search of F16B7/14	11/03/2020	LC
Forward backward search of tagged art	11/03/2020	LC
Search of Tagged Art	04/06/2021	LC
Search of Tagged Art	11/02/2021	LC

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner
	Keyword Search	10/18/2022	LC

/LAUREN A CRANE/ Primary Examiner, Art Unit 3754	
---	--

Issue Classification 	Application/Control No. 16/220,484	Applicant(s)/Patent Under Reexamination Lin, deceased et al.
	Examiner LAUREN A CRANE	Art Unit 3754

CPC						
Symbol					Type	Version
F16B	/	7	/	14	F	2013-01-01
E04H	/	4	/	0056	I	2013-01-01
F16B	/	7	/	042	I	2013-01-01
F16B	/	7	/	0446	I	2013-01-01
A63C	/	19	/	02	I	2013-01-01
E04H	/	4	/	14	I	2013-01-01

CPC Combination Sets					
Symbol		Type	Set	Ranking	Version
	/				

NONE (Assistant Examiner) (Date)		Total Claims Allowed: 29	
/LAUREN A CRANE/ Primary Examiner, Art Unit 3754 (Primary Examiner) (Date)		08 November 2022 (Date)	O.G. Print Claim(s) 1
			O.G. Print Figure 1

Issue Classification 	Application/Control No. 16/220,484	Applicant(s)/Patent Under Reexamination Lin, deceased et al.
	Examiner LAUREN A CRANE	Art Unit 3754

INTERNATIONAL CLASSIFICATION			
CLAIMED			
F16B		7	14
NON-CLAIMED			

US ORIGINAL CLASSIFICATION	
CLASS	SUBCLASS
4	506

CROSS REFERENCES(S)						
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)					

NONE (Assistant Examiner) _____ (Date) _____		Total Claims Allowed: 29	
/LAUREN A CRANE/ Primary Examiner, Art Unit 3754 (Primary Examiner) _____ (Date) _____		08 November 2022 O.G. Print Claim(s) 1	O.G. Print Figure 1

Issue Classification 	Application/Control No. 16/220,484	Applicant(s)/Patent Under Reexamination Lin, deceased et al.
	Examiner LAUREN A CRANE	Art Unit 3754

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47															
CLAIMS															
Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	1	9	10	16	19	25	28								
2	2	10	11	17	20	26	29								
3	3	11	12	18	21	27	30								
4	4		13	19	22	28	31								
5	5	12	14	20	23	29	32								
	6	13	15	21	24										
6	7	14	16	22	25										
7	8	15	17	23	26										
8	9		18	24	27										

NONE (Assistant Examiner) _____ (Date) _____		Total Claims Allowed: 29	
/LAUREN A CRANE/ Primary Examiner, Art Unit 3754 (Primary Examiner) _____ (Date) _____		08 November 2022 (Date)	O.G. Print Claim(s) 1 O.G. Print Figure 1

Bibliographic Data

Application No: 16/220,484

Foreign Priority claimed: ☒ Yes ☐ No

35 USC 119 (a-d) conditions met: ☒ Yes ☐ No ☒ Met After Allowance

Verified and Acknowledged:

/LAUREN A CRANE/

Examiner's Signature

L.A.C

Initials

Title:

JOINT FOR ABOVE GROUND POOL FRAME

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
12/14/2018	004	3754	
RULE			

APPLICANTS

Intex Marketing Ltd., Tortola, VIRGIN ISLANDS, BRITISH

INVENTORS

Hua Hsiang Lin, deceased, Fujian, CHINA

Yaw Yuan Hsu, Fujian, CHINA

CONTINUING DATA

This application is a 371 of PCT/US2017/037892 06/16/2017

FOREIGN APPLICATIONS

CHINA CN201620598406.9 06/17/2016

CHINA CN201630270359.0 06/22/2016

CHINA CN201621039473.3 09/06/2016

IF REQUIRED, FOREIGN LICENSE GRANTED**

03/06/2019

STATE OR COUNTRY

CHINA

ADDRESS

FILING FEE RECEIVED

\$1,720

Doc code: RCEX

Doc description: Request for Continued Examination (RCE)

PTO/SB/30EFS (01-22)

Approved for use through 05/31/2024. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

**REQUEST FOR CONTINUED EXAMINATION(RCE)TRANSMITTAL
(Submitted Only via EFS-Web)**

Application Number	16220484	Filing Date	2018-12-14	Docket Number (if applicable)	IRC-0042-02-US	Art Unit	3754
First Named Inventor	Hua Hsiang Lin			Examiner Name	Lauren Ashley Crane		

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.

Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. The Instruction Sheet for this form is located at WWW.USPTO.GOV

SUBMISSION REQUIRED UNDER 37 CFR 1.114

Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____☐ Other _____☒ Enclosed☐ Amendment/Reply☒ Information Disclosure Statement (IDS)☐ Affidavit(s)/ Declaration(s)☐ Other _____**MISCELLANEOUS**☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of months _____
(Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)☐ Other _____**FEES****The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.**☒ The Director is hereby authorized to charge any underpayment of fees, or credit any overpayments, to
Deposit Account No 020390**SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED**☒ Patent Practitioner Signature

Applicant Signature

Doc code: RCEX

Doc description: Request for Continued Examination (RCE)

PTO/SB/30EFS (01-22)

Approved for use through 05/31/2024. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Signature of Registered U.S. Patent Practitioner			
Signature	Robert D. Null/	Date (YYYY-MM-DD)	2022-12-15
Name	Robert D. Null	Registration Number	40746

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16220484
	Filing Date	2018-12-14
	First Named Inventor	Hua Hsiang Lin
	Art Unit	3754
	Examiner Name	Lauren Ashley Crane
	Attorney Docket Number	IRC-0042-02-US

U.S. PATENTS							Remove	
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1							
If you wish to add additional U.S. Patent citation information please click the Add button.							Add	
U.S. PATENT APPLICATION PUBLICATIONS							Remove	
Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1	20090144892		2009-06-11	Brindle			
If you wish to add additional U.S. Published Application citation information please click the Add button.							Add	
FOREIGN PATENT DOCUMENTS							Remove	
Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²ⁱ	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	T ⁵
	1	28886	RU		2003-04-20	Limited Liability Company	English Abstract Submitted	×
	2	2017/218904	WO		2017-12-21	Intex Recreation Corp.		☐
If you wish to add additional Foreign Patent Document citation information please click the Add button								Add
NON-PATENT LITERATURE DOCUMENTS								Remove

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		16220484
	Filing Date		2018-12-14
	First Named Inventor	Hua Hsiang Lin	
	Art Unit	3754	
	Examiner Name	Lauren Ashley Crane	
	Attorney Docket Number	IRC-0042-02-US	

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T ⁵
	1		

If you wish to add additional non-patent literature document citation information please click the Add button

EXAMINER SIGNATURE

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16220484
	Filing Date	2018-12-14
	First Named Inventor	Hua Hsiang Lin
	Art Unit	3754
	Examiner Name	Lauren Ashley Crane
	Attorney Docket Number	IRC-0042-02-US

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Robert D. Null/	Date (YYYY-MM-DD)	2022-12-15
Name/Print	Robert D. Null	Registration Number	40746

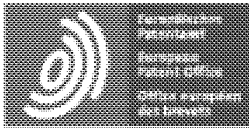
This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.



Patent Translate

Powered by EPO and Google

Notice

This translation is machine-generated. It cannot be guaranteed that it is intelligible, accurate, complete, reliable or fit for specific purposes. Critical decisions, such as commercially relevant or financial decisions, should not be based on machine-translation output.

ABSTRACT RU28886U1

1.

13 A swimming pool containing a supporting support frame and an elastic shell installed inside, characterized in that the supporting frame is made of U-shaped rigid frame racks, the vertical generatrices of which are fastened together in pairs, and the elastic shell is made in the form of a panel forming a single structure of the bottom and sides, and is equipped around the perimeter with loops for frame racks. 2. The pool according to claim 1, characterized in that the panel has dimensions in plan, determined by the formula $DD + 2H$, where D is the diameter of the panel of the pool shell; D is the diameter of the base (bottom) of the pool; H is the height of the frame pillars of the pool.



Espacenet

Bibliographic data: RU28886 (U1) — 2003-04-20

Бассейн

Inventor(s): Этин В.Л., ; Фирсов А.А., ; Рубанов Е.К.

Applicant(s): Общество с ограниченной ответственностью
"Судозкотехника - сервис"

Classification: - international: **E04H4/00**
- cooperative:

Application number: RU20010128978U 20011026

Priority number(s): RU20010128978U 20011026

Abstract of RU28886 (U1)

1. Бассейн, содержащий несущий опорный каркас и установленную внутри эластичную оболочку, отличающийся тем, что несущий каркас выполнен из жестких рамных стоек П-образной формы, вертикальные образующие которых попарно скреплены между собой, а эластичная оболочка выполнена в виде полотнища, образующего единую конструкцию днища и бортов, и снабжена по периметру петлями под рамные стойки. 2. Бассейн по п.1, отличающийся тем, что полотнище имеет размеры в плане, определяемые по формуле $D \cdot D + 2H$, где D - диаметр полотнища оболочки бассейна; D - диаметр основания (днища) бассейна; H - высота рамных стоек бассейна.

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(10) International Publication Number
WO 2017/218904 A1

(43) International Publication Date
21 December 2017 (21.12.2017)

(51) International Patent Classification:

A47B 9/14 (2006.01) E04H 4/14 (2006.01)
E04H 4/00 (2006.01) F16B 7/10 (2006.01)
E04H 4/02 (2006.01) F16B 7/14 (2006.01)
E04H 4/04 (2006.01)

(21) International Application Number:

PCT/US2017/037892

(22) International Filing Date:

16 June 2017 (16.06.2017)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

201620598406.9 17 June 2016 (17.06.2016) CN
201630270359.0 22 June 2016 (22.06.2016) CN
201621039473.3 06 September 2016 (06.09.2016) CN

(71) Applicant: **INTEX RECREATION CORP.** [US/US];
4001 Via Oro Avenue, Suite 210, Long Beach, California
90810 (US).

(72) Inventor: **LIN, Hua Hsiang** (*deceased*).

(72) Inventor: **HSU, Yaw Yuan**; Xinyang Industrial Zone No.
858 Wengjiao, Road, Haicang, Xiamen, Fujian 361022
(CN).

(74) Agent: **DREWRY, Jamie M.**; 300 N. Meridian Street,
Suite 2700, Indianapolis, Indiana 46204 (US).

(81) Designated States (*unless otherwise indicated, for every
kind of national protection available*): AE, AG, AL, AM,
AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ,
CA, CH, CL, CN, CO, CR, CU, CZ, DE, DJ, DK, DM, DO,
DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN,
HR, HU, ID, IL, IN, IR, IS, JO, JP, KE, KG, KH, KN, KP,
KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME,
MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ,
OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA,
SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN,
TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (*unless otherwise indicated, for every
kind of regional protection available*): ARIPO (BW, GH,
GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ,

(54) Title: **JOINT FOR ABOVE GROUND POOL FRAME**

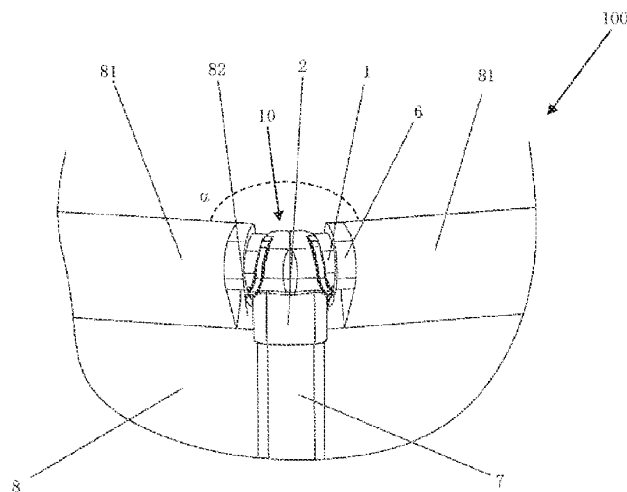


FIG. 1

(57) **Abstract:** A frame pool is disclosed including a frame assembly and a pool liner, the frame assembly including horizontal frame members and a vertical frame member coupled together via a T-shaped joint. The T-shaped joint may be constructed of plastic to facilitate attachment and detachment to the adjacent frame members and to resist galling and corrosion. The T-shaped joint may also be relatively small to improve the appearance and water containment of the frame pool.

[Continued on next page]

UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*
- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

Published:

- *with international search report (Art. 21(3))*

JOINT FOR ABOVE GROUND POOL FRAME**CROSS REFERENCE TO RELATED APPLICATIONS**

[0001] The present application claims priority to the following Chinese patent applications, the disclosures of which are hereby expressly incorporated by reference herein in their entirety:

Application Number	Filing Date
CN 201620598406.9	June 17, 2016
CN 201630270359.0	June 22, 2016
CN 201621039473.3	September 6, 2016

FIELD OF THE DISCLOSURE

[0002] The present disclosure relates to an above ground pool. More particularly, the present disclosure relates to a joint for an above ground pool, and to a method for using the same.

BACKGROUND OF THE DISCLOSURE

[0003] A frame pool may include a frame assembly and a pool liner supported by the frame assembly to form a water cavity of the pool. The frame assembly may include one or more horizontal frame members (e.g., horizontal pipes) that form an upper rim of the pool and one or more vertical frame members (e.g., vertical pipes) that extend downward from the horizontal frame members to the ground. To allow the frame assembly to be disassembled for storage and assembled for use, the horizontal frame members and the vertical frame members may be removably coupled together via a plurality of T-shaped joints. Existing T-shaped joints are formed of metal, which may be susceptible to galling and corrosion, especially as any protective coating on the metal becomes worn or damaged. Also, existing T-shaped joints are relatively wide, so existing pool liners may require wide holes or gaps to accommodate such T-shaped joints, which may impact the pool's appearance and ability to contain water.

SUMMARY

[0004] The present disclosure provides a frame pool including a frame assembly and a pool liner, the frame assembly including horizontal frame members and a vertical frame member coupled together via a T-shaped joint. The T-shaped joint may be constructed of plastic to facilitate attachment and detachment to the adjacent frame members and to resist galling and corrosion. The T-shaped joint may also be relatively small to improve the appearance and water containment of the frame pool.

[0005] According to an embodiment of the present disclosure, a frame joint is disclosed for an above ground pool frame having a first horizontal frame member, a second horizontal frame member, and a vertical frame member. The frame joint includes: a first horizontal joint portion including a first coupling assembly configured to couple with the first horizontal frame member; a second horizontal joint portion including a second coupling assembly configured to couple with the second horizontal frame member; and a vertical joint portion fixedly coupled to the first and second horizontal joint portions and configured to couple with the vertical frame member; wherein a width of the vertical joint portion accounts for at least 50% of a width between the first and second coupling assemblies of the first and second horizontal joint portions.

[0006] According to another embodiment of the present disclosure, a frame joint is disclosed for an above ground pool frame having a first horizontal frame member, a second horizontal frame member, and a vertical frame member. The frame joint includes: a first horizontal joint portion configured to couple with the first horizontal frame member, the first horizontal joint portion being constructed of plastic; a second horizontal joint portion configured to couple with the second horizontal frame member, the second horizontal joint portion being constructed of plastic; and a vertical joint portion fixedly coupled to the first and second horizontal joint portions and configured to couple with the vertical frame member, the vertical joint portion being constructed of plastic.

[0007] According to yet another embodiment of the present disclosure, a method is disclosed for assembling an above ground pool. The method includes: coupling a first horizontal joint portion of a frame joint to a first horizontal frame member with a first coupling assembly;

coupling a second horizontal joint portion of the frame joint to a second horizontal frame member with a second coupling assembly; and coupling a vertical joint portion of the frame joint to a vertical frame member, wherein a width of the vertical joint portion accounts for a majority of a width between the first and second coupling assemblies of the first and second horizontal joint portions.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008] The above-mentioned and other features and advantages of this disclosure, and the manner of attaining them, will become more apparent and will be better understood by reference to the following description of embodiments of the invention taken in conjunction with the accompanying drawings, wherein:

[0009] FIG. 1 is a partial perspective view of a frame pool including a frame assembly and a pool liner, the frame assembly including horizontal frame members and a vertical frame member coupled together via an exemplary T-shaped joint of the present disclosure;

[0010] FIG. 2 is an exploded perspective view of the frame assembly of FIG. 1;

[0011] FIG. 3 is an exploded perspective view of the T-shaped joint of FIG. 1; and

[0012] FIG. 4 is an assembled cross-sectional view of the T-shaped joint of FIG. 3.

[0013] Corresponding reference characters indicate corresponding parts throughout the several views. The exemplifications set out herein illustrate exemplary embodiments of the invention and such exemplifications are not to be construed as limiting the scope of the invention in any manner.

DETAILED DESCRIPTION

[0014] A portion of an exemplary frame pool 100 is shown in FIGS. 1 and 2. The illustrative portion of the frame pool 100 includes two adjacent horizontal frame members 6 (e.g., horizontal pipes) that cooperate to form an upper rim of the frame pool 100 and a vertical frame member 7 (e.g., vertical pipe) that extends downward from the horizontal frame members 6 to support the frame pool 100 on the ground. Although not shown in FIGS. 1 and 2, similar frame members 6 and 7 may be provided around the remaining perimeter of the frame pool 100.

The frame pool 100 may vary in size and shape. For example, the frame pool 100 may be rectangular, circular, elliptical, or other suitable shapes.

[0015] Referring still to FIGS. 1 and 2, a T-shaped joint 10 may be used to removably couple the two adjacent horizontal frame members 6 to the adjacent vertical frame member 7. Although a single T-shaped joint 10 is shown in FIGS. 1 and 2, similar T-shaped joints 10 may be provided around the remaining perimeter of the frame pool 100. Each T-shaped joint 10 illustratively includes two horizontal joint portions 1 configured to couple to the horizontal frame members 6 and a vertical joint portion 2 configured to couple to the vertical frame member 7. To form the T-shape, the vertical joint portion 2 is centered between and perpendicular to the two horizontal joint portions 1. The orientation of the horizontal joint portions 1 determines the orientation of the adjacent horizontal frame members 6. In the illustrated embodiment of FIG. 1, for example, the horizontal joint portions 1 define an obtuse angle α therebetween, so the horizontal frame members 6 define the same angle α therebetween. In another embodiment, the horizontal joint portions 1 may be collinear with each other, so the horizontal frame members 6 would also be collinear with each other. In another embodiment, the horizontal joint portions 1 may be perpendicular to each other, so the horizontal frame members 6 would also be perpendicular to each other, such as along a corner of a rectangular frame pool 100.

[0016] Some or all components of the frame assembly, including the horizontal frame members 6, the vertical frame members 7, and/or the T-shaped joints 10, may be constructed of a polymer, specifically plastic, such as by injection molding. Compared to metallic components, the plastic components may be smooth and elastic to facilitate assembly and disassembly of the frame assembly. Also, the plastic components may be more resistant to galling and corrosion to promote extended use. With respect to the T-shaped joint 10, in particular, the horizontal joint portions 1 and the vertical joint portion 2 may be integrally formed as a single piece of plastic. Alternatively, the horizontal joint portions 1 and the vertical joint portion 2 may be formed as multiple pieces of plastic and then fixedly coupled (e.g., adhered, welded) together. The upper end of the T-shaped joint 10 may include a raised rim 22 (FIG. 3) to give the appearance that the vertical joint portion 2 wraps around the horizontal joint portions 1.

[0017] The illustrative frame pool 100 of FIG. 1 also includes a pool liner 8 supported by the frame members 6 and 7 to form an interior water cavity for swimming and/or bathing. The

pool liner 8 may be wrapped and secured around the horizontal frame member 6 to form a loop or fold 81. The fold 81 of the pool liner 8 may also define a gap or hole 82 to expose the T-shaped joint 10, as described further below.

[0018] The illustrative T-shaped joint 10 is described in more detail with reference to FIGS. 3 and 4.

[0019] The horizontal joint portions 1 of the illustrative T-shaped joint 10 are configured to couple with the adjacent horizontal frame members 6 (FIG. 2). The horizontal joint portions 1 may be configured to fit within the adjacent horizontal frame members 6 in a sleeved manner. Thus, the external cross-section of the horizontal joint portions 1 may match the internal cross-section of the horizontal frame members 6. In the illustrated embodiment of FIG. 3, the external cross-section of the horizontal joint portions 1 is generally triangular with rounded edges to resist rotation between the horizontal joint portions 1 and the horizontal frame members 6. It is also within the scope of the present disclosure for the external cross-section to be circular, rectangular, elliptical, or another suitable shape to match the internal cross-section of the horizontal frame members 6.

