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APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/752,441	05/18/2021	11008136	066749-2584	9540

142078 7590 04/28/2021

Reinhart (Milwaukee Tool)
ATTN: TRAVIS MCDONNELL, PARALEGAL
1000 NORTH WATER STREET
SUITE 2100
MILWAUKEE, WI 53202

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

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 Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site http://pair.uspto.gov for additional applicants):

Yaron Brunner, Kibbutz Gvat, ISRAEL;
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Christopher S. Hoppe, Milwaukee, WI;
Steven W. Hyma, Milwaukee, WI;

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Substitute for form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

Date Submitted: November 12, 2020

(use as many sheets as necessary)

Sheet 2 of 3

Complete if Known	
Application Number	16/752,441
Filing Date	January 24, 2020
First Named Inventor	Yaron Brunner
Art Unit	3736
Examiner Name	Weinerth, Gideon R.
Attorney Docket Number	066749-2584

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant
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	A32	D777,426	01-31-2017	Dahl	
	A33	D784,089	04-18-2017	Furneaux et al.	
	A34	D803,631 11/2017	~~11-28-20017~~	Min et al.	
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Change(s) applied to document, /Q.N./ 2/1/2021

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Examiner Initials*	Cite No.[1]	U.S. Patent Application Document Serial Number-Kind Code[2] (*if known*)	Filing Date of Cited Document MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear

Examiner Signature	/GIDEON R WEINERTH/	Date Considered	01/02/2021

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Substitute for form 1449/PTO				***Complete if Known***	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				**Application Number**	To be determined
				Filing Date	January 24, 2020
Date Submitted: January 24, 2020				**First Named Inventor**	Yaron Brunner
				Art Unit	To be determined
(use as many sheets as necessary)				Examiner Name	To be determined
Sheet	1	of	10	Attorney Docket Number	066749-2584

U.S. PATENT DOCUMENTS

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Change(s) applied to document, /Q.N./ 2/1/2021

Examiner Signature	/GIDEON R WEINERTH/	Date Considered	09/17/2020

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

Date Submitted: September 16, 2020

(use as many sheets as necessary)

Sheet 1 of 2

Complete if Known	
Application Number	16/752,441
Filing Date	January 24, 2020
First Named Inventor	Yaron Brunner
Art Unit	3736
Examiner Name	WEINERTH, GIDEON R
Attorney Docket Number	066749-2584

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number: Number-Kind Code[2] (*if known*)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
Change(s) applied to document, /Q.N./ 2/8/2021	A1	5,538,213	07-23-1996	~~Brown Office Systems Inc.~~	Brown
	A2	7,779,764	08-24-2010	NAIDU et al.	
	A3	2009/0236482	09-24-2009	~~CC3 Storage Systems LLC~~	Winig et al.
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UNPUBLISHED U.S. PATENT APPLICATION DOCUMENTS

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Substitute for form 1449/PTO				***Complete if Known***	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				**Application Number**	To be determined
				Filing Date	January 24, 2020
Date Submitted: January 24, 2020				**First Named Inventor**	Yaron Brunner
				Art Unit	To be determined
(use as many sheets as necessary)				Examiner Name	To be determined
Sheet	5	of	10	Attorney Docket Number	066749-2584

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Examiner Initials*	Cite No.[1]	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant
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Examiner Signature	/GIDEON R WEINERTH/	Date Considered	09/17/2020

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				Filing Date	January 24, 2020
Date Submitted: January 24, 2020				**First Named Inventor**	Yaron Brunner
				Art Unit	To be determined
(use as many sheets as necessary)				Examiner Name	To be determined
Sheet	4	of	10	Attorney Docket Number	066749-2584

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Sheet	3	of	10	Attorney Docket Number	066749-2584

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant
	A58	9,566,990	02-14-2017	Bar-Erez; Sharon	
	A59	9,616,562	04-11-2017	Hoppe; Christopher S.	
Change(s) applied to document, /J.G./ 2/8/2021	A60	9,643,629	05-09-2017	~~The Stanley Works Israel Ltd.~~ Bar-Erez et al.	
	A61	9,701,443	07-11-2017	Wang; Tzu-Chien	
	A62	9,872,562	01-23-2018	Brunner; Yaron	
	A63	10,434,638	10-08-2019	Tsai	
	A64	2002/0000440	01-03-2002	Sagal et al.	
	A65	2002/0171228	11-21-2002	Kady	
	A66	2003/0115715	06-26-2003	Guido Valentini	
	A67	2003/0146589	08-07-2003	Jarko et al.	
	A68	2003/0184034	10-02-2003	Pfeiffer	
	A69	2003/0205877	11-06-2003	Verna et al.	
	A70	2004/0103494	06-03-2004	Valentini	
	A71	2004/0195793	10-07-2004	Sullivan, Hugh C., et al.	
	A72	2004/0206656	10-21-2004	Dubois et al.	
	A73	2005/0062244	03-24-2005	Guirlinger	
	A74	2005/0104308	05-19-2005	Barnes	
	A75	2005/0139745	06-30-2005	Liao, Chi-Cheng	
	A76	2006/0006770	01-12-2006	Valentini	
	A77	2006/0027475	02-09-2006	Gleason et al.	
	A78	2006/0038367	02-23-2006	Ferraro; Frank A.	
	A79	2006/0119060	06-08-2006	Sullivan et al.	
	A80	2006/0186624	08-24-2006	Kady, Darren	
	A81	2006/0254946	11-16-2006	Becklin	
	A82	2007/0068757	03-29-2007	Tan	
	A83	2007/0090616	04-26-2007	Tompkins	
	A84	2007/0145700	06-28-2007	Ambrose et al.	
	A85	2007/0194543	08-23-2007	Duvigneau	
	A86	2008/0104921	05-08-2008	Pervan; Darko	

Examiner Signature	/GIDEON R WEINERTH/	Date Considered	09/17/2020

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 1 Applicant's unique citation designation number (optional). 2 See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. 3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). 4 For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. 5 Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. 6 Applicant is to place a check mark here if English language Translation is attached.

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 2 hours 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, 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 (1-800-786-9199) and select option 2.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /G.R.W/

PTO/SB/08 (09-06)
Approved for use through 03/31/2007. OMB 0651-0031
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Substitute for form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

Date Submitted: September 16, 2020

(use as many sheets as necessary)

Sheet 1 of 2

Complete if Known	
Application Number	16/752,441
Filing Date	January 24, 2020
First Named Inventor	Yaron Brunner
Art Unit	3736
Examiner Name	WEINERTH, GIDEON R
Attorney Docket Number	066749-2584

Change(s) applied to document, /J.G./ 2/8/2021

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number: Number-Kind Code[2] (*if known*)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	A1	5,538,213	07-23-1996	~~Brown Office Systems Inc.~~	Brown
	A2	7,779,764	08-24-2010	NAIDU et al.	
	A3	2009/0236482	09-24-2009	~~SS3 Storage Systems LLC~~	Winig et al.
	A4	2011/174939	~~07-21-2013~~ 07-2011	~~Parts Express International~~ Inc.	Taylor
	A5	2013/0154218	06-20-2013	TIILIKAINEN	
	A6	2013/0068903	03-21-2013	~~Peerless Ind Inc.~~	O'Keene
	A7	2013/146551	06-13-2013	~~Electrolux Home Prod Inc.~~	Simpson et al.
	A8	2014/0076759	03-20-2014	ROEHM et al.	
	A9	2015/0274362	10-01-2015	CHRISTOPHER et al.	
	A10	2017/0349013	12-07-2017	GRONHOLM	
	A11	2018/0153312	06-07-2018	Buck James et al.	
	A12	2019/0031222	01-31-2019	TAKYAR et al.	
	A13	2020/0055534	02-20-2020	HASSELL	
	A14	D437,669	02-13-2001	BLASON et al.	
	A15	D456,972	05-07-2002	BLASON et al.	
	A16	D828,671	09-11-2018	COPE et al.	
	A17	D871,013	12-24-2019	LIU	

UNPUBLISHED U.S. PATENT APPLICATION DOCUMENTS

Examiner Initials*	Cite No.[1]	U.S. Patent Application Document: Serial Number-Kind Code[2] (*if known*)	Filing Date of Cited Document MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear

Examiner Signature		Date Considered	

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Atty. Dkt. No. 066749-2584

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Milwaukee Electric Tool Corporation
Title:	Utility Assembly and Coupling Mechanism
Appl. No.:	16/752,441
Filing Date:	January 24, 2020
Examiner:	WEINERTH, GIDEON R
Art Unit:	3736
Confirmation No.:	9540

ISSUE FEE TRANSMITTAL

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

Enclosed herewith please find Issue Fee Transmittal Form PTOL-85(B).

COMMENTS ON STATEMENT OF REASONS FOR ALLOWANCE

On page 2 of the Notice of Allowance dated April 15, 2021, the Examiner set forth various reasons for allowance. While the Applicant agrees that the allowed claims recite a combination of subject matter that is patentable over the cited references, the Applicant notes that the recited subject matter as well as various other subject matter and/or combinations of subject matter may be patentable for other reasons than those given by the Examiner. The Applicant expressly reserves the right to set forth additional and/or alternative reasons for patentability and/or allowance in connection with the present Application or in any other future proceeding.

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2003 - Page 9
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

REMARKS

These Comments on Statement of Reasons for Allowance under 37 C.F.R. § 1.104 are intended to be responsive to the Notice of Allowance dated April 15, 2021.

The requisite fees for payment of the Issue Fee are being charged to Deposit Account No. 18-0882.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 18-0882.

Respectfully submitted,

Date April 15, 2021

By /Derek H. Campbell/

Reinhart Boerner Van Deuren s.c.
Customer Number: 142078
Telephone: (414) 298-8374
Facsimile: (414) 298-8097

Derek H. Campbell
Attorney for Applicant
Registration No. 70,608

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2003 - Page 10
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

Electronic Patent Application Fee Transmittal

Application Number:	16752441
Filing Date:	24-Jan-2020
Title of Invention:	Utility Assembly and Coupling Mechanism
First Named Inventor/Applicant Name:	Yaron Brunner
Filer:	Derek Howard Campbell/Andrea Dietzel
Attorney Docket Number:	066749-2584

Filed as Large Entity

Filing Fees for Utility under 35 USC 111(a)

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:	42465780
Application Number:	16752441
International Application Number:	
Confirmation Number:	9540
Title of Invention:	Utility Assembly and Coupling Mechanism
First Named Inventor/Applicant Name:	Yaron Brunner
Customer Number:	142078
Filer:	Derek Howard Campbell/Andrea Dietzel
Filer Authorized By:	Derek Howard Campbell
Attorney Docket Number:	066749-2584
Receipt Date:	15-APR-2021
Filing Date:	24-JAN-2020
Time Stamp:	16:45:19
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	$1200
RAM confirmation Number	E20214EG45462501
Deposit Account	180882
Authorized User	Andrea Dietzel
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: 37 CFR 1.16 (National application filing, search, and examination fees) 37 CFR 1.17 (Patent application and reexamination processing fees)	

37 CFR 1.19 (Document supply fees)

37 CFR 1.20 (Post Issuance fees)

37 CFR 1.21 (Miscellaneous fees and charges)

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)	066749-2584_PTOL.pdf	110137 2166491a3a13d66c050013dc288aef582a1f08e7	no	1
Warnings:					
Information:					
2	Transmittal Letter	066749-2584_Transmittal.pdf	76632 66329efe14cd440201861ec516ea1084c5d1b1b8	no	2
Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	30432 de1e4f705fcae0ecc04b60e469e22027b1a561ca	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	217201		

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.

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)

142078 7590 04/15/2021

Reinhart (Milwaukee Tool)
ATTN: TRAVIS MCDONNELL, PARALEGAL
1000 NORTH WATER STREET
SUITE 2100
MILWAUKEE, WI 53202

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.
16/752,441	01/24/2020	Yaron Brunner	066749-2584	9540

TITLE OF INVENTION: Utility Assembly and Coupling Mechanism

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	07/15/2021

EXAMINER	ART UNIT	CLASS-SUBCLASS
WEINERTH, GIDEON R	3736	220-004270

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/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-09 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 Reinhart Boerner Van Deuren s.c.
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)
Milwaukee Electric Tool Corporation	Brookfield, Wisconsin
Keter Plastic Ltd.	Herzelyia, Israel

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. 180882

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 /Derek H. Campbell/ Date April 15, 2021

Typed or printed name Derek H. Campbell Registration No. 70,608

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2003 - Page 15
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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Alexandria, Virginia 22313-1450
www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

142078 7590 04/15/2021

Reinhart (Milwaukee Tool)
ATTN: TRAVIS MCDONNELL, PARALEGAL
1000 NORTH WATER STREET
SUITE 2100
MILWAUKEE, WI 53202

EXAMINER	
WEINERTH, GIDEON R	
ART UNIT	**PAPER NUMBER**
3736	

DATE MAILED: 04/15/2021

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/752,441	01/24/2020	Yaron Brunner	066749-2584	9540

TITLE OF INVENTION: Utility Assembly and Coupling Mechanism

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	07/15/2021

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 and an extra copy of the form should be submitted. 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.

PTOL-85 (Rev. 02/11)

PART B - FEE(S) TRANSMITTAL

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(Typed or printed name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/752,441	01/24/2020	Yaron Brunner	066749-2584	9540

TITLE OF INVENTION: Utility Assembly and Coupling Mechanism

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	07/15/2021

EXAMINER	ART UNIT	CLASS-SUBCLASS
WEINERTH, GIDEON R	3736	220-004270

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/SB/122) attached.

❑ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-09 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. _____

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❑ 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. _____

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IPR2024-01400

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.
16/752,441	01/24/2020	Yaron Brunner	066749-2584	9540

142078 7590 04/15/2021

Reinhart (Milwaukee Tool)
ATTN: TRAVIS MCDONNELL, PARALEGAL
1000 NORTH WATER STREET
SUITE 2100
MILWAUKEE, WI 53202

EXAMINER	
WEINERTH, GIDEON R	
ART UNIT	**PAPER NUMBER**
3736	

DATE MAILED: 04/15/2021

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.

PTOL-85 (Rev. 02/11)

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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.** 16/752,441	**Applicant(s)** Brunner et al.	
	Examiner GIDEON R WEINERTH	**Art Unit** 3736	**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 3/29/2021.
   ☐ 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 1-20 . 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 4/1/2021, 3/29/2021.
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 _____.

/GIDEON R WEINERTH/
Examiner, Art Unit 3736

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Reasons for Allowance

1. The following is an examiner's statement of reasons for allowance: The Terminal Disclaimer of 12/18/2020 overcomes the Double Patenting rejection issued on 9/25/2020.

2. Furthermore, the additional references supplied in the IDS submissions of 4/1/20201, and 3/29/2021 have been considered and do not read upon the present claims.

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

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GIDEON R. WEINERTH whose telephone number is (571)270-5121. The examiner can normally be reached on Monday-Friday 10AM-6PM 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, Greg Pickett can be reached on (571) 272-4560. 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.

/GIDEON R WEINERTH/
Examiner, Art Unit 3736

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/752,441	Brunner et al.
	Examiner	**Art Unit**
	GIDEON R WEINERTH	3736

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

CLAIMS

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	09/22/2020	01/02/2021							
	1	✓	=							
	2	✓	=							
	3	✓	=							
	4	✓	=							
	5	✓	=							
	6	✓	=							
	7	✓	=							
	8	✓	=							
	9	✓	=							
	10	✓	=							
	11	✓	=							
	12	✓	=							
	13	✓	=							
	14	✓	=							
	15	✓	=							
	16	✓	=							
	17	✓	=							
	18	✓	=							
	19	✓	=							
	20	✓	=							

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Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
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Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/752,441	Brunner et al.
	Examiner	**Art Unit**
	GIDEON R WEINERTH	3736

CPC						
Symbol					**Type**	**Version**
B65D	/	21	/	0223	F	2013-01-01
B25H	/	3	/	02	I	2013-01-01
A45C	/	5	/	14	I	2013-01-01
A45C	/	7	/	005	I	2013-01-01
A45F	/	3	/	10	I	2013-01-01
B25H	/	1	/	04	I	2013-01-01
A45C	/	13	/	02	I	2013-01-01
B25H	/	3	/	021	I	2013-01-01
B65D	/	21	/	0209	I	2013-01-01
B62B	/	1	/	14	I	2013-01-01
B65D	/	21	/	0228	I	2013-01-01
B65H	/	2701	/	533	A	2013-01-01
A45C	/	7	/	0045	A	2013-01-01
B25H	/	3	/	023	A	2013-01-01
B62B	/	5	/	067	A	2013-01-01
B65D	/	2255	/	00	A	2013-01-01

CPC Combination Sets								
Symbol					**Type**	**Set**	**Ranking**	**Version**
	/		/					

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	20	
/GIDEON R WEINERTH/ Examiner, Art Unit 3736	10 April 2021	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1A

U.S. Patent and Trademark Office — Part of Paper No.: 20210410

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2003 - Page 24
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/752,441	Brunner et al.
	Examiner	**Art Unit**
	GIDEON R WEINERTH	3736

INTERNATIONAL CLASSIFICATION				
CLAIMED				
B65D	/	21	/	02
B65D	/	21	/	028
A45C	/	13	/	02
B25H	/	3	/	02

NON-CLAIMED				
	/		/	

US ORIGINAL CLASSIFICATION	
CLASS	**SUBCLASS**
206	501

CROSS REFERENCES(S)						
CLASS	**SUBCLASS (ONE SUBCLASS PER BLOCK)**					
206	504	508	511			
280	47.18					

NONE		**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	20	
/GIDEON R WEINERTH/ Examiner, Art Unit 3736	10 April 2021	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1A

U.S. Patent and Trademark Office — Part of Paper No.: 20210410

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Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/752,441	Brunner et al.
	Examiner	Art Unit
	GIDEON R WEINERTH	3736

☑ 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		10		19										
	2		11		20										
	3		12												
	4		13												
	5		14												
	6		15												
	7		16												
	8		17												
	9		18												

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	20	
/GIDEON R WEINERTH/ Examiner, Art Unit 3736	10 April 2021	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1A

U.S. Patent and Trademark Office — Part of Paper No.: 20210410

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2003 - Page 26
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Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/752,441	Brunner et al.
	Examiner	Art Unit
	GIDEON R WEINERTH	3736

CPC - Searched*		
Symbol	Date	Examiner

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner

* 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
Update searches from 15826201, 15826232, 16216724, See search history	09/16/2020	GW
Update search, Interference search, IDS search	01/02/2021	GW
review references from Inter Partes filings identified in the IDS of 1/7/2021	01/19/2021	GW
Update search from IDS of 4/1/21 and 3/29/21	04/10/2021	GW

/GIDEON R WEINERTH/ Examiner, Art Unit 3736	/GIDEON R WEINERTH/ Examiner, Art Unit 3736

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Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/752,441	Brunner et al.
	Examiner	Art Unit
	GIDEON R WEINERTH	3736

Interference Search			
US Class/CPC Symbol	**US Subclass/CPC Group**	**Date**	**Examiner**
A45C5	14	01/02/2021	GW
A45C7	0045,005	01/02/2021	GW
A45C13	02	01/02/2021	GW
A45F3	10	01/02/2021	GW
A47B47	00,04	01/02/2021	GW
A47B67	04	01/02/2021	GW
A47B87	02,007,0276	01/02/2021	GW
A47B88	90	01/02/2021	GW
B25H1	04	01/02/2021	GW
B25H3	021,022,023,04,06,02	01/02/2021	GW
B62B1	14	01/02/2021	GW
B62B5	067	01/02/2021	GW
B65D21	067	01/02/2021	GW
B65D2255	00	01/02/2021	GW
B65D25	2823,06	01/02/2021	GW
B65H2701	533	01/02/2021	GW
B60P7	13,06	01/02/2021	GW
E04F2201	013,0146,023,05	01/02/2021	GW
Y10S292	38,53	01/02/2021	GW
Y10T403	7045	01/02/2021	GW

/GIDEON R WEINERTH/ Examiner, Art Unit 3736	/GIDEON R WEINERTH/ Examiner, Art Unit 3736

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2003 - Page 28
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /G.R.W/

PTO/SB/08 (09-06)
Approved for use through 03/31/2007. 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.

Substitute for form 1449/PTO				*Complete if Known*	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				**Application Number**	16/752,441
				Filing Date	January 24, 2020
Date Submitted: April 1, 2021				**First Named Inventor**	Yaron Brunner
				Art Unit	3736
(use as many sheets as necessary)				Examiner Name	WEINERTH, GIDEON R
Sheet	1	of	2	Attorney Docket Number	066749-2584

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] (*if known*)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	A1	509,839	11-28-1893	BOWLEY JOSEPH	
	A2	4,122,925	10-31-1978	Schultheiss; Udo F.	
	A3	4,673,070	06-16-1987	Ambal; Gilbert	
	A4	5,325,966	07-05-1994	Chang; Fu-Ping	
	A5	5,375,709	12-27-1994	Petro; Alan	
	A6	5,429,235	07-04-1995	Chen; Chang	
	A7	6,082,539	07-04-2000	Lee; Pei-Ling	
	A8	6,889,838	05-10-2005	Meier; Sven	
	A9	7,219,969	05-22-2007	Bezzubov; Feodor	
	A10	7,690,856	04-06-2010	Mortensen; Vidar	
	A11	8,602,217	12-10-2013	Sosnovsky; David	
	A12	8,640,913	02-04-2014	Berendes; Elmar	
	A13	10,603,783	03-31-2020	Brocket; Stephen	
	A14	10,703,534	07-01-2020	Brunner; Yaron	
	A15	10,750,833	08-25-2020	Burchia; Rolf	
	A16	10,793,172	10-06-2020	Brunner; Yaron	
	A17	10,829,269	11-10-2020	Gonitianer et al.	
	A18	2010/0224528	09-09-2010	Madsen; Jens Ole	
	A19	2011/0139777	06-16-2011	Sosnovsky; David	
	A20	2012/0152944	06-21-2012	Vilkomirski; Gil	
	A21	2014/0069832	03-13-2014	Roehm; Heiko	
	A22	2014/0123478	05-08-2014	Gylander; Jody	
	A23	2015/0014949	01-15-2015	Dittman; Rick Terrell	
	A24	2018/0229889	08-16-2018	Li; Yun	
	A25	2020/0346819	11-05-2020	KOGEL; Jan	
	A26	2021/0031975	02-04-2021	BRUNNER; Yaron	
	A27	2021/0039831	02-11-2021	BRUNNER; Yaron	
	A28	D738,622	09-15-2015	Sabbag; Yosi	

Examiner Signature	/GIDEON R WEINERTH/	Date Considered	04/10/2021

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 1 Applicant's unique citation designation number (optional). 2 See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. 3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). 4 For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. 5 Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. 6 Applicant is to place a check mark here if English language Translation is attached.

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 2 hours 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, 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 (1-800-786-9199) and select option 2.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /G.R.W/

PTO/SB/08 (09-06)
Approved for use through 03/31/2007. 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.