[0020] Each horizontal joint portion 1 of the T-shaped joint 10 includes a coupling assembly 3 for removable attachment to the adjacent horizontal frame member 6 (FIG. 2). As shown in FIGS. 3 and 4, each coupling assembly 3 includes a base 31 received in the horizontal joint portion 1, a helical spring 32 held in place by the base 31, and a pin 33 extending radially outward (e.g., downward) through a hole 35 in the horizontal joint portion 1. Each horizontal joint portion 1 may include an internal horizontal reinforcing rib 11 and/or an internal horizontal support member 5 to help support base 31 within the T-shaped joint 10. In an assembled or locked state, spring 32 may bias pin 33 radially outward through hole 35 to engage a corresponding recess or hole (not shown) of the horizontal frame member 6 (FIG. 2). In a disassembled or unlocked state, a user may press pin 33 radially inward to compress spring 32 and disengage the horizontal frame member 6 (FIG. 2).

[0021] The vertical joint portion 2 of the illustrative T-shaped joint 10 is configured to couple with the adjacent vertical frame member 7 (FIG. 2). The vertical joint portion 2 may be configured to fit within the adjacent vertical frame member 7 in a sleeved manner. Thus, the external cross-section of the vertical joint portion 2 may match the internal cross-section of the

vertical frame member 7. In the illustrated embodiment of FIG. 3, the external cross-section of the vertical joint portion 2 is generally triangular with rounded edges to resist rotation between the vertical joint portion 2 and the vertical frame member 7. It is also within the scope of the present disclosure for the external cross-section to be circular, rectangular, elliptical, or another suitable shape to match the internal cross-section of the vertical frame member 7.

[0022] The vertical joint portion 2 of the T-shaped joint 10 includes a coupling assembly 4 for removable attachment to the adjacent vertical frame member 7 (FIG. 2). As shown in FIGS. 3 and 4, each coupling assembly 4 includes a base 41 received in the vertical joint portion 2, a helical spring 42 held in place by the base 41, and a pin 43 extending radially outward (e.g., rearward) through a hole 45 in the vertical joint portion 2. The vertical joint portion 2 may include one or more internal vertical reinforcing ribs 21 to help support base 41 within the T-shaped joint 10, such as by compressing fingers 46 of base 41 together within the T-shaped joint 10. In an assembled or locked state, spring 42 may bias pin 43 radially outward through hole 45 to engage a corresponding recess or hole 71 of the vertical frame member 7 (FIG. 2). In a disassembled or unlocked state, a user may press pin 43 radially inward to compress spring 42 and disengage the hole 71 of the vertical frame member 7 (FIG. 2).

[0023] According to an exemplary embodiment of the present disclosure, and as shown in FIG. 4, the size of the T-shaped joint 10 may be minimized such that the size of the corresponding hole 82 in the pool liner 8 (shown in phantom) may also be minimized. The small hole 82 in the pool liner 8 may improve the appearance and water containment of the frame pool 100 (FIG. 1) while still leaving the coupling assemblies 3 and 4, specifically the pins 33 and 43 of the coupling assemblies 3 and 4, accessible for subsequent disassembly.

[0024] The width of the T-shaped joint 10 may be minimized such that the width of the corresponding hole 82 in the pool liner 8 may also be minimized. For example, the total width W_{J1} of the T-shaped joint 10 may be about 5 inches to about 7 inches, specifically about 5 3/4 inches, the width W_{J2} between the pins 33 of the coupling assemblies 3 may be about 3 inches to about 5 inches, specifically about 3 13/16 inches, and the width W_{J3} of the vertical joint portion 2 may be about 1 inches to about 3 inches, specifically about 2 3/8 inches. In the illustrated embodiment of FIG. 4, the width W_L of the hole 82 in the pool liner 8 is greater than both the width W_{J3} of the vertical joint portion 2 and the width W_{J2} between the pins 33 to expose the pins

33 of the coupling assemblies 3 for subsequent disassembly while being less than the total width W_{J1} of the T-shaped joint 10. For example, the width W_L of the hole 82 in the pool liner 8 is about 3 inches to about 7 inches, specifically about 4 1/2 inches.

[0025] To help minimize the size of the T-shaped joint 10, the pins 33 of the coupling assemblies 3 may be positioned close to the vertical joint portion 2. Due to this close positioning, the width W_{J3} of the vertical joint portion 2 may account for a majority of the width W_{J2} between the pins 33 of the coupling assemblies 3. For example, the width W_{J3} of the vertical joint portion 2 may account for 50%, 60%, 70%, 80%, or more of the width W_{J2} between the pins 33 of the coupling assemblies 3. In the illustrated embodiment of FIG. 4, in particular, the width W_{J3} of the vertical joint portion 2 accounts for about 70% of the width W_{J2} between the pins 33 of the coupling assemblies 3. The width W_{J3} of the vertical joint portion 2 may also account for a significant portion of the total width W_{J1} of the T-shaped joint 10. For example, the width W_{J3} of the vertical joint portion 2 may account for 40%, 50%, 60%, 70%, or more of the total width W_{J1} of the T-shaped joint 10. In the illustrated embodiment of FIG. 4, in particular, the width W_{J3} of the vertical joint portion 2 accounts for about 50% of the of the total width W_{J1} of the T-shaped joint 10.

[0026] Additionally, the height of the T-shaped joint 10 may be minimized such that the height of the corresponding hole 82 in the pool liner 8 may be minimized. For example, the total height H_J of the T-shaped joint 10 may be about 3 inches to about 5 inches, specifically about 3 7/8 inches. Because the pin 43 of the coupling assembly 4 may be accessible in front of the pool liner 8 and behind the T-shaped joint 10, the hole 82 in the pool liner 8 need not extend downward beneath the pin 43. Thus, in the illustrated embodiment of FIG. 4, the height H_L of the hole 82 in the pool liner 8 is less than the total height H_J of the T-shaped joint 10 while still allowing access to the pin 33 of the coupling assembly 3 and the pin 43 of the coupling assembly 4 for subsequent disassembly.

[0027] While this invention has been described as having exemplary designs, the present invention can be further modified within the spirit and scope of this disclosure. This application is therefore intended to cover any variations, uses, or adaptations of the invention using its general principles. Further, this application is intended to cover such departures from the present

disclosure as come within known or customary practice in the art to which this invention pertains and which fall within the limits of the appended claims.

WHAT IS CLAIMED IS:

1. A frame joint for an above ground pool frame having a first horizontal frame member, a second horizontal frame member, and a vertical frame member, the frame joint comprising:
 - a first horizontal joint portion including a first coupling assembly configured to couple with the first horizontal frame member;
 - a second horizontal joint portion including a second coupling assembly configured to couple with the second horizontal frame member; and
 - a vertical joint portion fixedly coupled to the first and second horizontal joint portions and configured to couple with the vertical frame member;wherein a width of the vertical joint portion accounts for at least 50% of a width between the first and second coupling assemblies of the first and second horizontal joint portions.
2. The frame joint of claim 1, wherein the width of the vertical joint portion accounts for at least 40% of a total width of the frame joint.
3. The frame joint of claim 2, wherein the width of the vertical joint portion accounts for about 50% of the total width of the frame joint.
4. The frame joint of claim 1, wherein each of the first and second coupling assemblies comprises a base, a helical spring supported by the base, and a pin biased outward through a hole in the respective horizontal joint portion by the helical spring to engage a corresponding recess of the respective horizontal frame member.
5. The frame joint of claim 4, wherein the width of the vertical joint portion accounts for about 70% of a width between the pins of the first and second coupling assemblies.
6. The frame joint of claim 1, further comprising a liner wrapped around the first and second horizontal frame members, the liner defining a hole that is sized to expose the first and second coupling assemblies.

7. The frame joint of claim 6, wherein a width of the frame joint exceeds a width of the hole in the liner.
8. The frame joint of claim 6, wherein a height of the frame joint exceeds a height of the hole in the liner.
9. A frame joint for an above ground pool frame having a first horizontal frame member, a second horizontal frame member, and a vertical frame member, the frame joint comprising:
 - a first horizontal joint portion configured to couple with the first horizontal frame member, the first horizontal joint portion being constructed of plastic;
 - a second horizontal joint portion configured to couple with the second horizontal frame member, the second horizontal joint portion being constructed of plastic; and
 - a vertical joint portion fixedly coupled to the first and second horizontal joint portions and configured to couple with the vertical frame member, the vertical joint portion being constructed of plastic.
10. The frame joint of claim 9, wherein the vertical joint portion is centered between the first and second horizontal joint portions to form a T-shaped frame joint.
11. The frame joint of claim 9, wherein the first and second horizontal joint portions cooperate to form an obtuse angle that defines a water cavity.
12. The frame joint of claim 9, wherein the vertical joint portion is integrally formed with the first and second horizontal joint portions as a single piece.
13. The frame joint of claim 9, further comprising:
 - a first coupling assembly associated with the first horizontal joint portion; and
 - a second coupling assembly associated with the second horizontal joint portion;wherein a width of the vertical joint portion accounts for a majority of a width between the first and second coupling assemblies.

14. A method of assembling an above ground pool, the method comprising:
coupling a first horizontal joint portion of a frame joint to a first horizontal frame member with a first coupling assembly;
coupling a second horizontal joint portion of the frame joint to a second horizontal frame member with a second coupling assembly; and
coupling a vertical joint portion of the frame joint to a vertical frame member;
wherein a width of the vertical joint portion accounts for a majority of a width between the first and second coupling assemblies of the first and second horizontal joint portions.
15. The method of claim 14, wherein:
an external cross-section of the first horizontal joint portion matches an internal cross-section of the first horizontal frame member;
an external cross-section of the second horizontal joint portion matches an internal cross-section of the second horizontal frame member, and
an external cross-section of the vertical joint portion matches an internal cross-section of the vertical frame member.
16. The method of claim 14, wherein the first horizontal joint portion, the second horizontal joint portion, and the vertical joint portion are constructed of plastic.
17. The method of claim 14, wherein:
coupling the first horizontal joint portion to the first horizontal frame member comprises depressing a first pin into the first horizontal joint portion and releasing the first pin into engagement with the first horizontal frame member, and
coupling the second horizontal joint portion to the second horizontal frame member comprises depressing a second pin into the second horizontal joint portion and releasing the second pin into engagement with the second horizontal frame member.
18. The method of claim 14, further comprising wrapping a liner around the first and second horizontal frame members with a hole exposing the first and second coupling assemblies.

19. The method of claim 18, wherein a width of the hole in the liner exceeds a width between the first and second coupling assemblies.

20. The method of claim 18, wherein the vertical joint portion of the frame joint is coupled to the vertical frame member with a third coupling assembly, and wherein a height of the hole in the liner is less than a distance between the first and third coupling assemblies.

1/4

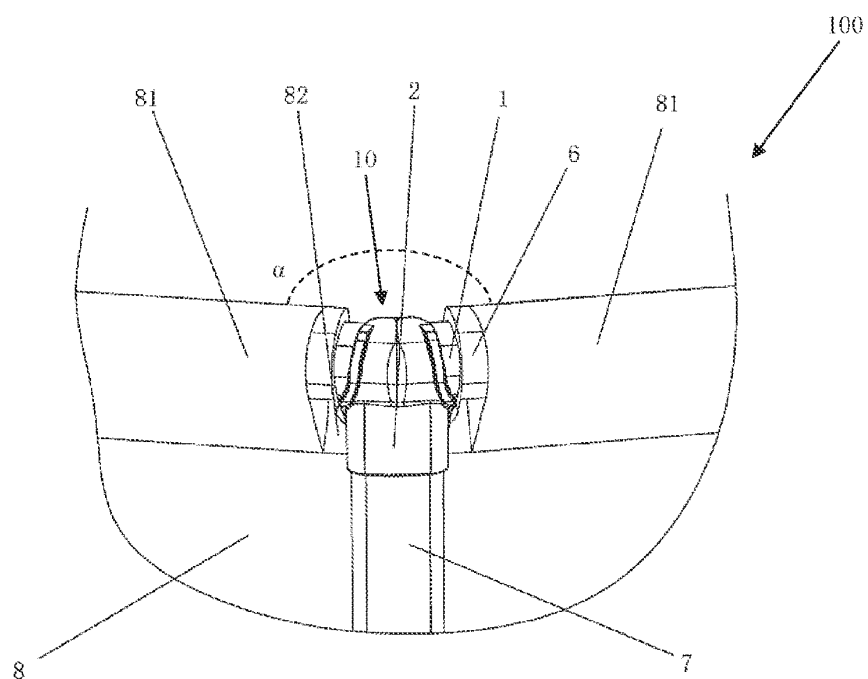


FIG. 1

2/4

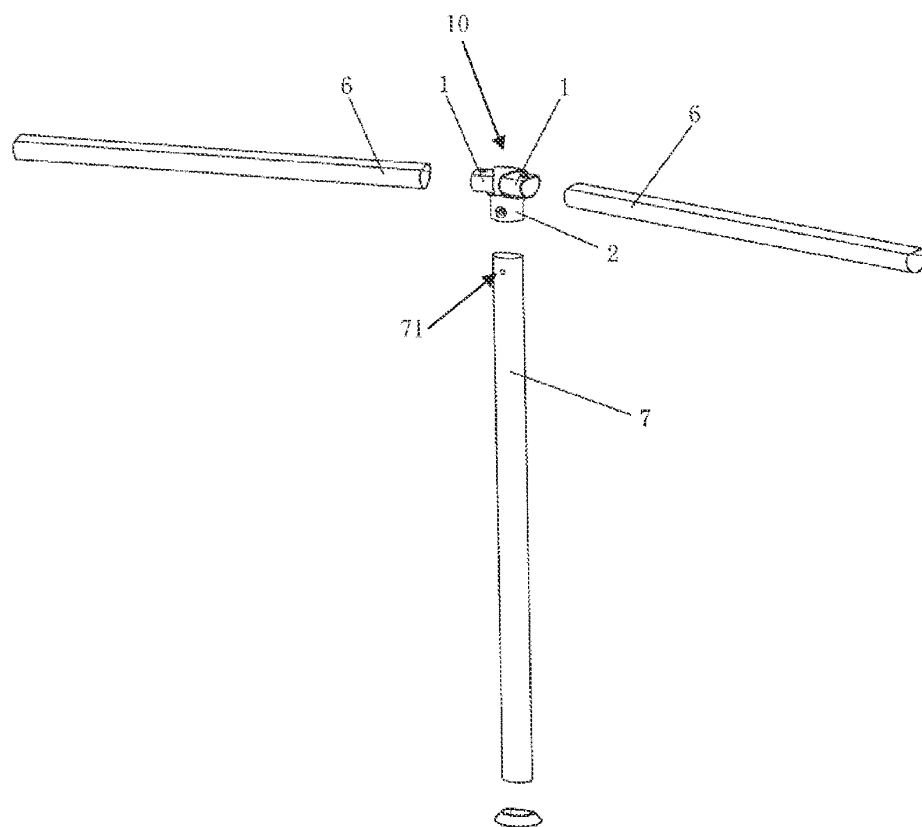


FIG. 2

3/4

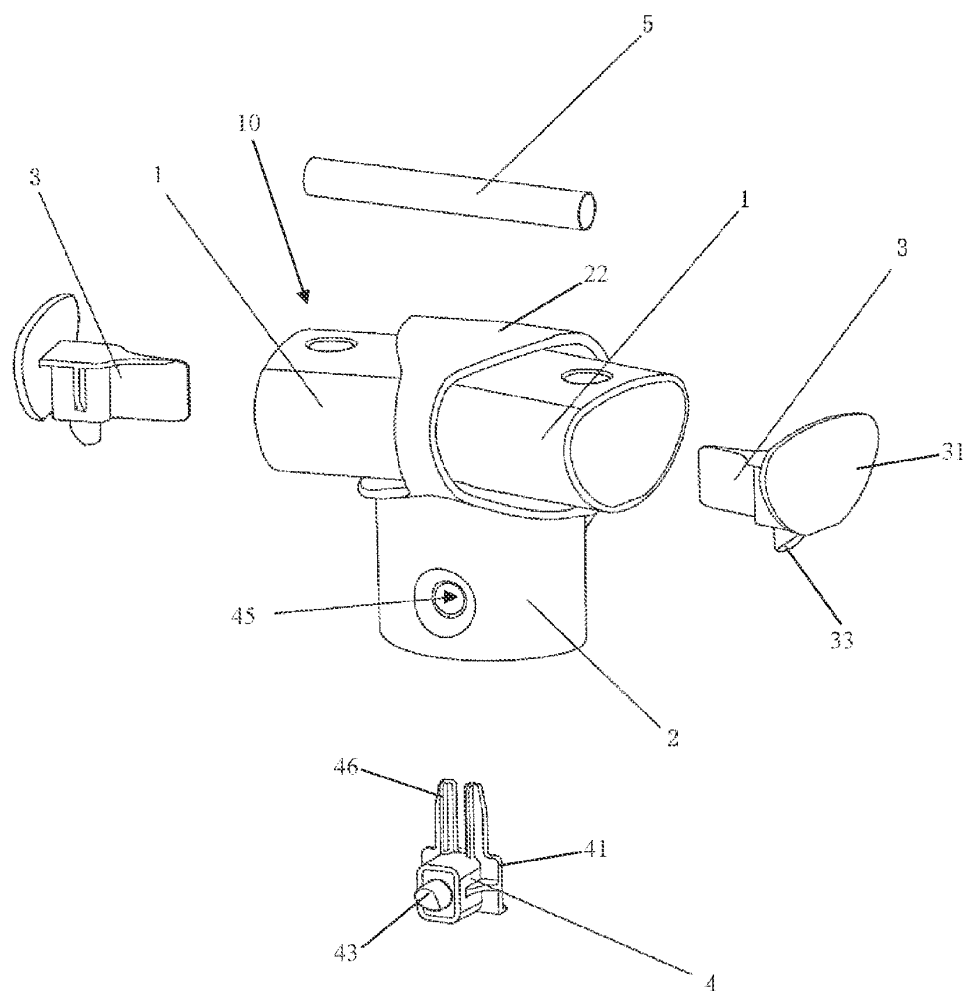


FIG. 3

4/4

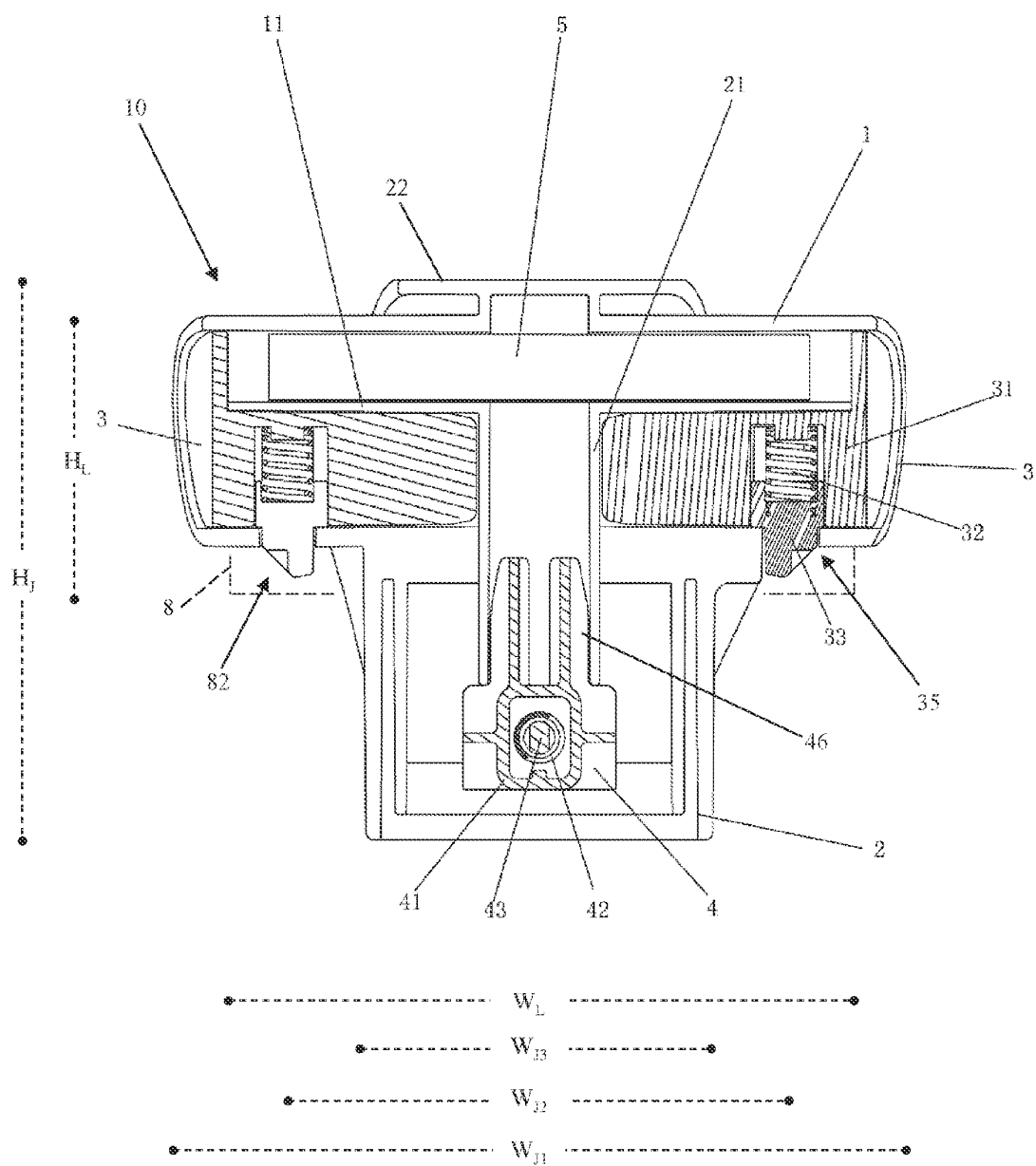


FIG. 4

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US2017/037892

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - E04H 4/00; A47B 9/14; E04H 4/02; E04H 4/04; E04H 4/14; F16B 7/10; F16B 7/14 (2017.01)

CPC - E04H 4/0056; E04B 2/766; E04H 2004/146 (2017.08)

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

See Search History document

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

See Search History document

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

See Search History document

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2014/0325751 A1 (HAKE) 06 November 2014 (06.11.2014) entire document	9, 10, 12
X	US 2002/0042948 A1 (LEE) 18 April 2002 (18.04.2002) entire document	1-3, 14, 15, 17
---		---
Y		4-9, 11, 13, 16, 18-20
Y	US 6,079,894 A (OBITTS) 27 June 2000 (27.06.2000) entire document	4, 5
Y	CN 204475914 U (SHANGHAI BESTWAY INFLATABLES & MATERIAL CORP) 15 July 2015 (15.07.2015) see machine translation	6-8, 18-20
Y	US 5,143,476 A (PRUIS) 01 September 1992 (01.09.1992) entire document	9, 11, 13, 15
A	US 4,323,319 A (ADAMS) 06 April 1982 (06.04.1982) entire document	1-20
A	US 2004/0118844 A1 (BENNETT et al) 24 June 2004 (24.06.2004) entire document	1-20
A	CN 200968073 Y (INTEX INDUSTRIES (XIAMEN) CO., LTD) 31 October 2007 (31.10.2007) see machine translation	1-20



Further documents are listed in the continuation of Box C.



See patent family annex.

•

Special categories of cited documents:

“A”

document defining the general state of the art which is not considered to be of particular relevance

“E”

earlier application or patent but published on or after the international filing date

“L”

document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

“O”

document referring to an oral disclosure, use, exhibition or other means

“P”

document published prior to the international filing date but later than the priority date claimed

“T” later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

“X”

document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

“Y”

document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

“&”

document member of the same patent family

Date of the actual completion of the international search

04 August 2017

Date of mailing of the international search report

24 AUG 2017

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US, Commissioner for Patents

P.O. Box 1450, Alexandria, VA 22313-1450

Facsimile No. 571-273-8300

Authorized officer

Blaine R. Copenheaver

PCT Helpdesk: 571-272-4300

PCT OSP: 571-272-7774

Form PCT/ISA/210 (second sheet) (January 2015)

Electronic Patent Application Fee Transmittal				
Application Number:		16220484		
Filing Date:		14-Dec-2018		
Title of Invention:		JOINT FOR ABOVE GROUND POOL FRAME		
First Named Inventor/Applicant Name:		Hua Hsiang Lin, deceased		
Filer:		Robert D. Null./Melissa Russell		
Attorney Docket Number:		IRC-0042-02-US		
Filed as Large Entity				
Filing Fees for U.S. National Stage under 35 USC 371				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
RCE- 2ND AND SUBSEQUENT REQUEST	1820	1	2000	2000
Total in USD (\$)				2000

Electronic Acknowledgement Receipt	
EFS ID:	47216275
Application Number:	16220484
International Application Number:	
Confirmation Number:	3890
Title of Invention:	JOINT FOR ABOVE GROUND POOL FRAME
First Named Inventor/Applicant Name:	Hua Hsiang Lin, deceased
Customer Number:	27268
Filer:	Robert D. Null./Melissa Russell
Filer Authorized By:	Robert D. Null.
Attorney Docket Number:	IRC-0042-02-US
Receipt Date:	15-DEC-2022
Filing Date:	14-DEC-2018
Time Stamp:	14:35:34
Application Type:	U.S. National Stage under 35 USC 371

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	\$2000
RAM confirmation Number	E2022BEE35590266
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Request for Continued Examination (RCE)	IRC_0042_02_US_RCE.pdf	1667137	no	3
			3ddcf5afbc8115605dee9a5eba53ee0d755e816f		
Warnings:					
Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	IRC_0042_02_US_IDS.pdf	1263434	no	4
			41380c4ed999cf09bc9a5edd315c30c514b7c129		
Warnings:					
Information:					
3	Foreign Reference	RU28886.pdf	126286	no	2
			afc6af1d91974812fc482c2bc54572ff6519a7a		
Warnings:					
Information:					
4	Foreign Reference	WO2017218904.pdf	982868	no	19
			1d97d56055d0265abec48a9f92f3953df9325605		
Warnings:					
Information:					
5	Fee Worksheet (SB06)	fee-info.pdf	37829	no	2
			b352a1f87e8c82dd4527ebff08625906ab62d616		
Warnings:					
Information:					
Total Files Size (in bytes):			4077554		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

27268 7590 01/25/2023
FAEGRE DRINKER BIDDLE & REATH LLP
300 NORTH MERIDIAN STREET
SUITE 2500
INDIANAPOLIS, IN 46204

EXAMINER

CRANE, LAUREN ASHLEY

ART UNIT PAPER NUMBER

3754

DATE MAILED: 01/25/2023

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/220,484	12/14/2018	Hua Hsiang Lin, deceased	IRC-0042-02-US	3890

TITLE OF INVENTION: JOINT FOR ABOVE GROUND POOL FRAME

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$1200	\$0.00	\$0.00	\$1200	04/25/2023

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 40% the amount of undiscounted fees, and micro entity fees are 20% the amount of undiscounted fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Maintenance fees are due in utility patents issuing on applications filed on or after Dec. 12, 1980. It is patentee's responsibility to ensure timely payment of maintenance fees when due. More information is available at www.uspto.gov/PatentMaintenanceFees.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

27268 7590 01/25/2023
FAEGRE DRINKER BIDDLE & REATH LLP
300 NORTH MERIDIAN STREET
SUITE 2500
INDIANAPOLIS, IN 46204

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

(Typed or printed name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/220,484	12/14/2018	Hua Hsiang Lin, deceased	IRC-0042-02-US	3890

TITLE OF INVENTION: JOINT FOR ABOVE GROUND POOL FRAME

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$1200	\$0.00	\$0.00	\$1200	04/25/2023

EXAMINER	ART UNIT	CLASS-SUBCLASS
CRANE, LAUREN ASHLEY	3754	004-506000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/AIA/122 or PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/AIA/47 or PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,

(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 _____
2 _____
3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. Fees submitted: ☐ Issue Fee ☐ Publication Fee (if required) ☐ Advance Order - # of Copies _____

4b. Method of Payment: (Please first reapply any previously paid fee shown above)

☐ Electronic Payment via EFS-Web ☐ Enclosed check ☐ Non-electronic payment by credit card (Attach form PTO-2038)

☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. _____

5. **Change in Entity Status** (from status indicated above)

☐ Applicant certifying micro entity status. See 37 CFR 1.29

☐ Applicant asserting small entity status. See 37 CFR 1.27

☐ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____

Date _____

Typed or printed name _____

Registration No. _____



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/220,484	12/14/2018	Hua Hsiang Lin, deceased	IRC-0042-02-US	3890
27268 7590 01/25/2023 FAEGRE DRINKER BIDDLE & REATH LLP 300 NORTH MERIDIAN STREET SUITE 2500 INDIANAPOLIS, IN 46204			EXAMINER CRANE, LAUREN ASHLEY	
			ART UNIT 3754	PAPER NUMBER
DATE MAILED: 01/25/2023				

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.** Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	Application No. 16/220,484	Applicant(s) Lin, deceased et al.	
	Examiner LAUREN A CRANE	Art Unit 3754	AIA (FITF) Status Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the RCE filed on 12/15/2022.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

3. ☒ The allowed claim(s) is/are 1-5,7-12 and 19-32. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
Certified copies:
a) ☒ All b) ☐ Some* c) ☐ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)	5. ☐ Examiner's Amendment/Comment
2. ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____.	6. ☒ Examiner's Statement of Reasons for Allowance
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material _____.	7. ☐ Other _____.
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date. _____.	

/LAUREN A CRANE/ Primary Examiner, Art Unit 3754	
---	--

Notice of Pre-AIA or AIA Status

1. The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.
- 2.

Continued Examination Under 37 CFR 1.114

3. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/15/2022 has been entered.

Allowable Subject Matter

4. Claims 1-5, 7-12, 14-17, 19-32 are allowed.
5. The following is an examiner's statement of reasons for allowance
6. Regarding claim 1, the combination including limitation the first horizontal and second horizontal frame member including a pin and a width of the vertical joint portion accounts for at least 50% of a width between the pins of the first and second coupling assemblies of the first and second horizontal joint portions in the invention as claimed is neither disclosed nor rendered obvious by the prior art.
7. Regarding claim 14, the combination including limitation the first horizontal and second horizontal frame member including a pin and a recesses and wherein a width of the vertical joint portion accounts for a majority of a width between the pins of the first

and second coupling assemblies of the first and second horizontal joint portions in the invention as claimed is neither disclosed nor rendered obvious by the prior art.

8. Regarding claim 24, the combination including limitation the first horizontal joint portion comprises a first external cross-section, the first external cross-section being generally triangular in the invention as claimed is neither disclosed nor rendered obvious by the prior art

9. Regarding claim 26, the combination including limitation wherein the vertical joint portion comprises a second external cross-section, the second external cross-section being generally triangular in the invention as claimed is neither disclosed nor rendered obvious by the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

10.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAUREN ASHLEY CRANE whose telephone number is (571)270-5198. The examiner can normally be reached Mondays & Tuesdays 8 am - 4pm.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an

interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at <http://www.uspto.gov/interviewpractice>.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Angwin can be reached on 571-270-3735. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of published or unpublished applications may be obtained from Patent Center. Unpublished application information in Patent Center is available to registered users. To file and manage patent submissions in Patent Center, visit: <https://patentcenter.uspto.gov>. Visit <https://www.uspto.gov/patents/apply/patent-center> for more information about Patent Center and <https://www.uspto.gov/patents/docx> for information about filing in DOCX format. For additional questions, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/LAUREN A CRANE/
Primary Examiner, Art Unit 3754

<i>Search Notes</i> 	Application/Control No. 16/220,484	Applicant(s)/Patent Under Reexamination Lin, deceased et al.
	Examiner LAUREN A CRANE	Art Unit 3754

CPC - Searched*		
Symbol	Date	Examiner
F16B7/17	04/14/2020	LC
E04H4/0056	11/03/2020	LC

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner
4	654	04/14/2020	LC
4	506	11/03/2020	

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner
Text search of F16B7/14	11/03/2020	LC
Forward backward search of tagged art	11/03/2020	LC
Search of Tagged Art	04/06/2021	LC
Search of Tagged Art	11/02/2021	LC

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner
	Keyword Search	10/18/2022	LC

/LAUREN A CRANE/ Primary Examiner, Art Unit 3754	
---	--

Issue Classification 	Application/Control No. 16/220,484	Applicant(s)/Patent Under Reexamination Lin, deceased et al.
	Examiner LAUREN A CRANE	Art Unit 3754

CPC						
Symbol					Type	Version
F16B	/	7	/	14	F	2013-01-01
E04H	/	4	/	0056	I	2013-01-01
F16B	/	7	/	042	I	2013-01-01
F16B	/	7	/	0446	I	2013-01-01
A63C	/	19	/	02	I	2013-01-01
E04H	/	4	/	14	I	2013-01-01

CPC Combination Sets					
Symbol		Type	Set	Ranking	Version
	/				

NONE (Assistant Examiner) (Date)		Total Claims Allowed: 29	
/LAUREN A CRANE/ Primary Examiner, Art Unit 3754 (Primary Examiner) (Date)		10 January 2023 (Date)	O.G. Print Claim(s) 1
			O.G. Print Figure 1

Issue Classification 	Application/Control No. 16/220,484	Applicant(s)/Patent Under Reexamination Lin, deceased et al.
	Examiner LAUREN A CRANE	Art Unit 3754

INTERNATIONAL CLASSIFICATION			
CLAIMED			
F16B		7	14
NON-CLAIMED			

US ORIGINAL CLASSIFICATION	
CLASS	SUBCLASS
4	506

CROSS REFERENCES(S)						
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)					

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	29	
/LAUREN A CRANE/ Primary Examiner, Art Unit 3754	10 January 2023	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1

Issue Classification 	Application/Control No. 16/220,484	Applicant(s)/Patent Under Reexamination Lin, deceased et al.
	Examiner LAUREN A CRANE	Art Unit 3754

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47															
CLAIMS															
Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	1	9	10	16	19	25	28								
2	2	10	11	17	20	26	29								
3	3	11	12	18	21	27	30								
4	4		13	19	22	28	31								
5	5	12	14	20	23	29	32								
	6	13	15	21	24										
6	7	14	16	22	25										
7	8	15	17	23	26										
8	9		18	24	27										

NONE	Total Claims Allowed:	
(Assistant Examiner)	(Date)	29
/LAUREN A CRANE/ Primary Examiner, Art Unit 3754	10 January 2023	O.G. Print Claim(s)
(Primary Examiner)	(Date)	1
		O.G. Print Figure
		1

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16220484
	Filing Date	2018-12-14
	First Named Inventor	Hua Hsiang Lin
	Art Unit	3754
	Examiner Name	Lauren Ashley Crane
	Attorney Docket Number	IRC-0042-02-US

U.S. PATENTS							Remove	
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1							
If you wish to add additional U.S. Patent citation information please click the Add button.							Add	
U.S. PATENT APPLICATION PUBLICATIONS							Remove	
Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1	20090144892		2009-06-11	Brindle			
If you wish to add additional U.S. Published Application citation information please click the Add button.							Add	
FOREIGN PATENT DOCUMENTS							Remove	
Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²ⁱ	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	T ⁵
	1	28886	RU		2003-04-20	Limited Liability Company	English Abstract Submitted	×
	2	2017/218904	WO		2017-12-21	Intex Recreation Corp.		☐
If you wish to add additional Foreign Patent Document citation information please click the Add button.							Add	
NON-PATENT LITERATURE DOCUMENTS							Remove	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		16220484
	Filing Date		2018-12-14
	First Named Inventor	Hua Hsiang Lin	
	Art Unit	3754	
	Examiner Name	Lauren Ashley Crane	
	Attorney Docket Number	IRC-0042-02-US	

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T ⁵
	1		

If you wish to add additional non-patent literature document citation information please click the Add button

EXAMINER SIGNATURE

Examiner Signature	/LAUREN A CRANE/	Date Considered	01/09/2023
--------------------	------------------	-----------------	------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		16220484
	Filing Date		2018-12-14
	First Named Inventor	Hua Hsiang Lin	
	Art Unit	3754	
	Examiner Name	Lauren Ashley Crane	
	Attorney Docket Number	IRC-0042-02-US	

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Robert D. Null/	Date (YYYY-MM-DD)	2022-12-15
Name/Print	Robert D. Null	Registration Number	40746

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

PE2E SEARCH - Search History (Prior Art)

There are no Prior Art searches to show.

PE2E SEARCH - Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	British Equivalents	Time Stamp
N51	1	(frame joint horizontal frame member pins 50% recess vertical joint portion).clms.	(US-PGPUB; USPAT)	AND	ON	ON	2023/01/10 11:31 AM

Bibliographic Data

Application No: 16/220,484

Foreign Priority claimed: ☒ Yes ☐ No

35 USC 119 (a-d) conditions met: ☒ Yes ☐ No ☒ Met After Allowance

Verified and Acknowledged:
Examiner's Signature Initials

Title:

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
12/14/2018	004	3754	
RULE			

APPLICANTS

Intex Marketing Ltd., Tortola, VIRGIN ISLANDS, BRITISH

INVENTORS

Hua Hsiang Lin, deceased, Fujian, CHINA

Yaw Yuan Hsu, Fujian, CHINA

CONTINUING DATA

This application is a 371 of PCT/US2017/037892 06/16/2017

FOREIGN APPLICATIONS

CHINA CN201620598406.9 06/17/2016

CHINA CN201630270359.0 06/22/2016

CHINA CN201621039473.3 09/06/2016

IF REQUIRED, FOREIGN LICENSE GRANTED**

03/06/2019

STATE OR COUNTRY

CHINA

ADDRESS

FILING FEE RECEIVED

\$1,720

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

27268 7590 01/25/2023
FAEGRE DRINKER BIDDLE & REATH LLP
300 NORTH MERIDIAN STREET
SUITE 2500
INDIANAPOLIS, IN 46204

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

(Typed or printed name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/220,484	12/14/2018	Hua Hsiang Lin, deceased	IRC-0042-02-US	3890

TITLE OF INVENTION: JOINT FOR ABOVE GROUND POOL FRAME

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$1200	\$0.00	\$0.00	\$1200	04/25/2023

EXAMINER	ART UNIT	CLASS-SUBCLASS
CRANE, LAUREN ASHLEY	3754	004-506000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/AIA/122 or PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/AIA/47 or PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,

(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 Faegre Drinker Biddle & Reath LLP

2 _____

3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

Intex Marketing Ltd.

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Tortola, British Virgin Islands

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☒ Corporation or other private group entity ☐ Government

4a. Fees submitted: ☒ Issue Fee ☐ Publication Fee (if required) ☐ Advance Order - # of Copies _____

4b. Method of Payment: (Please first reapply any previously paid fee shown above)

☒ Electronic Payment via EFS-Web ☐ Enclosed check ☐ Non-electronic payment by credit card (Attach form PTO-2038)

☒ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. 02-0390

5. Change in Entity Status (from status indicated above)

☐ Applicant certifying micro entity status. See 37 CFR 1.29

☐ Applicant asserting small entity status. See 37 CFR 1.27

☐ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature /Robert D. Null/

Date March 24, 2023

Typed or printed name Robert D. Null

Registration No. 40,746

Electronic Patent Application Fee Transmittal				
Application Number:		16220484		
Filing Date:		14-Dec-2018		
Title of Invention:		JOINT FOR ABOVE GROUND POOL FRAME		
First Named Inventor/Applicant Name:		Hua Hsiang Lin, deceased		
Filer:		Robert D. Null./Melissa Russell		
Attorney Docket Number:		IRC-0042-02-US		
Filed as Large Entity				
Filing Fees for U.S. National Stage under 35 USC 371				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
UTILITY APPL ISSUE FEE	1501	1	1200	1200

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				1200

Electronic Acknowledgement Receipt	
EFS ID:	47738854
Application Number:	16220484
International Application Number:	
Confirmation Number:	3890
Title of Invention:	JOINT FOR ABOVE GROUND POOL FRAME
First Named Inventor/Applicant Name:	Hua Hsiang Lin, deceased
Customer Number:	27268
Filer:	Robert D. Null./Melissa Russell
Filer Authorized By:	Robert D. Null.
Attorney Docket Number:	IRC-0042-02-US
Receipt Date:	24-MAR-2023
Filing Date:	14-DEC-2018
Time Stamp:	19:47:19
Application Type:	U.S. National Stage under 35 USC 371

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	\$1200
RAM confirmation Number	E20233NJ47455902
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Issue Fee Payment (PTO-85B)	IRC_0042_02_US_Issue_Fee_transmittal.pdf	106754	no	1
			66d7d498838665f4e7a2eaa0ffc1a7925984646c		
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	37900	no	2
			de607d67956c845aad439c0ed5d49e41b0abbc6b		
Warnings:					
Information:					
Total Files Size (in bytes):			144654		
<p>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</p> <p><u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p>					

Doc code: RCEX

Doc description: Request for Continued Examination (RCE)

PTO/SB/30EFS (01-22)

Approved for use through 05/31/2024. OMB 0851-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

REQUEST FOR CONTINUED EXAMINATION(RCE)TRANSMITTAL
(Submitted Only via EFS-Web)

Application Number	16220484	Filing Date	2018-12-14	Docket Number (if applicable)	IRC-0042-02-US	Art Unit	3754
First Named Inventor	Hua Hsiang Lin, deceased			Examiner Name	Lauren Ashley Crane		

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.

Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. The Instruction Sheet for this form is located at WWW.USPTO.GOV

SUBMISSION REQUIRED UNDER 37 CFR 1.114

Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____☐ Other _____☒ Enclosed☐ Amendment/Reply☒ Information Disclosure Statement (IDS)☐ Affidavit(s)/ Declaration(s)☐ Other _____**MISCELLANEOUS**☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of months _____
(Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)☐ Other _____**FEES****The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.**☒ The Director is hereby authorized to charge any underpayment of fees, or credit any overpayments, to
Deposit Account No 020390**SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED**☒ Patent Practitioner Signature

Applicant Signature

Doc code: RCEX

Doc description: Request for Continued Examination (RCE)

PTO/SB/30EFS (01-22)

Approved for use through 05/31/2024. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Signature of Registered U.S. Patent Practitioner			
Signature	Robert D Null/	Date (YYYY-MM-DD)	2023-03-27
Name	Robert D. Null	Registration Number	40746

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Doc code: IDS

Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-22)

Approved for use through 05/31/2024. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16220484
	Filing Date	2018-12-14
	First Named Inventor	Hua Hsiang Lin, deceased
	Art Unit	3754
	Examiner Name	Lauren Ashley Crane
	Attorney Docket Number	IRC-0042-02-US

U.S.PATENTS							Remove	
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1							
If you wish to add additional U.S. Patent citation information please click the Add button.							Add	
U.S.PATENT APPLICATION PUBLICATIONS							Remove	
Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1	20030001387		2003-01-02	Tawara			
If you wish to add additional U.S. Published Application citation information please click the Add button.							Add	
FOREIGN PATENT DOCUMENTS							Remove	
Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²ⁱ	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	T ⁵
	1	2349412	GB		2000-11-01	Surelock McGill Limited		
If you wish to add additional Foreign Patent Document citation information please click the Add button.								Add
NON-PATENT LITERATURE DOCUMENTS								Remove
Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.						T ⁵

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		16220484
	Filing Date		2018-12-14
	First Named Inventor	Hua Hsiang Lin, deceased	
	Art Unit	3754	
	Examiner Name	Lauren Ashley Crane	
	Attorney Docket Number	IRC-0042-02-US	

	1		
If you wish to add additional non-patent literature document citation information please click the Add button <input type="button" value="Add"/>			
EXAMINER SIGNATURE			
Examiner Signature		Date Considered	
*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.			
<small> ¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached. </small>			

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16220484
	Filing Date	2018-12-14
	First Named Inventor	Hua Hsiang Lin, deceased
	Art Unit	3754
	Examiner Name	Lauren Ashley Crane
	Attorney Docket Number	IRC-0042-02-US

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Robert D Null/	Date (YYYY-MM-DD)	2023-03-27
Name/Print	Robert D. Null	Registration Number	40746

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

(12) UK Patent Application (19) GB (11) 2 349 412 (13) A

(43) Date of A Publication 01.11.2000

(21) Application No 9907226.6

(22) Date of Filing 29.03.1999

(71) Applicant(s)
Surelock McGill Limited
(Incorporated in the United Kingdom)
25/26 The Business Centre, Molly Millars Lane,
WOKINGHAM, Berks, RG41 2QY, United Kingdom

(72) Inventor(s)
Bernard John Viney

(74) Agent and/or Address for Service
Boulton Wade Tennant
Verulam Gardens, 70 Gray's Inn Road, London,
WC1X 8BT, United Kingdom

(51) INT CL⁷
F16B 7/04

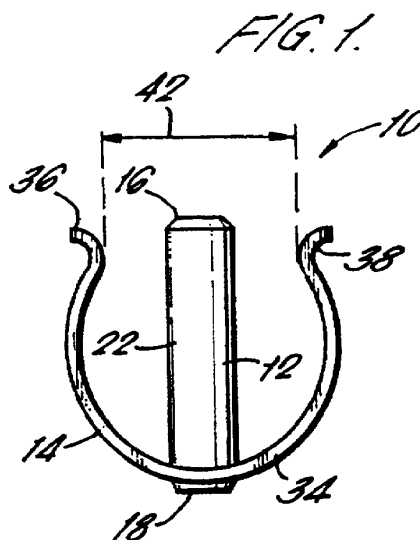
(52) UK CL (Edition R)
E2A ACSS A110

(56) Documents Cited
US 5797696 A **US 5590974 A** **US 4711595 A**
US 4647241 A **US 4627761 A** **US 4183691 A**
US 2110397 A

(58) Field of Search
UK CL (Edition R) **E2A ACAM ACSS**
INT CL⁷ **F16B 7/04 21/08**
Online : **WPI, PAJ, EPODOC;**

(54) Abstract Title
Clip having a pin for insertion through aligned openings in two parts and resilient means to retain the pin in position.

(57) A clip 10 for retaining a first member within a second tubular member comprises a pin 12 for insertion through aligned apertures in the two members to be fixed. The clip also includes a U shaped spring 14 adapted to resiliently engage the outside of the second tubular member to hold the pin in the inserted position. In another embodiment the first member is also tubular and the spring on the clip is adapted to engage the inner surface of the first member with the pin extending radially outwards through the aligned apertures in the two tubes.



GB 2 349 412 A

At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

1/4

FIG. 1.

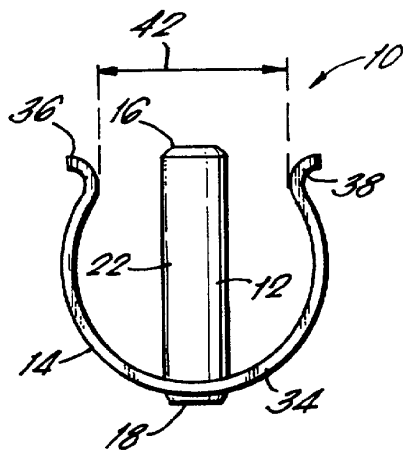


FIG. 2.

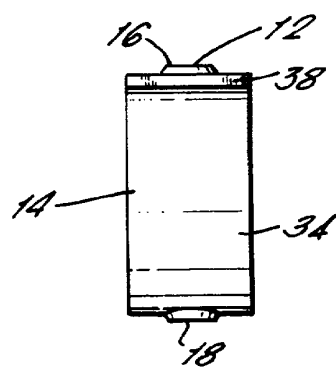


FIG. 3.

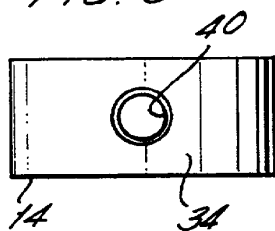


FIG. 4.

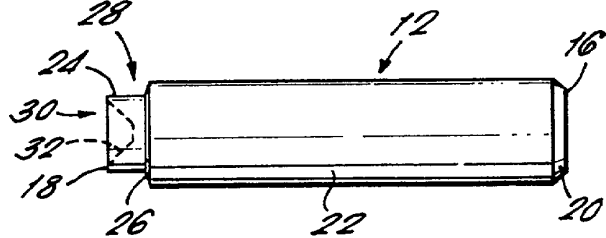


FIG. 5.

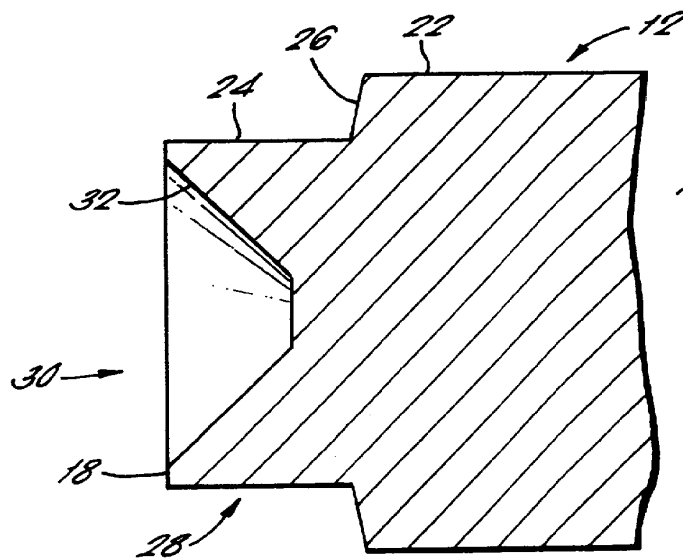
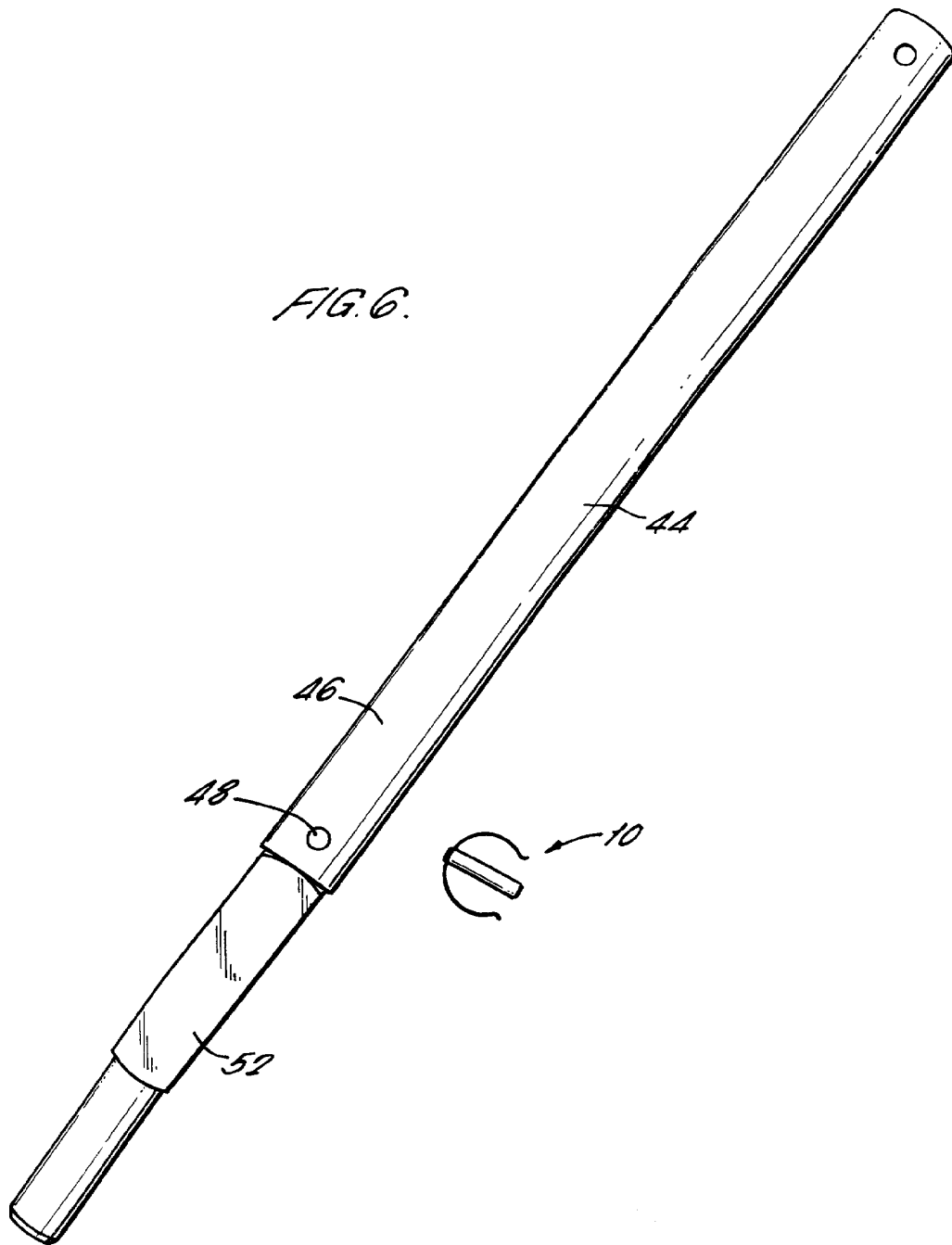


FIG. 6.



3/4

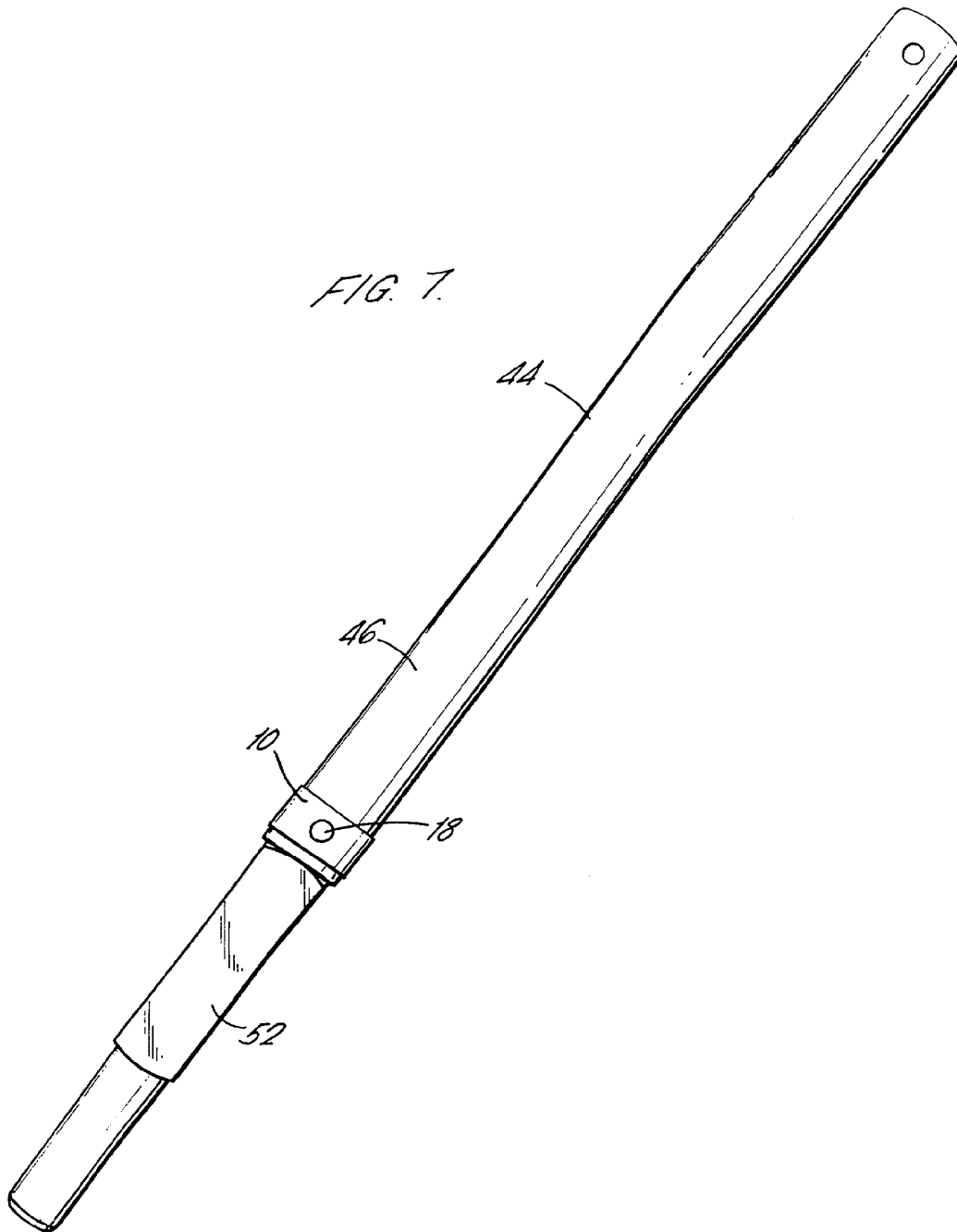
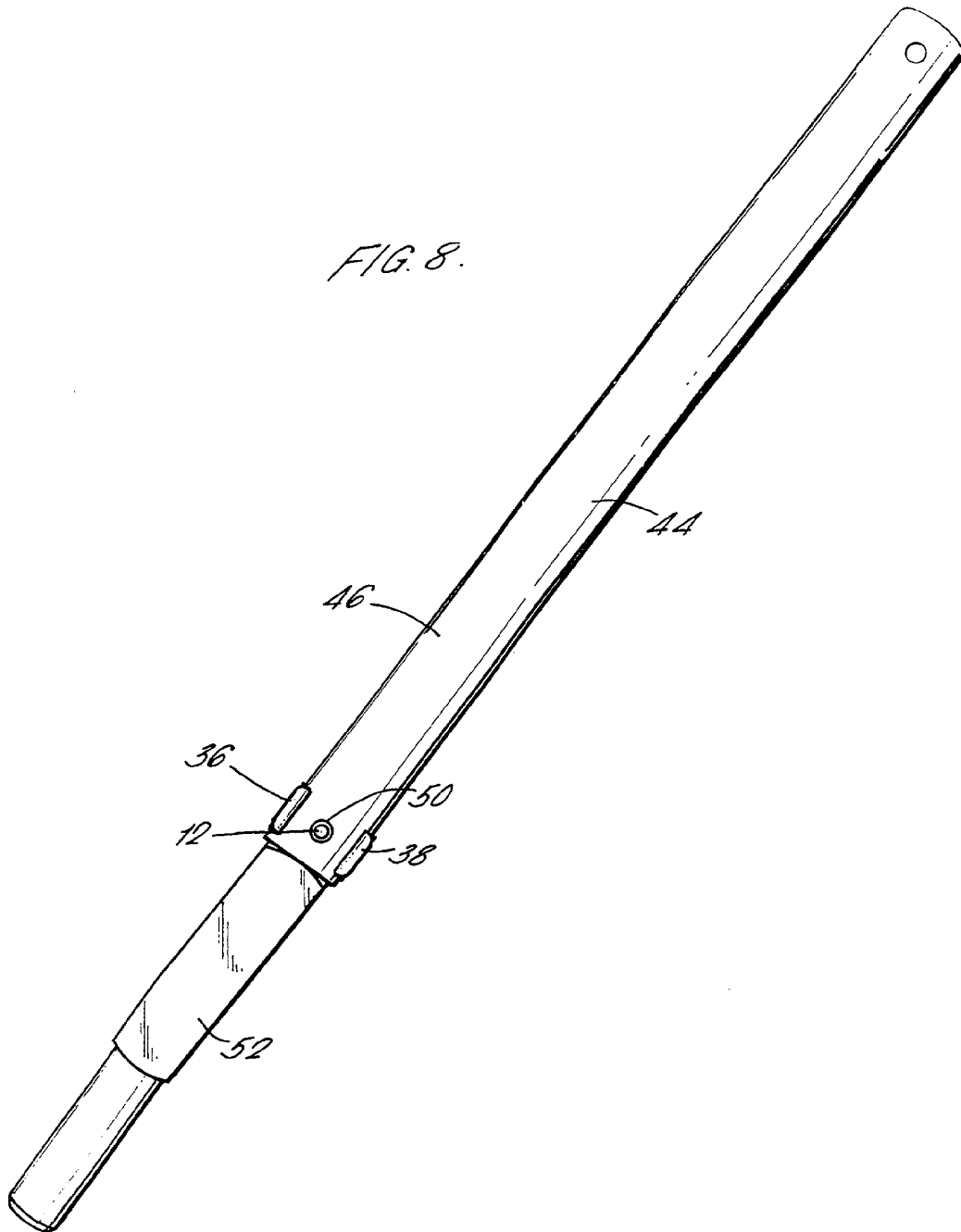


FIG. 8.



CLIP

The present invention relates to a clip for retaining a first member in fixed relation to second member and also relates to an assembly comprising the first and second members and the clip.

It has been known for many years that one way of retaining two members in fixed relation to each other is by providing each of the two members with a respective aperture, positioning the members so that the two apertures are aligned and then retaining the members in this position by inserting a dowel or similar pin through the two apertures. In particular, where one of the members comprises a hollow cylinder and the other member includes a stud portion for receipt within that cylinder, the two members may be retained in fixed relationship by drilling a hole through the cylinder wall and through the stud portion such that when the stud portion is inserted into the hollow cylinder the two apertures may be aligned. A dowel passing through the aperture in the cylinder wall and into the aperture in the stud portion will then serve to hold the two members together. For added security, the hollow cylinder may comprise a second aperture diametrically opposed to the first so that the dowel not only passes through the first aperture in the cylinder wall and into the stud portion but in addition, on exiting the stud portion, also passes through the second aperture.

Typically the dowel or similar pin is of substantially circular cross-section and is formed somewhat oversize with respect to the aligned apertures so that when it is inserted it often needs to be hammered home and is consequently held in position in an interference fit. In the past this has

led to problems where, if the person assembling the two members does not possess the appropriately sized drill bit and uses the closest, somewhat larger size drill bit in their possession to form the necessary apertures, the resulting apertures may be too large to securely retain the dowel in an interference fit. As a result the dowel may work loose and eventually fall out, enabling the two members to become separated. Accordingly, for the prior art system to work the tolerance on an aperture designed to receive a dowel must be quite tight. For example, for a pin of, say, 4.0mm diameter, the tolerance on the aperture must be of the order of 0.1-0.2mm.