Substitute for form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				**Application Number**	16/752,441
				Filing Date	January 24, 2020
Date Submitted: April 1, 2021				**First Named Inventor**	Yaron Brunner
				Art Unit	3736
(use as many sheets as necessary)				Examiner Name	WEINERTH, GIDEON R
Sheet	2	of	2	Attorney Docket Number	066749-2584

UNPUBLISHED U.S. PATENT APPLICATION DOCUMENTS					
Examiner Initials*	Cite No.[1]	U.S. Patent Application Document Serial Number-Kind Code[2] (*if known*)	Filing Date of Cited Document MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]-Number[4]-Kind Code[5] (*if known*)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Documents	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[6]

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No.[1]	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, page(s), volume-issue number(s), publisher, city and/or country where published.	T[6]

Examiner Signature	/GIDEON R WEINERTH/	Date Considered	04/10/2021

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ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /G.R.W/ PTO/SB/08 (09-06)
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Substitute for form 1449/PTO				*Complete if Known*	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				**Application Number**	16/752,441
				Filing Date	January 24, 2020
Date Submitted: March 29, 2021				**First Named Inventor**	Yaron Brunner
				Art Unit	3736
(use as many sheets as necessary)				Examiner Name	WEINERTH, GIDEON R
Sheet	1	of	2	Attorney Docket Number	066749-2584

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] (*if known*)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
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	A3	4,243,279	01-06-1981	Ackeret	
	A4	5,433,416	07-18-1995	Johnson	
	A5	8,925,752	01-06-2015	Smith	
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	A7	2017/0138382	05-18-2017	KO	
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	A10	2020/0223585	07-16-2020	Brunner et al.	
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	A12	D753,982	04-19-2016	Guirlinger	
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UNPUBLISHED U.S. PATENT APPLICATION DOCUMENTS

Examiner Initials*	Cite No.[1]	U.S. Patent Application Document Serial Number-Kind Code[2] (*if known*)	Filing Date of Cited Document MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear

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Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]-Number[4]-Kind Code[5] (*if known*)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Documents	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[6]

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Examiner Signature	/GIDEON R WEINERTH/	Date Considered	04/10/2021

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Substitute for form 1449/PTO				***Complete if Known***	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				**Application Number**	16/752,441
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Date Submitted: March 29, 2021				**First Named Inventor**	Yaron Brunner
				Art Unit	3736
(use as many sheets as necessary)				Examiner Name	WEINERTH, GIDEON R
Sheet	2	of	2	Attorney Docket Number	066749-2584

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Examiner Initials*	Cite No.[1]	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, page(s), volume-issue number(s), publisher, city and/or country where published.	T[6]

Examiner Signature	/GIDEON R WEINERTH/	Date Considered	04/10/2021

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If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Bibliographic Data

Application No: 16/752,441

Foreign Priority claimed: ○ Yes ◉ No

35 USC 119 (a-d) conditions met: ☐ Yes ☑ No ☐ Met After Allowance

Verified and Acknowledged: /GIDEON R WEINERTH/ (Examiner's Signature) G.R.W (Initials)

Title: Utility Assembly and Coupling Mechanism

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
01/24/2020	220	3736	066749-2584
RULE			

APPLICANTS

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Christopher S. Hoppe, Milwaukee, WI, UNITED STATES

Steven W. Hyma, Milwaukee, WI, UNITED STATES

CONTINUING DATA

This application is a CON of 16216724 12/11/2018 PAT 10583962

16216724 is a CON of 15826232 11/29/2017 PAT 10703534

15826232 is a CON of PCT/IL2017/050481 04/30/2017

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PCT/IL2017/050481 has PRO of 62330334 05/02/2016

FOREIGN APPLICATIONS

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MILWAUKEE, WI 53202
UNITED STATES

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EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	22	(US-0029543-$ | US-0138382-$ | US-0223585-$ | US-0225371-$ | US-1084360-$ | US-10933501-$ | US-20170138382-$ | US-20190225371-$ | US-20200029543-$ | US-20200223585-$ | US-3999818-$ | US-4243279-$ | US-5433416-$ | US-8925752-$ | US-D285986-$ | US-D753982-$ | US-D898320-$).DID.	US-PGPUB; USPAT; USOCR	OR	ON	2021/04/10 21:40
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S37	20	B65D21/02.cpc. and spring	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 21:12
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S40	60	(french adj cleat)	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 21:16
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S45	22	("3131829" | "3194426" | "3338452" | "4258847" | "4328902" | "4428479" | "5016946" | "5050755" | "5310071" | "5316159" | "5503288" | "5845790").PN. OR ("6276550").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 21:25
S46	7	("1849659").URPN.	USPAT	OR	OFF	2018/04/05 21:29
S47	46	("1849659" | "2774511" | "2916293" | "2994457" | "3053397" | "3100582" | "3113680" | "3219232" | "3282458" | "3647112" | "4000817" | "4176747" | "Re26758" | "Re27649").PN. OR ("4550837").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 21:30
S48	1,066	B65D21/0217,0219,0222,0228,023.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 21:33
S49	92	B65D21/0217,0219,0222,0228,023.cpc. and spring	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 21:33
S50	0	("2017/0121056").URPN.	USPAT	OR	OFF	2018/04/05 21:37
S51	4	("20110139777" | "5301829" | "5427265" | "8602217").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 21:37
S52	16	("20080000899" | "20120312812" | "20130127129" | "3379482" | "3811559" | "4118048" | "4619363" | "5125697" | "5904269" | "6082539" | "6371320" | "6874634" | "6889838" | "7387350" | "7516842").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 21:39
S53	2	("2012/0024739").URPN.	USPAT	OR	OFF	2018/04/05 21:43
S54	4	("2011/0168599").URPN.	USPAT	OR	OFF	2018/04/05 21:44

S55	22	("5699925" | "6959507" | "20090139892" | "3182856" | "20030155267" | "20080308641" | "3182856" | "5353948" | "3581928" | "4351448" | "20090178989" | "2634020" | "3387732" | "5755180" | "6761266" | "20050224494" | "7246718" | "5606820" | "20090236255" | "5469961").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 21:45
S56	237	206/501.ccls.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 21:46
S57	2	("2010/0219193").URPN.	USPAT	OR	OFF	2018/04/05 21:50
S58	72	("0879455" | "20040134390" | "20040178208" | "20060254946" | "20060254947" | "20080017650" | "20100219193" | "2695115" | "2849151" | "3103278" | "3117692" | "3383009" | "3391824" | "3407758" | "3419184" | "3481502" | "3616943" | "3754645" | "3756396" | "3759416" | "3811747" | "3916803" | "3926321" | "3968879" | "4287997" | "4618059" | "4655360" | "4765252" | "4832200" | "4848605" | "4889235" | "5054617" | "5203494" | "5392945" | "5404829" | "5454477" | "5641090" | "5718350" | "5769230" | "5779051" | "5974981" | "6021916" | "6085467" | "6186345" | "6237758" | "6308858" | "6371364" | "6446563" | "6457599" | "6585090" | "6622642" | "6662950" | "6698362" | "7163122" | "D236326" | "D333094" | "D361715" | "D446017" | "D500924").PN. OR ("8851287").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 21:50
S59	36	("20020096844" | "4066155" | "4813542" | "5099968" | "5564805" | "5906291" | "D439739").PN. OR ("6585090").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 21:52
S60	73	("20030029750" | "20030123965" | "20050072642" | "20050077136" | "20060119060" | "20070012694" | "20070068757" | "2497173" | "3061057" | "3452846" | "3532355" | "3572253" | "3650216" | "3861703" | "3891230" | "4081061" | "4118048" | "4122925" | "4350194" | "4621716" | "4657135" | "4693345" | "4738340" | "4792025" | "4813521" | "4951818" | "5038842" | "5048649" | "5109961" | "5142445" | "5178244" | "5186290" | "5197579" | "5339934" | "5373104" | "5379870" |	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 21:53

		"5407039" | "5447216" | "5484045" | "5484046" | "5632496" | "5713439" | "5890571" | "5927361" | "6073737" | "6116390" | "6164425" | "6213266" | "6401890" | "6520327" | "6585090" | "6634496" | "6758334" | "6976566" | "7077252" | "7232018" | "7380685" | "7398868" | "7726483" | "7780002" | "7942282" | "D294775" | "D453623").PN. OR ("8561769").URPN.				
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S62	10	("20050199623" | "5765707" | "5829595" | "6024223" | "7337908").PN. OR ("8146771").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:03
S63	42	("0621601" | "2761582" | "3113690" | "3616943" | "3643993" | "3823973" | "3828964" | "3977558" | "4000704" | "4042111" | "4416374" | "4678084" | "4887731" | "5011036" | "5022546" | "5105967").PN. OR ("5186330").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:05
S64	74	("0879455" | "2849151" | "3005282" | "3371816" | "3393858" | "3481502").PN. OR ("3616943").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:08
S65	36	("1234730" | "20020145022" | "20030010799" | "20040207225" | "20090212584" | "2578238" | "2883764" | "3002650" | "3131829" | "3351228" | "3374914" | "3616943" | "4754883" | "4838745" | "4941784" | "5025964" | "5392945" | "5469999" | "5538153" | "5671511" | "5676251" | "5687895" | "5855310" | "6471278" | "7159730" | "7329451" | "7537119" | "D264014" | "D333094").PN. OR ("9738198").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:09

S66	75	("0879455" | "20040178208" | "20060254947" | "2695115" | "2849151" | "2939603" | "3103278" | "3117692" | "3383009" | "3391824" | "3419184" | "3481502" | "3616943" | "3754645" | "3756396" | "3759416" | "3811747" | "3968879" | "4287997" | "4655360" | "4671411" | "4765252" | "4832200" | "4848605" | "5042674" | "5203494" | "5392945" | "5454477" | "5566824" | "5641090" | "5718350" | "5769230" | "5779051" | "6021916" | "6085467" | "6186345" | "6237758" | "6308858" | "6367630" | "6371364" | "6457599" | "6585090" | "6662950" | "7163122" | "D333094" | "D361715" | "D446017" | "D500924").PN. OR ("7537119").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:10
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S68	32	("4506798" | "4626155" | "4741449" | "5109985" | "5123541" | "5190179" | "5722328" | "5862917").PN. OR ("6024223").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:12
S69	4	("1665238").URPN.	USPAT	OR	OFF	2018/04/05 22:15
S70	39	("2885135" | "3376046" | "3539071" | "3568879" | "3987829" | "4174950" | "4765252" | "4844263" | "D248015").PN. OR ("D333094").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:17
S71	53	("2761582" | "3117692" | "3360162" | "3379341" | "3392875" | "3419184" | "3675815" | "3759416" | "3979016" | "4093071" | "4106624" | "4189052" | "4379508").PN. OR ("4832200").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:19
S72	79	("3117692").URPN.	USPAT	OR	OFF	2018/04/05 22:22

S73	45	("1762635" | "2531671" | "2614399" | "3117692" | "3498494" | "3501044" | "3502241" | "3667647" | "3751852").PN. OR ("4279354").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:24
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S75	45	("1762635" | "2531671" | "2614399" | "3117692" | "3498494" | "3501044" | "3502241" | "3667647" | "3751852").PN. OR ("4279354").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:26
S76	110	("2457842" | "2483464" | "2664219" | "2702142" | "3073466" | "3130855" | "3140007" | "3586204" | "3828964").PN. OR ("4287997").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:30
S77	63	("2461526" | "3078484" | "3114486" | "3233803" | "3749294" | "3902640" | "3915189" | "4082208" | "4287997" | "4307826" | "4366922" | "4424841" | "4491258" | "4545414" | "4673070" | "4790432" | "4813542" | "4884731" | "5131576" | "5184763" | "5321904" | "5419473").PN. OR ("5628443").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:33
S78	151	("1409838" | "20010040080" | "20020074332" | "20020130005" | "20020185350" | "20030034215" | "20030034636" | "20040000457" | "20040004332" | "20040026199" | "20040074725" | "20040163910" | "20040211634" | "20040238303" | "20050077133" | "20050077706" | "20050098402" | "20050103590" | "20050150733" | "20050258621" | "20050285359" | "20060010644" | "20060086583" | "20060102677" | "20060163305" | "20060175170" | "20060196743" | "20060207848" | "20080060953" | "20080136133" | "20080223679" | "20080236972" | "20080308369" | "20080308370" | "20090057082" | "20090139813" | "20090160147" | "20090218187" | "20100000805" | "20100025174" | "20100095480" | "20100108452" | "20100147642" | "20100263977" | "20100307879" | "20100308563" | "20110247910" | "20120160617" | "20120261223" | "20150091264" | "20160045000" | "2454438" | "2602675" | "3131829" | "3178197" | "3317081" |	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:34

		"3659867" | "3842953" | "3891230" | "3974898" | "4087102" | "4314624" | "4335895" | "4575109" | "4588055" | "4673070" | "4917392" | "4953257" | "4969660" | "5072958" | "5105962" | "5127662" | "5263727" | "5310071" | "5348325" | "5533231" | "5628443" | "5630601" | "5749503" | "5803471" | "5815843" | "5873145" | "5984154" | "5984327" | "6016893" | "6042127" | "6047442" | "6141841" | "6179176" | "6182981" | "6186295" | "6196366" | "6196560" | "6213266" | "6213267" | "6237734" | "6260871" | "6279705" | "6289554" | "6305587" | "6360400" | "6367602" | "6401888" | "6401890" | "6409412" | "6454065" | "6471019" | "6474524").PN. OR ("6484362" | "6530507" | "6533086" | "6575493" | "6591950" | "6604617" | "6609271" | "6736073" | "6769701" | "6832670" | "6880685" | "6923352" | "6961976" | "6964420" | "7066311" | "7070190" | "7073694" | "7093700" | "7097181" | "7097183" | "7143912" | "7226073" | "7232018" | "7237660" | "7281616" | "7284304" | "7318507" | "7328779" | "7350648" | "7374183" | "7426985" | "7441785" | "7478803" | "7594569" | "7597341" | "7780026" | "8607947").PN. OR ("9888752").URPN.				
S79	6	("2008/0308369").URPN.	USPAT	OR	OFF	2018/04/05 22:35
S80	45	("0672173" | "1084360" | "20020144376" | "20040084269" | "20040173427" | "20040238241" | "20050077136" | "20050092568" | "20080308369" | "20090095588" | "20090101461" | "20100059322" | "20100170761" | "20100236886" | "20100270116" | "20110168507" | "20130037364" | "20130175129" | "20130213753" | "20130220754" | "2581417" | "4836343" | "5099968" | "5355980" | "5560458" | "5671832" | "5829559" | "5927450" | "5988334" | "6347693" | "6533086" | "6536568" | "7322477" | "7322585" | "7503569" | "7909149" | "8087513" | "D516869" | "D671316").PN. OR ("9027722").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:36

S81	35	("0922567" | "1084360" | "1567461" | "2372845" | "2428906" | "2801666" | "2858957" | "3837447" | "4098312" | "4122925" | "4142563" | "4257463" | "4286639" | "4673070" | "4744446").PN. OR ("4836343").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:39
S82	51	("0778785" | "1567461" | "2372845" | "2428906" | "2989998" | "3631572" | "3696850" | "4122925" | "4128194" | "4256245" | "4424841").PN. OR ("4673070").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:40
S83	33	("0842498" | "1689399" | "3114486" | "3698045" | "4231135" | "4673070" | "4799298" | "4934573" | "5205448" | "5259093" | "5465425" | "5604958" | "5632071" | "5724707" | "5815843" | "6108816" | "7080430" | "7251867").PN. OR ("7526842").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:41
S84	23	("2428906" | "2707035" | "3225951" | "3319744" | "3696850" | "3958731").PN. OR ("4122925").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:43
S85	33	("1973819" | "2007696" | "3373911").PN. OR ("4142563").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:46
S86	12	("2858957").URPN.	USPAT	OR	OFF	2018/04/05 22:48
S87	12	("20060071581" | "20080060964" | "2858957" | "3346137" | "3568879" | "4258847" | "4592601" | "4685565" | "4863222" | "7311202").PN. OR ("9724820").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:49
S88	43	("2128854" | "3743372").PN. OR ("4863222").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:49
S89	73	("2842420" | "2998128" | "3032381" | "3294463" | "3501044" | "3552817").PN. OR ("3743372").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:51
S90	36	("2011962" | "3514170" | "3552817" | "3743372" | "3851936" | "3999818" | "4198777" | "4238032" | "4353470" | "4589546" | "4744612" | "4782619" | "4874210" | "4907703" | "5046789" | "5137340" | "5176435" | "5191983" | "5344024" | "5399004" | "5454634").PN. OR ("6050657").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:53
S91	17	("3131829" | "3429632" | "3552579" | "3707023" | "4062302" | "4239306" | "5246284").PN. OR ("5454634").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:55

S92	55	("0511617" | "1890000" | "2492697" | "2557630" | "2807387" | "3203744" | "3283915" | "3514170" | "3743372" | "3758181" | "3918781" | "3999818" | "4026615" | "4056295" | "4120549").PN. OR ("4243279").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:59
S93	45	("2593998" | "2653072" | "2730423" | "3131829" | "3219400" | "3514170" | "3552817" | "3563624" | "3743372" | "3814489").PN. OR ("3999818").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 23:03
S94	14	("2593998").URPN.	USPAT	OR	OFF	2018/04/05 23:06
S95	52	("4081061" | "4621716" | "5316159" | "6213266" | "6213267" | "7976024" | "1084360" | "3749273" | "4570799" | "4995436" | "5779051" | "D447944" | "3103278" | "3374917" | "5000713" | "6585090" | "5098328" | "D359315" | "20030132184" | "20050199459" | "4813542" | "0480709" | "5062539" | "5186290" | "6276550" | "D346627" | "5310071" | "20040222059" | "3583590" | "3836043" | "4287997" | "4656840" | "5167336" | "5392945" | "6257381" | "20040000458" | "4573595" | "7644828" | "D483200" | "7648407" | "3811747" | "20010027902" | "5099968" | "5485920" | "5709304" | "5735422" | "3346137").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 23:14
S96	22	("3131829" | "3194426" | "3338452" | "4258847" | "4328902" | "4428479" | "5016946" | "5050755" | "5310071" | "5316159" | "5503288" | "5845790").PN. OR ("6276550").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 23:16
S97	41	("2454438" | "2495132" | "3131829" | "3194426" | "3297196" | "3317081" | "3343705" | "3404805" | "3851936" | "4192422").PN. OR ("4328902").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 23:18
S98	43	("1092651" | "2565969" | "2891639" | "3028207" | "3032381" | "3506321").PN. OR ("3974898").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 23:29
S99	11	("0907507" | "1626482" | "2343525" | "3974898" | "4065014").PN. OR ("4423687").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 23:30
S100	32	("3481502").URPN.	USPAT	OR	OFF	2018/04/05 23:38
S101	8	(("1112943") or ("2255513") or ("2849151") or ("3371816")).PN.	USPAT; USOCR	OR	OFF	2018/04/05 23:41

S102	16	("2849151").URPN.	USPAT	OR	OFF	2018/04/05 23:41
S103	8	(("0993866") or ("1342909") or ("1514512") or ("1640368")).PN.	USPAT; USOCR	OR	OFF	2018/04/05 23:42
S104	21	("1112943").URPN.	USPAT	OR	OFF	2018/04/05 23:43
S105	16	("2849151").URPN.	USPAT	OR	OFF	2018/04/06 12:32
S106	8	(("0993866") or ("1342909") or ("1514512") or ("1640368")).PN.	USPAT; USOCR	OR	OFF	2018/04/06 12:33
S107	22	("879455").URPN.	USPAT	OR	OFF	2018/04/06 12:34
S108	16	("2849151").URPN.	USPAT	OR	OFF	2018/04/06 13:10
S109	8	(("0993866") or ("1342909") or ("1514512") or ("1640368")).PN.	USPAT; USOCR	OR	OFF	2018/04/06 13:11
S110	37	("3899229" | "4431237" | "4519655" | "4828341" | "4889254" | "5191983").PN. OR ("5469961").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 13:11
S111	25	("20030155267" | "20050224494" | "20080308641" | "20090139892" | "20090178989" | "20090236255" | "2634020" | "3182856" | "3387732" | "3581928" | "4351448" | "5353948" | "5469961" | "5606820" | "5699925" | "5755180" | "6761266" | "6959507" | "7246718").PN. OR ("8677661").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 13:12
S112	24	("1226708" | "2833137" | "2834121" | "2843943" | "3139744" | "3220229" | "3545235" | "3824813" | "4507942" | "4551996" | "4663948" | "4680948" | "4821535" | "4972687" | "4989426" | "5469961" | "5653416").PN. OR ("5951130").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 13:13
S113	118	(US-20130127129-$ or US-20110155613-$ or US-20110139665-$ or US-20040195793-$ or US-20020000440-$ or US-20120292213-$ or US-20070012694-$ or US-20150336710-$ or US-20020134700-$ or US-20100270764-$ or US-20100000893-$ or US-20050062244-$ or US-20040183266-$ or US-20020014488-$ or US-20020113386-$ or US-20030196860-$ or US-20170259956-$ or US-20160144500-$ or US-20160130034-$ or US-20150274362-$ or US-20110168599-$ or US-20090178989-$ or US-20100219193-$ or US-20060254946-$ or US-20070068757-	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:03

		$ or US-20090178946-$).did. or (US-20050199459-$ or US-20080308369-$ or US-20050077136-$).did. or (US-7503569-$ or US-9022234-$ or US-8875888-$ or US-8657307-$ or US-8590704-$ or US-3182856-$ or US-8459495-$ or US-7097036-$ or US-6193062-$ or US-9393684-$ or US-6637592-$ or US-D730088-$ or US-5833065-$ or US-5482162-$ or US-5244265-$ or US-4244509-$ or US-9643629-$ or US-7780026-$ or US-9132543-$ or US-8567796-$ or US-8226092-$ or US-8201837-$ or US-8132819-$ or US-7997594-$ or US-3010775-$ or US-9669930-$).did. or (US-4813542-$ or US-6585090-$ or US-6085925-$ or US-D776106-$ or US-6839238-$ or US-9609964-$ or US-7152752-$ or US-9506489-$ or US-3944282-$ or US-5241765-$ or US-4389078-$ or US-1849659-$ or US-4405057-$ or US-9802741-$ or US-8851287-$ or US-8763836-$ or US-8561769-$ or US-D808164-$ or US-9550605-$ or US-4887731-$ or US-9738198-$ or US-7537119-$ or US-8813960-$ or US-9669968-$ or US-6024223-$ or US-1665238-$ or US-D333094-$).did. or (US-3376046-$ or US-4832200-$ or US-D364558-$ or US-3419184-$ or US-3117692-$ or US-8684222-$ or US-2328689-$ or US-4287997-$ or US-5628443-$ or US-9888752-$ or US-9027722-$ or US-4673070-$ or US-7526842-$ or US-5465839-$ or US-9724820-$ or US-4863222-$ or US-3743372-$ or US-6050657-$ or US-5454634-$ or US-3851936-$ or US-5602721-$ or US-3999818-$ or US-5271515-$ or US-4243279-$ or US-6276550-$ or US-4328902-$ or US-7350648-$).did. or (US-5407074-$ or US-3481502-$ or US-2849151-$ or US-3616943-$ or US-5469961-$ or US-8677661-$ or US-5951130-$).did. or (US-3117692-$ or US-2593998-$).did.				
S115	286	B65D21/0223.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:05

S116	226	B65D21/0224.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:05
S117	2,198	B25H3/021,022,023,04,06.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:07
S118	436	A47B47/00.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:10
S119	1,076	A47B87/02,007,0276.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:10
S120	550	A47B67/04.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:11
S121	770	Y10T403/7045.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:12
S122	9	("7451578" | "6209278" | "4599841" | "6363677" | "6955020" | "7040068" | "6588166" | "6804926" | "6658808").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:14
S123	102	("0890436" | "2740167" | "3310919" | "3988187" | "5295341" | "5630304" | "6023907" | "1854396" | "2381469" | "20030029116" | "3040388" | "3192574" | "3347048" | "3526420" | "4599841" | "6098365" | "5899038" | "20020112433" | "20030029115" | "2381469" | "3673751" | "4599841" | "4819932" | "5086599" | "5363616" | "6029416" | "6216409" | "6324809" | "6546691" | "6606834" | "6647690" | "20030029115" | "3902291" | "5295341" | "5630304" | "6421970" | "6763643" | "0753791" | "20030029116" | "2430200" | "3579941" | "5283102" | "6209278" | "6647690" | "6854235" | "20030024201" | "3579941" | "3673751" | "4426820" | "4741136" | "5860267" | "6023907" | "6122879" | "6769835" | "0338653" | "1776188" | "1854396" | "20030024201" | "3172508" | "3175476" | "3902291" | "4094090" | "5706621" | "6122879" | "6397548" | "2740167" | "20020112433" | "3175476" | "4416097" | "5797237" | "6029416" | "6182410" | "6397548" | "0890436" | "0623562" | "3040388" | "3192574" | "3347048" | "4426820" | "5860267" | "6098365" | "6490836" | "20050210810" | "3310919" | "4819932" | "5086599" | "5283102" |	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:15

		"6006486" | "6101778" | "6209278" | "6324809" | "3720027" | "20020170258" | "4416097" | "4807416" | "5165816" | "5618602" | "6094882" | "6101778" | "6182410" | "6513862" | "20020170258" | "20030024200" | "3657852" | "3988187" | "5165816" | "6094882" | "6591568" | "5274979" | "6772568" | "3200553" | "3657852" | "4741136" | "4819532" | "5797237" | "6006486" | "6505452" | "6591568" | "6854235" | "4094090" | "5363616" | "5618602" | "6513862" | "6606834" | "5548937" | "6880307" | "7065935" | "20030024200" | "2138085" | "2142305" | "3526420" | "5348778" | "20050210810" | "1776188" | "2138085" | "2142305" | "2430200" | "3172508" | "0338653" | "5706621" | "6490836" | "6504552" | "6546691" | "5274979" | "1723306").PN.				
S124	373	("2740167").URPN.	USPAT	OR	OFF	2018/04/06 18:16
S125	477	("0087853" | "0108068" | "0124228" | "0213740" | "0274354" | "0316176" | "0634581" | "0861911" | "1194636" | "1723306" | "1743492" | "1809393" | "1902716" | "20010024707" | "20020031646" | "20020069611" | "20020092263" | "20020170258" | "20020170259" | "20020178674" | "20020178680" | "20020189190" | "20020194807" | "20030009971" | "20030024199" | "20030037504" | "20030084636" | "20030094230" | "20030101681" | "20030145549" | "20030180091" | "20030188504" | "20030196405" | "20040016196" | "20040031227" | "20040049999" | "20040060255" | "20040068954" | "20040123548" | "20040128934" | "20040139676" | "20040139678" | "20040159066" | "20040168392" | "20040177584" | "20040182033" | "20040182036" | "20040200175" | "20040211143" | "20040244325" | "20040250492" | "20040261348" | "20050003132" | "20050028474" | "20050050827" | "20050160694" | "20050166514" | "20050205161" | "20050210810" | "20050235593" | "20050252130" | "20050268570" | "20060053724" | "20060070333" |	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:17

		"20060101769" | "20060156670" | "20060174577" | "20060179754" | "20060236642" | "20060260254" | "20060272262" | "20070006543" | "20070011981" | "20070028547" | "20070065293" | "20070175156" | "20070193178" | "20080000182" | "20080000186" | "20080000187" | "20080005998" | "20080010931" | "20080010937" | "20080028707" | "20080034708" | "20080041008" | "20080066415" | "20080104921" | "20080110125" | "20080134607" | "20080134613" | "20080134614" | "20080155930" | "20080216434" | "20080216920" | "20080295432" | "20090133353").PN. OR ("20090193748" | "20100293879" | "20100300031" | "20100319290" | "20100319291" | "20110030303" | "20110041996" | "20110088344" | "20110088345" | "20110088346" | "20110154763" | "20110167750" | "20110225922" | "20110252733" | "20110283650" | "20120017533" | "20120031029" | "20120036804" | "20120151865" | "20120174515" | "20120174520" | "20120279161" | "20130008117" | "20130014463" | "20130019555" | "20130042562" | "20130042563" | "20130042564" | "20130042565" | "20130047536" | "20130081349" | "20130111845" | "20130145708" | "20130160391" | "20130232905" | "20130239508" | "20130263454" | "20130263547" | "20130318906" | "20140007539" | "20140020324" | "20140033634" | "20140053497" | "20140059966" | "20140069043" | "20140090335" | "20140109501" | "20140109506" | "20140123586" | "20140150369" | "20140190112" | "20140208677" | "20140223852" | "20140237931" | "20140250813" | "20140260060" | "20140305065" | "20140366476" | "20140373478" | "20140373480" | "20150000221" | "20150013260" | "20150059281" | "20150089896" | "20150121796" | "20150152644" | "20150167318" | "20150211239" | "20150233125" | "20150267419" | "20150300029" | "20150330088" | "20150337537" |				