In addition, with the prior art system it is often impossible to disassemble the two members once the dowel or similar pin has been inserted should this ever be desired. The only thing that can be done is to drill out the dowel which takes time, destroys the dowel and possibly compromises the dimensional integrity of the apertures through which it was inserted.

In view of the limitations associated with the prior art fixing system it is desirable to provide a means for retaining two members in fixed relationship to each other which does not require so tight a tolerance of any parts to be drilled or otherwise machined and furthermore enables the parts to be quickly and easily disassembled if so desired.

According to a first aspect of the present invention there is provided a clip for retaining a first member in fixed relation to a second member, said first and second members defining respective apertures therethrough and being adapted so as to be capable of being mutually positioned such that said respective apertures are aligned, the clip comprising

a pin for insertion through said aligned apertures and spring means adapted to resiliently engage at least one of said first and second members to hold said pin in said inserted position. In this way the pin may be
5 retained in position by means other than an interference fit, thereby enabling the tolerances of the apertures and pin to be relaxed.

Advantageously the apertures may be aligned as a result of one of the first and second members being at
10 least partially received within the other, the spring means being adapted to resiliently engage the member in which said one of the first and second members is at least partially received. That is, the spring means may resiliently engage the outer of the two
15 members. In such an arrangement the pin may be inserted from the outside. In other words, the pin may be adapted to be inserted through the aperture in the member in which said one of the first and second members is at least partially received and then
20 through the aperture in said one of the first and second members which is at least partially received within the other.

In another arrangement the spring means may be adapted to resiliently engage said one of the first
25 and second members which is at least partially received within the other. Under such conditions the pin may be inserted from the inside and hence be adapted to be inserted through the aperture in said one of the first and second members which is at least
30 partially received within the other and then through the aperture in said other member.

Advantageously the spring means may substantially conform to the shape of the or each member with which it resiliently engages. In particular, if the member
35 with which the spring means resiliently engages is of

substantially circular cross-section, the spring means may also be of substantially circular cross-section or at least part circular cross-section.

Advantageously the spring means may include a
5 formation for releasable engagement with a
complementary formation provided on the or each member
with which the spring means resiliently engages. For
example, the formation and complementary formation may
comprise a projection and complementary recess or
10 aperture.

According to a second aspect of the present
invention there is provided an assembly comprising a
first member, a second member and a clip, the clip
being as previously described, said first and second
15 members defining respective apertures therethrough and
being mutually positioned such that said apertures are
aligned, the pin of the clip being inserted through
said aligned apertures and said spring means
resiliently engaging at least one of said first and
20 second members to hold said pin in said inserted
position to thereby retain said first member in fixed
relation to said second member.

An embodiment of the present invention will now
be described by way of example with reference to the
25 accompanying drawings in which:

FIG. 1 is a view of a clip in accordance with one
embodiment of the present invention;

FIG. 2 is a side view of the clip of Figure 1;

FIG. 3 is an end view of the clip of Figure 1;

30 FIG. 4 is a side view of a pin of the clip of
Figure 1;

FIG. 5 is an enlarged cross-sectional view of one
end of the pin of Figure 4;

FIG. 6 is a plan view of two members each
35 defining a respective aperture with the members

mutually positioned such that the apertures are aligned and with the clip of Figure 1 shown to one side;

5 FIG. 7 is a plan view of the members of Figure 6 with the pin of the clip inserted through the aligned apertures; and

FIG. 8 is a plan view similar to that of Figure 7 but with the members and clip rotated through 180° .

As can be seen from Figure 1, the clip 10 comprises a pin 12 and a substantially U-shaped member or circlip 14. As can be seen more clearly from Figures 4 and 5, the pin 12 is a substantially circular cross-section and defines first and second ends 16 and 18. Adjacent the first end 16, the pin 12 is provided with a chamfer of typically 45° which defines a frustro conical surface 20. This frustro conical surface 20 merges with a cylindrical surface of the pin 22 while, towards the other end 18, the cylindrical surface 22 merges with a second cylindrical surface of reduced diameter 24 via an inclined annular surface 26. The second cylindrical surface 24 is not only of reduced diameter in comparison to the cylindrical surface 22 but is also of very much reduced axial length and serves to define a stub portion 28 at an end of which, remote from the inclined annular surface 26, is provided a dimple 30 defined by a frustro conical internal surface 32.

By contrast, the U-shaped member 14 can be seen from Figures 1 to 3 to comprise a first arcuate portion 34 which, in cross-section, extends along the circumference of a circle and subtends an angle at the centre of approximately 260° . This first arcuate portion merges at its respective opposite ends with two further out-turned arcuate portions 36 and 38 which, in cross-section, curve radially outwardly away

from the centre of curvature defined by the first arcuate portion 34. As can be seen from Figure 2, the U-shaped member has a width greater than the diameter of the pin 12 and, as shown in Figure 3, the first arcuate portion 34 comprises a circular aperture 40 located midway between the two further arcuate portions 36 and 38 and centrally of its width. The circular aperture 40 preferably has a diameter somewhat greater than that of the stub portion 28 but less than that of the cylindrical surface 22.

The components of the clip and in particular the pin 12 and U-shaped member 14 may be formed of any suitable material. For example, the clip may be formed of plastics material in which case the pin 12 and U-shaped member 14 may be moulded integrally as one piece. Alternatively, the pin 12 and U-shaped member 14 may be formed separately and subsequently joined together. However, in the embodiment shown in the accompanying drawings the pin 12 and U-shaped member 14 are both formed of metal. Under such circumstances the U-shaped member 14 may be formed from a flat sheet using press tools having first been cropped to size. The circular aperture 40 may be formed by piercing the metal sheet either before or after bending the metal sheet to provide the member 14 with its characteristic U-shape.

Similarly, the pin 12 may also be formed from a flat metal sheet, either by tightly rolling the sheet to form a cylinder which is subsequently machined to the shape illustrated or by stamping the pin from a somewhat thicker sheet.

Where the pin 12 and U-shaped member 14 are both formed of metal, the clip may be assembled by inserting the stub portion 28 of the pin 12 through the circular aperture 40 and then swaging the two

together by striking the dimpled end of the pin 12 with a suitable die to deform that part of the stub portion 28 protruding through the circular aperture 40 to form a rivet.

5 Of course, it will be apparent to those skilled in the art that the pin 12 and U-shaped member 14 may be secured together by any other suitable means. For example, the second cylindrical surface of reduced diameter 24 might be provided with an external screw
10 thread so that the stub portion 28 might threadingly engage a corresponding thread provided within the circular aperture 40. Alternatively, the pin 12 and U-shaped member 14 may simply be formed as one piece.

 As shown in Figure 1, when the clip is assembled,
15 the out-turned opposing further arcuate portions 36 and 38 define an opening 42 which is narrower than the diameter of the first arcuate portion 34 and through which the pin 12 projects. Although the pin 12 may be of any suitable length, in the embodiments shown the
20 axial length of the cylindrical surface 22 is of substantially the same dimension as the diameter of the first arcuate portion 34.

 It will be apparent to those skilled in the art that the illustrated clip may be scaled to any
25 suitable size. However, in one currently preferred embodiment the pin 12 has an axial length of 17.4mm from the first end 16 to the second end 18 made up of a stub portion 28 having an axial length of 1.5mm, a cylindrical surface 22 having an axial length of
30 15.4mm and a frustro conical surface 20 having an axial length of 0.5mm. In this embodiment the cylindrical surface 22 preferably has a diameter of 4.0mm while the second cylindrical surface 24 has a reduced diameter of 2.85-2.95mm. The inclined annular
35 surface 26 slopes at an angle of 12° to the

perpendicular while the dimple 30 is defined by a
frustro conical internal surface 32 which tapers at
45° from an end diameter of 2.6mm to a reduced
diameter of 0.6mm. In this arrangement the dimple 30
5 may be made with an 8 x 90° spot drill.

In use the clip 10 may be used to retain a first
member in fixed relation to a second member. In the
assembly shown in Figures 6 to 8 the first member 44
comprises a hollow metal cylinder defined by a
10 continuous wall surface 46. In this wall surface 46
adjacent one end of the metal cylinder there are
provided two diametrically opposed and aligned
circular apertures 48 and 50.

By contrast, the second member of the assembly 52
15 comprises a solid metal cylindrical stud (not shown)
which is sized so as to be capable of being received
within the hollow metal cylinder of the first member
44. The solid metal cylindrical stud is provided with
a throughbore (again not shown) which extends
20 perpendicularly to the axis of the solid metal
cylindrical stud and is of substantially the same
diameter as the circular apertures 48 and 50.

In order to assemble the first and second members
44 and 52 together the solid metal cylindrical stud is
25 inserted into the apertured end of the hollow metal
cylinder and positioned so that the throughbore is
aligned with the circular apertures 48 and 50. With
the first and second members 44 and 52 in this
position, the clip 10 is offered up to the combination
30 in such a way that the chamfered end 16 of the pin 12
is received within a first of the diametrically
opposed circular apertures 48. The annular chamfer
represented by the frustro conical surface 20
facilitates this process and serves to guide the pin
35 12 into position. Nevertheless, further insertion of

the pin into the throughbore of the solid metal cylindrical stud is resisted by the abutment against the surface 46 of the hollow metal cylinder of the out-turned shoulders of the U-shaped member 14 defined by the further arcuate portions 36 and 38. This is because the opening 42 is narrower than the diameter of the hollow metal cylinder. Nevertheless, as further pressure is applied to the clip in the direction of insertion of the pin, the two limbs of the U-shaped member 14 on either side of the pin 12 flex outwardly as the further arcuate portions 36 and 38 slide over the wall surface 46 on either side of the circular aperture 48. This increases the size of the opening 42 to a dimension comparable to the diameter of the hollow metal cylinder and allows its receipt within the first arcuate portion 34 before the further arcuate portions 36 and 38, having passed the widest point of the hollow metal cylinder, snap back to retain the hollow metal cylinder within the U-shaped member 14. At the same time the pin 12 is urged through the first circular aperture 48 into the throughbore and, if sufficiently long, out of the throughbore and through the second circular aperture 50. This is the position of the clip shown in Figures 7 and 8.

Using the described clip it is no longer necessary for the diametrically opposed circular apertures 48 and 50 or the throughbore to be drilled to the same high tolerances as previously required since the pin 12 is held in position not simply by an interference fit but additionally by (or even solely by) the resilient engagement of the U-shaped member 14 with the hollow metal cylinder 44. Indeed, whereas in the prior art case of a dowel having a diameter of 4.0mm the apertures 48 and 50 and the throughbore

needed to be drilled to a tolerance of between 0.1mm and 0.2mm, with the present clip and again with a pin of 4.0mm diameter the circular apertures 48 and 50 and the throughbore could be made oversized by as much as 1.0mm to 2.0mm and the clip still function to hold the first and second members 44 and 52 in fixed relationship.

Furthermore, it will be apparent to those skilled in the art that whereas in the prior art case it was not possible to easily disassemble the first and second members once the dowel pin had been hammered home, with the present clip it is possible to quickly and easily disassemble the first and second members 44 and 52 if so desired. For example, by pressing the two further arcuate portions 36 and 38 in a direction that would tend to withdraw the pin 12 from the circular apertures 48 and 50 and from the throughbore the first arcuate portion 34 can be made to flex and the two further arcuate portions 36 and 38 to slide over the surface of the hollow metal cylinder thereby increasing the size of the opening 42. When the opening 42 has been increased to a size comparable to the diameter of the hollow metal cylinder it may be withdrawn from its receipt by the first arcuate portion 34. Indeed, continued pressure on the further arcuate portions 36 and 38 beyond the widest point of the hollow metal cylinder will cause the further arcuate portions to snap back, expelling the hollow metal cylinder from its engagement with the first arcuate portion 34.

Although the clip has been described as comprising a pin 12 in combination with a U-shaped member 14, it will be apparent to those skilled in the art that one of the limbs of the U-shaped member (ie one of the parts of the U-shaped member to one side of

the pin comprising just under half of the first arcuate portion 34 and one of the further arcuate portions 36 or 38) may be omitted while still enabling the clip to function in the manner described.

5 Likewise, although the clip has been described as comprising a U-shaped member for engagement with a first member of circular cross-section, the U-shaped member may be replaced with spring means of a different shape which is nevertheless adapted to conform to the shape of the member with which it
10 resiliently engages. For example, the spring means may be partially elliptical in shape or else may be formed to resiliently engage a member of any polygonal cross-section including members of triangular, square
15 and rectangular cross-section.

Although the described clip is intended for insertion from the outside (that is, where one of the members is at least partially received within the other, the pin is adapted to pass through an aperture
20 in the outer member and into a aperture provided in the inner member and the U-shaped member or other spring means is adapted to engage a surface of the outer member) nevertheless, the clip of the present invention could equally be adapted to be inserted from
25 the inside. In other words, where one of the members is received within the other, the pin may be adapted to be pushed outwardly through an aperture in the inner member and into an aperture provided in the outer member. At the same time, the spring means may
30 be adapted to engage a surface of the inner member. In such an arrangement the spring means may still comprise a U-shaped member although the pin, rather than projecting from the mid-point of the arcuate portion through the centre of curvature, would project
35 outwardly from the arcuate portion and extend away

from the centre of curvature. Similarly, the two
further arcuate portions, rather than curving radially
outwardly away from the first arcuate portion would
curve away from the first arcuate portion in a
5 radially inward direction.

CLAIMS:

1. A clip for retaining a first member in fixed relation to a second member, said first and second
5 members defining respective apertures therethrough and being adapted so as to be capable of being mutually positioned such that said respective apertures are aligned, the clip comprising a pin for insertion through said aligned apertures and spring means
10 adapted to resiliently engage at least one of said first and second members to hold said pin in said inserted position.

2. A clip in accordance with claim 1, wherein said
15 apertures may be aligned as a result of one of said first and second members being at least partially received within the other, said spring means being adapted to resiliently engage the member in which said one of said first and second members is at least
20 partially received.

3. A clip in accordance with claim 2, wherein said pin is adapted to be inserted through the aperture in the member in which said one said first and second
25 members is at least partially received and then through the aperture in said one of said first and second members which is at least partially received within the other.

30 4. A clip in accordance with claim 1, wherein said apertures may be aligned as a result of one of said first and second members being at least partially received within the other, said spring means being adapted to resiliently engage said one of said first
35 and second members which is at least partially

received within the other.

5. A clip in accordance with claim 4, wherein said
pin is adapted to be inserted through the aperture in
5 said one of said first and second members which is at
least partially received within the other and then
through the aperture in said other member.

6. A clip in accordance with any preceding claim,
10 wherein said spring means substantially conforms to
the shape of the or each member with which it
resiliently engages.

7. A clip in accordance with any preceding claim,
15 wherein said spring means includes a formation for
releasable engagement with a complementary formation
provided on the or each member with which said spring
means resiliently engages.

8. A clip in accordance with claim 7, wherein said
20 formation and complementary formation comprise a
projection and complementary recess or aperture.

9. An assembly comprising a first member, a second
25 member and a clip, the clip being in accordance with
any preceding claim, said first and second members
defining respective apertures therethrough and being
mutually positioned such that said apertures are
aligned, the pin of the clip being inserted through
30 said aligned apertures and said spring means
resiliently engaging at least one of said first and
second members to hold said pin in said inserted
position to thereby retain said first member in fixed
relation to said second member.

35

10. A clip substantially as herein described with reference to the accompanying drawings.

11. An assembly substantially as herein described
5 with reference to the accompanying drawings.



INVESTOR IN PEOPLE

Application No: GB 9907226.6
Claims searched: 1-11

Examiner: Phil Thorpe
Date of search: 24 August 2000

Patents Act 1977
Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:
UK CI (Ed.R): E2A (ACAM, ACSS) ;
Int CI (Ed.7): F16B (7/04, 21/08) ;
Other: Online : WPI, EPODOC, PAJ ;

Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
X	US5797696A Nastech - see fastener 21 in figures 7a and 7b.	1-3,6,9
X	US5590974A Yang - see fastener 30 in figures.	1,4,5,9.
X	US4183691A Van Melle - see whole document.	1-3,6,9
X	US4711595A Magid et al - see fastener 30A in figure 4.	1,4-6.
X	US4647241A Weber - see fastener 46 in figures 3 and 5.	1-3,6,9
X	US4627761A Snap on Tools Ltd - see fastener 30 in figures 1 and 7.	1-3, 6-9.
X	US2110397A Kangas - see fastener 16 in figures	1-3,6-9

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.

An Executive Agency of the Department of Trade and Industry

Doc Code: PET.AUTO Document Description: Petition automatically granted by EFS-Web		PTO/SB/140 U.S. Patent and Trademark Office Department of Commerce	
Electronic Petition Request	PETITION TO WITHDRAW AN APPLICATION FROM ISSUE AFTER PAYMENT OF THE ISSUE FEE UNDER 37 CFR 1.313(c)		
Application Number	16220484		
Filing Date	14-Dec-2018		
First Named Inventor	Hua Lin, deceased		
Art Unit	3754		
Examiner Name	LAUREN CRANE		
Attorney Docket Number	IRC-0042-02-US		
Title	JOINT FOR ABOVE GROUND POOL FRAME		
<p>An application may be withdrawn from issue for further action upon petition by the applicant. To request that the Office withdraw an application from issue, applicant must file a petition under this section including the fee set forth in § 1.17(h) and a showing of good and sufficient reasons why withdrawal of the application from issue is necessary.</p> <p>APPLICANT HEREBY PETITIONS TO WITHDRAW THIS APPLICATION FROM ISSUE UNDER 37 CFR 1.313(c).</p> <p>A grantable petition requires the following items:</p> <p>(1) Petition fee; and</p> <p>(2) One of the following reasons:</p> <p>(a) Unpatentability of one or more claims, which must be accompanied by an unequivocal statement that one or more claims are unpatentable, an amendment to such claim or claims, and an explanation as to how the amendment causes such claim or claims to be patentable;</p> <p>(b) Consideration of a request for continued examination in compliance with § 1.114 (for a utility or plant application only); or</p> <p>(c) Express abandonment of the application. Such express abandonment may be in favor of a continuing application, but not a CPA under 37 CFR 1.53(d).</p>			
Petition Fee			
☐ Small Entity			
☐ Micro Entity			
☒ Regular Undiscounted			
Reason for withdrawal from issue			

Electronic Patent Application Fee Transmittal				
Application Number:		16220484		
Filing Date:		14-Dec-2018		
Title of Invention:		JOINT FOR ABOVE GROUND POOL FRAME		
First Named Inventor/Applicant Name:		Hua Hsiang Lin, deceased		
Filer:		Robert D. Null./Melissa Russell		
Attorney Docket Number:		IRC-0042-02-US		
Filed as Large Entity				
Filing Fees for U.S. National Stage under 35 USC 371				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
PETITION FEE- 37 CFR 1.17(H) (GROUP III)	1464	1	140	140
RCE- 2ND AND SUBSEQUENT REQUEST	1820	1	2000	2000
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				2140



UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

Decision Date : March 27, 2023

In re Application of :

Hua Hsiang Lin, deceased

DECISION ON PETITION

UNDER CFR 1.313(c)(2)

Application No : 16220484

Filed : 14-Dec-2018

Attorney Docket No : IRC-0042-02-US

This is an electronic decision on the petition under 37 CFR 1.313(c)(2), filed March 27, 2023 , to withdraw the above-identified application from issue after payment of the issue fee.

The petition is **GRANTED**.

The above-identified application is withdrawn from issue for consideration of a submission under 37 CFR 1.114 (request for continued examination). See 37 CFR 1.313(c)(2).

Petitioner is advised that the issue fee paid in this application cannot be refunded. If, however, this application is again allowed, petitioner may request that it be applied towards the issue fee required by the new Notice of Allowance.

Telephone inquiries concerning this decision should be directed to the Patent Electronic Business Center (EBC) at 866-217-9197.

This application file is being referred to Technology Center AU 3754 for processing of the request for continuing examination under 37 CFR 1.114 .