		"20160032596" | "20160060879" | "20160069088" | "20160076260" | "20160090744" | "20160153200" | "20160168866" | "20160186426" | "20160194884" | "20160201336" | "20160251859" | "20160251860" | "20160281368" | "20160281370" | "20160340913" | "20170037641" | "2026511" | "2204675" | "2266464" | "2277758" | "2430200" | "2596280").PN. OR ("2732706" | "2740167" | "2858584" | "2863185" | "2865058" | "2889016" | "3023681" | "3077703" | "3099110" | "3147522" | "3271787" | "3325585" | "3331180" | "3378958" | "3396640" | "3512324" | "3517927" | "3526071" | "3535844" | "3572224" | "3579941" | "3720027" | "3722379" | "3731445" | "3742669" | "3760547" | "3760548" | "3778954" | "3849235" | "3919820" | "3950915" | "3994609" | "4007994" | "4030852" | "4037377" | "4041665" | "4064571" | "4080086" | "4082129" | "4100710" | "4104840" | "4107892" | "4113399" | "4169688" | "4196554" | "4227430" | "4299070" | "4304083" | "4426820" | "4447172" | "4512131" | "4599841" | "4648165" | "4819932" | "5007222" | "5026112" | "5071282" | "5135597" | "5148850" | "5173012" | "5182892" | "5247773" | "5272850" | "5274979" | "5295341" | "5344700" | "5348778" | "5373674" | "5465546" | "5485702" | "5502939" | "5548937" | "5577357" | "5598682" | "5618602" | "5634309" | "5658086" | "5694730" | "5755068" | "5860267" | "5899038" | "5910084" | "5950389" | "5970675" | "6006486" | "6029416" | "6052960" | "6065262" | "6173548" | "6182410" | "6203653" | "6254301" | "6295779" | "6314701" | "6332733" | "6339908" | "6345481" | "6358352" | "6363677" | "6385936" | "6418683" | "6446413" | "6449918" | "6450235" | "6490836" | "6505452" | "6546691" | "6553724" | "6576079" | "6584747" | "6591568" | "6601359" | "6617009" | "6647689" | "6647690" | "6651400" | "6670019" | "6681820" | "6684592" | "6685391" | "6729091" | "6763643" | "6766622" | "6769219" | "6769835").PN. OR ("6802166" | "6804926" | "6808777" | "6854235" |			

		"6862857" | "6865855" | "6874291" | "6880307" | "6948716" | "7021019" | "7040068" | "7051486" | "7108031" | "7121058" | "7152383" | "7188456" | "7219392" | "7251916" | "7337588" | "7377081" | "7451578" | "7454875" | "7516588" | "7517427" | "7533500" | "7556849" | "7568322" | "7584583" | "7614197" | "7617651" | "7634884" | "7637068" | "7644553" | "7677005" | "7716889" | "7721503" | "7757452" | "7802411" | "7806624" | "7841144" | "7841145" | "7841150" | "7856789" | "7861482" | "7866110" | "7908815" | "7908816" | "7930862" | "7954295" | "7980041" | "8006458" | "8033074" | "8042311" | "8061104" | "8079196" | "8112967" | "8171692" | "8181416" | "8234830" | "8245478" | "8341914" | "8341915" | "8353140" | "8359805" | "8381477" | "8387327" | "8448402" | "8499521" | "8505257" | "8511031" | "8528289" | "8544230" | "8544234" | "8572922" | "8578675" | "8596013" | "8627862" | "8640424" | "8650826" | "8677714" | "8689512" | "8701368" | "8707650" | "8713886" | "8733065" | "8733410" | "8763341" | "8769905" | "8776473" | "8844236" | "8857126" | "8869485" | "8898988" | "8925274" | "8959866" | "8973331" | "9027306" | "9051738" | "9068360" | "9091077" | "9194134" | "9212492" | "9216541" | "9238917" | "9284737" | "9309679" | "9316002" | "9340974" | "9347469" | "9359774" | "9366036" | "9376821" | "9382716" | "9388584" | "9428919" | "9453347" | "9458634" | "9482012" | "9540826" | "9663940" | "RE30154").PN. OR ("9803375").URPN.				
S126	100	("2732706").URPN.	USPAT	OR	OFF	2018/04/06 18:21
S127	16	(("1351133") or ("1459189") or ("1465421") or ("1652421") or ("1652305") or ("1667160") or ("2201110") or ("2460330")).PN.	USPAT; USOCR	OR	OFF	2018/04/06 18:22
S128	6	(("0935402") or ("1925070") or ("2453918")).PN.	USPAT; USOCR	OR	OFF	2018/04/06 18:23
S129	3	("3351366").URPN.	USPAT	OR	OFF	2018/04/06 18:39

S130	51	("1575270" | "20020170933" | "20030141329" | "20050247653" | "20060237509" | "20080142462" | "20080179370" | "20080185353" | "20090145789" | "20090145866" | "20140075650" | "20170266804" | "2290468" | "2546720" | "2763377" | "2964196" | "3145031" | "3536286" | "4264013" | "4923202" | "4932576" | "5395023" | "5511705" | "5722576" | "5881891" | "5971242" | "6213365" | "6666465" | "6698632" | "6874624" | "7090075" | "7322482" | "7686196" | "7699197" | "7726495" | "7762440" | "8267260" | "8510868" | "9038869" | "D163637" | "D165553" | "D328681").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:42
S131	18	("2715966" | "20050247653" | "4771897" | "5429252" | "5740927" | "5845792" | "5915573" | "6152312" | "6267338" | "6435357" | "6564949" | "6581788" | "6698603" | "6871749" | "7014052" | "7028854" | "7117998").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:43
S132	7	("20100314271" | "8991599" | "5799787" | "7686180" | "8695795" | "8991599" | "20100314271" | "5797508" | "3862689").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:46
S133	2	("20080236562" | "7723655").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:47
S134	6	(matthew near3 vargo).inv.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:49
S135	75	(Hoppe near2 Christopher).inv.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:49
S136	14	B65D25/2823.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:54
S137	351	B65D25/06.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:54
S138	73	(Milwaukee adj Electric).as. and (stack box)	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 19:01
S139	8	(Milwaukee adj Electric).as. and ("220" "206" "215").clas.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 19:02

S140	8	(Milwaukee and tool).as. and ("220" "206" "215").clas.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 19:02
S141	84	(Milwaukee and tool).as. and latch	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 19:03
S142	37	(Milwaukee and tool).as. and (stack stacked stacking)	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 19:04
S143	629	("1275862" | "20010022257" | "20020008125" | "20020014507" | "20020017752" | "20020043534" | "20020074332" | "20020084159" | "20020125160" | "20020162716" | "20020163284" | "20030034636" | "20030042091" | "20030042093" | "20030075468" | "20030132080" | "20030151218" | "20040004332" | "20040026199" | "20040026294" | "20040036240" | "20040108179" | "20040112777" | "20040144606" | "20040154889" | "20040163910" | "20040188201" | "20040188205" | "20040195791" | "20040206431" | "20040245735" | "20050023096" | "20050056511" | "20050109650" | "20050121275" | "20050121868" | "20050194756" | "20050224305" | "20050279123" | "20060017293" | "20060124505" | "20060144732" | "20060151967" | "20060196744" | "20060201834" | "20060213735" | "20070045370" | "20070045974" | "20070051765" | "20070074941" | "20070137960" | "20070164064" | "20070170671" | "20070194543" | "20070200309" | "20070215425" | "20070241113" | "20070267371" | "20070290466" | "20080017463" | "20080017537" | "20080035508" | "20080035510" | "20080067206" | "20080135364" | "20080135366" | "20080136130" | "20080152944" | "20080164842" | "20080169739" | "20080217130" | "20080230416" | "20090014974" | "20090080809" | "20090139813" | "20090166141" | "20090211932" | "20090212536" | "20090236810" | "20090250365" | "20090301833" | "20100000805" | "20100012538" | "20100012655" |	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 19:04

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OR ("6367603" | "6371320" | "6371346" |
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"6755448" | "6758534" | "6761366" |

		"6789670" | "6820878" | "6840359" | "6860059" | "6910560" | "6915902" | "6923352" | "6926129" | "6938740" | "6938741" | "6948724" | "6955381" | "6976566" | "6978890" | "7004481" | "7008031" | "7021637" | "7036641" | "7048133" | "7066311" | "7073694" | "7104555" | "7108131" | "7111853" | "7117991" | "7121407" | "7144020" | "7147089" | "7158376" | "7168713" | "7201243" | "7225923" | "7228983" | "7237673" | "7237688" | "7240909" | "7246704" | "7270223" | "7296808" | "7316309" | "7318542" | "7322470" | "7322583" | "7326428" | "7331454" | "7334680" | "7357250" | "7357268" | "7367451" | "7370891" | "7374183" | "7387304" | "7387305" | "7387350" | "7389997" | "7401698" | "7401700" | "7416066" | "7418846" | "7438084" | "7438308" | "7458601" | "7461730" | "7467695" | "7478711" | "7500547" | "7503439" | "7503440" | "7503569" | "7516502" | "7540364" | "7552560" | "7552950" | "7571915" | "7581736" | "7591627" | "7594569" | "7597341" | "7600618" | "7600640").PN. OR ("7631380" | "7661530" | "7661683" | "7780051" | "7823991" | "7837053" | "7837206" | "7845653" | "7850020" | "7854321" | "7874328" | "7883096" | "7938412" | "7946609" | "7984820" | "7997591" | "8037983" | "8056919" | "8056943" | "8061536" | "8087513" | "8123007" | "8123068" | "8132289" | "8132819" | "8152037" | "8191910" | "8210387" | "8256591" | "8262106" | "8267230" | "8267245" | "8267247" | "8272628" | "8282113" | "8327576" | "8328247" | "8328530" | "8342543" | "8365886" | "8376177" | "8434617" | "8439174" | "8469195" | "8505729" | "8517155" | "8517400" | "8534434" | "8567796" | "8657307" | "8662268" | "8695770" | "8708351" | "8752683" | "8844689" | "8851282" | "8869960" | "8888111" | "8919896" | "8936140" | "8936258" | "8960959" | "8979073" | "8979100" | "9060577" | "9066565" | "9067614" | "9095193" | "9260129" | "9295313" | "D258705" | "D259154" | "D272203" | "D309981" | "D316485" | "D326815" | "D333215" | "D333487" | "D347731" |			

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S144	325	B65D21/0212.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 19:09
S145	27	("4212415" | "4664283" | "4823955" | "4896926" | "5246105").PN. OR ("5544751").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 19:11
S146	44	("1699130" | "2072672" | "2551814" | "2633285" | "2736487" | "3010638" | "3361322" | "3623650" | "3632037" | "3713579" | "3905478" | "3905541" | "3921896" | "4002261" | "4023617" | "4187977" | "4230233" | "4245773" | "4251006" | "4277015" | "4291830" | "4389013" | "4482074" | "4643314" | "4685610" | "4762270" | "4763833" | "4828894" | "4884739" | "4911356" | "4948039" | "4993623" | "5038998" | "5116290" | "5190213").PN. OR ("5429260").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 19:12
S147	0	("1140005").URPN.	USPAT	OR	OFF	2018/04/06 19:30

S148	119	("1267650" | "1999162" | "3163268" | "3379482" | "3419184" | "3425471" | "3498689" | "3642168" | "3700137" | "3979016" | "3987829" | "4161261" | "4293073" | "4303158" | "4523692" | "4664347" | "4799503" | "4804092" | "4819795" | "4915913" | "4982863" | "4984687" | "5011013" | "5024471" | "5040834" | "5042674" | "5065885" | "5065887" | "5080250" | "5103994" | "5117979" | "5123564" | "5176281" | "5186330" | "5190152" | "5193706" | "5244265" | "5319937" | "D237135" | "D237611" | "D238148" | "D239695" | "D246872" | "D248280" | "D257934" | "D258721" | "D277797" | "D286937" | "D292711" | "D302774" | "D312573" | "D316516" | "D319016" | "D321090" | "D321091" | "D322164" | "D325323" | "D325324" | "D326775" | "D326815" | "D327646" | "D328425" | "D328818" | "D328819" | "D329331" | "D329747" | "D330161" | "D330162" | "D330329" | "D331317" | "D335960" | "D336366" | "D339471" | "D342364").PN. OR ("5564805").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 20:05
S149	62	("0198092" | "0564782" | "1063046" | "1268124" | "1740470" | "1987822" | "2011197" | "2094805" | "2122969" | "2504722" | "2759507" | "2786500" | "2791251" | "2799306" | "3018355" | "3615087" | "3746210" | "3851756" | "4061323" | "4239195" | "4256294" | "4278243" | "4303158" | "4378828" | "4460085" | "4909491" | "4911296" | "5011013" | "5117979" | "5193706" | "D253212" | "D263533" | "D288867").PN. OR ("5595228").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 22:03
S150	15	("2587829" | "2610761" | "2740517" | "4252239" | "4733703" | "5329929" | "5595228").PN. OR ("6206063").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 22:04
S151	6	("4466659" | "4967944" | "5207470" | "6193118" | "6554169" | "7000810").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/07 00:38
S152	96	("1032326" | "1503894" | "1926162" | "2612200" | "2629644" | "2724595" | "2735597" | "2754079" | "2979190" | "3229946" | "3640423" | "3642168" | "3664704" | "3727971" | "3759416" | "3791547" | "3854621" | "3940009" | "3987829" | "4190281" | "4213539" |	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/07 00:38

		"4215896" | "4288011" | "4403786" | "4458570" | "4488669" | "4499998" | "4522326" | "4531774" | "4580827" | "4593816" | "4623071" | "4674665" | "D259413" | "D285673").PN. OR ("4967944").URPN.				
S153	25	("2967080" | "2987358" | "4844305" | "4967944" | "5419476" | "5667115").PN. OR ("5988473").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/07 00:40
S154	10	("2987358").URPN.	USPAT	OR	OFF	2018/04/07 00:41
S155	4	("2009/0315285").URPN.	USPAT	OR	OFF	2018/04/07 00:46
S156	223	("5072918" | "5390943" | "5871219" | "6739605" | "0875476" | "6086073" | "4743040" | "6109628" | "1427388" | "20040129658" | "20050023786" | "20050057011" | "20060232033" | "20060237091" | "3472392" | "3999775" | "4699270" | "4786122" | "5072955" | "5743607" | "5876047" | "6123346" | "6545863" | "7232136" | "D396023" | "6497423" | "D153654" | "2155769" | "3313498" | "3870177" | "4391422" | "4763799" | "4923202" | "4998023" | "5509671" | "5915646" | "6073919" | "6095156" | "6170839" | "6264216" | "D188099" | "D460235" | "D461941" | "D469235" | "5921566" | "D415867" | "20030047895" | "20030218308" | "5183372" | "5275349" | "5465988" | "5913528" | "6276471" | "6752281" | "7114733" | "7134673" | "7144020" | "4743040" | "3379431" | "4457527" | "5316232" | "5566961" | "6572123" | "D153654" | "D415867" | "6497423" | "D485037" | "20060066064" | "3698735" | "3908749" | "4895068" | "6138558" | "6251113" | "6267080" | "6471010" | "6497424" | "7207449" | "4901937" | "5308012" | "6270094" | "D463646" | "D474570" | "D485410" | "5921566" | "D273242" | "D474570" | "1149639" | "2413164" | "2575661" | "2819908" | "20050001395" | "20060006621" | "20060157944" | "4099735" | "4688860" | "5048857" | "5224531" | "5452908" | "7017603" | "7156475" | "7204374" | "7296808" | "5887878" | "1126544" | "2705114" | "20050280228" | "20050284697" | "5285981" | "6116533" |	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/07 00:50

		"D302064" | "D361187" | "D381168" | "D424321" | "D487604" | "D504000" | "D469235" | "1200008" | "1471446" | "1562089" | "2623642" | "2845780" | "20010045718" | "20020084607" | "20020096844" | "20060076306" | "3965969" | "4138504" | "4165088" | "4373761" | "4880248" | "6539831" | "7044569" | "5154544" | "20040065989" | "20040227315" | "3212645" | "4179080" | "4759560" | "5188308" | "5362078" | "5495951" | "5687928" | "5839739" | "5971512" | "6497423" | "6669214" | "D336183" | "D471687" | "6086073" | "D302064" | "D336183" | "20020060438" | "20040056439" | "20060208440" | "4518208" | "4832355" | "5221132" | "5375860" | "5873585" | "6022088" | "6101831" | "6206385" | "D140635" | "4380293" | "6109437" | "3610431" | "4743040" | "5269545" | "5848798" | "6241181" | "6315376" | "D391032" | "D395108" | "D403826" | "D468881" | "D471688" | "D485037" | "20030122331" | "4923202" | "1487856" | "20030107195" | "3606445" | "3873114" | "5011240" | "5634649" | "5716116" | "5941229" | "6578938" | "6783563" | "6910710" | "D469235" | "4815394" | "1660521" | "3759538" | "4564152" | "4585130" | "5016948" | "5123666" | "5595395" | "6102497" | "6109628" | "6322061" | "6615973" | "D361188" | "D153654" | "1649065" | "20020064478" | "20030121874" | "20050127627" | "3722700" | "4019793" | "5282678" | "6857644" | "D147135").PN.				
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S158	31	("0783059" | "2878928" | "3245528" | "3319685" | "3386607" | "3605374" | "3835992" | "3992810" | "4320846" | "4627595" | "4799590" | "4890741" | "5135823" | "5370255").PN. OR ("5676274").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/07 16:50
S159	26	("1101357" | "1149266" | "1862868" | "2702116" | "3145871" | "4154362" |	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/07 16:53

		"4503955" | "4705316" | "4896926" | "4998616").PN. OR ("5415255").URPN.				
S160	37	("3182856" | "3565146" | "4951812" | "4998616" | "5036980" | "5040681" | "5060851" | "5117979").PN. OR ("5325966").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/07 16:55
S161	6	("3412888" | "4204609" | "5409126" | "5499715" | "5769229").PN. OR ("6467681").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/07 17:17
S162	173	(US-20130127129-$ or US-20110155613-$ or US-20110139665-$ or US-20040195793-$ or US-20020000440-$ or US-20120292213-$ or US-20070012694-$ or US-20150336710-$ or US-20020134700-$ or US-20100270764-$ or US-20100000893-$ or US-20050062244-$ or US-20040183266-$ or US-20020014488-$ or US-20020113386-$ or US-20030196860-$ or US-20170259956-$ or US-20160144500-$ or US-20160130034-$ or US-20150274362-$ or US-20110168599-$ or US-20090178989-$ or US-20100219193-$ or US-20060254946-$ or US-20070068757-$ or US-20090178946-$).did. or (US-20050199459-$ or US-20080308369-$ or US-20050077136-$ or US-20080104921-$ or US-20160153200-$ or US-20080134613-$ or US-20080134607-$ or US-20070193178-$ or US-20170266804-$ or US-20140075650-$ or US-20090145866-$ or US-20170217464-$ or US-20170174392-$ or US-20170166352-$ or US-20160023349-$ or US-20140166516-$ or US-20120326406-$ or US-20110121695-$ or US-20070194543-$ or US-20070170671-$ or US-20110049824-$ or US-20130056378-$ or US-20120312812-$ or US-20120187013-$ or US-20120080432-$ or US-20120061930-$ or US-20050280228-$).did. or (US-20060027475-$ or US-20050155889-$ or US-20160168880-$).did. or (US-7503569-$ or US-9022234-$ or US-8875888-$ or US-8657307-$ or US-8590704-$ or US-3182856-$ or US-8459495-$ or US-7097036-$ or US-6193062-$ or US-9393684-$ or US-6637592-$ or US-D730088-$ or US-5833065-$ or US-5482162-$ or US-5244265-$ or US-4244509-$ or US-9643629-$ or US-7780026-$ or US-9132543-$ or US-8567796-$ or US-	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/09 01:25

		8226092-$ or US-8201837-$ or US-8132819-$ or US-7997594-$ or US-3010775-$ or US-9669930-$).did. or (US-4813542-$ or US-6585090-$ or US-6085925-$ or US-D776106-$ or US-6839238-$ or US-9609964-$ or US-7152752-$ or US-9506489-$ or US-3944282-$ or US-5241765-$ or US-4389078-$ or US-1849659-$ or US-4405057-$ or US-9802741-$ or US-8851287-$ or US-8763836-$ or US-8561769-$ or US-D808164-$ or US-9550605-$ or US-4887731-$ or US-9738198-$ or US-7537119-$ or US-8813960-$ or US-9669968-$ or US-6024223-$ or US-1665238-$ or US-D333094-$).did. or (US-3376046-$ or US-4832200-$ or US-D364558-$ or US-3419184-$ or US-3117692-$ or US-8684222-$ or US-2328689-$ or US-4287997-$ or US-5628443-$ or US-9888752-$ or US-9027722-$ or US-4673070-$ or US-7526842-$ or US-5465839-$ or US-9724820-$ or US-4863222-$ or US-3743372-$ or US-6050657-$ or US-5454634-$ or US-3851936-$ or US-5602721-$ or US-3999818-$ or US-5271515-$ or US-4243279-$ or US-6276550-$ or US-4328902-$ or US-7350648-$).did. or (US-5407074-$ or US-3481502-$ or US-2849151-$ or US-3616943-$ or US-5469961-$ or US-8677661-$ or US-5951130-$ or US-7451578-$ or US-6122879-$ or US-3526420-$ or US-2740167-$ or US-9803375-$ or US-9663940-$ or US-7841144-$ or US-9616562-$ or US-5544751-$ or US-5429260-$ or US-7946609-$ or US-6578708-$ or US-6176559-$ or US-5927837-$ or US-5564805-$ or US-5595228-$ or US-6206063-$ or US-7000810-$ or US-4967944-$ or US-5988473-$).did. or (US-6641013-$ or US-2987358-$ or US-4576423-$ or US-4756394-$ or US-4896926-$ or US-5325966-$ or US-5697500-$ or US-6467681-$).did. or (US-3117692-$ or US-2593998-$).did.				
S163	3	(("20170166352") or ("20110139665") or ("5628443")).PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/09 01:26

S164	28	(US-20170166352-$ or US-20110139665-$ or US-20170266804-$ or US-20170217464-$ or US-20170174392-$ or US-20160168880-$ or US-20160144500-$ or US-20160130034-$ or US-20140166516-$ or US-20120326406-$ or US-20100219193-$ or US-20090145866-$ or US-20070194543-$ or US-20070068757-$ or US-20060254946-$ or US-20060027475-$).did. or (US-5628443-$ or US-9132543-$ or US-9506489-$ or US-8813960-$ or US-8677661-$ or US-8459495-$ or US-8132819-$ or US-6641013-$ or US-6085925-$ or US-5988473-$ or US-5595228-$ or US-3117692-$).did.	US-PGPUB; USPAT	OR	OFF	2018/04/09 01:36
S165	7	(("5240264") or ("7503569") or ("20020000440") or ("20040195793") or ("20110139665") or ("20110155613") or ("20130127129")).PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/09 01:37
S166	27	S164 not S165	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/09 01:37
S167	1	("2011/0139665").URPN.	USPAT	OR	OFF	2018/11/21 18:13
S168	56	("1932429" | "20060016811" | "20060070906" | "20060237341" | "20070080089" | "20080110190" | "20080112782" | "20080121253" | "20080128414" | "20090178989" | "20090184021" | "20110139665" | "2178091" | "2259041" | "5271515" | "5429260" | "5531517" | "5544751" | "5549241" | "5860527" | "6062388" | "6581772" | "6880705" | "6991106" | "7044483" | "7063210" | "7516854" | "7661549" | "8342329" | "8640871" | "8973811" | "8997993" | "9056694" | "9101212" | "D277532" | "D277723" | "D277819" | "D347130" | "D385306" | "D406478" | "D470641" | "D529755" | "D538571" | "D543030" | "D589723" | "D590021" | "D645902" | "D654726" | "D664034" | "D689718" | "D709716" | "D773217" | "D781625").PN. OR ("D815471").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 18:13
S169	5	(("20160144500") or ("0784114") or ("20110073516") or ("20150274362")).PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 18:16

S170	4	(("20160144500") or ("7841144") or ("20110073516") or ("20150274362")).PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 18:17
S171	554	("0124228" | "0213740" | "0714987" | "0753791" | "1124228" | "1194636" | "1371856" | "1407679" | "1454250" | "1468288" | "1477813" | "1510924" | "1540128" | "1575821" | "1602256" | "1602267" | "1615096" | "1622103" | "1622104" | "1637634" | "1644710" | "1660480" | "1714738" | "1718702" | "1723306" | "1734826" | "1743492" | "1764331" | "1778069" | "1787027" | "1790178" | "1809393" | "1823039" | "1859667" | "1898364" | "1902716" | "1906411" | "1925070" | "1929871" | "1940377" | "1953306" | "1986739" | "1988201" | "1995264" | "20010029720" | "20020007608" | "20020007609" | "20020014047" | "20020020127" | "20020031646" | "20020046528" | "20020056245" | "20020069611" | "20020083673" | "20020092263" | "20020100231" | "20020160610" | "20020178673" | "20020178674" | "20020178682" | "20030009971" | "20030009972" | "20030024199" | "20030033777" | "20030033784" | "20030037504" | "20030041545" | "20030084636" | "20030101674" | "20030101681" | "20030115812" | "20030115821" | "20030180091" | "20030188504" | "20030196405" | "20030221387" | "20030233809" | "20040016196" | "20040031227" | "20040035078" | "20040035079" | "20040060255" | "20040068954" | "20040115921" | "20040139678" | "20040168392" | "20040177584" | "20040182036" | "20040200175" | "20040206036" | "20040211143" | "20040241374" | "20040255541" | "20050034404" | "20050034405" | "20050097860" | "20050102937" | "20050108970" | "20050138881" | "20050160694" | "20050161468" | "20050166516" | "20050193677" | "20050208255").PN. OR ("20050210810" | "20050235593" | "20050252130" | "20050268570" | "20060032168" | "20060048474" | "20060070333" | "20060073320" | "20060075713" |	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 18:17

		"20060101769" | "20060117696" | "20060179773" | "20060196139" | "20060236642" | "20060260254" | "20060283127" | "20070006543" | "20070028547" | "20070119110" | "20070151189" | "20070193178" | "20080000186" | "20080010931" | "20080010937" | "20080028707" | "20080034708" | "20080066415" | "20080104921" | "20080110125" | "20080134607" | "20080134613" | "20080134614" | "20080295432" | "20090193748" | "2015813" | "2026511" | "2044216" | "2088238" | "2089075" | "2204675" | "2266464" | "2276071" | "2303745" | "2324628" | "2398632" | "2430200" | "2495862" | "2596280" | "2732706" | "2740167" | "2780253" | "2851740" | "2865058" | "2894292" | "2947040" | "3023681" | "3045294" | "3100556" | "3120083" | "3125138" | "3182769" | "3200553" | "3203149" | "3247638" | "3267630" | "3282010" | "3301147" | "3310919" | "3347048" | "3377931" | "3378958" | "3387422" | "3436888" | "3460304" | "3481810" | "3508523" | "3512324" | "3517927" | "3526071" | "3526420" | "3535844" | "3538665" | "3548559" | "3553919" | "3554850" | "3555762" | "3572224" | "3579941" | "3694983" | "3714747" | "3731445" | "3742669" | "3759007" | "3768846" | "3786608" | "3842562" | "3849235" | "3857749" | "3859000" | "3902293" | "3908053" | "3919820" | "3936551" | "3988187" | "4037377" | "4082129" | "4084996" | "4090338" | "4099358" | "4100710" | "4107892" | "4113399" | "4169688").PN. OR ("4196554" | "4227430" | "4242390" | "4299070" | "4304083" | "4426820" | "4471012" | "4489115" | "4501102" | "4561233" | "4567706" | "4599841" | "4612074" | "4612745" | "4641469" | "4643237" | "4646494" | "4648165" | "4653242" | "4703597" | "4715162" | "4716700" | "4738071" | "4769963" | "4819932" | "4822440" | "4831806" | "4845907" | "4905442" | "5029425" | "5113632" | "5117603" | "5148850" | "5165816" | "5179812" | "5182892" | "5216861" | "5247773" | "5253464" | "5271564" | "5286545" | "5295341" | "5344700" |			

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S172	969	Y10S292/38,53.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 18:25
S173	35	E04F2201/013.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 18:25
S174	1,351	E04F2201/0146,023,05.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 18:26
S175	514	B25H3/02.cpc.	USPAT	OR	OFF	2018/11/21 18:45
S176	1,041	B25H3/02.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 18:45

S177	165	B25H3/021.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 18:45
S178	0	("2018/0213934").URPN.	USPAT	OR	OFF	2018/11/21 18:46
S179	369	A47B88/90.cpc.	USPAT	OR	OFF	2018/11/21 18:46
S180	81	A47B2210/19.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 18:47
S181	29	("2614016" | "2676080" | "3001564" | "3079037" | "3974898" | "4040538" | "4119204" | "4239309" | "4287997" | "4293072" | "4865404" | "5190156").PN. OR ("5407074").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 18:50
S182	27	("0224486" | "1472676" | "2975930" | "3159436" | "3424334" | "3506321" | "3584738" | "3737031" | "4155452").PN. OR ("4293072").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 18:51
S183	48	("3506321").URPN.	USPAT	OR	OFF	2018/11/21 18:54
S184	46	("1092651" | "2565969" | "2891639" | "3028207" | "3032381" | "3506321").PN. OR ("3974898").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 18:56
S185	520	B65D21/0204.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 19:01
S186	868	A47B87/02.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 19:02
S187	2,232	312/107,111.ccls.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 19:02
S188	703	A47B88/90.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 19:15
S189	50	(("BRUNNER") near3 ("Yaron")).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 19:23
S190	34	("0455883" | "0484121" | "0918297" | "20060175945" | "20100052276" | "20110279956" | "20120086319" | "20130134850" | "2341434" | "2431830" | "2441728" | "3058320" | "3135570" | "3326203" | "3712697" | "4590709" | "5011240" | "5026130" | "5048902" | "5145245" | "5673984" | "6068356" |	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 19:24

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S191	45	("1223455" | "2123803" | "2704699" | "3272581" | "3316045" | "3796474" | "4155611" | "4505526" | "4577773" | "4848588" | "5205595" | "5246105" | "5299688" | "5344226" | "5358321" | "5426885").PN. OR ("5603559").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 19:27
S192	36	("1253546" | "1619761" | "1857640" | "2004900" | "3133771" | "3409162" | "3529878" | "3606506" | "3729242" | "3758181").PN. OR ("5246105").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 19:28
S193	16	("20080000899" | "20120312812" | "20130127129" | "3379482" | "3811559" | "4118048" | "4619363" | "5125697" | "5904269" | "6082539" | "6371320" | "6874634" | "6889838" | "7387350" | "7516842").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 20:02
S194	75	("0440957" | "1933637" | "2511949" | "2789828" | "2981549" | "3055723" | "3349924" | "3379482" | "3891230" | "3905662").PN. OR ("4118048").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 20:03
S195	45	("0273398" | "0325555" | "0825642" | "0953715" | "0953815" | "1143711" | "1365098" | "1495046" | "1611034" | "2055657" | "2565969" | "2714433" | "3828899" | "3891230" | "3974898" | "3987875" | "4066155" | "4118048" | "4139084" | "4202586" | "4389078" | "4693345").PN. OR ("4813521").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 20:04
S196	29	("2472491" | "2925283" | "3057636").PN. OR ("3891230").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 20:05
S197	143	("0344661" | "0687619" | "1424819" | "20010052681" | "20020014488" | "20020067027" | "20020074905" | "20020113386" | "20020185831" | "20030001348" | "20030146589" | "20040265104" | "20050062244" | "20050104308" | "20050258610" | "20050275178" | "20060006619" | "20060012139" | "20060038367" | "20070080512" | "20070194543" | "20070273114" | "20080084036" | "20080121547" | "20080128305" | "20080143069" | "20090020528" | "20090026901" | "20090096181" | "20090309323" | "20100052276" | "20100290877" | "20100327562" | "20110049824" | "20110181008" |	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 20:05

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S198	18	("2042387" | "2528872" | "3401420" | "3891230" | "4989291" | "5915438" | "6230361" | "7000287").PN. OR ("7263742").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 20:07
S199	37	("5013055" | "5207723" | "5378005").PN. OR ("5799958").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 20:08
S201	2,395	280/47.26,47.28,652.ccls.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 20:09
S202	1,975	280/47.26,47.28.ccls.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 20:10
S203	518	280/652.ccls.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 20:10

S204	1	"15826201"	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/22 00:33
S205	12	(US-0271616-$ | US-0320243-$ | US-1276744-$ | US-1477050-$ | US-15826201-$ | US-20080308369-$ | US-3616562-$ | US-3875888-$).DID.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/22 03:39
S206	2	(("8875888") or ("9616562") or ("20080308369")).PN.	USPAT; USOCR	OR	OFF	2018/11/22 03:40
S207	3	(("8875888") or ("9616562") or ("20080308369")).PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/22 03:40
S208	64	("20020113387" | "20070194543" | "20080079227" | "20080084036" | "20110049824" | "3522955" | "4118048" | "4119044" | "4281843" | "5176281" | "5193706" | "5244265" | "5378005" | "5634649" | "5641170" | "5680932" | "5799958" | "5906381" | "5938396" | "5950828" | "6131926" | "6170839" | "6176559" | "6264220" | "6347847" | "6371320" | "6601930" | "6761366" | "6817623" | "7367571" | "7467801" | "7503569" | "7628406" | "7845653" | "7883096" | "7938412" | "D404916" | "D437484" | "D462168" | "D462170").PN. OR ("8132819").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/22 19:37
S209	269	("20020014507" | "20020043534" | "20020074332" | "20020125160" | "20030075468" | "20040112777" | "20050109650" | "20060017293" | "20060124505" | "20060144732" | "20060201834" | "20070137960" | "20070194543" | "20070241113" | "20080017537" | "20080035508" | "20080035510" | "20080067206" | "20080152944" | "20080164842" | "20080169739" | "20080230416" | "20090080809" | "20090211932" | "20090236810" | "20090250365" | "20100012538" | "20100012655" | "20100033325" | "20100224527" | "20100258465" | "20110084075" | "20110094910" | "20110132046" | "20110174648" | "20110268374" | "20120018330" | "20120152944" | "20120206907" | "20120257379" | "20120267374" | "20120292213" | "20120312708" | "20120317933" | "20120318792" | "20120326406" | "20120326669" | "20130007979" |	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/22 19:39

		"20130186795" | "20140102928" | "2125856" | "2145143" | "2799306" | "2883184" | "3177023" | "3259411" | "3394955" | "3817419" | "3851756" | "3924844" | "4105112" | "4278187" | "4353182" | "4890414" | "5042193" | "5165148" | "5295742" | "5379887" | "5386907" | "5429287" | "5470000" | "5501379" | "5518139" | "5562208" | "5580137" | "5595228" | "5620212" | "5660276" | "5672145" | "5732987" | "5755311" | "5762411" | "5915553" | "5915554" | "5924533" | "6006906" | "6015064" | "6038747" | "6073766" | "6081695" | "6082538" | "6167680" | "6176559" | "6203075" | "6206063" | "6213296" | "6230887" | "6244485" | "6244486" | "6343708" | "6343815" | "6347847" | "6371320" | "6405864" | "6415924" | "6478463" | "6502882" | "6527309").PN. OR ("6533138" | "6561402" | "6614337" | "6622856" | "6675965" | "6675967" | "6695142" | "6698609" | "6722524" | "6755302" | "6755448" | "6761366" | "6789670" | "6860059" | "6915902" | "6955381" | "6978890" | "7008031" | "7021637" | "7048133" | "7108131" | "7121407" | "7158376" | "7225923" | "7228983" | "7237673" | "7237688" | "7246704" | "7316309" | "7322470" | "7326428" | "7334680" | "7357250" | "7357268" | "7367451" | "7370891" | "7401698" | "7401700" | "7418846" | "7540364" | "7552560" | "7552950" | "7600640" | "7661530" | "7837053" | "7845653" | "7854321" | "7874328" | "7883096" | "7938412" | "7984820" | "8056943" | "8061536" | "8132819" | "8152037" | "8191910" | "8210387" | "8267245" | "8267247" | "8272628" | "8327576" | "8328247" | "8376177" | "8434617" | "8469195" | "8505729" | "8657307" | "D259154" | "D272203" | "D309981" | "D326815" | "D333215" | "D333487" | "D347731" | "D355849" | "D368159" | "D370619" | "D374772" | "D375834" | "D377118" | "D378247" | "D385110" | "D386903" | "D390358" | "D402106" | "D405956" | "D414038" | "D418977" | "D437684" | "D447340" | "D447630" | "D448162" | "D449442" | "D449738" | "D451275" | "D452071" | "D453624" | "D455263" |			

		"D459073" | "D462168" | "D465923" | "D467070" | "D470659" | "D471360" | "D472774" | "D480867" | "D505548" | "D509656" | "D516310" | "D516808" | "D516812" | "D520746" | "D563669" | "D572479" | "D572480" | "D588811" | "D589703" | "D599112" | "D600015" | "D600912" | "D601797" | "D605403" | "D608094" | "D609911" | "D609913").PN. OR ("D616200" | "D618911" | "D624317" | "D627968" | "D629607" | "D630435" | "D630851" | "D635769" | "D636996" | "D637812" | "D639554" | "D641552" | "D647301" | "D648532" | "D648533" | "D649350" | "D649783" | "D661858" | "D661903" | "D664354" | "D668867" | "D668868" | "D668869" | "D670500" | "D672555" | "D673774" | "D701696" | "D744750" | "D750890").PN. OR ("9539722").URPN.				
S210	15	("2007/0194543").URPN.	USPAT	OR	OFF	2018/11/22 19:40
S211	56	("1478913" | "20010035704" | "20050159784" | "20050269792" | "20060006621" | "20060144732" | "20070194543" | "20070235959" | "20080128305" | "20090301913" | "20100289236" | "20100295430" | "20110127736" | "20120292870" | "20130118818" | "3861703" | "3874531" | "4435115" | "4726602" | "4822116" | "4846485" | "4858940" | "4976450" | "4993551" | "5174447" | "5378005" | "5452908" | "5573089" | "5743607" | "5799958" | "5893572" | "6027128" | "6170839" | "6439585" | "6446987" | "6702168" | "6935641" | "6945546" | "7044569" | "7083174" | "7314134" | "7328905" | "7431313" | "7434819" | "7503569" | "7661685" | "7905502" | "8226092" | "8376376" | "8668209" | "D182716").PN. OR ("8915504").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/22 19:40
S212	2	("2012/0292870").URPN.	USPAT	OR	OFF	2018/11/22 19:41
S213	52	("6264083" | "6666362" | "7204374" | "20120247044" | "4249684" | "6264220" | "6935641" | "7048320" | "7165702" | "20040194333" | "20040251227" | "20070210021" | "20100300996" | "20120199708" | "4944416" | "7487981" | "6615973" | "6786374" | "20070137532" |	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/22 19:46

		"5628534" | "7017254" | "6932406" | "20040051016" | "20050006539" | "20080296245" | "7740329" | "20060021985" | "5913380" | "6736265" | "20020100396" | "20120131872" | "3610429" | "6629654" | "4535897" | "6581920" | "20110107704" | "0332360" | "5406894" | "6474245" | "20050269792" | "5582269" | "20070012636" | "5687856" | "5899544" | "6247720" | "6814362" | "20040222176" | "20110168651" | "4630739" | "4961295" | "5730414").PN.				
S214	39	("2320387" | "3052484" | "3179270" | "3734526" | "4281843" | "4363496" | "4790549" | "5464104" | "5465987" | "5474312" | "5595395" | "5671933").PN. OR ("6131926").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/22 23:52
S215	1	"12736715"	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/23 01:36
S216	1	("2011/0139665").URPN.	USPAT	OR	OFF	2018/11/23 01:36
S217	20	("2807387" | "20060220503" | "3219400" | "3424334" | "4293072" | "4643494" | "4782619" | "4996628" | "5184726" | "5246105" | "5427394" | "5544751" | "5699925" | "5901998" | "5924778" | "6367631" | "6983946").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/23 01:37
S218	36	("1253546" | "1619761" | "1857640" | "2004900" | "3133771" | "3409162" | "3529878" | "3606506" | "3729242" | "3758181").PN. OR ("5246105").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/23 01:38
S219	13	("3379482").URPN.	USPAT	OR	OFF	2018/11/23 02:28
S220	0	("2012/0152800").URPN.	USPAT	OR	OFF	2018/11/23 02:30
S221	12	("20080060964" | "3568879" | "4592601" | "4685565" | "20060071581" | "4258847" | "4863222" | "2858957" | "7311202" | "3346137").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/23 02:30
S222	1,041	B25H3/02.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/23 02:39
S223	140	S222 and (snap)	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/23 02:39

S224	67	(US-20170166352-$ or US-20110139665-$ or US-20170266804-$ or US-20170217464-$ or US-20170174392-$ or US-20160168880-$ or US-20160144500-$ or US-20160130034-$ or US-20140166516-$ or US-20120326406-$ or US-20100219193-$ or US-20090145866-$ or US-20070194543-$ or US-20070068757-$ or US-20060254946-$ or US-20060027475-$ or US-20150274362-$ or US-20110073516-$ or US-20090193748-$ or US-20080134607-$ or US-20080104921-$ or US-20180313094-$ or US-20180213934-$ or US-20150102717-$ or US-20180161975-$ or US-20140305829-$).did. or (US-20120312812-$ or US-20180290288-$ or US-20180162592-$ or US-20170239808-$ or US-20170121056-$ or US-20130127129-$ or US-20060038367-$ or US-20160114822-$ or US-20080308369-$ or US-20080169739-$ or US-20120292870-$).did. or (US-5628443-$ or US-9132543-$ or US-9506489-$ or US-8813960-$ or US-8677661-$ or US-8459495-$ or US-8132819-$ or US-6641013-$ or US-6085925-$ or US-5988473-$ or US-5595228-$ or US-3117692-$ or US-5429260-$ or US-7841144-$ or US-5407074-$ or US-4293072-$ or US-3506321-$ or US-3974898-$ or US-6109707-$ or US-4423687-$ or US-9872562-$ or US-6547347-$ or US-4619363-$ or US-4118048-$ or US-3891230-$ or US-9566990-$).did. or (US-5799958-$ or US-9616562-$ or US-5184726-$).did. or (US-2430200-$).did.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/23 14:36
S225	3	("20080308369" | "8875888" | "9616562").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/23 14:37
S226	28	(US-20170266804-$ or US-20170217464-$ or US-20170174392-$ or US-20170166352-$ or US-20160168880-$ or US-20160144500-$ or US-20160130034-$ or US-20140166516-$ or US-20120326406-$ or US-20100219193-$ or US-20090145866-$ or US-20070194543-$ or US-20070068757-$ or US-20060254946-$ or US-20060027475-$ or US-20110139665-$).did. or (US-9506489-$ or US-9132543-$ or US-8813960-$ or US-8677661-$ or US-8459495-$ or US-8132819-$ or US-6641013-$ or US-6085925-$ or US-	US-PGPUB; USPAT	OR	OFF	2018/11/23 14:37

		5988473-$ or US-5628443-$ or US-5595228-$ or US-3117692-$).did.				
S227	37	S224 not (S225 S226)	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/23 14:37
S228	1	"20170174392".pn.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/23 14:54
S229	14	(US-20180290288-$ or US-20180161975-$ or US-20170239808-$ or US-20170121056-$ or US-20080169739-$ or US-20080134607-$ or US-20080104921-$ or US-20060038367-$).did. or (US-9872562-$ or US-9566990-$ or US-7841144-$ or US-6547347-$ or US-5429260-$).did. or (US-2430200-$).did.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/23 21:07
S230	716	((("MILWAUKEE") near3 ("ELECTRIC") near3 ("TOOL") near3 ("CORPORATION"))).AS,AANM.	USPAT	OR	OFF	2019/01/16 16:21
S231	51	((("Brunner") near3 ("Yaron"))).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:21
S232	33	((("Squiers") near3 ("Grant") near3 ("T"))).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:21
S233	56	((("Hoppe") near3 ("Christopher") near3 ("S"))).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:21
S234	114	((("Hyma") near3 ("Steven") near3 ("W"))).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:21
S235	0	("2017/0166352").URPN.	USPAT	OR	OFF	2019/01/16 16:23
S236	1	(("2012312812") or ("4974740")).PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:25
S237	0	"2012312812".pn.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:26
S238	1	"20120312812".pn.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:26
S239	4	("2012/0312812").URPN.	USPAT	OR	OFF	2019/01/16 16:26
S240	0	("2018/0161975").URPN.	USPAT	OR	OFF	2019/01/16 16:29

S241	0	("2018/0044059").URPN.	USPAT	OR	OFF	2019/01/16 16:29
S242	68	("6082539" | "6874634" | "8875888" | "7503569" | "D462519" | "D467424" | "D753394" | "D753395" | "D753396" | "20010030403" | "20120152944" | "6761366" | "D437484" | "D439407" | "D449738" | "D564216" | "D629607" | "D636994" | "D668048" | "D700777" | "D709697" | "D753397" | "6371320" | "20140102928" | "D415894" | "D520237" | "D613560" | "D643217" | "D701697" | "7905353" | "20110181008" | "D348152" | "D647300" | "D663952" | "D674605" | "D710098" | "D713639" | "20110049824" | "20110139666" | "5022546" | "D467426" | "D527181" | "D572479" | "D630851" | "D701696" | "D711105" | "5437369" | "D693121" | "20070273114" | "20090145790" | "8602217" | "8789699" | "8851282" | "D630435" | "D702044" | "D703437" | "D709287" | "9393684" | "8505729" | "20040134818" | "D493284" | "D600912" | "D649350" | "D653832" | "D694522" | "D703436" | "D710100" | "D719352").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:30
S243	46	("20030062232" | "20040211634" | "20060012139" | "20060027475" | "5011013" | "5209384" | "5240264" | "5664652" | "5833065" | "6126003" | "6176559" | "6347847" | "6371320" | "6601930" | "6761366" | "7004481" | "7210689").PN. OR ("7503569").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:34
S244	23	("1192847" | "1891811" | "2053969" | "2828023").PN. OR ("5022546").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:37
S245	14	("2053969").URPN.	USPAT	OR	OFF	2019/01/16 16:38
S246	19	("2053969" | "3014604" | "3061134" | "3162320" | "3734308" | "4109789" | "4616752" | "6024223").PN. OR ("6840378").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:39
S247	22	("20040000550" | "2705575" | "3346137" | "4293072" | "5628443" | "5704625" | "6840378").PN. OR ("7780026").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:39
S248	21	("3081120" | "3162320" | "3653521").PN. OR ("3734308").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:41

S249	34	("3015407" | "3493258" | "3501193" | "3552557" | "3633777" | "3677599" | "3691595" | "3712661" | "3734308" | "3888536" | "3980185" | "4093090" | "4149747" | "4341495" | "4356145" | "4630856" | "4648645" | "5163726" | "5931617" | "6135524" | "7014234").PN. OR ("8177463").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:41
S250	65	("2053969" | "3014604" | "3691595" | "3712661").PN. OR ("3980185").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:42
S251	23	("0610816" | "20080099622" | "2357182" | "2431194" | "3380602" | "3765711" | "3980185" | "4128267" | "4341495" | "4881601" | "5161705" | "5328133" | "5344203" | "5593113" | "5836548" | "7014234" | "7549687" | "7887011" | "8177463").PN. OR ("9440741").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:42
S252	28	("2876726" | "3004772" | "3057315" | "3107024" | "3162320" | "3711902" | "3734308" | "3799100" | "3805721" | "3818854" | "3822667" | "3872555" | "3938461" | "3980185" | "4290382" | "4294185").PN. OR ("4695184").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:44
S253	899	B60P7/13,06.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:46
S254	110	410/84.ccls.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:47
S255	7	("6077006" | "7056081" | "6490766" | "8342786" | "8523501" | "7056061" | "8523401").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:47
S256	2	("1751571").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:49
S257	38	("3034256" | "3159368" | "3334953" | "3618795" | "4249684" | "4303367" | "4325531" | "4737055" | "4805859" | "4901961" | "5161700" | "5205602" | "5240214" | "5511842" | "5588631" | "5609451" | "5653366" | "5730414" | "5855310" | "5899544").PN. OR ("6666362").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:50
S258	25	("3334953" | "4249684" | "4938398" | "4993771" | "5255832" | "5395019").PN. OR ("5653366").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:51

S259	17	("2696962" | "4929973" | "5035389" | "5040712" | "5129613" | "5282554" | "5332183" | "5356105" | "5653366" | "5730348" | "5730406" | "6036071" | "6315182" | "7225958" | "8020821").PN. OR ("8448829").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:51
S260	37	("1252207" | "20060186290" | "20070097617" | "20070170336" | "20070230102" | "20080105803" | "2174140" | "5730406" | "5833189" | "5850996" | "6173931" | "6315255" | "6371424" | "6431510" | "6702604" | "6758454" | "6877641" | "7261264" | "7334762" | "7455271" | "7499272" | "7673838").PN. OR ("8020821").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:52
S261	10	("20050139745" | "4660793" | "5035389" | "5433416" | "5452874" | "5608603" | "5924790" | "6237886" | "6520463" | "6637707").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:52
S262	10	("5356104" | "5639522" | "5662375" | "5694123" | "5943208" | "5947440" | "6349911" | "6402106" | "6446915" | "6710828").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:53
S263	12	("5284311" | "5428502").PN. OR ("5608603").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:54
S264	788	248/224.7,225.21.ccls.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:56
S265	21	("1862466" | "2979300" | "3110467" | "3669035" | "4056250" | "4076204" | "4085867").PN. OR ("4660793").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:57
S266	25	("3334953" | "4249684" | "4938398" | "4993771" | "5255832" | "5395019").PN. OR ("5653366").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 17:01
S267	38	("3454250" | "3456929" | "4065092" | "4230248" | "4249684" | "4444427" | "4848629" | "4974766" | "4984837" | "5007568" | "5046652" | "5181639" | "5275320" | "5285942").PN. OR ("5395019").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 17:02
S268	42	("2680000" | "2897928" | "3631572" | "3881677" | "4346868" | "4618081" | "4948085" | "5181774").PN. OR ("5332183").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 17:05
S269	71	("2708088" | "3878589" | "3915189" | "3931893" | "4450989" | "4461445" | "4858869" | "5026016" | "5035389" |	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 17:45

		"5078279" | "5344032" | "5356038" | "5433416" | "5435511" | "5452874" | "5765699" | "5915572" | "D329192" | "D386298" | "D386304").PN. OR ("6637707").URPN.				
S270	32	("2103106" | "2703912" | "2879561" | "3237779" | "3399374" | "3403641" | "4029038" | "4068332" | "4266882" | "4340199" | "4376593" | "4389133" | "4430947").PN. OR ("4565465").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 17:55
S271	570	220/4.27.ccls.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:12
S272	319	B65D21/0223.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:12
S273	1,937	A45C5/14.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:12
S274	69	A45C7/005.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:12
S275	2,987	A45C13/02.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:13
S277	357	A45F3/10.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:13
S278	850	B25H1/04.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:14
S279	1,194	B25H3/02,021.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:14
S280	1,052	B62B1/14.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:14
S281	437	B65D21/0209.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:14
S282	164	B65D21/0228.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:15
S283	320	A45C7/0045.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:15