Office of Petitions

Electronic Acknowledgement Receipt	
EFS ID:	47745867
Application Number:	16220484
International Application Number:	
Confirmation Number:	3890
Title of Invention:	JOINT FOR ABOVE GROUND POOL FRAME
First Named Inventor/Applicant Name:	Hua Hsiang Lin, deceased
Customer Number:	27268
Filer:	Robert D. Null./Melissa Russell
Filer Authorized By:	Robert D. Null.
Attorney Docket Number:	IRC-0042-02-US
Receipt Date:	27-MAR-2023
Filing Date:	14-DEC-2018
Time Stamp:	15:29:31
Application Type:	U.S. National Stage under 35 USC 371

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	\$2140
RAM confirmation Number	E20233QF29266602
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Request for Continued Examination (RCE)	IRC_0042_02_US_RCE.pdf	1667206	no	3
			b55e82e4b3265a696ba5893475eefe4eaf1f2b1f		
Warnings:					
Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	IRC_0042_02_US_IDS.pdf	1263412	no	4
			3c45e5a5fba77b7f264343ab42298246b3d7cf06		
Warnings:					
Information:					
3	Foreign Reference	GB2349412.pdf	715781	no	21
			00056f69dfe05a7579432f3d9454f2487916abf0		
Warnings:					
Information:					
4	ePetition Request Form	petition-request.pdf	39787	no	2
			84b4cccf625376d8428f3ac1946b3da3f77ffb2		
Warnings:					
Information:					
5	Fee Worksheet (SB06)	fee-info.pdf	40334	no	2
			579935cf0e4ef46b1ae7e210bd06139f5acca12b		
Warnings:					
Information:					
Total Files Size (in bytes):			3726520		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Doc code: IDS

Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-22)

Approved for use through 05/31/2024. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16220484
	Filing Date	2018-12-14
	First Named Inventor	Hua Hsiang Lin
	Art Unit	3754
	Examiner Name	Lauren Ashley Crane
	Attorney Docket Number	IRC-0042-02-US

U.S. PATENTS							Remove	
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1							
If you wish to add additional U.S. Patent citation information please click the Add button.							Add	
U.S. PATENT APPLICATION PUBLICATIONS							Remove	
Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1	20170089085		2017-03-30	Liu			
If you wish to add additional U.S. Published Application citation information please click the Add button.							Add	
FOREIGN PATENT DOCUMENTS							Remove	
Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²ⁱ	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	T ⁵
	1	201487444	CN		2010-05-26	Intex Ind Xiamen Co Ltd.	English Abstract Submitted	×
If you wish to add additional Foreign Patent Document citation information please click the Add button.							Add	
NON-PATENT LITERATURE DOCUMENTS							Remove	
Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.						T ⁵

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		16220484
	Filing Date		2018-12-14
	First Named Inventor	Hua Hsiang Lin	
	Art Unit	3754	
	Examiner Name	Lauren Ashley Crane	
	Attorney Docket Number	IRC-0042-02-US	

	1		
If you wish to add additional non-patent literature document citation information please click the Add button <input type="button" value="Add"/>			
EXAMINER SIGNATURE			
Examiner Signature		Date Considered	
*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.			
<small> ¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached. </small>			

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16220484
	Filing Date	2018-12-14
	First Named Inventor	Hua Hsiang Lin
	Art Unit	3754
	Examiner Name	Lauren Ashley Crane
	Attorney Docket Number	IRC-0042-02-US

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Robert D. Null/	Date (YYYY-MM-DD)	2023-03-30
Name/Print	Robert D. Null	Registration Number	40746

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.



Espacenet

Bibliographic data: CN201487444 (U) — 2010-05-26

Corner connecting structure for side pipes of square pool

Inventor(s): HUAXIANG LIN ± (LIN HUAXIANG)

Applicant(s): INTEX IND XIAMEN CO LTD ± (INTEX INDUSTRIES (XIAMEN) CO., LTD)

Classification: - **international:** F16L21/00; F16L37/00; F16L43/00
- **cooperative:**

Application number: CN20092062670U 20090820

Priority number(s): CN20092062670U 20090820

Abstract of CN201487444 (U)

The utility model discloses a corner connecting structure for side pipes of a square pool, which comprises a corner joint and two adjacent and mutually vertical side pipes, wherein the corner joint is an L-shaped pipe body and has two mutually vertical combination ends; the side pipes are hollow pipe bodies, and the inside diameter of the side pipes is slightly greater than the diameter of the corner joint pipe body; and the two combination ends are respectively movably inserted into the two side pipes correspondingly. The corner joint and the side pipes adopt a movable sleeving mode, so the two combination ends of the corner joint can relatively stretch and displace in the side pipes to correspond to the change of a clearance between the two side pipes, and the side walls can always keep in a straight line and are not bent and deformed due to stress when moving.



(12) 实用新型专利

(10) 授权公告号 CN 201487444 U

(45) 授权公告日 2010.05.26

(21) 申请号 200920062670.0

(22) 申请日 2009.08.20

(73) 专利权人 明达实业(厦门)有限公司

地址 361022 福建省厦门市海沧新阳工业区

(72) 发明人 林华乡

(74) 专利代理机构 厦门市新华专利商标代理有

限公司 35203

代理人 朱凌

(51) Int. Cl.

F16L 37/00(2006.01)

F16L 43/00(2006.01)

F16L 21/00(2006.01)

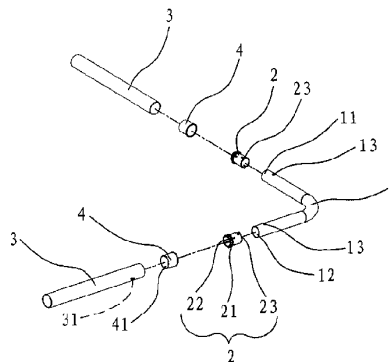
权利要求书 1 页 说明书 2 页 附图 3 页

(54) 实用新型名称

方形水池边管转角连接结构

(57) 摘要

本实用新型为一种方形水池边管转角连接结构,包括有:角接头,为 L 型管体具两相互垂直的结合端;两相邻且互为垂直的边管,该边管为一中空管体,并该边管的内径略大于角接头管体的直径,该角接头的两结合端分别对应活动穿伸于两边管内,由于该角接头与边管采用活动的套接方式,使角接头的两结合端可于边管内作相对的伸缩位移,以对应两相邻边管之间的间隙变化,也就使得边管在移动时,能始终保持直线,不致受力产生弯曲变形。



1. 一种方形水池边管转角连接结构,其特征在于:包括有,
一角接头,为 L 型管体,具两相互垂直的结合端;
两相邻且互为垂直的边管,该边管为一中空管体,并该边管的内径略大于角接头管体的直径,该角接头的两结合端分别对应活动穿伸于边管内。
2. 如权利要求 1 所述的方形水池的边管转角的连接结构,其特征在于:该角接头可为中空管体,其两结合端内分别套设有导滑塞。
3. 如权利要求 2 所述的方形水池的边管转角的连接结构,其特征在于:该角接头两结合端的外缘贯设有穿孔,该导滑塞的一端形成有具数开槽的环凸缘,另一端外缘则凸设有对应角接头穿孔的凸粒。
4. 如权利要求 1 所述的方形水池的边管转角的连接结构,其特征在于:该边管设有角接头套环,该角接头套环的端缘上成型有凸起,而边管上则对应该凸起设有穿孔。

方形水池边管转角连接结构

技术领域

[0001] 本实用新型关于一种管件的连接结构,特别是指一种方形水池的边管转角的连接结构。

背景技术

[0002] 一种较大型的方形水池或游泳池,为加强其池壁的强度,于池壁的外周围另增设有钢质的支撑结构,并上端则围设有相邻两边相互垂直的水池边管,该两相邻水池边管之间是通过角接头作连接固定,而传统的角接头与水池边管的连接是将角接头的两端分别套伸于两相邻水池边管内,并在角接头与边管的连接处各贯设通孔,藉由锁紧件穿设该通孔,使角接头与水池边管固定连接,如图 5 所示,采用此连接方式于使用中却存在下列不足:

[0003] 1、在安装锁固角接头与边管时,该角接头与边管上的通孔较难对准,使得安装过程费力且操作难度大;

[0004] 2、在水池水位及水压发生变化的影响下,会使得该水池边管向水池中间或向外作移动,此时受角接头与水池边管固定连接的制约,造成水池边管受力而产生弯曲变形,影响水池边管的使用寿命。

实用新型内容

[0005] 因此,本实用新型的目的在于提供一种方形水池边管转角连接结构,通过将角接头与边管设为可伸缩的活动连接,使水池边管不会因水压作用而弯曲变形。

[0006] 为达上述目的,本实用新型采如下技术方案:一种方形水池边管转角连接结构,其包括有:一角接头,为 L 型管体,具两相互垂直的结合端;两相邻且互为垂直的边管,该边管为一中空管体,并该边管的内径略大于角接头管体的直径,该角接头的两结合端分别对应活动穿伸于边管内。

[0007] 该角接头可为中空管体,其两结合端内分别套设有导滑塞。

[0008] 该角接头两结合端的外缘贯设有穿孔,该导滑塞的一端形成有具数开槽的环凸缘,另一端外缘则凸设有对应角接头穿孔的凸粒。

[0009] 该边管内设有角接头套环,该角接头套环的端缘上成型有凸起,而边管上则对应该凸起设有穿孔。

[0010] 采用上述方案,本实用新型由于角接头与边管采用活动套接方式,使角接头的两结合端可于边管内作相对的伸缩位移,以对应两相邻边管之间的间隙变化;也就是当边管在水压的作用下向水池中间或向外移动时,而角接头配合导滑塞则于边管内作相对的伸入或移出,使得边管在移动时,仍能保持直线,不致产生弯曲变形。

[0011] 以下结合附图与具体实施例对本实用新型作详细说明。

附图说明

[0012] 图 1 为本实用新型分解示意图;

- [0013] 图 2 为本实用新型部分组合示意图；
[0014] 图 3 为本实用新型角接头相对边管伸缩动作的示意图；
[0015] 图 4 为本实用新型应用于一种方形水池的示意图
[0016] 图 5 为习用转角与边管的连接结构。

具体实施方式

[0017] 如图 1、2、4 所示，为本实用新型的一种方形水池边管转角连接结构，是指两相邻边管之间通过一角接头实现连接，其主要包括有：

[0018] 一角接头 1，为 L 型中空管体，具两相互垂直的结合端 11、12，该两结合端 11、12 的外缘贯设有穿孔 13；

[0019] 两导滑塞 2，其一端形成有具数开槽 22 的环凸缘 21，另一端外缘则凸设有上下对称对应角接头 1 穿孔 13 的凸粒 23，该两导滑塞 2 分别对应穿置于角接头 1 的两结合端 11、12 内，并挡止限于导滑塞 2 的环凸缘 21，而导滑塞 2 上下对称的凸粒 23 则对应卡掣于角接头两结合端 11、12 外缘的穿孔 13，并凸粒 23 突出该穿孔 13；

[0020] 两相邻且互为垂直的边管 3，分别对应连接角接头 1 的两结合端 11、12，该边管 3 为一中空管体，该边管 3 的内径并略大于角接头 1 的直径；

[0021] 两角接头套环 4 分别穿置于边管 3 内且靠近边管 3 端口处，并该角接头套环 4 的端缘上形成一凸起 41，边管 3 上则设有对应卡掣该角接头套环 4 凸起 41 的穿孔 31，以使角接头套环 4 稳固设置于边管 3 内。

[0022] 安装组接时，配合图 2、3 所示，该两角接头套环 4 分别卡掣于边管 3 内，再将组设有导滑塞 2 的角接头 1 的两结合端 11、12 分别对应穿过角接头套环 4 后伸入边管 3 内，与边管 3 实现连接，由于角接头 1 的直径略小于边管 3 的内径，因此角接头 1 的外径与边管 3 的内径之间存有空隙，使角接头 1 的两结合端 11、12 可于边管 3 内作相对的伸缩位移，以对应两相邻边管 3 之间的间隙变化；即当边管 3 在水压的作用下向水池中间或向外偏移，而角接头 1 配合导滑塞 2 则于边管 3 内作相对的伸入或移出以对应边管的偏移，使边管能保持平直，并且角接头 1 在边管 3 内相对位移时，该导滑塞 2 具数开槽 22 的环凸缘 21 除在装配时可使角接头 1 顺利插伸入边管 3 内，还可在伸缩位移过程中避免角接头 1 与边管 3 的内壁直接接触造成角接头 1 划伤，令角接头 1 在边管 3 内移动更顺畅。

[0023] 由上述可见，本实用新型的角接头 1 与边管 3 采用了活动套接的方式，使得边管在偏移时，仍能保持平直线，不致受力而产生弯曲变型，相比习用技术确为一技术上的创新。

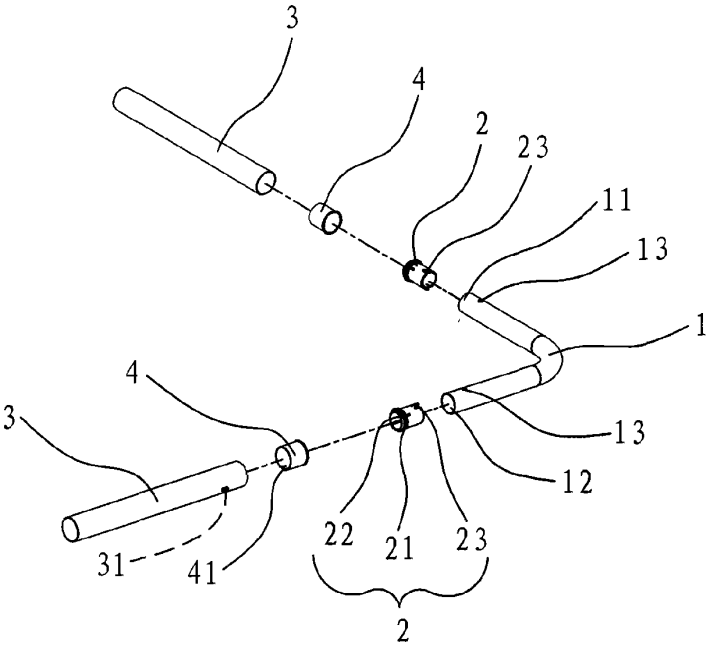


图 1

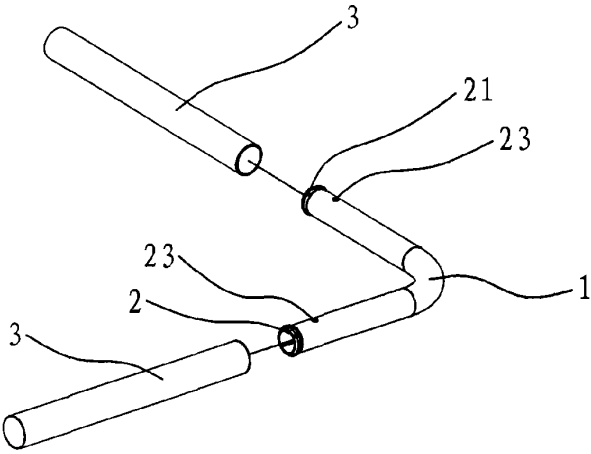


图 2

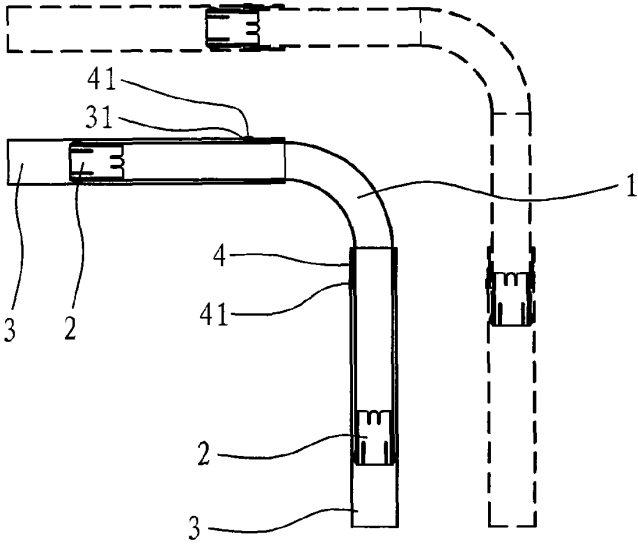


图 3

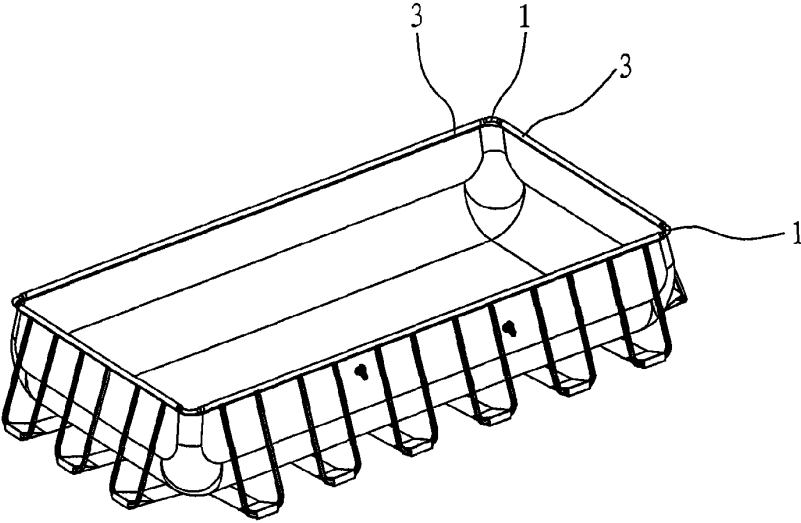


图 4

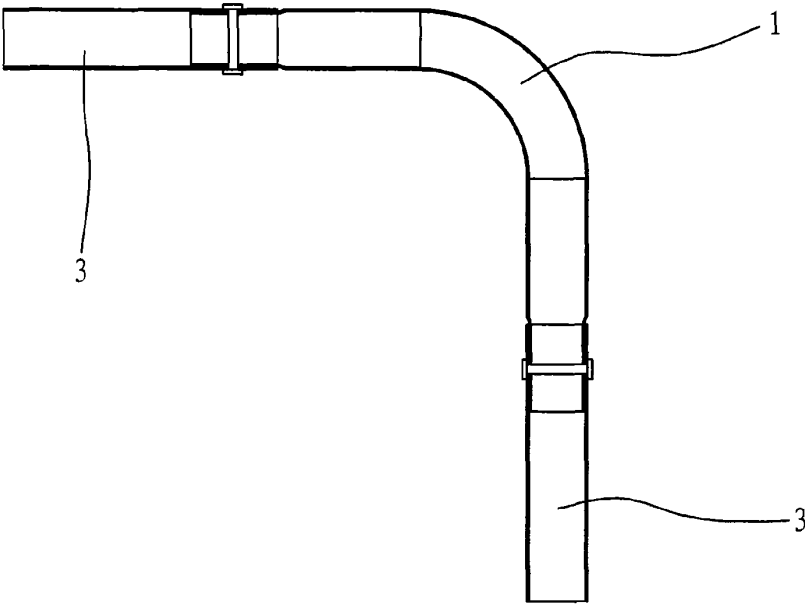


图 5

Electronic Acknowledgement Receipt	
EFS ID:	47767058
Application Number:	16220484
International Application Number:	
Confirmation Number:	3890
Title of Invention:	JOINT FOR ABOVE GROUND POOL FRAME
First Named Inventor/Applicant Name:	Hua Hsiang Lin, deceased
Customer Number:	27268
Filer:	Robert D. Null./Melissa Russell
Filer Authorized By:	Robert D. Null.
Attorney Docket Number:	IRC-0042-02-US
Receipt Date:	30-MAR-2023
Filing Date:	14-DEC-2018
Time Stamp:	14:04:48
Application Type:	U.S. National Stage under 35 USC 371

Payment information:

Submitted with Payment		no			
File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	IRC_0042_02_US_IDS.pdf	1263367	no	4
			cd765ef7ae540f9129104c5dc660499ba11f aaa1		
Warnings:					

Information:					
2	Foreign Reference	CN201487444.pdf	268708	no	8
			ed48641a4deade09eed519a2a06099a2aa3ec8cc		
Warnings:					
Information:					
Total Files Size (in bytes):			1532075		
<p>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</p> <p><u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p>					

Doc code: IDS

Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-22)

Approved for use through 05/31/2024. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16220484
	Filing Date	2018-12-14
	First Named Inventor	Hua Hsiang Lin
	Art Unit	3754
	Examiner Name	Lauren Ashley Crane
	Attorney Docket Number	IRC-0042-02-US

U.S.PATENTS							Remove	
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear		
	1							
If you wish to add additional U.S. Patent citation information please click the Add button.							Add	
U.S.PATENT APPLICATION PUBLICATIONS							Remove	
Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear		
	1							
If you wish to add additional U.S. Published Application citation information please click the Add button.							Add	
FOREIGN PATENT DOCUMENTS							Remove	
Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²ⁱ	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T ⁵
	1							
If you wish to add additional Foreign Patent Document citation information please click the Add button.							Add	
NON-PATENT LITERATURE DOCUMENTS							Remove	
Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.						T ⁵

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		16220484
	Filing Date		2018-12-14
	First Named Inventor	Hua Hsiang Lin	
	Art Unit	3754	
	Examiner Name	Lauren Ashley Crane	
	Attorney Docket Number	IRC-0042-02-US	

1	Non-Final Office Action, issued by the U.S. Patent and Trademark Office, dated August 4, 2022, for U.S. Patent Application No. 17/276,885; 10 pages.
2	Response to Non-Final Office Action, issued by the U.S. Patent and Trademark Office, dated November 3, 2022, for U.S. Patent Application No. 17/276,885; 8 pages.
3	Non-Final Office Action, issued by the U.S. Patent and Trademark Office, dated December 20, 2022, for U.S. Patent Application No. 17/962,979; 12 pages.
4	Response to Non-Final Office Action, filed with the U.S. Patent and Trademark Office, dated March 20, 2023, for U.S. Patent Application No. 17/962,979; 11 pages.
5	Final Office Action, issued by the U.S. Patent and Trademark Office, dated April 3, 2023, for U.S. Patent Application No. 17/962,979; 7 pages.

If you wish to add additional non-patent literature document citation information please click the Add button

EXAMINER SIGNATURE

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16220484
	Filing Date	2018-12-14
	First Named Inventor	Hua Hsiang Lin
	Art Unit	3754
	Examiner Name	Lauren Ashley Crane
	Attorney Docket Number	IRC-0042-02-US

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Robert D. Null/	Date (YYYY-MM-DD)	2023-04-03
Name/Print	Robert D. Null	Registration Number	40746

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Acknowledgement Receipt	
EFS ID:	47779503
Application Number:	16220484
International Application Number:	
Confirmation Number:	3890
Title of Invention:	JOINT FOR ABOVE GROUND POOL FRAME
First Named Inventor/Applicant Name:	Hua Hsiang Lin, deceased
Customer Number:	27268
Filer:	Robert D. Null./Melissa Russell
Filer Authorized By:	Robert D. Null.
Attorney Docket Number:	IRC-0042-02-US
Receipt Date:	03-APR-2023
Filing Date:	14-DEC-2018
Time Stamp:	11:37:46
Application Type:	U.S. National Stage under 35 USC 371

Payment information:

Submitted with Payment	no
------------------------	----

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	IRC_0042_02_US_IDS.pdf	1263559	no	4
			9b637fa5f808b1051a2280fe717305dea4554e56		

Warnings:

Information:					
A U.S. Patent Number Citation or a U.S. Publication Number Citation is required in the Information Disclosure Statement (IDS) form for autoloading of data into USPTO systems. You may remove the form to add the required data in order to correct the Informational Message if you are citing U.S. References. If you chose not to include U.S. References, the image of the form will be processed and be made available within the Image File Wrapper (IFW) system. However, no data will be extracted from this form. Any additional data such as Foreign Patent Documents or Non Patent Literature will be manually reviewed and keyed into USPTO systems.					
2	Other reference-Patent/Application/ Search Documents	IRC_NPL_1.pdf	602911	no	10
			400c53bc66ae77057801425a26cebb343623d3cb		
Warnings:					
Information:					
3	Other reference-Patent/Application/ Search Documents	IRC_NPL_2.pdf	268312	no	8
			4085f75aacf863b917f374d8d969ea1dac4035e8		
Warnings:					
Information:					
4	Other reference-Patent/Application/ Search Documents	IRC_NPL_3.pdf	742548	no	12
			60fc4fc361e8ad15015f08a1d3cc11722835336e		
Warnings:					
Information:					
5	Other reference-Patent/Application/ Search Documents	IRC_NPL_4.pdf	399908	no	11
			7ab499423c4126351343afa3f37bafa59954e59f		
Warnings:					
Information:					
6	Other reference-Patent/Application/ Search Documents	IRC_NPL_5.pdf	416368	no	7
			5a5c8a7976217fa10843c1108bde70e9c111a80c		
Warnings:					
Information:					
Total Files Size (in bytes):			3693606		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Doc code: IDS

Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-22)

Approved for use through 05/31/2024. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16220484
	Filing Date	2018-12-14
	First Named Inventor	Hua Hsiang Lin
	Art Unit	3754
	Examiner Name	Lauren Ashley Crane
	Attorney Docket Number	IRC-0042-02-US

U.S.PATENTS							Remove	
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear		
	1							
If you wish to add additional U.S. Patent citation information please click the Add button.							Add	
U.S.PATENT APPLICATION PUBLICATIONS							Remove	
Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear		
	1							
If you wish to add additional U.S. Published Application citation information please click the Add button.							Add	
FOREIGN PATENT DOCUMENTS							Remove	
Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²ⁱ	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T ⁵
	1							
If you wish to add additional Foreign Patent Document citation information please click the Add button.							Add	
NON-PATENT LITERATURE DOCUMENTS							Remove	
Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.						T ⁵

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16220484
	Filing Date	2018-12-14
	First Named Inventor	Hua Hsiang Lin
	Art Unit	3754
	Examiner Name	Lauren Ashley Crane
	Attorney Docket Number	IRC-0042-02-US

1	Final Office Action, issued by the U.S. Patent and Trademark Office, dated April 3, 2023, for U.S. Patent Application No. 17/962,979; 7 pages.
2	Response to Final Office Action, filed with the U.S. Patent and Trademark Office, dated April 3, 2023, for U.S. Patent Application No. 17/962,979; 7 pages.

If you wish to add additional non-patent literature document citation information please click the Add button

EXAMINER SIGNATURE

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		16220484
	Filing Date		2018-12-14
	First Named Inventor	Hua Hsiang Lin	
	Art Unit	3754	
	Examiner Name	Lauren Ashley Crane	
	Attorney Docket Number	IRC-0042-02-US	

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Robert D. Null/	Date (YYYY-MM-DD)	2023-04-03
Name/Print	Robert D. Null	Registration Number	40746

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Acknowledgement Receipt	
EFS ID:	47782701
Application Number:	16220484
International Application Number:	
Confirmation Number:	3890
Title of Invention:	JOINT FOR ABOVE GROUND POOL FRAME
First Named Inventor/Applicant Name:	Hua Hsiang Lin, deceased
Customer Number:	27268
Filer:	Robert D. Null./Melissa Russell
Filer Authorized By:	Robert D. Null.
Attorney Docket Number:	IRC-0042-02-US
Receipt Date:	03-APR-2023
Filing Date:	14-DEC-2018
Time Stamp:	15:13:32
Application Type:	U.S. National Stage under 35 USC 371

Payment information:

Submitted with Payment	no
------------------------	----

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	IRC_0042_02_US_IDS.pdf	1263373	no	4
			8e4dabbd47078a3223a55bfec1866282c1e04426		

Warnings:

Information:					
A U.S. Patent Number Citation or a U.S. Publication Number Citation is required in the Information Disclosure Statement (IDS) form for autoloading of data into USPTO systems. You may remove the form to add the required data in order to correct the Informational Message if you are citing U.S. References. If you chose not to include U.S. References, the image of the form will be processed and be made available within the Image File Wrapper (IFW) system. However, no data will be extracted from this form. Any additional data such as Foreign Patent Documents or Non Patent Literature will be manually reviewed and keyed into USPTO systems.					
2	Other reference-Patent/Application/ Search Documents	IRC_NPL_1.pdf	412713	no	7
			355cb0568e74ef3e298b48803e02779fc5ec00dc		
Warnings:					
Information:					
3	Other reference-Patent/Application/ Search Documents	IRC_NPL_2.pdf	120410	no	7
			2a1e6d9fa1884f3781aeb4dba255bdc1ba8e734c		
Warnings:					
Information:					
Total Files Size (in bytes):			1796496		
<p>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</p> <p><u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p>					



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

27268 7590 04/21/2023
FAEGRE DRINKER BIDDLE & REATH LLP
300 NORTH MERIDIAN STREET
SUITE 2500
INDIANAPOLIS, IN 46204

EXAMINER

CRANE, LAUREN ASHLEY

ART UNIT

PAPER NUMBER

3754

DATE MAILED: 04/21/2023

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/220,484	12/14/2018	Hua Hsiang Lin, deceased	IRC-0042-02-US	3890

TITLE OF INVENTION: JOINT FOR ABOVE GROUND POOL FRAME

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$1200	\$0.00	\$1200.00	\$0	07/21/2023

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 40% the amount of undiscounted fees, and micro entity fees are 20% the amount of undiscounted fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Maintenance fees are due in utility patents issuing on applications filed on or after Dec. 12, 1980. It is patentee's responsibility to ensure timely payment of maintenance fees when due. More information is available at www.uspto.gov/PatentMaintenanceFees.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications. **Because electronic patent issuance may occur shortly after issue fee payment, any desired continuing application should preferably be filed prior to payment of this issue fee in order not to jeopardize copendency.**

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

27268 7590 04/21/2023
FAEGRE DRINKER BIDDLE & REATH LLP
300 NORTH MERIDIAN STREET
SUITE 2500
INDIANAPOLIS, IN 46204

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

(Typed or printed name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/220,484	12/14/2018	Hua Hsiang Lin, deceased	IRC-0042-02-US	3890

TITLE OF INVENTION: JOINT FOR ABOVE GROUND POOL FRAME

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$1200	\$0.00	\$1200.00	\$0	07/21/2023

EXAMINER	ART UNIT	CLASS-SUBCLASS
CRANE, LAUREN ASHLEY	3754	004-506000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/AIA/122 or PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/AIA/47 or PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,

(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 _____

2 _____

3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. Fees submitted: ☐ Issue Fee ☐ Publication Fee (if required)

4b. Method of Payment: (Please first reapply any previously paid fee shown above)

☐ Electronic Payment via Patent Center or EFS-Web ☐ Enclosed check ☐ Non-electronic payment by credit card (Attach form PTO-2038)

☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. _____

5. **Change in Entity Status** (from status indicated above)

☐ Applicant certifying micro entity status. See 37 CFR 1.29

☐ Applicant asserting small entity status. See 37 CFR 1.27

☐ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____

Date _____

Typed or printed name _____

Registration No. _____



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/220,484	12/14/2018	Hua Hsiang Lin, deceased	IRC-0042-02-US	3890
27268	7590	04/21/2023	EXAMINER	
FAEGRE DRINKER BIDDLE & REATH LLP			CRANE, LAUREN ASHLEY	
300 NORTH MERIDIAN STREET			ART UNIT	
SUITE 2500			PAPER NUMBER	
INDIANAPOLIS, IN 46204			3754	

DATE MAILED: 04/21/2023

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.** Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	Application No. 16/220,484	Applicant(s) Lin, deceased et al.	
	Examiner LAUREN A CRANE	Art Unit 3754	AIA (FITF) Status Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the RCE filed on 3/30/2023.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

3. ☒ The allowed claim(s) is/are 1-5,7-12 and 19-32. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
Certified copies:
a) ☒ All b) ☐ Some* c) ☐ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)	5. ☐ Examiner's Amendment/Comment
2. ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____.	6. ☒ Examiner's Statement of Reasons for Allowance
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material _____.	7. ☐ Other _____.
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____.	

/LAUREN A CRANE/ Primary Examiner, Art Unit 3754	
---	--

Notice of Pre-AIA or AIA Status

1. The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/27/2023 has been entered.

Allowable Subject Matter

2. Claims 1-5, 7-12, 14-17, 19-32 are allowed.
3. The following is an examiner's statement of reasons for allowance
4. Regarding claim 1, the combination including limitation the first horizontal and second horizontal frame member including a pin and a width of the vertical joint portion accounts for at least 50% of a width between the pins of the first and second coupling assemblies of the first and second horizontal joint portions in the invention as claimed is neither disclosed nor rendered obvious by the prior art.
5. Regarding claim 14, the combination including limitation the first horizontal and second horizontal frame member including a pin and a recesses and wherein a width of the vertical joint portion accounts for a majority of a width between the pins of the first and second coupling assemblies of the first and second horizontal joint portions in the invention as claimed is neither disclosed nor rendered obvious by the prior art.

6. Regarding claim 24, the combination including limitation the first horizontal joint portion comprises a first external cross-section, the first external cross-section being generally triangular in the invention as claimed is neither disclosed nor rendered obvious by the prior art

7. Regarding claim 26, the combination including limitation wherein the vertical joint portion comprises a second external cross-section, the second external cross-section being generally triangular in the invention as claimed is neither disclosed nor rendered obvious by the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

2.

1. Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAUREN ASHLEY CRANE whose telephone number is (571)270-5198. The examiner can normally be reached Mondays & Tuesdays 8 am - 4pm.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at <http://www.uspto.gov/interviewpractice>.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Angwin can be reached on 571-270-3735. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of published or unpublished applications may be obtained from Patent Center. Unpublished application information in Patent Center is available to registered users. To file and manage patent submissions in Patent Center, visit: <https://patentcenter.uspto.gov>. Visit <https://www.uspto.gov/patents/apply/patent-center> for more information about Patent Center and <https://www.uspto.gov/patents/docx> for information about filing in DOCX format. For additional questions, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/LAUREN A CRANE/
Primary Examiner, Art Unit 3754

Issue Classification 	Application/Control No. 16/220,484	Applicant(s)/Patent Under Reexamination Lin, deceased et al.
	Examiner LAUREN A CRANE	Art Unit 3754

CPC						
Symbol					Type	Version
F16B	/	7	/	14	F	2013-01-01
E04H	/	4	/	0056	I	2013-01-01
F16B	/	7	/	042	I	2013-01-01
F16B	/	7	/	0446	I	2013-01-01
A63C	/	19	/	02	I	2013-01-01
E04H	/	4	/	14	I	2013-01-01

CPC Combination Sets					
Symbol		Type	Set	Ranking	Version
	/				

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	29	
/LAUREN A CRANE/ Primary Examiner, Art Unit 3754	11 April 2023	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1

Issue Classification 	Application/Control No. 16/220,484	Applicant(s)/Patent Under Reexamination Lin, deceased et al.
	Examiner LAUREN A CRANE	Art Unit 3754

INTERNATIONAL CLASSIFICATION			
CLAIMED			
F16B		7	14
NON-CLAIMED			

US ORIGINAL CLASSIFICATION	
CLASS	SUBCLASS
4	506

CROSS REFERENCES(S)						
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)					

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	29	
/LAUREN A CRANE/ Primary Examiner, Art Unit 3754	11 April 2023	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1

Issue Classification 	Application/Control No. 16/220,484	Applicant(s)/Patent Under Reexamination Lin, deceased et al.
	Examiner LAUREN A CRANE	Art Unit 3754

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47															
CLAIMS															
Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	1	9	10	16	19	25	28								
2	2	10	11	17	20	26	29								
3	3	11	12	18	21	27	30								
4	4		13	19	22	28	31								
5	5	12	14	20	23	29	32								
	6	13	15	21	24										
6	7	14	16	22	25										
7	8	15	17	23	26										
8	9		18	24	27										

NONE	Total Claims Allowed:	
(Assistant Examiner)	(Date)	29
/LAUREN A CRANE/ Primary Examiner, Art Unit 3754	11 April 2023	O.G. Print Claim(s)
(Primary Examiner)	(Date)	1
		O.G. Print Figure
		1

<i>Search Notes</i> 	Application/Control No. 16/220,484	Applicant(s)/Patent Under Reexamination Lin, deceased et al.
	Examiner LAUREN A CRANE	Art Unit 3754

CPC - Searched*		
Symbol	Date	Examiner
F16B7/17	04/14/2020	LC
E04H4/0056	11/03/2020	LC

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner
4	654	04/14/2020	LC
4	506	11/03/2020	

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner
Text search of F16B7/14	11/03/2020	LC
Forward backward search of tagged art	11/03/2020	LC
Search of Tagged Art	04/06/2021	LC
Search of Tagged Art	11/02/2021	LC

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner
	Keyword Search	10/18/2022	LC

/LAUREN A CRANE/ Primary Examiner, Art Unit 3754	
---	--

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16220484
	Filing Date	2018-12-14
	First Named Inventor	Hua Hsiang Lin
	Art Unit	3754
	Examiner Name	Lauren Ashley Crane
	Attorney Docket Number	IRC-0042-02-US

U.S. PATENTS							Remove	
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1							
If you wish to add additional U.S. Patent citation information please click the Add button.							Add	
U.S. PATENT APPLICATION PUBLICATIONS							Remove	
Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1							
If you wish to add additional U.S. Published Application citation information please click the Add button.							Add	
FOREIGN PATENT DOCUMENTS							Remove	
Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²ⁱ	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	T ⁵
	1							
If you wish to add additional Foreign Patent Document citation information please click the Add button.								Add
NON-PATENT LITERATURE DOCUMENTS								Remove
Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.						T ⁵

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16220484
	Filing Date	2018-12-14
	First Named Inventor	Hua Hsiang Lin
	Art Unit	3754
	Examiner Name	Lauren Ashley Crane
	Attorney Docket Number	IRC-0042-02-US

1	Non-Final Office Action, issued by the U.S. Patent and Trademark Office, dated August 4, 2022, for U.S. Patent Application No. 17/276,885; 10 pages.
2	Response to Non-Final Office Action, issued by the U.S. Patent and Trademark Office, dated November 3, 2022, for U.S. Patent Application No. 17/276,885; 8 pages.
3	Non-Final Office Action, issued by the U.S. Patent and Trademark Office, dated December 20, 2022, for U.S. Patent Application No. 17/962,979; 12 pages.
4	Response to Non-Final Office Action, filed with the U.S. Patent and Trademark Office, dated March 20, 2023, for U.S. Patent Application No. 17/962,979; 11 pages.
5	Final Office Action, issued by the U.S. Patent and Trademark Office, dated April 3, 2023, for U.S. Patent Application No. 17/962,979; 7 pages.

If you wish to add additional non-patent literature document citation information please click the Add button

EXAMINER SIGNATURE

Examiner Signature	LAUREN A CRANE/	Date Considered	04/11/2023
--------------------	-----------------	-----------------	------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		16220484
	Filing Date		2018-12-14
	First Named Inventor	Hua Hsiang Lin	
	Art Unit	3754	
	Examiner Name	Lauren Ashley Crane	
	Attorney Docket Number	IRC-0042-02-US	

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Robert D. Null/	Date (YYYY-MM-DD)	2023-04-03
Name/Print	Robert D. Null	Registration Number	40746

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16220484
	Filing Date	2018-12-14
	First Named Inventor	Hua Hsiang Lin
	Art Unit	3754
	Examiner Name	Lauren Ashley Crane
	Attorney Docket Number	IRC-0042-02-US

U.S. PATENTS							Remove	
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1							
If you wish to add additional U.S. Patent citation information please click the Add button.							Add	
U.S. PATENT APPLICATION PUBLICATIONS							Remove	
Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1	20170089085		2017-03-30	Liu			
If you wish to add additional U.S. Published Application citation information please click the Add button.							Add	
FOREIGN PATENT DOCUMENTS							Remove	
Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²ⁱ	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	T ⁵
	1	201487444	CN		2010-05-26	Intex Ind Xiamen Co Ltd.	English Abstract Submitted	×
If you wish to add additional Foreign Patent Document citation information please click the Add button.							Add	
NON-PATENT LITERATURE DOCUMENTS							Remove	
Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.						T ⁵

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		16220484
	Filing Date		2018-12-14
	First Named Inventor	Hua Hsiang Lin	
	Art Unit	3754	
	Examiner Name	Lauren Ashley Crane	
	Attorney Docket Number	IRC-0042-02-US	

1			
If you wish to add additional non-patent literature document citation information please click the Add button <input type="button" value="Add"/>			
EXAMINER SIGNATURE			
Examiner Signature	/LAUREN A CRANE/		Date Considered 04/11/2023
*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.			
<small> ¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached. </small>			

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		16220484
	Filing Date		2018-12-14
	First Named Inventor	Hua Hsiang Lin	
	Art Unit	3754	
	Examiner Name	Lauren Ashley Crane	
	Attorney Docket Number	IRC-0042-02-US	

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Robert D. Null/	Date (YYYY-MM-DD)	2023-03-30
Name/Print	Robert D. Null	Registration Number	40746

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16220484
	Filing Date	2018-12-14
	First Named Inventor	Hua Hsiang Lin
	Art Unit	3754
	Examiner Name	Lauren Ashley Crane
	Attorney Docket Number	IRC-0042-02-US

U.S. PATENTS							Remove	
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1							
If you wish to add additional U.S. Patent citation information please click the Add button.							Add	
U.S. PATENT APPLICATION PUBLICATIONS							Remove	
Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1							
If you wish to add additional U.S. Published Application citation information please click the Add button.							Add	
FOREIGN PATENT DOCUMENTS							Remove	
Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²ⁱ	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	T ⁵
	1							
If you wish to add additional Foreign Patent Document citation information please click the Add button.								Add
NON-PATENT LITERATURE DOCUMENTS								Remove
Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.						T ⁵

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /I.A.C/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16220484
	Filing Date	2018-12-14
	First Named Inventor	Hua Hsiang Lin
	Art Unit	3754
	Examiner Name	Lauren Ashley Crane
	Attorney Docket Number	IRC-0042-02-US

1	Final Office Action, issued by the U.S. Patent and Trademark Office, dated April 3, 2023, for U.S. Patent Application No. 17/962,979; 7 pages.
2	Response to Final Office Action, filed with the U.S. Patent and Trademark Office, dated April 3, 2023, for U.S. Patent Application No. 17/962,979; 7 pages.