S284	436	B25H3/023.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:15
S285	752	B62B5/067.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:16
S286	23	B65D2255/00.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:16
S287	177	B65H2701/533.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:16
S288	121	(US-0000440-$ | US-0027475-$ | US-0038367-$ | US-0068757-$ | US-0104921-$ | US-0121056-$ | US-0127129-$ | US-0130034-$ | US-0134607-$ | US-0139665-$ | US-0144500-$ | US-0145866-$ | US-0155613-$ | US-0161975-$ | US-0166352-$ | US-0166516-$ | US-0168880-$ | US-0169739-$ | US-0174392-$ | US-0194543-$ | US-0195793-$ | US-0217464-$ | US-0219193-$ | US-0239808-$ | US-0254946-$ | US-0266804-$ | US-0271616-$ | US-0290288-$ | US-0308369-$ | US-0320243-$ | US-0326406-$ | US-1276744-$ | US-1477050-$ | US-2430200-$ | US-20020000440-$ | US-20040195793-$ | US-20060027475-$ | US-20060038367-$ | US-20060254946-$ | US-20070068757-$ | US-20070194543-$ | US-20080104921-$ | US-20080134607-$ | US-20080169739-$ | US-20080308369-$ | US-20090145866-$ | US-20100219193-$ | US-20110139665-$ | US-20110155613-$ | US-20120326406-$ | US-20130127129-$ | US-20140166516-$ | US-20160130034-$ | US-20160144500-$ | US-20160168880-$ | US-20170121056-$ | US-20170166352-$ | US-20170174392-$ | US-20170217464-$ | US-20170239808-$ | US-20170266804-$ | US-20180161975-$ | US-20180290288-$ | US-2608238-$ | US-3117692-$ | US-5240264-$ | US-5429260-$ | US-5595228-$ | US-5628443-$ | US-5988473-$ | US-6085925-$ | US-6547347-$ | US-6641013-$ | US-7503569-$ | US-7841144-$ | US-8132819-$ | US-8459495-$ | US-8677661-$ | US-8813960-$ | US-8875888-$ | US-9132543-$ | US-9506489-$ | US-9566990-$ | US-9616562-$ | US-9872562-$).DID.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:23

S289	4	(CN-2608238-$ | JP-1276744-$ | JP-1477050-$ | KR-300271616-$ | KR-300320243-$ | TW-135074-$ | TW-168686-$ | TW-174412-$ | VA-223131450-$ | WO-2016142935-$ | WO-2017028845-$).DID.	FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/01/16 21:24
S290	0	(15/826201).APP.	FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/01/16 21:25
S291	0	("150826201").APP.	FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/01/16 21:25
S292	0	"150826201"	FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/01/16 21:25
S293	45	("1699130" | "2072672" | "2551814" | "2633285" | "2736487" | "3010638" | "3361322" | "3623650" | "3632037" | "3713579" | "3905478" | "3905541" | "3921896" | "4002261" | "4023617" | "4187977" | "4230233" | "4245773" | "4251006" | "4277015" | "4291830" | "4389013" | "4482074" | "4643314" | "4685610" | "4762270" | "4763833" | "4828894" | "4884739" | "4911356" | "4948039" | "4993623" | "5038998" | "5116290" | "5190213").PN. OR ("5429260").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:39
S294	2	"2430200".pn.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:43
S295	70	("3861703" | "4738340" | "4951818" | "5038842" | "5048649" | "5178244" | "D294775" | "5373104" | "6213266" | "20030123965" | "3061057" | "3532355" | "4350194" | "5407039" | "6634496" | "6758334" | "7077252" | "20020104725" | "20050077136" | "4081061" | "4118048" | "4813521" | "5484045" | "20070068757" | "5927361" | "7232018" | "4693345" | "4122925" | "5484046" | "20060119060" | "20050072642" | "4792025" | "D453623" | "5186290" | "5890571" | "6073737" | "7380685" | "5109961" | "20070012694" | "3452846" | "4657135" | "5339934" | "5379870" | "5447216" | "6116390" | "6401890" | "5142445" | "7398868" | "7726483" | "6164425" | "6520327" |	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:50

		"6976566" | "3650216" | "2497173" | "20010027902" | "20030029750" | "4621716" | "5197579" | "5632496" | "5713439" | "7780002" | "7942282" | "3572253" | "6585090" | "3891230").PN.				
S296	70	("3861703" | "4738340" | "4951818" | "5038842" | "5048649" | "5178244" | "D294775" | "5373104" | "6213266" | "20030123965" | "3061057" | "3532355" | "4350194" | "5407039" | "6634496" | "6758334" | "7077252" | "20020104725" | "20050077136" | "4081061" | "4118048" | "4813521" | "5484045" | "20070068757" | "5927361" | "7232018" | "4693345" | "4122925" | "5484046" | "20060119060" | "20050072642" | "4792025" | "D453623" | "5186290" | "5890571" | "6073737" | "7380685" | "5109961" | "20070012694" | "3452846" | "4657135" | "5339934" | "5379870" | "5447216" | "6116390" | "6401890" | "5142445" | "7398868" | "7726483" | "6164425" | "6520327" | "6976566" | "3650216" | "2497173" | "20010027902" | "20030029750" | "4621716" | "5197579" | "5632496" | "5713439" | "7780002" | "7942282" | "3572253" | "6585090" | "3891230").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:51
S297	40	("20020096844" | "4066155" | "4813542" | "5099968" | "5564805" | "5906291" | "D439739").PN. OR ("6585090").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:53
S298	29	("2472491" | "2925283" | "3057636").PN. OR ("3891230").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:55
S299	59	("3194426" | "3338452" | "3441033" | "3862683" | "4426056" | "4523680" | "4589430" | "4804773").PN. OR ("4889254").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:59
S300	0	("2018/0127007").URPN.	USPAT	OR	OFF	2019/01/17 20:57
S301	3	("20110220531" | "5890613" | "6925834").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/17 20:58
S302	4	("20110139777" | "5301829" | "5427265" | "8602217").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/17 21:07
S303	1	("2014/0326693").URPN.	USPAT	OR	OFF	2019/01/17 21:08

S304	4	("20110139777" | "5301829" | "5427265" | "8602217").PN. OR ("9701443").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/17 21:09
S305	22	("3521764").URPN.	USPAT	OR	OFF	2019/01/17 21:15
S306	0	("2016/0082585").URPN.	USPAT	OR	OFF	2019/01/17 21:21
S307	11	("4887751" | "20080169739" | "20050045640" | "20090250470" | "20050211586" | "20140353191" | "4688674" | "20040016666" | "20080197756" | "4403638" | "5653337").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/17 21:22
S308	13	("2414708" | "4720021" | "4365725" | "5011013" | "4997090" | "5353948" | "5967322" | "7780036" | "0520505" | "4161261" | "4714158").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/17 21:24
S309	8	("6761366" | "0968633" | "6761366" | "0968633" | "5575401" | "20020030425" | "5575401" | "20050224384" | "20070012694" | "6371320").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/17 21:26
S310	12	("2006/0027475").URPN.	USPAT	OR	OFF	2019/01/17 21:29
S311	18	("1193809" | "1268124" | "1521310" | "3696850" | "4724976" | "4756394" | "4787488" | "5209279" | "5219423" | "5314046" | "5971119" | "0622263" | "0695149").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/17 21:29
S312	1	"20110073516".pn.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/19 21:16
S313	71	(US-20180290288-$ or US-20180161975-$ or US-20170239808-$ or US-20170121056-$ or US-20080169739-$ or US-20080134607-$ or US-20080104921-$ or US-20060038367-$ or US-20190002004-$ or US-20120312812-$ or US-20180044059-$ or US-20110181008-$ or US-20090145790-$ or US-20130121783-$ or US-20030034654-$ or US-20080105803-$ or US-20050139745-$ or US-20170174392-$ or US-20060254946-$ or US-20170318927-$ or US-20170259956-$ or US-20100147642-$ or US-20150274362-$ or US-20140262885-$ or US-20130127129-$ or US-20120152800-$).did. or (US-20060027475-$ or US-20030094392-$ or US-20080277221-$ or US-20110073516-$).did. or (US-9872562-$ or US-9566990-$	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/19 21:16

		or US-7841144-$ or US-6547347-$ or US-5429260-$ or US-9725209-$ or US-8789699-$ or US-7503569-$ or US-5022546-$ or US-6840378-$ or US-3980185-$ or US-7780026-$ or US-8657307-$ or US-8177463-$ or US-9440741-$ or US-4341495-$ or US-5183375-$ or US-4695184-$ or US-3734308-$ or US-8342786-$ or US-6666362-$ or US-5653366-$ or US-8448829-$ or US-8020821-$ or US-5608603-$ or US-4660793-$).did. or (US-5395019-$ or US-9056586-$ or US-8387940-$ or US-5332183-$ or US-8398315-$ or US-5129613-$ or US-6637707-$ or US-4565465-$ or US-2053969-$ or US-6585090-$ or US-8561769-$ or US-3891230-$ or US-4889254-$ or US-9701443-$).did. or (US-2430200-$).did.				
S314	121	(US-20180290288-$ or US-20180161975-$ or US-20170266804-$ or US-20170239808-$ or US-20170217464-$ or US-20170174392-$ or US-20170166352-$ or US-20170121056-$ or US-20160168880-$ or US-20160144500-$ or US-20160130034-$ or US-20140166516-$ or US-20130127129-$ or US-20120326406-$ or US-20110155613-$ or US-20110139665-$ or US-20100219193-$ or US-20090145866-$ or US-20080308369-$ or US-20080169739-$ or US-20080134607-$ or US-20080104921-$ or US-20070194543-$ or US-20070068757-$ or US-20060254946-$ or US-20060038367-$).did. or (US-20060027475-$ or US-20040195793-$ or US-20020000440-$).did. or (US-9872562-$ or US-9616562-$ or US-9566990-$ or US-9506489-$ or US-9132543-$ or US-8875888-$ or US-8813960-$ or US-8677661-$ or US-8459495-$ or US-8132819-$ or US-7841144-$ or US-7503569-$ or US-6641013-$ or US-6547347-$ or US-6085925-$ or US-5988473-$ or US-5628443-$ or US-5595228-$ or US-5429260-$ or US-5240264-$ or US-3117692-$ or US-2608238-$ or US-2430200-$ or US-1477050-$ or US-1276744-$ or US-0326406-$).did. or (US-0320243-$ or US-0308369-$ or US-0290288-$ or US-0271616-$ or US-0266804-$ or US-	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/19 21:16

		0254946-$ or US-0239808-$ or US-0219193-$ or US-0217464-$ or US-0195793-$ or US-0194543-$ or US-0174392-$ or US-0169739-$ or US-0168880-$ or US-0166516-$ or US-0166352-$ or US-0161975-$ or US-0155613-$ or US-0145866-$ or US-0144500-$ or US-0139665-$ or US-0134607-$ or US-0130034-$ or US-0127129-$ or US-0121056-$ or US-0104921-$ or US-0068757-$).did. or (US-0038367-$ or US-0027475-$ or US-0000440-$).did. or (US-3117692-$ or US-2608238-$ or US-2430200-$ or US-1477050-$ or US-1276744-$ or US-0326406-$ or US-0320243-$ or US-0308369-$ or US-0290288-$ or US-0271616-$ or US-0266804-$ or US-0254946-$ or US-0239808-$ or US-0219193-$ or US-0217464-$ or US-0195793-$ or US-0194543-$ or US-0174392-$ or US-0169739-$ or US-0168880-$ or US-0166516-$ or US-0166352-$ or US-0161975-$ or US-0155613-$ or US-0145866-$ or US-0144500-$).did. or (US-0139665-$ or US-0134607-$ or US-0130034-$ or US-0127129-$ or US-0121056-$ or US-0104921-$ or US-0068757-$ or US-0038367-$ or US-0027475-$ or US-0000440-$).did.				
S315	52	S313 not S314	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/19 21:17
S316	1	"20120207571".pn.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/06/06 19:39
S317	1	"20080115312".pn.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/06/06 19:47
S318	13	(US-0023349-$ | US-0115312-$ | US-0186624-$ | US-0207571-$ | US-20060186624-$ | US-20080115312-$ | US-20120207571-$ | US-20160023349-$ | US-6848980-$).DID.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/06/06 20:25
S319	2,000	A45C5/14.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/06/09 16:14

S320	380	A45C7/0045,005.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/06/09 16:15
S321	700	F16B12/24,44.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/06/09 16:34
S322	13	("7534065" | "9506489" | "20100254757" | "3944282" | "4995176" | "6612078" | "20110085853" | "4900090" | "6830236" | "6877824" | "8464408" | "20070145864" | "7152752").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/06/09 16:36
S355	14	(US-20110073516-$ or US-20190002004-$ or US-20180044059-$ or US-20170318927-$ or US-20130121783-$ or US-20110181008-$ or US-20100147642-$ or US-20090145790-$ or US-20080277221-$ or US-20050139745-$ or US-20080115312-$ or US-20170138382-$ or US-20070145864-$).did. or (US-9506489-$).did.	US-PGPUB; USPAT	OR	OFF	2019/06/09 21:00
S356	14	("20050139745" | "20080277221" | "20090145790" | "20100147642" | "20110073516" | "20110181008" | "20130121783" | "20170318927" | "20180044059" | "20190002004" | "5608603" | "6637707" | "8177463" | "9701443").PN.	US-PGPUB; USPAT	OR	OFF	2019/06/09 21:00
S357	4	S355 not S356	US-PGPUB; USPAT	OR	OFF	2019/06/09 21:01
S359	11	("20070145864" | "20100254757" | "20110085853" | "3944282" | "4900090" | "4995176" | "6612078" | "6830236" | "6877824" | "7152752" | "8464408").PN. OR ("9506489").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/09/03 21:43
S380	1	(US-20170138382-$).did.	US-PGPUB	OR	OFF	2019/09/04 13:40
S381	1	(US-20170138382-$).did.	US-PGPUB	OR	OFF	2019/09/04 13:42
S382	1	(US-20170138382-$).did.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/09/04 13:42
S386	1	"16752441"	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 21:31
S387	30	(US-0031222-$ | US-0055534-$ | US-0068903-$ | US-0076759-$ | US-0153312-$ | US-0154218-$ | US-0236482-$ | US-0274362-$ | US-0349013-$ | US-	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 21:38

		20090236482-$ | US-20130068903-$ | US-20130154218-$ | US-20140076759-$ | US-20150274362-$ | US-20170349013-$ | US-20180153312-$ | US-20190031222-$ | US-20200055534-$ | US-5538213-$ | US-7779764-$ | US-D871013-$).DID.				
S388	7	(("7779764") or ("20090236482") or ("2011174939") or ("20130154218") or ("D437669") or ("D456972") or ("D828671") or ("D871013")).PN. or ((2013/0068903) or (2013/146551) or (2014/0076759) or (2015/0274362) or (2017/0349013) or (2018/0153312) or (2019/0031222) or (2020/0055534)).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 21:41
S389	14	(("7779764") or ("20090236482") or ("2011174939") or ("20130154218") or ("20130068903") or ("2013146551") or ("20140076759") or ("20150274362") or ("20170349013") or ("20180153312") or ("20190031222") or ("20200055534") or ("D437669") or ("D456972") or ("D828671") or ("D871013")).PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 21:41
S390	2	(("D668869") or ("D815831")).PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 21:43
S391	980	((("MILWAUKEE") near3 ("ELECTRIC") near3 ("TOOL") near3 ("CORPORATION"))).AS,AANM.	USPAT	OR	OFF	2020/09/17 21:48
S392	67	((("Brunner") near3 ("Yaron"))).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 21:48
S393	55	((("Squiers") near3 ("Grant") near3 ("T"))).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 21:48
S394	89	((("Hoppe") near3 ("Christopher") near3 ("S"))).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 21:48
S395	162	((("Hyma") near3 ("Steven") near3 ("W"))).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 21:48
S396	12	(("8505729") or ("8567796") or ("8979100") or ("9511491") or ("20090026901") or ("20150376917") or ("D395533") or ("D653832") or ("D661858") or ("D738106") or ("D816334") or ("D826510")).PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 21:51

S397	262	(US-0000440-$ | US-0002004-$ | US-0006770-$ | US-0023349-$ | US-0024468-$ | US-0027475-$ | US-0031731-$ | US-0031732-$ | US-0038367-$ | US-0039781-$ | US-0044059-$ | US-0052276-$ | US-0062244-$ | US-0068757-$ | US-0071990-$ | US-0073516-$ | US-0090616-$ | US-0103494-$ | US-0104308-$ | US-0104921-$ | US-0106244-$ | US-0115312-$ | US-0115715-$ | US-0119060-$ | US-0121056-$ | US-0121547-$ | US-0121783-$ | US-0127129-$ | US-0130034-$ | US-0134607-$ | US-0138382-$ | US-0139566-$ | US-0139665-$ | US-0139745-$ | US-0144500-$ | US-0145700-$ | US-0145790-$ | US-0145866-$ | US-0145913-$ | US-0146589-$ | US-0147642-$ | US-0155613-$ | US-0160886-$ | US-0161518-$ | US-0161975-$ | US-0165828-$ | US-0166352-$ | US-0166516-$ | US-0168880-$ | US-0169739-$ | US-0171228-$ | US-0174392-$ | US-0178946-$ | US-0180250-$ | US-0181008-$ | US-0184034-$ | US-0186624-$ | US-0194543-$ | US-0195793-$ | US-0205877-$ | US-0206656-$ | US-0207571-$ | US-0217464-$ | US-0219193-$ | US-0220531-$ | US-0220758-$ | US-0223971-$ | US-0225371-$ | US-0239808-$ | US-0254946-$ | US-0257958-$ | US-0266804-$ | US-0271280-$ | US-0271616-$ | US-0277221-$ | US-0290288-$ | US-0308369-$ | US-0318927-$ | US-0320243-$ | US-0326406-$ | US-10434638-$ | US-1276744-$ | US-1477050-$ | US-2042387-$ | US-2430200-$ | US-2970358-$ | US-20020000440-$ | US-20020171228-$ | US-20030115715-$ | US-20030146589-$ | US-20030184034-$ | US-20030205877-$ | US-20040103494-$ | US-20040195793-$ | US-20040206656-$ | US-20050062244-$ | US-20050104308-$ | US-20050139745-$ | US-20060006770-$ | US-20060027475-$ | US-20060038367-$ | US-20060119060-$ | US-20060186624-$ | US-20060254946-$ | US-20070068757-$ | US-20070090616-$ | US-20070145700-$ | US-20070194543-$ | US-20080104921-$ | US-20080115312-$ | US-20080121547-$ | US-20080134607-$ | US-20080169739-$ | US-20080271280-$ | US-20080277221-$ | US-20080308369-$ | US-20090071990-$ | US-20090145790-$ | US-20090145866-$ | US-20090145913-$ | US-20090178946-$ | US-20100052276-$ | US-20100139566-$ | US-	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 21:53

		20100147642-$ | US-20100219193-$ | US-20110073516-$ | US-20110139665-$ | US-20110155613-$ | US-20110181008-$ | US-20110220531-$ | US-20120160886-$ | US-20120180250-$ | US-20120207571-$ | US-20120326406-$ | US-20130024468-$ | US-20130031731-$ | US-20130031732-$ | US-20130121783-$ | US-20130127129-$ | US-20130223971-$ | US-20140161518-$ | US-20140166516-$ | US-20140000-$ | US-20160023349-$ | US-20160130034-$ | US-20160144500-$ | US-20160168880-$ | US-20170121056-$ | US-20170138382-$ | US-20170165828-$ | US-20170166352-$ | US-20170174392-$ | US-20170217464-$ | US-20170239808-$ | US-20170257958-$ | US-20170266804-$ | US-20170318927-$ | US-20180044059-$ | US-20180161975-$ | US-20180220758-$ | US-20180290288-$ | US-20190002004-$ | US-20190039781-$ | US-20190106244-$ | US-20190225371-$ | US-2608238-$ | US-3117692-$ | US-3506321-$ | US-3974898-$ | US-4168076-$ | US-5035445-$ | US-5105947-$ | US-5240264-$ | US-5301829-$ | US-5429260-$).DID.				
S398	53	(US-5595228-$ | US-5608603-$ | US-5628443-$ | US-5797617-$ | US-5951037-$ | US-5988473-$ | US-6050660-$ | US-6085925-$ | US-6109627-$ | US-6176559-$ | US-6347847-$ | US-6367631-$ | US-6371320-$ | US-6431580-$ | US-6547347-$ | US-6601930-$ | US-6619772-$ | US-6637707-$ | US-6641013-$ | US-6945546-$ | US-6948691-$ | US-6983946-$ | US-7044484-$ | US-7066475-$ | US-7147243-$ | US-7263742-$ | US-7367571-$ | US-7503569-$ | US-7658887-$ | US-7780026-$ | US-7841144-$ | US-7212840-$ | US-8028845-$ | US-8132819-$ | US-8177463-$ | US-8191910-$ | US-8454033-$ | US-8459495-$ | US-8677661-$ | US-8689396-$ | US-8714355-$ | US-8813960-$ | US-8875888-$ | US-8985922-$ | US-9132543-$ | US-9506489-$ | US-9566990-$ | US-9616562-$ | US-9643629-$ | US-9701443-$ | US-9872562-$ | US-9750543-$ | US-D701696-$).DID.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 21:53
S399	570	220/4.27.ccls.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 22:01

S400	392	B65D21/0223.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 22:01
S401	2,201	A45C5/14,0045.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 22:02
S402	3,330	A45C13/02.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 22:02
S403	423	A45F3/10.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 22:02
S404	923	B25H1/04.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 22:02
S405	1,163	B25H3/02.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 22:02
S406	197	B25H3/021.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 22:02
S407	1,141	B62B1/14.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 22:03
S408	717	B65D21/0209,0228.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 22:03
S409	468	B25H3/023.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 22:03
S410	940	B62B5/067.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 22:03
S411	38	B65D2255/00.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 22:03
S412	203	B65H2701/533.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 22:03
S413	2	(("10583962") or ("10703534")).PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 22:05
S414	1	"15826201"	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 22:08

S415	5	"15826232"	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 22:08
S416	3	"16216724"	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 22:09
S417	1	"10703534".pn.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 22:19
S418	0	"15826201".a[.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 22:20
S419	0	"15826201".ap.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 22:20
S420	0	"15826201".did.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 22:20
S421	4	("2018/0161975").URPN.	USPAT	OR	OFF	2020/09/17 22:21
S422	188	(US-0271616-$ | US-0320243-$ | US-10434638-$ | US-1276744-$ | US-1321247-$ | US-14125488-$ | US-1428764-$ | US-1477050-$ | US-1819487-$ | US-19750543-$ | US-2042387-$ | US-2970358-$ | US-20140000-$ | US-20218996-$ | US-2047181-$ | US-2289671-$ | US-2330521-$ | US-2346741-$ | US-2406331-$ | US-2413265-$ | US-2456341-$ | US-2555660-$ | US-2555661-$ | US-2608238-$ | US-2805799-$ | US-29708343-$ | US-3117692-$ | US-3974898-$ | US-3141354-$ | US-3510307-$ | US-4168076-$ | US-4415638-$ | US-5035445-$ | US-5105947-$ | US-5240264-$ | US-5301829-$ | US-5595228-$ | US-5608603-$ | US-5628443-$ | US-5797617-$ | US-5951037-$ | US-5988473-$ | US-6050660-$ | US-6085925-$ | US-6109627-$ | US-6176559-$ | US-6347847-$ | US-6367631-$ | US-6371320-$ | US-6431580-$ | US-6601930-$ | US-6619772-$ | US-6637707-$ | US-6641013-$ | US-6945546-$ | US-6948691-$ | US-6983946-$ | US-7044484-$ | US-7066475-$ | US-7147243-$ | US-7263742-$ | US-7367571-$ | US-7503569-$ | US-7658887-$ | US-7779764-$ | US-7780026-$ | US-8028845-$ | US-8177463-$ | US-8191910-$ | US-8454033-$ | US-8505729-$ | US-8567796-$ | US-8689396-$ | US-8714355-$ | US-	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 22:31

		8979100-$ | US-8985922-$ | US-9511491-$ | US-9566990-$ | US-9616562-$ | US-9643629-$ | US-9313802-$ | US-D395533-$ | US-D437669-$ | US-D456972-$ | US-D525789-$ | US-D630851-$ | US-D653832-$ | US-D661858-$ | US-D663952-$ | US-D664354-$ | US-D674605-$ | US-D701696-$ | US-D738106-$ | US-D753394-$ | US-D753395-$ | US-D765974-$ | US-D770179-$ | US-D790221-$ | US-D814187-$ | US-D816334-$ | US-D826510-$ | US-D828671-$ | US-D833744-$ | US-D837515-$ | US-D871013-$ | US-20020000440-$ | US-20020171228-$ | US-20030115715-$ | US-20030146589-$ | US-20030184034-$ | US-20030205877-$ | US-20040103494-$ | US-20040195793-$ | US-20040206656-$ | US-20050062244-$ | US-20050104308-$ | US-20050139745-$ | US-20060006770-$ | US-20060027475-$ | US-20060119060-$ | US-20060186624-$ | US-20060254946-$ | US-20070068757-$ | US-20070090616-$ | US-20070145700-$ | US-20070194543-$ | US-20080115312-$ | US-20080121547-$ | US-20080169739-$ | US-20080271280-$ | US-20080277221-$ | US-20090026901-$ | US-20090071990-$ | US-20090145790-$ | US-20090145866-$ | US-20090145913-$ | US-20090178946-$ | US-20100052276-$ | US-20100139566-$ | US-20100147642-$ | US-20100219193-$ | US-20110139665-$ | US-20110155613-$ | US-20110181008-$ | US-20120160886-$ | US-20120180250-$ | US-20120207571-$ | US-20130024468-$ | US-20130031731-$ | US-20130031732-$ | US-20130121783-$ | US-20130127129-$ | US-20130154218-$ | US-20130223971-$ | US-20140076759-$ | US-20150274362-$ | US-20150376917-$ | US-20160023349-$ | US-20170138382-$ | US-20170165828-$ | US-20170174392-$ | US-20170217464-$ | US-20170257958-$ | US-20170349013-$ | US-20180044059-$ | US-20180220758-$ | US-20190031222-$ | US-20190106244-$ | US-20190225371-$ | US-20200055534-$).DID.				
S423	6	("2016/0144500").URPN.	USPAT	OR	OFF	2020/09/18 00:00
S424	13	("20030094392" | "20070034539" | "20120024739" | "20120312812" | "20160008972" | "20160144500" | "5325966" | "6082539" | "7523827").PN. OR ("9725209").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/18 00:01

S425	146	(US-10434638-$ | US-2042387-$ | US-2970358-$ | US-3117692-$ | US-3974898-$ | US-4168076-$ | US-5035445-$ | US-5105947-$ | US-5240264-$ | US-5301829-$ | US-5595228-$ | US-5608603-$ | US-5628443-$ | US-5797617-$ | US-5951037-$ | US-5988473-$ | US-6050660-$ | US-6085925-$ | US-6109627-$ | US-6176559-$ | US-6347847-$ | US-6367631-$ | US-6371320-$ | US-6431580-$ | US-6601930-$ | US-6619772-$ | US-6637707-$ | US-6641013-$ | US-6945546-$ | US-6948691-$ | US-6983946-$ | US-7044484-$ | US-7066475-$ | US-7147243-$ | US-7263742-$ | US-7367571-$ | US-7503569-$ | US-7658887-$ | US-7779764-$ | US-7780026-$ | US-8028845-$ | US-8177463-$ | US-8191910-$ | US-8454033-$ | US-8505729-$ | US-8567796-$ | US-8689396-$ | US-8714355-$ | US-8979100-$ | US-8985922-$ | US-9511491-$ | US-9566990-$ | US-9616562-$ | US-9643629-$ | US-D395533-$ | US-D437669-$ | US-D456972-$ | US-D525789-$ | US-D630851-$ | US-D653832-$ | US-D661858-$ | US-D663952-$ | US-D664354-$ | US-D674605-$ | US-D701696-$ | US-D738106-$ | US-D753394-$ | US-D753395-$ | US-D765974-$ | US-D770179-$ | US-D790221-$ | US-D814187-$ | US-D816334-$ | US-D826510-$ | US-D828671-$ | US-D833744-$ | US-D837515-$ | US-D871013-$ | US-20020000440-$ | US-20020171228-$ | US-20030115715-$ | US-20030146589-$ | US-20030184034-$ | US-20030205877-$ | US-20040103494-$ | US-20040195793-$ | US-20040206656-$ | US-20050062244-$ | US-20050104308-$ | US-20050139745-$ | US-20060006770-$ | US-20060027475-$ | US-20060119060-$ | US-20060186624-$ | US-20060254946-$ | US-20070068757-$ | US-20070090616-$ | US-20070145700-$ | US-20070194543-$ | US-20080115312-$ | US-20080121547-$ | US-20080169739-$ | US-20080271280-$ | US-20080277221-$ | US-20090026901-$ | US-20090071990-$ | US-20090145790-$ | US-20090145866-$ | US-20090145913-$ | US-20090178946-$ | US-20100052276-$ | US-20100139566-$ | US-20100147642-$ | US-20100219193-$ | US-20110139665-$ | US-20110155613-$ | US-20110181008-$ | US-20120160886-$ | US-20120180250-$ | US-20120207571-$ | US-20130024468-$ | US-	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/22 19:41

		20130031731-$ | US-20130031732-$ | US-20130121783-$ | US-20130127129-$ | US-20130154218-$ | US-20130223971-$ | US-20140076759-$ | US-20150274362-$ | US-20150376917-$ | US-20160023349-$ | US-20170138382-$ | US-20170165828-$ | US-20170174392-$ | US-20170217464-$ | US-20170257958-$ | US-20170349013-$ | US-20180044059-$ | US-20180220758-$ | US-20190031222-$ | US-20190106244-$ | US-20190225371-$ | US-20200055534-$).DID.				
S426	13	(US-20170138382-$ or US-20150274362-$ or US-20190225371-$ or US-20180161975-$ or US-20190106244-$).did. or (US-9506489-$ or US-D816334-$ or US-8979100-$ or US-9701443-$ or US-10583962-$ or US-D895967-$ or US-5608603-$ or US-9725209-$).did.	US-PGPUB; USPAT	OR	OFF	2020/09/22 19:42
S427	146	(US-20200055534-$ or US-20190225371-$ or US-20190106244-$ or US-20190031222-$ or US-20180220758-$ or US-20180044059-$ or US-20170349013-$ or US-20170257958-$ or US-20170217464-$ or US-20170174392-$ or US-20170165828-$ or US-20170138382-$ or US-20160023349-$ or US-20150376917-$ or US-20150274362-$ or US-20140076759-$ or US-20130223971-$ or US-20130154218-$ or US-20130127129-$ or US-20130121783-$ or US-20130031732-$ or US-20130031731-$ or US-20130024468-$ or US-20120207571-$ or US-20120180250-$ or US-20120160886-$).did. or (US-20110181008-$ or US-20110155613-$ or US-20110139665-$ or US-20100219193-$ or US-20100147642-$ or US-20100139566-$ or US-20100052276-$ or US-20090178946-$ or US-20090145913-$ or US-20090145866-$ or US-20090145790-$ or US-20090071990-$ or US-20090026901-$ or US-20080277221-$ or US-20080271280-$ or US-20080169739-$ or US-20080121547-$ or US-20080115312-$ or US-20070194543-$ or US-20070145700-$ or US-20070090616-$ or US-20070068757-$ or US-20060254946-$ or US-20060186624-$ or US-20060119060-$ or US-20060027475-$ or US-20060006770-$).did. or (US-20050139745-$ or US-20050104308-$ or US-20050062244-$ or US-20040206656-$ or US-20040195793-$ or US-20040103494-$ or US-20030205877-	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/22 19:42

		$ or US-20030184034-$ or US-20030146589-$ or US-20030115715-$ or US-20020171228-$ or US-20020000440-$).did. or (US-D871013-$ or US-10434638-$ or US-D837515-$ or US-D833744-$ or US-D828671-$ or US-D826510-$ or US-D816334-$ or US-D814187-$ or US-D790221-$ or US-9643629-$ or US-9616562-$ or US-9566990-$ or US-9511491-$ or US-D770179-$ or US-D765974-$ or US-D753395-$ or US-D753394-$ or US-D738106-$ or US-8985922-$ or US-8979100-$ or US-8714355-$ or US-8689396-$ or US-D701696-$ or US-8567796-$ or US-8505729-$ or US-8454033-$).did. or (US-D674605-$ or US-D664354-$ or US-D663952-$ or US-D661858-$ or US-8191910-$ or US-8177463-$ or US-D653832-$ or US-8028845-$ or US-D630851-$ or US-7780026-$ or US-7779764-$ or US-7658887-$ or US-7503569-$ or US-7367571-$ or US-7263742-$ or US-7147243-$ or US-D525789-$ or US-7066475-$ or US-7044484-$ or US-6983946-$ or US-6948691-$ or US-6945546-$ or US-6641013-$ or US-6637707-$ or US-6619772-$ or US-6601930-$ or US-6431580-$).did. or (US-D456972-$ or US-6371320-$ or US-6367631-$ or US-6347847-$ or US-D437669-$ or US-6176559-$ or US-6109627-$ or US-6085925-$ or US-6050660-$ or US-5988473-$ or US-5951037-$ or US-5797617-$ or US-D395533-$ or US-5628443-$ or US-5608603-$ or US-5595228-$ or US-5301829-$ or US-5240264-$ or US-5105947-$ or US-5035445-$ or US-4168076-$ or US-3974898-$ or US-3117692-$ or US-2970358-$ or US-2042387-$).did. or (US-3117692-$ or US-2970358-$ or US-2042387-$).did.				
S428	6	S426 not S425	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/22 19:43
S430	1	"20120074022".pn.	US-PGPUB; USPAT; USOCR	OR	OFF	2021/01/02 18:34

S431	0	("2012/0074022").URPN.	USPAT	OR	OFF	2021/01/02 18:34
S432	26	(US-0074158-$ | US-0127146-$ | US-0168376-$ | US-0242144-$ | US-0296443-$ | US-10758065-$ | US-20050242144-$ | US-20080296443-$ | US-20090127146-$ | US-20120074158-$ | US-20190168376-$ | US-3514170-$ | US-3743372-$ | US-4805859-$ | US-5282554-$ | US-5653366-$ | US-5775046-$ | US-5890613-$ | US-5957421-$ | US-8448829-$).DID.	US-PGPUB; USPAT; USOCR	OR	OFF	2021/01/02 18:35
S433	73	(US-0034515-$ | US-0094393-$ | US-0099405-$ | US-0125072-$ | US-0186513-$ | US-0221177-$ | US-0243925-$ | US-0292213-$ | US-0299027-$ | US-10106180-$ | US-10583962-$ | US-20020125072-$ | US-20030094393-$ | US-20120292213-$ | US-20150034515-$ | US-20160221177-$ | US-20180099405-$ | US-20180186513-$ | US-20200243925-$ | US-20200299027-$ | US-3225865-$ | US-4971201-$ | US-5098235-$ | US-6305498-$ | US-9506489-$ | US-9725209-$ | US-D232798-$ | US-D319016-$ | US-D325324-$ | US-D326815-$ | US-D340167-$ | US-D352208-$ | US-D361511-$ | US-D415393-$ | US-D420860-$ | US-D527225-$ | US-D536580-$ | US-D649350-$ | US-D738105-$ | US-D753396-$ | US-D777426-$ | US-D784089-$ | US-D803631-$ | US-D806483-$ | US-D831352-$ | US-D836995-$ | US-D839681-$ | US-D845080-$ | US-D845081-$ | US-D857387-$ | US-D873085-$ | US-D880252-$ | US-D880951-$ | US-D883752-$ | US-D887788-$ | US-D888422-$ | US-D888503-$ | US-D891193-$ | US-D891195-$ | US-D891875-$ | US-D892565-$ | US-D895375-$).DID.	US-PGPUB; USPAT; USOCR	OR	OFF	2021/01/02 18:37
S434	2,094	B65D21/02,0204,0213,0219,064,083.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2021/01/02 18:43
S436	194	B65D2251/1025.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2021/01/02 18:44
S437	1,248	206/373,478.ccls.	US-PGPUB; USPAT; USOCR	OR	OFF	2021/01/02 18:45
S438	3,180	220/23.4,481,735,810.ccls.	US-PGPUB; USPAT; USOCR	OR	OFF	2021/01/02 18:45

S439	1,440	248/220.21,224.51,225.11.ccls.	US-PGPUB; USPAT; USOCR	OR	OFF	2021/01/02 18:46
S440	642	52/592.6,590.1.ccls.	US-PGPUB; USPAT; USOCR	OR	OFF	2021/01/02 18:46
S441	7	("2011/0158761").URPN.	USPAT	OR	OFF	2021/01/02 20:09
S442	7	("2008/0110790").URPN.	USPAT	OR	OFF	2021/01/02 20:11
S443	20	("20030183549" | "20040206655" | "20050183980" | "20080110790" | "20090178989" | "20140261910" | "3934724" | "3951265" | "4102453" | "4189052" | "4308954" | "4320837" | "5582296" | "5595338" | "5881902" | "6062388" | "6273259" | "7686167" | "7690856" | "9926164").PN. OR ("10829268").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2021/01/02 20:11
S444	48	("0131258" | "0760974" | "2257536" | "2809404" | "3301200" | "3329103" | "3429472" | "3878796" | "3989156" | "4048754" | "4359948" | "4703866" | "4979446" | "5058746" | "5094175" | "5170722" | "5215205" | "5360128").PN. OR ("5593058").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2021/01/02 20:17
S445	3	("131258").URPN.	USPAT	OR	OFF	2021/01/02 20:18
S446	3	(US-20120074022-$ or US-20190168376-$).did. or (US-10829268-$).did.	US-PGPUB; USPAT	OR	OFF	2021/01/02 21:36
S447	3	(US-20120074022-$ or US-20190168376-$).did. or (US-10829268-$).did.	US-PGPUB; USPAT	OR	OFF	2021/01/02 21:36
S448	36	(US-20170138382-$ or US-20150274362-$ or US-20190225371-$ or US-20180161975-$ or US-20190106244-$ or US-20120074022-$ or US-20190168376-$ or US-20190039781-$ or US-20170121056-$ or US-20190002004-$ or US-20180290288-$ or US-20180220758-$ or US-20180044059-$ or US-20170318927-$ or US-20170166352-$ or US-20160168880-$ or US-20110139665-$ or US-20110073516-$ or US-20100219193-$ or US-20100147642-$ or US-20090145866-$ or US-20080277221-$ or US-20060254946-$ or US-20120326406-$).did. or (US-9506489-$ or US-D816334-$ or US-8979100-$ or US-9701443-$ or US-10583962-$ or US-D895967-$ or US-	US-PGPUB; USPAT	OR	OFF	2021/01/02 21:37

		5608603-$ or US-9725209-$ or US-10829268-$ or US-D895966-$ or US-5628443-$ or US-9850029-$).did.				
S449	62	(US-0034515-$ | US-0094393-$ | US-0099405-$ | US-0125072-$ | US-0186513-$ | US-0221177-$ | US-0243925-$ | US-0292213-$ | US-0299027-$ | US-10106180-$ | US-10583962-$ | US-20020125072-$ | US-20030094393-$ | US-20120292213-$ | US-20150034515-$ | US-20160221177-$ | US-20180099405-$ | US-20180186513-$ | US-20200243925-$ | US-20200299027-$ | US-3225865-$ | US-4971201-$ | US-5098235-$ | US-6305498-$ | US-9506489-$ | US-9725209-$ | US-D232798-$ | US-D319016-$ | US-D325324-$ | US-D326815-$ | US-D340167-$ | US-D352208-$ | US-D361511-$ | US-D415393-$ | US-D420860-$ | US-D527225-$ | US-D536580-$ | US-D649350-$ | US-D738105-$ | US-D753396-$ | US-D777426-$ | US-D784089-$ | US-D803631-$ | US-D806483-$ | US-D831352-$ | US-D836995-$ | US-D839681-$ | US-D845080-$ | US-D845081-$ | US-D857387-$ | US-D873085-$ | US-D880252-$ | US-D880951-$ | US-D883752-$ | US-D887788-$ | US-D888422-$ | US-D888503-$ | US-D891193-$ | US-D891195-$ | US-D891875-$ | US-D892565-$ | US-D895375-$).DID.	US-PGPUB; USPAT	OR	OFF	2021/01/02 21:37
S450	33	S448 not S449	US-PGPUB; USPAT	OR	OFF	2021/01/02 21:38
S451	99	(US-20190168376-$ or US-20120074158-$ or US-20090127146-$ or US-20080296443-$ or US-20050242144-$ or US-20200299027-$ or US-20200243925-$ or US-20180186513-$ or US-20180099405-$ or US-20160221177-$ or US-20150034515-$ or US-20120292213-$ or US-20030094393-$ or US-20020125072-$).did. or (US-10758065-$ or US-8448829-$ or US-5957421-$ or US-5890613-$ or US-5775046-$ or US-5653366-$ or US-5282554-$ or US-4805859-$ or US-3743372-$ or US-3514170-$ or US-0296443-$ or US-0242144-$ or US-0168376-$ or US-0127146-$ or US-0074158-$ or US-D895375-$ or US-D892565-$ or US-D891875-$ or US-D891195-$ or US-D891193-$ or US-D888503-$ or US-D888422-$ or US-D887788-$ or US-D883752-$ or US-	US-PGPUB; USPAT; USOCR	OR	OFF	2021/01/02 21:38

		D880951-$ or US-D880252-$).did. or (US-10583962-$ or US-D873085-$ or US-D857387-$ or US-D845081-$ or US-D845080-$ or US-D839681-$ or US-D836995-$ or US-D831352-$ or US-10106180-$ or US-D806483-$ or US-D803631-$ or US-9725209-$ or US-D784089-$ or US-D777426-$ or US-9506489-$ or US-D753396-$ or US-D738105-$ or US-D649350-$ or US-D536580-$ or US-D527225-$ or US-6305498-$ or US-D420860-$ or US-D415393-$ or US-D361511-$ or US-D352208-$ or US-D340167-$ or US-D326815-$).did. or (US-D325324-$ or US-5098235-$ or US-D319016-$ or US-4971201-$ or US-D232798-$ or US-3225865-$ or US-0299027-$ or US-0292213-$ or US-0243925-$ or US-0221177-$ or US-0186513-$ or US-0125072-$ or US-0099405-$ or US-0094393-$ or US-0034515-$).did. or (US-3514170-$ or US-0296443-$ or US-0242144-$ or US-0168376-$ or US-0127146-$ or US-0074158-$ or US-D232798-$ or US-3225865-$ or US-0299027-$ or US-0292213-$ or US-0243925-$ or US-0221177-$ or US-0186513-$ or US-0125072-$ or US-0099405-$ or US-0094393-$ or US-0034515-$).did.				
S452	32	S450 not S451	US-PGPUB; USPAT; USOCR	OR	OFF	2021/01/02 21:38

EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S323	949	A45C5/14.cpc.	USPAT	OR	OFF	2019/06/09 16:15
S324	163	A45C7/0045,005.cpc.	USPAT	OR	OFF	2019/06/09 16:15
S325	1,408	A45C13/02.cpc.	USPAT	OR	OFF	2019/06/09 16:15
S327	180	A45F3/10.cpc.	USPAT	OR	OFF	2019/06/09 16:15

S328	508	A47B47/00,04.cpc.	USPAT	OR	OFF	2019/06/09 16:16
S329	312	A47B67/04.cpc.	USPAT	OR	OFF	2019/06/09 16:16
S330	532	A47B87/02,007,00276.cpc.	USPAT	OR	OFF	2019/06/09 16:16
S331	104	A47B88/906.cpc.	USPAT	OR	OFF	2019/06/09 16:16
S332	47	A47B2210/19.cpc.	USPAT	OR	OFF	2019/06/09 16:17
S333	483	B25H1/04.cpc.	USPAT	OR	OFF	2019/06/09 16:17
S334	1,785	B25H3/021,022,023,04,06,02.cpc.	USPAT	OR	OFF	2019/06/09 16:17
S335	578	B62B1/14.cpc.	USPAT	OR	OFF	2019/06/09 16:17
S336	367	B62B5/067.cpc.	USPAT	OR	OFF	2019/06/09 16:18
S337	623	B62D21/0217,0219,0222,0228,023,0224,02,0223,0212,0204,0209.cpc.	USPAT	OR	OFF	2019/06/09 16:18
S339	193	B65D25/2823,06.cpc.	USPAT	OR	OFF	2019/06/09 16:19
S340	105	B65H2701/533.cpc.	USPAT	OR	OFF	2019/06/09 16:20
S343	526	B60P7/13,06.cpc.	USPAT	OR	OFF	2019/06/09 16:20
S344	637	E04F2201/013,0146,023,05.cpc.	USPAT	OR	OFF	2019/06/09 16:21
S345	733	Y10S292/38,53.cpc.	USPAT	OR	OFF	2019/06/09 16:21
S346	449	Y10T403/7045.cpc.	USPAT	OR	OFF	2019/06/09 16:21
S347	2,233	206/501,503,504,508,511.ccls.	USPAT	OR	OFF	2019/06/09 16:22
S348	391	220/4.27.ccls.	USPAT	OR	OFF	2019/06/09 16:22
S349	2,735	280/47.18,47.19,47.26,79.2,47.28,652.ccls.	USPAT	OR	OFF	2019/06/09 16:22
S350	1,372	312/107,111.ccls.	USPAT	OR	OFF	2019/06/09 16:23
S351	76	410/84.ccls.	USPAT	OR	OFF	2019/06/09 16:23
S352	502	248/224.7,225.21.ccls.	USPAT	OR	OFF	2019/06/09 16:23

S353	0	"20140161518".pn.	USPAT	OR	OFF	2019/06/09 16:31
S354	1	"20140161518".pn.	US-PGPUB; USPAT	OR	OFF	2019/06/09 16:31
S358	5	"Term Removed" or "Term Removed"	US-PGPUB; USPAT	OR	OFF	2019/06/09 21:00
S361	961	A45C5/14.cpc.	USPAT	OR	OFF	2019/09/03 21:44
S362	961	A45C5/14.cpc.	USPAT	OR	OFF	2019/09/03 21:44
S363	165	A45C7/0045,005.cpc.	USPAT	OR	OFF	2019/09/03 21:44
S364	1,426	A45C13/02.cpc.	USPAT	OR	OFF	2019/09/03 21:45
S365	1,426	A45C13/02.cpc.	USPAT	OR	OFF	2019/09/03 21:45
S366	1,426	A45C13/02.cpc.	USPAT	OR	OFF	2019/09/03 21:45
S367	183	A45F3/10.cpc.	USPAT	OR	OFF	2019/09/03 21:45
S368	512	A47B47/00,04.cpc.	USPAT	OR	OFF	2019/09/03 21:45
S369	312	A47B67/04.cpc.	USPAT	OR	OFF	2019/09/03 21:46
S370	534	A47B87/02,007,00276.cpc.	USPAT	OR	OFF	2019/09/03 21:46
S371	104	A47B88/906.cpc.	USPAT	OR	OFF	2019/09/03 21:46
S372	48	A47B2210/19.cpc.	USPAT	OR	OFF	2019/09/03 21:46
S373	491	B25H1/04.cpc.	USPAT	OR	OFF	2019/09/03 21:46
S374	1,803	B25H3/021,022,023,04,06,02.cpc.	USPAT	OR	OFF	2019/09/03 21:46
S376	1,803	B25H3/021,022,023,04,06,02.cpc.	USPAT	OR	OFF	2019/09/03 21:47
S377	580	B62B1/14.cpc.	USPAT	OR	OFF	2019/09/03 21:47

S378	105	B65H2701/533.cpc.	USPAT	OR	OFF	2019/09/03 21:47
S379	531	B60P7/13,06.cpc.	USPAT	OR	OFF	2019/09/03 21:48
S383	11	("20070145864" | "20100254757" | "20110085853" | "3944282" | "4900090" | "4995176" | "6612078" | "6830236" | "6877824" | "7152752" | "8464408").PN. OR ("9506489").URPN.	US-PGPUB; USPAT	OR	OFF	2019/09/04 13:24
S384	2	"Term Removed"	USPAT	OR	OFF	2019/09/04 13:40
S385	2	"Term Removed"	USPAT	OR	OFF	2019/09/04 13:42
S429	1	"Term Removed"	USPAT	OR	OFF	2020/09/22 19:42
S453	1,046	A45C5/14.cpc.	USPAT	OR	OFF	2021/01/02 19:50
S454	181	A45C7/0045,005.cpc.	USPAT	OR	OFF	2021/01/02 19:50
S456	1,531	A45C13/02.cpc.	USPAT	OR	OFF	2021/01/02 19:50
S457	208	A45F3/10.cpc.	USPAT	OR	OFF	2021/01/02 19:52
S458	609	A47B47/00,04.cpc.	USPAT	OR	OFF	2021/01/02 19:52
S459	322	A47B67/04.cpc.	USPAT	OR	OFF	2021/01/02 19:53
S460	612	A47B87/02,007,0276.cpc.	USPAT	OR	OFF	2021/01/02 19:53
S461	493	A47B88/90.cpc.	USPAT	OR	OFF	2021/01/02 19:53
S462	526	B25H1/04.cpc.	USPAT	OR	OFF	2021/01/02 19:54
S463	1,916	B25H3/021,022,023,04,06,02,.cpc.	USPAT	OR	OFF	2021/01/02 19:54
S464	615	B62B1/14.cpc.	USPAT	OR	OFF	2021/01/02 19:54
S465	451	B62B5/067.cpc.	USPAT	OR	OFF	2021/01/02 19:54
S466	1,640	B65D21/0217,0219,0222,0228,023,0224,02,0223,0212,0204,0209.cpc.	USPAT	OR	OFF	2021/01/02 19:54
S467	17	B65D2255/00.cpc.	USPAT	OR	OFF	2021/01/02 19:54

S468	217	B65D25/2823,06.cpc.	USPAT	OR	OFF	2021/01/02 19:55
S469	113	B65H2701/533.cpc.	USPAT	OR	OFF	2021/01/02 19:55
S470	562	B60P7/13,06.cpc.	USPAT	OR	OFF	2021/01/02 19:55
S471	760	E04F2201/013,0146,023,05,.cpc.	USPAT	OR	OFF	2021/01/02 19:55
S472	740	Y10S292/38,53.cpc.	USPAT	OR	OFF	2021/01/02 19:55
S473	456	Y10T403/7045.cpc.	USPAT	OR	OFF	2021/01/02 19:55
S474	20	("20070145864" | "20100254757" | "20110085853" | "3944282" | "4900090" | "4995176" | "6612078" | "6830236" | "6877824" | "7152752" | "8464408").PN. OR ("9506489").URPN.	US-PGPUB; USPAT	OR	OFF	2021/01/02 20:25
S475	178	("10434638" | "20020000440" | "20020171228" | "20030115715" | "20030146589" | "20030184034" | "20030205877" | "20040103494" | "20040195793" | "20040206656" | "20050062244" | "20050104308" | "20050139745" | "20060006770" | "20060027475" | "20060038367" | "20060119060" | "20060186624" | "20060254946" | "20070068757" | "20070090616" | "20070145700" | "20070194543" | "20080104921" | "20080115312" | "20080121547" | "20080134607" | "20080169739" | "20080271280" | "20080277221" | "20080308369" | "20090026901" | "20090071990" | "20090145790" | "20090145866" | "20090145913" | "20090178946" | "20100052276" | "20100139566" | "20100147642" | "20100219193" | "20110073516" | "20110139665" | "20110155613" | "20110181008" | "20110220531" | "20120160886" | "20120180250" | "20120207571" | "20120326406" | "20130024468" | "20130031731" | "20130031732" | "20130121783" | "20130127129" | "20130154218" | "20130223971" | "20140076759" | "20140161518" | "20140166516" | "20150274362" | "20150376917" | "20160023349" | "20160130034" | "20160144500" | "20160168880" | "20170121056" | "20170138382" | "20170165828" | "20170166352" | "20170174392" | "20170217464" | "20170239808" | "20170257958" | "20170266804" | "20170318927" | "20170349013" | "20180044059" | "20180161975" | "20180220758" | "20180290288" | "20190002004" | "20190031222" | "20190039781" | "20190106244" | "20190225371" | "20200055534" | "2042387" | "2430200" | "2970358" | "3117692" | "3506321" | "3974898" | "4168076" | "5035445" | "5105947").PN. OR ("5240264" | "5301829" | "5429260" | "5595228" | "5608603" | "5628443" | "5797617" |	US-PGPUB; USPAT	OR	OFF	2021/01/02 20:25