If you wish to add additional non-patent literature document citation information please click the Add button

EXAMINER SIGNATURE

Examiner Signature	/LAUREN A CRANE/	Date Considered	04/11/2023
--------------------	------------------	-----------------	------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		16220484
	Filing Date		2018-12-14
	First Named Inventor	Hua Hsiang Lin	
	Art Unit	3754	
	Examiner Name	Lauren Ashley Crane	
	Attorney Docket Number	IRC-0042-02-US	

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Robert D. Null/	Date (YYYY-MM-DD)	2023-04-03
Name/Print	Robert D. Null	Registration Number	40746

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

Bibliographic Data

Application No: 16/220,484

Foreign Priority claimed: ☒ Yes ☐ No

35 USC 119 (a-d) conditions met: ☒ Yes ☐ No ☒ Met After Allowance

Verified and Acknowledged:
Examiner's Signature Initials

Title:

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
12/14/2018	004	3754	
RULE			

APPLICANTS

Intex Marketing Ltd., Tortola, VIRGIN ISLANDS, BRITISH

INVENTORS

Hua Hsiang Lin, deceased, Fujian, CHINA

Yaw Yuan Hsu, Fujian, CHINA

CONTINUING DATA

This application is a 371 of PCT/US2017/037892 06/16/2017

FOREIGN APPLICATIONS

CHINA CN201620598406.9 06/17/2016

CHINA CN201630270359.0 06/22/2016

CHINA CN201621039473.3 09/06/2016

IF REQUIRED, FOREIGN LICENSE GRANTED**

03/06/2019

STATE OR COUNTRY

CHINA

ADDRESS

FILING FEE RECEIVED

\$1,720

PE2E SEARCH - Search History (Prior Art)

There are no Prior Art searches to show.

PE2E SEARCH - Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	British Equivalents	Time Stamp
N51	1	(frame joint horizontal frame member pins 50% recess vertical joint portion).clms.	(US-PGPUB; USPAT)	AND	ON	ON	2023/01/10 11:31 AM

Doc code: IDS

Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-22)

Approved for use through 05/31/2024. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16220484
	Filing Date	2018-12-14
	First Named Inventor	Hua Hsiang Lin, deceased
	Art Unit	3754
	Examiner Name	Lauren Ashley Crane
	Attorney Docket Number	IRC-0042-02-US

U.S. PATENTS							Remove	
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1							
If you wish to add additional U.S. Patent citation information please click the Add button.							Add	
U.S. PATENT APPLICATION PUBLICATIONS							Remove	
Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1	20030001387		2003-01-02	Tawara			
If you wish to add additional U.S. Published Application citation information please click the Add button.							Add	
FOREIGN PATENT DOCUMENTS							Remove	
Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²ⁱ	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	T ⁵
	1	2349412	GB		2000-11-01	Surelock McGill Limited		
If you wish to add additional Foreign Patent Document citation information please click the Add button.								Add
NON-PATENT LITERATURE DOCUMENTS								Remove
Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.						T ⁵

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16220484
	Filing Date	2018-12-14
	First Named Inventor	Hua Hsiang Lin, deceased
	Art Unit	3754
	Examiner Name	Lauren Ashley Crane
	Attorney Docket Number	IRC-0042-02-US

1	
---	--

If you wish to add additional non-patent literature document citation information please click the Add button

EXAMINER SIGNATURE			
Examiner Signature	/LAUREN A CRANE/	Date Considered	04/11/2023

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16220484
	Filing Date	2018-12-14
	First Named Inventor	Hua Hsiang Lin, deceased
	Art Unit	3754
	Examiner Name	Lauren Ashley Crane
	Attorney Docket Number	IRC-0042-02-US

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Robert D Null/	Date (YYYY-MM-DD)	2023-03-27
Name/Print	Robert D. Null	Registration Number	40746

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications. **Because electronic patent issuance may occur shortly after issue fee payment, any desired continuing application should preferably be filed prior to payment of this issue fee in order not to jeopardize copendency.**

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

27268 7590 04/21/2023
FAEGRE DRINKER BIDDLE & REATH LLP
300 NORTH MERIDIAN STREET
SUITE 2500
INDIANAPOLIS, IN 46204



Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

(Typed or printed name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/220,484	12/14/2018	Hua Hsiang Lin, deceased	IRC-0042-02-US	3890

TITLE OF INVENTION: JOINT FOR ABOVE GROUND POOL FRAME

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$1200	\$0.00	\$1200.00	\$0	07/21/2023

EXAMINER	ART UNIT	CLASS-SUBCLASS
CRANE, LAUREN ASHLEY	3754	004-506000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.563).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/AIA/122 or PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/AIA/47 or PTO/SB/47; Rev 03-02 or more recent) attached. Use of a Customer Number is required.

2. For printing on the patent front page, list

(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,

(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 Faegre Drinker Biddle & Reath LLP

2

3

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

Intex Marketing Ltd.

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Tortola, British Virgin Islands

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☒ Corporation or other private group entity ☐ Government4a. Fees submitted: ☒ Issue Fee ☐ Publication Fee (if required)

4b. Method of Payment: (Please first reapply any previously paid fee shown above)

☒ Electronic Payment via Patent Center or EFS-Web ☐ Enclosed check ☐ Non-electronic payment by credit card (Attach form PTO-2038)☒ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. 02-0390

5. Change in Entity Status (from status indicated above)

☐ Applicant certifying micro entity status. See 37 CFR 1.29☐ Applicant asserting small entity status. See 37 CFR 1.27☐ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature /Robert D. Null/

Date May 17, 2023

Typed or printed name Robert D. Null

Registration No. 40,746

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications. **Because electronic patent issuance may occur shortly after issue fee payment, any desired continuing application should preferably be filed prior to payment of this issue fee in order not to jeopardize copendency.**

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

27268 7590 04/21/2023
FAEGRE DRINKER BIDDLE & REATH LLP
300 NORTH MERIDIAN STREET
SUITE 2500
INDIANAPOLIS, IN 46204

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

(Typed or printed name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/220,484	12/14/2018	Hua Hsiang Lin, deceased	IRC-0042-02-US	3890

TITLE OF INVENTION: JOINT FOR ABOVE GROUND POOL FRAME

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$1200	\$0.00	\$1200.00	\$0	07/21/2023

EXAMINER	ART UNIT	CLASS-SUBCLASS
CRANE, LAUREN ASHLEY	3754	004-506000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/AIA/122 or PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/AIA/47 or PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,

(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 Faegre Drinker Biddle & Reath LLP

2 _____

3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

Intex Marketing Ltd.

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Tortola, British Virgin Islands

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☒ Corporation or other private group entity ☐ Government

4a. Fees submitted: ☒ Issue Fee ☐ Publication Fee (if required)

4b. Method of Payment: (Please first reapply any previously paid fee shown above)

☒ Electronic Payment via Patent Center or EFS-Web ☐ Enclosed check ☐ Non-electronic payment by credit card (Attach form PTO-2038)

☒ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. 02-0390

5. **Change in Entity Status** (from status indicated above)

☐ Applicant certifying micro entity status. See 37 CFR 1.29

☐ Applicant asserting small entity status. See 37 CFR 1.27

☐ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature /Robert D. Null/

Date May 17, 2023

Typed or printed name Robert D. Null

Registration No. 40,746

Electronic Acknowledgement Receipt	
EFS ID:	48016740
Application Number:	16220484
International Application Number:	
Confirmation Number:	3890
Title of Invention:	JOINT FOR ABOVE GROUND POOL FRAME
First Named Inventor/Applicant Name:	Hua Hsiang Lin, deceased
Customer Number:	27268
Filer:	Robert D. Null./Melissa Russell
Filer Authorized By:	Robert D. Null.
Attorney Docket Number:	IRC-0042-02-US
Receipt Date:	17-MAY-2023
Filing Date:	14-DEC-2018
Time Stamp:	14:29:31
Application Type:	U.S. National Stage under 35 USC 371

Payment information:

Submitted with Payment	no
------------------------	----

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Issue Fee Payment (PTO-85B)	IRC_0042_02_US_Issue_Fee_transmittal.pdf	109148	no	1
			7922da7669cca16577146049270e2da648b337ef		

Warnings:

Information:	
Total Files Size (in bytes):	109148
<p>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</p> <p><u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p>	



United States Patent and Trademark Office

Office of the Chief Financial Officer

Document Code:WFEE

User :Cynthia Chau

Sale Accounting Date:05/18/2023

Sale Item Reference Number
16220484

Effective Date
05/17/2023

Document Number	Fee Code	Fee Code Description	Amount Paid	Payment Method
I20235HC27329615	1501	UTILITY APPL ISSUE FEE	\$1,200.00	Salea

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	16220484
	Filing Date	2018-12-14
	First Named Inventor	Hua Hsiang Lin
	Art Unit	3754
	Examiner Name	CRANE, LAUREN ASHLEY
	Attorney Docket Number	IRC-0042-02-US

U.S. PATENTS							Remove
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	
	1						
If you wish to add additional U.S. Patent citation information please click the Add button.							Add
U.S. PATENT APPLICATION PUBLICATIONS							Remove
Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	
Change(s) applied to document, /A.C./ 1 11/2/2022	1	20220275661	A1	2022-09-01	INTEX MARKETING LTD Huang et al.		
If you wish to add additional U.S. Published Application citation information please click the Add button.							Add
FOREIGN PATENT DOCUMENTS							Remove
Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²ⁱ	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear
	1						
If you wish to add additional Foreign Patent Document citation information please click the Add button.							Add
NON-PATENT LITERATURE DOCUMENTS							Remove
Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.					T ⁵

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/220,484	07/04/2023	11692572	IRC-0042-02-US	3890

27268 7590 06/14/2023
FAEGRE DRINKER BIDDLE & REATH LLP
300 NORTH MERIDIAN STREET
SUITE 2500
INDIANAPOLIS, IN 46204

ISSUE NOTIFICATION

The projected patent number and issue date are specified above. The patent will issue electronically. The electronically issued patent is the official patent grant pursuant to 35 U.S.C. § 153. The patent may be accessed on or after the issue date through Patent Center at <https://patentcenter.uspto.gov/>. The patent will be available in both the public and the private sides of Patent Center. Further assistance in electronically accessing the patent, or about Patent Center, is available by calling the Patent Electronic Business Center at 1-888-217-9197.

The USPTO is implementing electronic patent issuance with a transition period, during which period the USPTO will mail a ceremonial paper copy of the electronic patent grant to the correspondence address of record. Additional copies of the patent (i.e., certified and presentation copies) may be ordered for a fee from the USPTO's Certified Copy Center at <https://certifiedcopycenter.uspto.gov/index.html>. The Certified Copy Center may be reached at (800)972-6382.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)

(application filed on or after May 29, 2000)

The Patent Term Adjustment is 0 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Patents Stakeholder Experience (OPSE), Stakeholder Support Division (SSD) at (571)-272-4200.

INVENTOR(s) (Please see PAIR WEB site <http://pair.uspto.gov> for additional inventors):

Hua Hsiang Lin, deceased, Fujian, CHINA, Deceased;
Yaw Yuan Hsu, Fujian, CHINA;

APPLICANT(s) (Please see PAIR WEB site <http://pair.uspto.gov> for additional applicants):

Intex Marketing Ltd., Tortola, VIRGIN ISLANDS, BRITISH

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The USA offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to encourage and facilitate business investment. To learn more about why the USA is the best country in the world to develop technology, manufacture products, and grow your business, visit SelectUSA.gov.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/220,484	12/14/2018	Hua Hsiang Lin, deceased	IRC-0042-02-US	3890
27268 7590 07/04/2023 FAEGRE DRINKER BIDDLE & REATH LLP 300 NORTH MERIDIAN STREET SUITE 2500 INDIANAPOLIS, IN 46204			EXAMINER CRANE, LAUREN ASHLEY	
			ART UNIT 3754	PAPER NUMBER
			NOTIFICATION DATE 07/04/2023	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

intear@faegredrinker.com



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	ISSUE DATE	PATENT NO.
16/220,484	04-Jul-2023	11692572

FAEGRE DRINKER BIDDLE & REATH LLP
300 NORTH MERIDIAN STREET
INDIANAPOLIS, IN 46204

EGRANT NOTIFICATION

Your electronic patent grant (eGrant) is now available, which can be accessed via Patent Center at <https://patentcenter.uspto.gov>

The electronic patent grant is the official patent grant under 35 U.S.C. 153. For more information, please visit <https://www.uspto.gov/electronicgrants>

FAEGRE DRINKER BIDDLE & REATH LLP 300 North Meridian Street, Suite 2500
Indianapolis, Indiana 46204
Telephone: 317-237-0300

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Intex Marketing Ltd. Customer No.: 27268
Patent No.: 11,692,572
Issue Date: July 4, 2023
Conf. No.: 3890
Title: JOINT FOR ABOVE GROUND POOL FRAME
Examiner: Lauren Ashley Crane
Art Group: 3754
Our File No.: IRC-0042-02-US

REQUEST FOR CERTIFICATE OF CORRECTION
UNDER 37 C.F.R. § 1.322

ATTENTION: Certificate of Corrections Branch
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Applicant respectfully requests a Certificate of Correction under 37 C.F.R. § 1.322 to correct typographical errors in claims 1 and 8 of the above-identified patent, in accordance with the enclosed form PTO/SB/44. Specifically, claims 1 and 8 should be amended to read as follows:

1. A frame joint for an above ground pool frame having a first horizontal frame member, a second horizontal frame member, and a vertical frame member, the frame joint comprising: a first horizontal joint portion including a first coupling assembly including a pin configured **to** engage a corresponding recess of the first horizontal frame member to couple with the first horizontal frame member; a second horizontal joint portion including a second coupling

US.358421532.01

assembly including a pin configured **to** engage a corresponding recess of the second horizontal frame member to couple with the second horizontal frame member; a vertical joint portion fixedly coupled to the first and second horizontal joint portions and configured to couple with the vertical frame member; and a liner positioned around the first and second horizontal frame members, the liner defining a hole that is sized to expose the first and second coupling assemblies; wherein a width of the vertical joint portion accounts for at least 50% of a width between the pins of the first and second coupling assemblies of the first and second horizontal joint portions.

8. The frame joint of claim 1, wherein: the first horizontal joint portion is constructed of plastic; the second horizontal joint portion is constructed of plastic; and the vertical joint portion is **being** constructed of plastic.

Applicant asserts that the typographical errors occurred in good faith and were not the fault of the U.S. Patent and Trademark Office. This request for a Certificate of Correction satisfies the requirements of 35 U.S.C. § 225, because the errors are of a clerical or typographical nature, and correcting the typographical errors would not constitute new matter or require reexamination.

Applicant submits herewith payment via credit card as required by 37 C.F.R. § 1.20(a) for the Certificate of Correction.

In the event Applicant has overlooked the need for payment of any fee, or any extensions of time to effect a timely response, Applicant hereby petitions therefore and authorizes that any additional fees be charged to Deposit Account No. 02-0390, Faegre Drinker Biddle & Reath LLP.

If any question concerning this application should arise, the Examiner is invited to contact the undersigned.

Respectfully submitted,

Patent No. 11,692,572
Request for Certificate of Correction
Page 3

/Robert D. Null/

Robert D. Null, Reg. No. 40,746
Attorney for Applicant

FAEGRE DRINKER BIDDLE & REATH LLP
300 North Meridian Street
Suite 2500
Indianapolis, Indiana 46204
Telephone: 317-237-0300

Submitted: July 10, 2023

UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

Page 1 of 1

PATENT NO. : 11,692,572
APPLICATION NO.: 16/220,484
ISSUE DATE : July 4, 2023
INVENTOR(S) : Hua Hsiang Lin, deceased and Yaw Yuan Hsu

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Claims 1 and 8 should be amended to read as follows:

1. A frame joint for an above ground pool frame having a first horizontal frame member, a second horizontal frame member, and a vertical frame member, the frame joint comprising: a first horizontal joint portion including a first coupling assembly including a pin configured to engage a corresponding recess of the first horizontal frame member to couple with the first horizontal frame member; a second horizontal joint portion including a second coupling assembly including a pin configured to engage a corresponding recess of the second horizontal frame member to couple with the second horizontal frame member; a vertical joint portion fixedly coupled to the first and second horizontal joint portions and configured to couple with the vertical frame member; and a liner positioned around the first and second horizontal frame members, the liner defining a hole that is sized to expose the first and second coupling assemblies; wherein a width of the vertical joint portion accounts for at least 50% of a width between the pins of the first and second coupling assemblies of the first and second horizontal joint portions.

8. The frame joint of claim 1, wherein: the first horizontal joint portion is constructed of plastic; the second horizontal joint portion is constructed of plastic; and the vertical joint portion is constructed of plastic.

MAILING ADDRESS OF SENDER (Please do not use Customer Number below):

Faegre Drinker Biddle & Reath LLP
300 North Meridian Street, Suite 2500
Indianapolis, Indiana 46204

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: **Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Patent Application Fee Transmittal				
Application Number:		16220484		
Filing Date:		14-Dec-2018		
Title of Invention:		JOINT FOR ABOVE GROUND POOL FRAME		
First Named Inventor/Applicant Name:		Hua Hsiang Lin, deceased		
Filer:		Robert D. Null./Melissa Russell		
Attorney Docket Number:		IRC-0042-02-US		
Filed as Large Entity				
Filing Fees for U.S. National Stage under 35 USC 371				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
CERTIFICATE OF CORRECTION	1811	1	160	160

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				160

Electronic Acknowledgement Receipt	
EFS ID:	48269577
Application Number:	16220484
International Application Number:	
Confirmation Number:	3890
Title of Invention:	JOINT FOR ABOVE GROUND POOL FRAME
First Named Inventor/Applicant Name:	Hua Hsiang Lin, deceased
Customer Number:	27268
Filer:	Robert D. Null./Melissa Russell
Filer Authorized By:	Robert D. Null.
Attorney Docket Number:	IRC-0042-02-US
Receipt Date:	10-JUL-2023
Filing Date:	14-DEC-2018
Time Stamp:	11:59:46
Application Type:	U.S. National Stage under 35 USC 371

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	\$160
RAM confirmation Number	E202370C00407208
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Request for Certificate of Correction	IRC_0042_02_US_Request_Certificate_Correction.pdf	120640	no	3
			7d8106d6125dbfe68bc4ba06346f62b74ea7b79a		
Warnings:					
Information:					
2	Request for Certificate of Correction	IRC_0042_02_US_Certificate_Correction.pdf	176129	no	2
			b624e82f5a6d37a6e8619ca7d6db065a57ed2a78		
Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	37799	no	2
			a61a24ea521b13c436eb4226da50dacd789a6861		
Warnings:					
Information:					
Total Files Size (in bytes):			334568		
<p>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</p> <p><u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p>					

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 11,692,572 B2
APPLICATION NO. : 16/220484
DATED : July 4, 2023
INVENTOR(S) : Hua Hsiang Lin and Yaw Yuan Hsu

Page 1 of 1

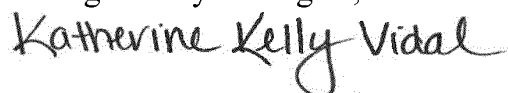
It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

In the Claims

Claims 1 and 8 should be amended to read as follows:

1. A frame joint for an above ground pool frame having a first horizontal frame member, a second horizontal frame member, and a vertical frame member, the frame joint comprising: a first horizontal joint portion including a first coupling assembly including a pin configured to engage a corresponding recess of the first horizontal frame member to couple with the first horizontal frame member; a second horizontal joint portion including a second coupling assembly including a pin configured to engage a corresponding recess of the second horizontal frame member to couple with the second horizontal frame member; a vertical joint portion fixedly coupled to the first and second horizontal joint portions and configured to couple with the vertical frame member; and a liner positioned around the first and second horizontal frame members, the liner defining a hole that is sized to expose the first and second coupling assemblies; wherein a width of the vertical joint portion accounts for at least 50% of a width between the pins of the first and second coupling assemblies of the first and second horizontal joint portions.

8. The frame joint of claim 1, wherein: the first horizontal joint portion is constructed of plastic; the second horizontal joint portion is constructed of plastic; and the vertical joint portion is constructed of plastic.

Signed and Sealed this
Eighth Day of August, 2023


Katherine Kelly Vidal
Director of the United States Patent and Trademark Office