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S477	10	("20110168599" | "20170121056" | "20190039781").PN. OR ("10434638").URPN.	US-PGPUB; USPAT	OR	OFF	2021/01/02 20:26
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S482	36	"Term Removed" or "Term Removed"	US-PGPUB; USPAT	OR	OFF	2021/01/02 21:36
S483	36	"Term Removed" or "Term Removed"	US-PGPUB; USPAT	OR	OFF	2021/01/02 21:36
S484	3	"Term Removed"	USPAT	OR	OFF	2021/01/02 21:37

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Substitute for form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

Date Submitted: April 1, 2021

(use as many sheets as necessary)

Sheet 1 of 2

Complete if Known	
Application Number	16/752,441
Filing Date	January 24, 2020
First Named Inventor	Yaron Brunner
Art Unit	3736
Examiner Name	WEINERTH, GIDEON R
Attorney Docket Number	066749-2584

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] (*if known*)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	A1	509,839	11-28-1893	BOWLEY JOSEPH	
	A2	4,122,925	10-31-1978	Schultheiss; Udo F.	
	A3	4,673,070	06-16-1987	Ambal; Gilbert	
	A4	5,325,966	07-05-1994	Chang; Fu-Ping	
	A5	5,375,709	12-27-1994	Petro; Alan	
	A6	5,429,235	07-04-1995	Chen; Chang	
	A7	6,082,539	07-04-2000	Lee; Pei-Ling	
	A8	6,889,838	05-10-2005	Meier; Sven	
	A9	7,219,969	05-22-2007	Bezzubov; Feodor	
	A10	7,690,856	04-06-2010	Mortensen; Vidar	
	A11	8,602,217	12-10-2013	Sosnovsky; David	
	A12	8,640,913	02-04-2014	Berendes; Elmar	
	A13	10,603,783	03-31-2020	Brocket; Stephen	
	A14	10,703,534	07-01-2020	Brunner; Yaron	
	A15	10,750,833	08-25-2020	Burchia; Rolf	
	A16	10,793,172	10-06-2020	Brunner; Yaron	
	A17	10,829,269	11-10-2020	Gonitianer et al.	
	A18	2010/0224528	09-09-2010	Madsen; Jens Ole	
	A19	2011/0139777	06-16-2011	Sosnovsky; David	
	A20	2012/0152944	06-21-2012	Vilkomirski; Gil	
	A21	2014/0069832	03-13-2014	Roehm; Heiko	
	A22	2014/0123478	05-08-2014	Gylander; Jody	
	A23	2015/0014949	01-15-2015	Dittman; Rick Terrell	
	A24	2018/0229889	08-16-2018	Li; Yun	
	A25	2020/0346819	11-05-2020	KOGEL; Jan	
	A26	2021/0031975	02-04-2021	BRUNNER; Yaron	
	A27	2021/0039831	02-11-2021	BRUNNER; Yaron	
	A28	D738,622	09-15-2015	Sabbag; Yosi	

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 1 Applicant's unique citation designation number (optional). 2 See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. 3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). 4 For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. 5 Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. 6 Applicant is to place a check mark here if English language Translation is attached.

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PTO/SB/08 (09-06)
Approved for use through 03/31/2007. OMB 0651-0031
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Substitute for form 1449/PTO				***Complete if Known***	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				**Application Number**	16/752,441
				Filing Date	January 24, 2020
Date Submitted: April 1, 2021				**First Named Inventor**	Yaron Brunner
				Art Unit	3736
(use as many sheets as necessary)				Examiner Name	WEINERTH, GIDEON R
Sheet	2	of	2	Attorney Docket Number	066749-2584

UNPUBLISHED U.S. PATENT APPLICATION DOCUMENTS

Examiner Initials*	Cite No.[1]	U.S. Patent Application Document Serial Number-Kind Code[2] (*if known*)	Filing Date of Cited Document MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]-Number[4]-Kind Code[5] (*if known*)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Documents	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[6]

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.[1]	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, page(s), volume-issue number(s), publisher, city and/or country where published.	T[6]

Examiner Signature		Date Considered	

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Electronic Acknowledgement Receipt

EFS ID:	42346579
Application Number:	16752441
International Application Number:	
Confirmation Number:	9540
Title of Invention:	Utility Assembly and Coupling Mechanism
First Named Inventor/Applicant Name:	Yaron Brunner
Customer Number:	142078
Filer:	Derek Howard Campbell/Andrea Dietzel
Filer Authorized By:	Derek Howard Campbell
Attorney Docket Number:	066749-2584
Receipt Date:	01-APR-2021
Filing Date:	24-JAN-2020
Time Stamp:	17:21:47
Application Type:	Utility under 35 USC 111(a)

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	Transmittal Letter	066749-2584_Transmittal.pdf	80741 cb87d801459c6b47d59d1951cecda67a8b0 50386	no	2

Warnings:

Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	066749-2584_SB08.pdf	115790 e9d6ab2e2c8898aab6c8ba8bf7e415ed6f29dd67	no	2
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
			Total Files Size (in bytes):	196531	

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.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Milwaukee Electric Tool Corporation et al.
Title:	Utility Assembly and Coupling Mechanism
Appl. No.:	16/752,441
Filing Date:	January 24, 2020
Examiner:	WEINERTH, GIDEON R.
Art Unit:	3736
Confirmation Number:	9540

INFORMATION DISCLOSURE STATEMENT UNDER 37 CFR §1.56

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

Submitted herewith on Form PTO/SB/08 is a listing of the documents known to Applicants in order to comply with Applicants' duty of disclosure pursuant to 37 CFR § 1.56.

The submission of any document herewith, which is not a statutory bar, is not intended as an admission that such document constitutes prior art against the claims of the present application or that such document is considered material to patentability as defined in 37 CFR §1.56(b). Applicants do not waive any rights to take any action which would be appropriate to antedate or otherwise remove as a competent reference any document which is determined to be a *prima facie* art reference against the claims of the present application.

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2003 - Page 114
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

TIMING OF THE DISCLOSURE

The listed documents are being submitted in compliance with 37 CFR §1.97(b)(4), before the mailing of a first Office action after the filing of a Request for Continued Examination under §1.114.

RELEVANCE OF EACH DOCUMENT

All of the documents are in English.

Applicants respectfully request that each listed document be considered by the Examiner and be made of record in the present application and that an initialed copy of Form PTO/SB/08 be returned in accordance with MPEP §609.

Although Applicant believes that no fee is required for this Request, the Commissioner is hereby authorized to charge any additional fees which may be required for this Request to Deposit Account No. 18-0882.

Respectfully submitted,

Date April 1, 2021

By /Derek H. Campbell/

Reinhart Boerner Van Deuren s.c.
Customer Number: 142078
Telephone: (414) 298-8374
Facsimile: (414) 298-8097

Derek H. Campbell
Attorney for Applicant
Registration No. 70,608

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2003 - Page 115
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

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				Filing Date	January 24, 2020
Date Submitted: March 29, 2021				**First Named Inventor**	Yaron Brunner
				Art Unit	3736
(use as many sheets as necessary)				Examiner Name	WEINERTH, GIDEON R
Sheet	1	of	2	Attorney Docket Number	066749-2584

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] (*if known*)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	A1	1,084,360	01-13-1914	Rahm	
	A2	3,999,818	12-28-1976	Schankler	
	A3	4,243,279	01-06-1981	Ackeret	
	A4	5,433,416	07-18-1995	Johnson	
	A5	8,925,752	01-06-2015	Smith	
	A6	10,933,501	03-02-2021	Bisson	
	A7	2017/0138382	05-18-2017	KO	
	A8	2019/0225371	07-25-2019	Hoppe	
	A9	2020/0029543	01-30-2020	Householder	
	A10	2020/0223585	07-16-2020	Brunner et al.	
	A11	D285,986	10-07-1986	Huang	
	A12	D753,982	04-19-2016	Guirlinger	
	A13	D898,320	10-06-2020	Brunner et al.	

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Examiner Signature		Date Considered	

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Substitute for form 1449/PTO				***Complete if Known***	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				**Application Number**	16/752,441
				Filing Date	January 24, 2020
Date Submitted: March 29, 2021				**First Named Inventor**	Yaron Brunner
				Art Unit	3736
(use as many sheets as necessary)				Examiner Name	WEINERTH, GIDEON R
Sheet	2	of	2	Attorney Docket Number	066749-2584

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No.[1]	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, page(s), volume-issue number(s), publisher, city and/or country where published.	T[6]

Examiner Signature		Date Considered	

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Examiner:	WEINERTH, GIDEON R
Art Unit:	3736
Confirmation Number:	9540

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

Submitted herewith on Form PTO/SB/08 is a listing of the documents known to Applicants in order to comply with Applicants' duty of disclosure pursuant to 37 CFR § 1.56.

The submission of any document herewith, which is not a statutory bar, is not intended as an admission that such document constitutes prior art against the claims of the present application or that such document is considered material to patentability as defined in 37 CFR §1.56(b). Applicants do not waive any rights to take any action which would be appropriate to antedate or otherwise remove as a competent reference any document which is determined to be a *prima facie* art reference against the claims of the present application.

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2003 - Page 118
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

TIMING OF THE DISCLOSURE

The listed documents are being submitted in compliance with 37 CFR §1.97(b)(4), before the mailing of a first Office action after the filing of a Request for Continued Examination under §1.114.

RELEVANCE OF EACH DOCUMENT

All of the documents are in English.

Applicants respectfully request that each listed document be considered by the Examiner and be made of record in the present application and that an initialed copy of Form PTO/SB/08 be returned in accordance with MPEP §609.

Although Applicant believes that no fee is required for this Request, the Commissioner is hereby authorized to charge any additional fees which may be required for this Request to Deposit Account No. 18-0882.

Respectfully submitted,

Date March 29, 2021

By /Derek H. Campbell/

Reinhart Boerner Van Deuren s.c.
Customer Number: 142078
Telephone: (414) 298-8374
Facsimile: (414) 298-8097

Derek H. Campbell
Attorney for Applicant
Registration No. 70,608

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2003 - Page 119
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

Electronic Patent Application Fee Transmittal	
Application Number:	16752441
Filing Date:	24-Jan-2020
Title of Invention:	Utility Assembly and Coupling Mechanism
First Named Inventor/Applicant Name:	Yaron Brunner
Filer:	Derek Howard Campbell/Andrea Dietzel
Attorney Docket Number:	066749-2584
Filed as Large Entity	
Filing Fees for Utility under 35 USC 111(a)	

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($)
Miscellaneous:				
RCE- 1ST REQUEST	1801	1	1360	1360
		Total in USD ($)		**1360**

Electronic Acknowledgement Receipt	
EFS ID:	42310847
Application Number:	16752441
International Application Number:	
Confirmation Number:	9540
Title of Invention:	Utility Assembly and Coupling Mechanism
First Named Inventor/Applicant Name:	Yaron Brunner
Customer Number:	142078
Filer:	Derek Howard Campbell/Andrea Dietzel
Filer Authorized By:	Derek Howard Campbell
Attorney Docket Number:	066749-2584
Receipt Date:	29-MAR-2021
Filing Date:	24-JAN-2020
Time Stamp:	17:34:33
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	$1360
RAM confirmation Number	E20213SH34504317
Deposit Account	180882
Authorized User	Andrea Dietzel
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: 37 CFR 1.16 (National application filing, search, and examination fees) 37 CFR 1.17 (Patent application and reexamination processing fees)	

37 CFR 1.19 (Document supply fees)

37 CFR 1.20 (Post Issuance fees)

37 CFR 1.21 (Miscellaneous fees and charges)

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)	066749-2584_RCE.pdf	82034 3219d1aa40ed5f0333455adf3703650e67876cb3	no	3
Warnings:					
This is not a USPTO supplied RCE SB30 form.					
Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	066749-2584_SB08.pdf	110657 2f709a49cac793f9fd614959162bdc896b4c227b	no	2
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
3	Transmittal Letter	066749-2584_IDS_Transmittal.pdf	80722 64ef865e0fb45b448746b750fa534d29ace9a821	no	2
Warnings:					
Information:					
4	Fee Worksheet (SB06)	fee-info.pdf	30662 f8ac9d31faf7151aa2fcd9360a10a18d58b8bcee	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	304075		

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: RCEX
Doc description: Request for Continued Examination (RCE)

PTO/SB/30EFS (07-09)
Approved for use through 07/31/2012. 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	16/752,441	Filing Date	2020-01-24	Docket Number (if applicable)	066749-2584	Art Unit	3736
First Named Inventor	Yaron Brunner			Examiner Name	WEINERTH, GIDEON R		

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 180882

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

☒ Patent Practitioner Signature
☐ Applicant Signature

PTO/SB/30EFS (07-09)
Approved for use through 07/31/2012. 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	/Derek H. Campbell/	Date (YYYY-MM-DD)	2021-03-29
Name	Derek H. Campbell	Registration Number	70608

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.

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.
16/752,441	01/24/2020	Yaron Brunner	066749-2584	9540

142078 7590 01/25/2021

Reinhart (Milwaukee Tool)
ATTN: TRAVIS MCDONNELL, PARALEGAL
1000 NORTH WATER STREET
SUITE 2100
MILWAUKEE, WI 53202

EXAMINER	
WEINERTH, GIDEON R	

ART UNIT	PAPER NUMBER
3736	

NOTIFICATION DATE	DELIVERY MODE
01/25/2021	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):

IPAdmin@reinhartlaw.com

Notice of Allowability	Application No. 16/752,441	Applicant(s) Brunner et al.	
	Examiner GIDEON R WEINERTH	Art Unit 3736	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 12/18/2020.
   ☐ 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 1-20 . 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 1/7/2021.
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 _____.

/GIDEON R WEINERTH/
Examiner, Art Unit 3736

Reasons for Allowance

1. The following is an examiner's statement of reasons for allowance: The Terminal Disclaimer of 12/18/2020 overcomes the Double Patenting rejection issued on 9/25/2020.

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

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GIDEON R. WEINERTH whose telephone number is (571)270-5121. The examiner can normally be reached on Monday-Friday 10AM-6PM 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, Greg Pickett can be reached on (571) 272-4560. 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.

/GIDEON R WEINERTH/
Examiner, Art Unit 3736

Notice of References Cited	Application/Control No. 16/752,441	Applicant(s)/Patent Under Reexamination Brunner et al.	
	Examiner GIDEON R WEINERTH	Art Unit 3736	Page 1 of 2

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-20060254946-A1	11-2006	Becklin; Dennis M.	B65D21/0223	206/508
*	B	US-20080277221-A1	11-2008	Josefson; Mark L.	A45C5/14	190/18A
*	C	US-20100147642-A1	06-2010	Andochick; Scott E.	A45C7/0045	190/18A
*	D	US-20110139665-A1	06-2011	MADSEN; Jens Ole	B25H3/026	206/508
*	E	US-20120074022-A1	03-2012	McTavish; Gordon	B65D21/043	206/503
*	F	US-20120326406-A1	12-2012	LIFSHITZ; Omri	B25H3/02	280/47.19
*	G	US-8979100-B2	03-2015	Bensman; Mark	B25H3/021	280/47.26
*	H	US-20150274362-A1	10-2015	CHRISTOPHER; Brent	B25H3/02	206/506
*	I	US-20170138382-A1	05-2017	KO; Kenneth H.	F16B12/24	1/1
*	J	US-20170121056-A1	05-2017	Wang; Tzu-Chien	B25H3/02	1/1
*	K	US-20170166352-A1	06-2017	Hoppe; Christopher S.	B25H3/022	1/1
*	L	US-9701443-B2	07-2017	Wang; Tzu-Chien	B65D21/0219	1/1
*	M	US-9850029-B2	12-2017	Brunner; Yaron	B65D25/30	1/1

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.

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IPR2024-01400

Notice of References Cited	Application/Control No. 16/752,441	Applicant(s)/Patent Under Reexamination Brunner et al.	
	Examiner GIDEON R WEINERTH	Art Unit 3736	Page 2 of 2

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-20180044059-A1	02-2018	BRUNNER; Yaron	B65D21/0224	1/1
*	B	US-D816334-S	05-2018	Brunner; Yaron		D3/273
*	C	US-20180161975-A1	06-2018	Brunner; Yaron	B65D21/0228	1/1
*	D	US-20180220758-A1	08-2018	BURCHIA; Rolf	B25H3/027	1/1
*	E	US-20190002004-A1	01-2019	BRUNNER; Yaron	B25H3/02	1/1
*	F	US-20190039781-A1	02-2019	KOGEL; Jan	B65D21/0209	1/1
*	G	US-20190225371-A1	07-2019	Hoppe; Christopher S.	B65D21/0223	1/1
*	H	US-D895966-S	09-2020	Brunner; Yaron		D3/294
	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.

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IPR2024-01400

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/752,441	Brunner et al.
	Examiner	**Art Unit**
	GIDEON R WEINERTH	3736

CPC								
Symbol							**Type**	**Version**
B65D	/	21	/	0223			F	2013-01-01
B25H	/	3	/	02			I	2013-01-01
A45C	/	5	/	14			I	2013-01-01
A45C	/	7	/	005			I	2013-01-01
A45F	/	3	/	10			I	2013-01-01
B25H	/	1	/	04			I	2013-01-01
A45C	/	13	/	02			I	2013-01-01
B25H	/	3	/	021			I	2013-01-01
B65D	/	21	/	0209			I	2013-01-01
B62B	/	1	/	14			I	2013-01-01
B65D	/	21	/	0228			I	2013-01-01
B65H	/	2701	/	533			A	2013-01-01
A45C	/	7	/	0045			A	2013-01-01
B25H	/	3	/	023			A	2013-01-01
B62B	/	5	/	067			A	2013-01-01
B65D	/	2255	/	00			A	2013-01-01

CPC Combination Sets								
Symbol					**Type**	**Set**	**Ranking**	**Version**
	/		/					

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	1	
/GIDEON R WEINERTH/ Examiner, Art Unit 3736	20 January 2021	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1A

U.S. Patent and Trademark Office — Part of Paper No.: 20210120

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2003 - Page 134
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IPR2024-01400

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/752,441	Brunner et al.
	Examiner	**Art Unit**
	GIDEON R WEINERTH	3736

INTERNATIONAL CLASSIFICATION				
CLAIMED				
B65D	/	21	/	02
B65D	/	21	/	028
A45C	/	13	/	02
B25H	/	3	/	02

NON-CLAIMED				
	/		/	

US ORIGINAL CLASSIFICATION	
CLASS	**SUBCLASS**
206	501

CROSS REFERENCES(S)						
CLASS	**SUBCLASS (ONE SUBCLASS PER BLOCK)**					
206	504	508	511			
280	47.18					

NONE		**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	1	
/GIDEON R WEINERTH/ Examiner, Art Unit 3736	20 January 2021	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1A

U.S. Patent and Trademark Office — Part of Paper No.: 20210120

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2003 - Page 135
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IPR2024-01400

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/752,441	Brunner et al.
	Examiner	**Art Unit**
	GIDEON R WEINERTH	3736

☑ 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		10		19										
	2		11		20										
	3		12												
	4		13												
	5		14												
	6		15												
	7		16												
	8		17												
	9		18												

NONE		**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	1	
/GIDEON R WEINERTH/ Examiner, Art Unit 3736	20 January 2021	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1A

U.S. Patent and Trademark Office — Part of Paper No.: 20210120

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2003 - Page 136
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/752,441	Brunner et al.
	Examiner	Art Unit
	GIDEON R WEINERTH	3736

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

CLAIMS

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	09/22/2020	01/02/2021							
	1	✓	=							
	2	✓	=							
	3	✓	=							
	4	✓	=							
	5	✓	=							
	6	✓	=							
	7	✓	=							
	8	✓	=							
	9	✓	=							
	10	✓	=							
	11	✓	=							
	12	✓	=							
	13	✓	=							
	14	✓	=							
	15	✓	=							
	16	✓	=							
	17	✓	=							
	18	✓	=							
	19	✓	=							
	20	✓	=							

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2003 - Page 137
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/752,441	Brunner et al.
	Examiner	Art Unit
	GIDEON R WEINERTH	3736

CPC - Searched*		
Symbol	Date	Examiner

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner

* 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
Update searches from 15826201, 15826232, 16216724, See search history	09/16/2020	GW
Update search, Interference search, IDS search	01/02/2021	GW
review references from Inter Partes filings identified in the IDS of 1/7/2021	01/19/2021	GW

/GIDEON R WEINERTH/ Examiner, Art Unit 3736	/GIDEON R WEINERTH/ Examiner, Art Unit 3736

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2003 - Page 138
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/752,441	Brunner et al.
	Examiner	Art Unit
	GIDEON R WEINERTH	3736

Interference Search			
US Class/CPC Symbol	**US Subclass/CPC Group**	**Date**	**Examiner**
A45C5	14	01/02/2021	GW
A45C7	0045,005	01/02/2021	GW
A45C13	02	01/02/2021	GW
A45F3	10	01/02/2021	GW
A47B47	00,04	01/02/2021	GW
A47B67	04	01/02/2021	GW
A47B87	02,007,0276	01/02/2021	GW
A47B88	90	01/02/2021	GW
B25H1	04	01/02/2021	GW
B25H3	021,022,023,04,06,02	01/02/2021	GW
B62B1	14	01/02/2021	GW
B62B5	067	01/02/2021	GW
B65D21	067	01/02/2021	GW
B65D2255	00	01/02/2021	GW
B65D25	2823,06	01/02/2021	GW
B65H2701	533	01/02/2021	GW
B60P7	13,06	01/02/2021	GW
E04F2201	013,0146,023,05	01/02/2021	GW
Y10S292	38,53	01/02/2021	GW
Y10T403	7045	01/02/2021	GW

/GIDEON R WEINERTH/ Examiner, Art Unit 3736	/GIDEON R WEINERTH/ Examiner, Art Unit 3736

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2003 - Page 139
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
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PTO/SB/08 (09-06)
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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.

Substitute for form 1449/PTO				***Complete if Known***	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				**Application Number**	16/752,441
				Filing Date	January 24, 2020
Date Submitted: January 7, 2021				**First Named Inventor**	Yaron Brunner
				Art Unit	3736
(use as many sheets as necessary)				Examiner Name	WEINERTH, GIDEON R
Sheet	1	of	3	Attorney Docket Number	066749-2584

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] (*if known*)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear

UNPUBLISHED U.S. PATENT APPLICATION DOCUMENTS					
Examiner Initials*	Cite No.[1]	U.S. Patent Application Document Serial Number-Kind Code[2] (*if known*)	Filing Date of Cited Document MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]-Number[4]-Kind Code[5] (*if known*)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Documents	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[6]

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No.[1]	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, page(s), volume-issue number(s), publisher, city and/or country where published.	T[6]
/G.R.W/	A1	Inter Partes Review No. 2021-00373, "Petition for Inter Partes Review of U.S. Pat. No. 10,583,962," filed January 5, 2021, 198 pages.	
/G.R.W/	A2	Exhibit 1001 in Petition for Inter Partes Review of U.S. Pat. No. 10,583,962, filed January 5, 2021, 64 pages.	
/G.R.W/	A3	Exhibit 1002 in Petition for Inter Partes Review of U.S. Pat. No. 10,583,962, filed January 5, 2021, 75 pages.	
/G.R.W/	A4	Exhibit 1003 in Petition for Inter Partes Review of U.S. Pat. No. 10,583,962, filed January 5, 2021, 13 pages.	
/G.R.W/	A5	Exhibit 1004 in Petition for Inter Partes Review of U.S. Pat. No. 10,583,962, filed January 5, 2021, 18 pages.	

Examiner Signature	/GIDEON R WEINERTH/	Date Considered	01/20/2021

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 1 Applicant's unique citation designation number (optional). 2 See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. 3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). 4 For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. 5 Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. 6 Applicant is to place a check mark here if English language Translation is attached.

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 2 hours 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, 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**.

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Substitute for form 1449/PTO				***Complete if Known***	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				**Application Number**	16/752,441
Date Submitted: January 7, 2021				**Filing Date**	January 24, 2020
				First Named Inventor	Yaron Brunner
(use as many sheets as necessary)				Art Unit	3736
				Examiner Name	WEINERTH, GIDEON R
Sheet	2	of	3	Attorney Docket Number	066749-2584

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No.[1]	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, page(s), volume-issue number(s), publisher, city and/or country where published.	T[6]
/G.R.W/	A6	Exhibit 1005 in Petition for Inter Partes Review of U.S. Pat. No. 10,583,962, filed January 5, 2021, 9 pages.	
	A7	Exhibit 1006 in Petition for Inter Partes Review of U.S. Pat. No. 10,583,962, filed January 5, 2021, 176 pages.	
	A8	Exhibit 1007 in Petition for Inter Partes Review of U.S. Pat. No. 10,583,962, filed January 5, 2021, 22 pages.	
	A9	Exhibit 1008 in Petition for Inter Partes Review of U.S. Pat. No. 10,583,962, filed January 5, 2021, 6 pages.	
	A10	Exhibit 1009 in Petition for Inter Partes Review of U.S. Pat. No. 10,583,962, filed January 5, 2021, 24 pages.	
	A11	Exhibit 1010 in Petition for Inter Partes Review of U.S. Pat. No. 10,583,962, filed January 5, 2021, 19 pages.	
	A12	Exhibit 1011 in Petition for Inter Partes Review of U.S. Pat. No. 10,583,962, filed January 5, 2021, 26 pages.	
	A13	Exhibit 1012 in Petition for Inter Partes Review of U.S. Pat. No. 10,583,962, filed January 5, 2021, 3 pages.	
	A14	Exhibit 1013 in Petition for Inter Partes Review of U.S. Pat. No. 10,583,962, filed January 5, 2021, 168 pages.	
	A15	Exhibit 1014 in Petition for Inter Partes Review of U.S. Pat. No. 10,583,962, filed January 5, 2021, PART A pages 1-166 of 481 pages.	
	A16	Exhibit 1014 in Petition for Inter Partes Review of U.S. Pat. No. 10,583,962, filed January 5, 2021, PART B pages 167-320 of 481 pages.	
	A17	Exhibit 1014 in Petition for Inter Partes Review of U.S. Pat. No. 10,583,962, filed January 5, 2021, PART C pages 321-481 of 481 pages.	
/G.R.W/	A18	Exhibit 1015 in Petition for Inter Partes Review of U.S. Pat. No. 10,583,962, filed January 5, 2021, 6 pages.	

Examiner Signature	/GIDEON R WEINERTH/	Date Considered	01/20/2021

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 1 Applicant's unique citation designation number (optional). 2 See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. 3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). 4 For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. 5 Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. 6 Applicant is to place a check mark here if English language Translation is attached.

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 2 hours 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, 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**.

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Substitute for form 1449/PTO				***Complete if Known***	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				**Application Number**	16/752,441
				Filing Date	January 24, 2020
Date Submitted: January 7, 2021				**First Named Inventor**	Yaron Brunner
				Art Unit	3736
(use as many sheets as necessary)				Examiner Name	WEINERTH, GIDEON R
Sheet	3	of	3	Attorney Docket Number	066749-2584

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No.[1]	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, page(s), volume-issue number(s), publisher, city and/or country where published.	T[6]
/G.R.W/	A19	Exhibit 1016 in Petition for Inter Partes Review of U.S. Pat. No. 10,583,962, filed January 5, 2021, 242 pages.	
	A20	Exhibit 1017 in Petition for Inter Partes Review of U.S. Pat. No. 10,583,962, filed January 5, 2021, 6 pages.	
	A21	Exhibit 1018 in Petition for Inter Partes Review of U.S. Pat. No. 10,583,962, filed January 5, 2021, 250 pages.	
	A22	Exhibit 1019 in Petition for Inter Partes Review of U.S. Pat. No. 10,583,962, filed January 5, 2021, 44 pages.	
	A23	Exhibit 1020 in Petition for Inter Partes Review of U.S. Pat. No. 10,583,962, filed January 5, 2021, 5 pages.	
	A24	Exhibit 1021 in Petition for Inter Partes Review of U.S. Pat. No. 10,583,962, filed January 5, 2021, 1 page.	
	A25	Exhibit 1022 in Petition for Inter Partes Review of U.S. Pat. No. 10,583,962, filed January 5, 2021, 1 page.	
	A26	Exhibit 1023 in Petition for Inter Partes Review of U.S. Pat. No. 10,583,962, filed January 5, 2021, 24 pages.	
/G.R.W/	A27	Exhibit 1024 in Petition for Inter Partes Review of U.S. Pat. No. 10,583,962, filed January 5, 2021, 28 pages.	

Examiner Signature	/GIDEON R WEINERTH/	Date Considered	01/20/2021

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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 2 hours 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, 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**.

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UNITED STATES DEPARTMENT OF COMMERCE
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NOTICE OF ALLOWANCE AND FEE(S) DUE

142078 7590 01/19/2021

Reinhart (Milwaukee Tool)
ATTN: TRAVIS MCDONNELL, PARALEGAL
1000 NORTH WATER STREET
SUITE 2100
MILWAUKEE, WI 53202

EXAMINER
WEINERTH, GIDEON R

ART UNIT	PAPER NUMBER
3736	

DATE MAILED: 01/19/2021

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/752,441	01/24/2020	Yaron Brunner	066749-2584	9540

TITLE OF INVENTION: Utility Assembly and Coupling Mechanism

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	04/19/2021

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 and an extra copy of the form should be submitted. 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.

PTOL-85 (Rev. 02/11)

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

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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.

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142078 7590 01/19/2021
Reinhart (Milwaukee Tool)
ATTN: TRAVIS MCDONNELL, PARALEGAL
1000 NORTH WATER STREET
SUITE 2100
MILWAUKEE, WI 53202

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.
16/752,441	01/24/2020	Yaron Brunner	066749-2584	9540

TITLE OF INVENTION: Utility Assembly and Coupling Mechanism

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	04/19/2021

EXAMINER	ART UNIT	CLASS-SUBCLASS
WEINERTH, GIDEON R	3736	220-004270

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/SB/122) attached.

❑ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-09 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. _____

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2003 - Page 144
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

UNITED STATES PATENT AND TRADEMARK OFFICE

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United States Patent and Trademark Office
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Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/752,441	01/24/2020	Yaron Brunner	066749-2584	9540

142078 7590 01/19/2021

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SUITE 2100
MILWAUKEE, WI 53202

EXAMINER	
WEINERTH, GIDEON R	
ART UNIT	**PAPER NUMBER**
3736	

DATE MAILED: 01/19/2021

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.

PTOL-85 (Rev. 02/11)

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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.** 16/752,441	**Applicant(s)** Brunner et al.	
	Examiner GIDEON R WEINERTH	**Art Unit** 3736	**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 12/18/2020.
   ☐ 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 1-20 . 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 12/22/2020, 11/12/2020.
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 _____.

/GIDEON R WEINERTH/
Examiner, Art Unit 3736

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Reasons for Allowance

1. The following is an examiner's statement of reasons for allowance: The Terminal Disclaimer of 12/18/2020 overcomes the Double Patenting rejection issued on 9/25/2020.

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

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GIDEON R. WEINERTH whose telephone number is (571)270-5121. The examiner can normally be reached on Monday-Friday 10AM-6PM 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, Greg Pickett can be reached on (571) 272-4560. 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.

/GIDEON R WEINERTH/
Examiner, Art Unit 3736

Notice of References Cited	Application/Control No. 16/752,441	Applicant(s)/Patent Under Reexamination Brunner et al.	
	Examiner GIDEON R WEINERTH	Art Unit 3736	Page 1 of 2

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-20060254946-A1	11-2006	Becklin; Dennis M.	B65D21/0223	206/508
*	B	US-20080277221-A1	11-2008	Josefson; Mark L.	A45C5/14	190/18A
*	C	US-20100147642-A1	06-2010	Andochick; Scott E.	A45C7/0045	190/18A
*	D	US-20110139665-A1	06-2011	MADSEN; Jens Ole	B25H3/026	206/508
*	E	US-20120074022-A1	03-2012	McTavish; Gordon	B65D21/043	206/503
*	F	US-20120326406-A1	12-2012	LIFSHITZ; Omri	B25H3/02	280/47.19
*	G	US-8979100-B2	03-2015	Bensman; Mark	B25H3/021	280/47.26
*	H	US-20150274362-A1	10-2015	CHRISTOPHER; Brent	B25H3/02	206/506
*	I	US-20170138382-A1	05-2017	KO; Kenneth H.	F16B12/24	1/1
*	J	US-20170121056-A1	05-2017	Wang; Tzu-Chien	B25H3/02	1/1
*	K	US-20170166352-A1	06-2017	Hoppe; Christopher S.	B25H3/022	1/1
*	L	US-9701443-B2	07-2017	Wang; Tzu-Chien	B65D21/0219	1/1
*	M	US-9850029-B2	12-2017	Brunner; Yaron	B65D25/30	1/1

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.

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Notice of References Cited	Application/Control No. 16/752,441	Applicant(s)/Patent Under Reexamination Brunner et al.	
	Examiner GIDEON R WEINERTH	Art Unit 3736	Page 2 of 2

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-20180044059-A1	02-2018	BRUNNER; Yaron	B65D21/0224	1/1
*	B	US-D816334-S	05-2018	Brunner; Yaron		D3/273
*	C	US-20180161975-A1	06-2018	Brunner; Yaron	B65D21/0228	1/1
*	D	US-20180220758-A1	08-2018	BURCHIA; Rolf	B25H3/027	1/1
*	E	US-20190002004-A1	01-2019	BRUNNER; Yaron	B25H3/02	1/1
*	F	US-20190039781-A1	02-2019	KOGEL; Jan	B65D21/0209	1/1
*	G	US-20190225371-A1	07-2019	Hoppe; Christopher S.	B65D21/0223	1/1
*	H	US-D895966-S	09-2020	Brunner; Yaron		D3/294
	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.

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Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/752,441	Brunner et al.
	Examiner	Art Unit
	GIDEON R WEINERTH	3736

CPC - Searched*		
Symbol	Date	Examiner

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner

* 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
Update searches from 15826201, 15826232, 16216724, See search history	09/16/2020	GW
Update search, Interference search, IDS search	01/02/2021	GW

/GIDEON R WEINERTH/ Examiner, Art Unit 3736	/GIDEON R WEINERTH/ Examiner, Art Unit 3736

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Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/752,441	Brunner et al.
	Examiner	Art Unit
	GIDEON R WEINERTH	3736

Interference Search			
US Class/CPC Symbol	**US Subclass/CPC Group**	**Date**	**Examiner**
A45C5	14	01/02/2021	GW
A45C7	0045,005	01/02/2021	GW
A45C13	02	01/02/2021	GW
A45F3	10	01/02/2021	GW
A47B47	00,04	01/02/2021	GW
A47B67	04	01/02/2021	GW
A47B87	02,007,0276	01/02/2021	GW
A47B88	90	01/02/2021	GW
B25H1	04	01/02/2021	GW
B25H3	021,022,023,04,06,02	01/02/2021	GW
B62B1	14	01/02/2021	GW
B62B5	067	01/02/2021	GW
B65D21	067	01/02/2021	GW
B65D2255	00	01/02/2021	GW
B65D25	2823,06	01/02/2021	GW
B65H2701	533	01/02/2021	GW
B60P7	13,06	01/02/2021	GW
E04F2201	013,0146,023,05	01/02/2021	GW
Y10S292	38,53	01/02/2021	GW
Y10T403	7045	01/02/2021	GW

/GIDEON R WEINERTH/ Examiner, Art Unit 3736	/GIDEON R WEINERTH/ Examiner, Art Unit 3736

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	16/752,441	Brunner et al.
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CPC								
Symbol							**Type**	**Version**
B65D	/	21	/	0223			F	2013-01-01
B25H	/	3	/	02			I	2013-01-01
A45C	/	5	/	14			I	2013-01-01
A45C	/	7	/	005			I	2013-01-01
A45F	/	3	/	10			I	2013-01-01
B25H	/	1	/	04			I	2013-01-01
A45C	/	13	/	02			I	2013-01-01
B25H	/	3	/	021			I	2013-01-01
B65D	/	21	/	0209			I	2013-01-01
B62B	/	1	/	14			I	2013-01-01
B65D	/	21	/	0228			I	2013-01-01
B65H	/	2701	/	533			A	2013-01-01
A45C	/	7	/	0045			A	2013-01-01
B25H	/	3	/	023			A	2013-01-01
B62B	/	5	/	067			A	2013-01-01
B65D	/	2255	/	00			A	2013-01-01

CPC Combination Sets								
Symbol					**Type**	**Set**	**Ranking**	**Version**
	/		/					

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	1	
/GIDEON R WEINERTH/ Examiner, Art Unit 3736	02 January 2021	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1A

U.S. Patent and Trademark Office — Part of Paper No.: 20210102

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Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/752,441	Brunner et al.
	Examiner	**Art Unit**
	GIDEON R WEINERTH	3736

INTERNATIONAL CLASSIFICATION				
CLAIMED				
B65D	/	21	/	02
B65D	/	21	/	028
A45C	/	13	/	02
B25H	/	3	/	02

NON-CLAIMED				
	/		/	

US ORIGINAL CLASSIFICATION	
CLASS	**SUBCLASS**
206	501

CROSS REFERENCES(S)						
CLASS	**SUBCLASS (ONE SUBCLASS PER BLOCK)**					
206	504	508	511			
280	47.18					

NONE		**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	1	
/GIDEON R WEINERTH/ Examiner, Art Unit 3736	02 January 2021	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1A

U.S. Patent and Trademark Office — Part of Paper No.: 20210102

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Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/752,441	Brunner et al.
	Examiner	**Art Unit**
	GIDEON R WEINERTH	3736

☑ 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		10		19										
	2		11		20										
	3		12												
	4		13												
	5		14												
	6		15												
	7		16												
	8		17												
	9		18												

NONE		**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	1	
/GIDEON R WEINERTH/ Examiner, Art Unit 3736	02 January 2021	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1A

U.S. Patent and Trademark Office — Part of Paper No.: 20210102

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Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
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	Examiner	Art Unit
	GIDEON R WEINERTH	3736

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

CLAIMS

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	09/22/2020	01/02/2021							
	1	✓	=							
	2	✓	=							
	3	✓	=							
	4	✓	=							
	5	✓	=							
	6	✓	=							
	7	✓	=							
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	13	✓	=							
	14	✓	=							
	15	✓	=							
	16	✓	=							
	17	✓	=							
	18	✓	=							
	19	✓	=							
	20	✓	=							

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IPR2024-01400

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /G.R.W./

PTO/SB/08 (09-06)
Approved for use through 03/31/2007. 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.

Substitute for form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

Date Submitted: November 12, 2020

(use as many sheets as necessary)

Sheet 1 of 3

Complete if Known	
Application Number	16/752,441
Filing Date	January 24, 2020
First Named Inventor	Yaron Brunner
Art Unit	3736
Examiner Name	Weinerth, Gideon R.
Attorney Docket Number	066749-2584

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] (*if known*)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	A1	3,225,865	12-28-1965	J. W. Downey	
	A2	4,971,201	11-20-1990	Sathre	
	A3	5,098,235	03-24-1992	Svetlik et al.	
	A4	6,305,498	10-23-2001	Itzkovitch	
	A5	9,506,489	11-29-2016	Ko	
	A6	9,725,209	08-08-2017	Ben-Gigi	
	A7	10,106,180	10-23-2018	Bar-Erez et al.	
	A8	10,583,962	03-10-2020	Brunner et al.	
	A9	2002/0125072	09-12-2002	Levy	
	A10	2003/0094393	05-22-2003	Sahm, III	
	A11	2012/0292213	11-22-2012	Brunner	
	A12	2015/0034515	02-05-2015	Monyak et al.	
	A13	2016/0221177	08-04-2016	Reinhart	
	A14	2018/0099405	04-12-2018	Reinhart	
	A15	2018/0186513	07-05-2018	Brunner	
	A16	2020/0243925	07-30-2020	Polakowski et al.	
	A17	2020/0299027	09-24-2020	Brunner et al.	
	A18	D232,798	09-17-1974	Roche et al.	
	A19	D319,016	08-13-1991	Kahl	
	A20	D325,324	04-14-1992	Kahl	
	A21	D326,815	06-09-1992	Meisner et al.	
	A22	D340,167	10-12-1993	Kahl	
	A23	D352,208	11-08-1994	Brookshire	
	A24	D361,511	08-22-1995	Dickinson et al.	
	A25	D415,393	10-19-1999	Kei	
	A26	D420,860	02-22-2000	Golichowski et al.	
	A27	D527,225	08-29-2006	Krieger et al.	
	A28	D536,580	02-13-2007	Krieger et al.	
	A29	D649,350	11-29-2011	Shitrit	

Examiner Signature	/GIDEON R WEINERTH/	Date Considered	01/02/2021

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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 2 hours 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, 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.**

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ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /G.R.W/

PTO/SB/08 (09-06)
Approved for use through 03/31/2007. OMB 0651-0031
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Substitute for form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

Date Submitted: November 12, 2020

(use as many sheets as necessary)

Sheet 2 of 3

Complete if Known	
Application Number	16/752,441
Filing Date	January 24, 2020
First Named Inventor	Yaron Brunner
Art Unit	3736
Examiner Name	Weinerth, Gideon R.
Attorney Docket Number	066749-2584

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant
	A30	D738,105	09-08-2015	Shitrit	
	A31	D753,396	04-12-2016	Brunner	
	A32	D777,426	01-31-2017	Dahl	
	A33	D784,089	04-18-2017	Furneaux et al.	
	A34	D803,631	11-28-20017	Min et al.	
	A35	D806,483	01-02-2018	Stanford et al.	
	A36	D831,352	10-23-2018	Brunner	
	A37	D836,995	01-01-2019	Carey et al.	
	A38	D839,681	02-05-2019	Evron et al.	
	A39	D845,080	04-09-2019	Jacobsen	
	A40	D845,081	04-08-2019	Jacobsen	
	A41	D857,387	08-27-2019	Shpitzer	
	A42	D873,085	01-21-2020	DeFrancia	
	A43	D880,252	04-07-2020	Jacobsen	
	A44	D880,951	04-14-2020	Jacobsen	
	A45	D883,752	05-12-2020	Carey et al.	
	A46	D887,788	06-23-2020	Meda et al.	
	A47	D888,422	06-30-2020	Yang	
	A48	D888,503	06-30-2020	Meda et al.	
	A49	D891,193	06-28-2020	Stanford et al.	
	A50	D891,195	07-28-2020	Zhou	
	A51	D891,875	08-04-2020	Olson	
	A52	D892,565	08-11-2020	Astle et al.	
	A53	D895,375	09-08-2020	Hurley, Jr.	

UNPUBLISHED U.S. PATENT APPLICATION DOCUMENTS

Examiner Initials*	Cite No.[1]	U.S. Patent Application Document Serial Number-Kind Code[2] (*if known*)	Filing Date of Cited Document MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear

Examiner Signature	/GIDEON R WEINERTH/	Date Considered	01/02/2021

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Substitute for form 1449/PTO				*Complete if Known*	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				**Application Number**	16/752,441
				Filing Date	January 24, 2020
Date Submitted: November 12, 2020				**First Named Inventor**	Yaron Brunner
				Art Unit	3736
(use as many sheets as necessary)				Examiner Name	Weinerth, Gideon R.
Sheet	3	of	3	Attorney Docket Number	066749-2584

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]-Number[4]-Kind Code[5] (*if known*)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Documents	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[6]
/G.R.W/	A54	CN102608238	07-25-2012	Zhengzhou Tobacco Res Cntc		
/G.R.W/	A55	JPD1503434	07-28-2014	Name not in English		
/G.R.W/	A56	JPD1665028	08-03-2020	Keter Plastic LTD et al.		

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.[1]	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, page(s), volume-issue number(s), publisher, city and/or country where published.	T[6]

Examiner Signature	/GIDEON R WEINERTH/	Date Considered	01/02/2021

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EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L22	7	("2011/0158761").URPN.	USPAT	OR	OFF	2021/01/02 20:09
L23	7	("2008/0110790").URPN.	USPAT	OR	OFF	2021/01/02 20:11
L24	20	("20030183549" | "20040206655" | "20050183980" | "20080110790" | "20090178989" | "20140261910" | "3934724" | "3951265" | "4102453" | "4189052" | "4308954" | "4320837" | "5582296" | "5595338" | "5881902" | "6062388" | "6273259" | "7686167" | "7690856" | "9926164").PN. OR ("10829268").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2021/01/02 20:11
L25	48	("0131258" | "0760974" | "2257536" | "2809404" | "3301200" | "3329103" | "3429472" | "3878796" | "3989156" | "4048754" | "4359948" | "4703866" | "4979446" | "5058746" | "5094175" | "5170722" | "5215205" | "5360128").PN. OR ("5593058").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2021/01/02 20:17
L26	3	("131258").URPN.	USPAT	OR	OFF	2021/01/02 20:18
L35	3	(US-20120074022-$ or US-20190168376-$).did. or (US-10829268-$).did.	US-PGPUB; USPAT	OR	OFF	2021/01/02 21:36
L37	3	(US-20120074022-$ or US-20190168376-$).did. or (US-10829268-$).did.	US-PGPUB; USPAT	OR	OFF	2021/01/02 21:36
L39	36	(US-20170138382-$ or US-20150274362-$ or US-20190225371-$ or US-20180161975-$ or US-20190106244-$ or US-20120074022-$ or US-20190168376-$ or US-20190039781-$ or US-20170121056-$ or US-20190002004-$ or US-20180290288-$ or US-20180220758-$ or US-20180044059-$ or US-20170318927-$ or US-20170166352-$ or US-20160168880-$ or US-20110139665-$ or US-20110073516-$ or US-20100219193-$ or US-20100147642-$ or US-20090145866-$ or US-20080277221-$ or US-20060254946-$ or US-20120326406-$).did. or (US-9506489-$ or US-D816334-$ or US-8979100-$ or US-9701443-$ or US-10583962-$ or US-D895967-$ or US-	US-PGPUB; USPAT	OR	OFF	2021/01/02 21:37

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S2	7	(("5240264") or ("7503569") or ("20020000440") or ("20040195793") or ("20110139665") or ("20110155613") or ("20130127129")).PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 19:41
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S9	38	(("BRUNNER") near3 ("Yaron")).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 20:01
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S11	206	S10 and (spring resilient)	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 20:07
S12	121	S10 and (spring bias biasing biased)	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 20:08
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S14	66	("0353600" | "0888611" | "2111884" | "2256024" | "2670892" | "3145870" | "3341053" | "3343670" | "3353665" | "3369658" | "3419176").PN. OR ("3933268").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 20:12
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S41	25	("3361293").URPN.	USPAT	OR	OFF	2018/04/05 21:21
S42	32	("2483269" | "3219400" | "3361293" | "3512696" | "3565624" | "3763980" | "4190172" | "4322118" | "4389078" | "4624383" | "4660725" | "5016946" | "5038937" | "5105962" | "5310071" | "6047827" | "6056377" | "6276550" | "D330128" | "D332745").PN. OR ("7152752").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 21:22
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S44	16	("3469331" | "4716666").PN. OR ("4995176").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 21:24
S45	22	("3131829" | "3194426" | "3338452" | "4258847" | "4328902" | "4428479" | "5016946" | "5050755" | "5310071" | "5316159" | "5503288" | "5845790").PN. OR ("6276550").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 21:25
S46	7	("1849659").URPN.	USPAT	OR	OFF	2018/04/05 21:29

S47	46	("1849659" | "2774511" | "2916293" | "2994457" | "3053397" | "3100582" | "3113680" | "3219232" | "3282458" | "3647112" | "4000817" | "4176747" | "Re26758" | "Re27649").PN. OR ("4550837").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 21:30
S48	1,066	B65D21/0217,0219,0222,0228,023.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 21:33
S49	92	B65D21/0217,0219,0222,0228,023.cpc. and spring	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 21:33
S50	0	("2017/0121056").URPN.	USPAT	OR	OFF	2018/04/05 21:37
S51	4	("20110139777" | "5301829" | "5427265" | "8602217").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 21:37
S52	16	("20080000899" | "20120312812" | "20130127129" | "3379482" | "3811559" | "4118048" | "4619363" | "5125697" | "5904269" | "6082539" | "6371320" | "6874634" | "6889838" | "7387350" | "7516842").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 21:39
S53	2	("2012/0024739").URPN.	USPAT	OR	OFF	2018/04/05 21:43
S54	4	("2011/0168599").URPN.	USPAT	OR	OFF	2018/04/05 21:44
S55	22	("5699925" | "6959507" | "20090139892" | "3182856" | "20030155267" | "20080308641" | "3182856" | "5353948" | "3581928" | "4351448" | "20090178989" | "2634020" | "3387732" | "5755180" | "6761266" | "20050224494" | "7246718" | "5606820" | "20090236255" | "5469961").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 21:45
S56	237	206/501.ccls.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 21:46
S57	2	("2010/0219193").URPN.	USPAT	OR	OFF	2018/04/05 21:50
S58	72	("0879455" | "20040134390" | "20040178208" | "20060254946" | "20060254947" | "20080017650" | "20100219193" | "2695115" | "2849151" | "3103278" | "3117692" | "3383009" | "3391824" | "3407758" | "3419184" | "3481502" | "3616943" | "3754645" | "3756396" | "3759416" | "3811747" |	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 21:50

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S60	73	("20030029750" | "20030123965" | "20050072642" | "20050077136" | "20060119060" | "20070012694" | "20070068757" | "2497173" | "3061057" | "3452846" | "3532355" | "3572253" | "3650216" | "3861703" | "3891230" | "4081061" | "4118048" | "4122925" | "4350194" | "4621716" | "4657135" | "4693345" | "4738340" | "4792025" | "4813521" | "4951818" | "5038842" | "5048649" | "5109961" | "5142445" | "5178244" | "5186290" | "5197579" | "5339934" | "5373104" | "5379870" | "5407039" | "5447216" | "5484045" | "5484046" | "5632496" | "5713439" | "5890571" | "5927361" | "6073737" | "6116390" | "6164425" | "6213266" | "6401890" | "6520327" | "6585090" | "6634496" | "6758334" | "6976566" | "7077252" | "7232018" | "7380685" | "7398868" | "7726483" | "7780002" | "7942282" | "D294775" | "D453623").PN. OR ("8561769").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 21:53
S61	44	("20040007574" | "20050036847" | "20050199459" | "20070130731" | "20090178946" | "20120292867" | "3419184" | "3987829" | "4287997" | "4452555" | "5058746" | "5085448" | "5186330" | "5564805" | "5709008" | "5785328" | "6116390" | "6983946" | "7011214" | "7044528" | "7163122" | "7350789" | "7482928" | "7530580" | "7537119" | "7714708" | "7780026" | "7854321" | "7883096" | "7938412" |	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 21:59

		"8132819" | "8146771" | "8256242" | "8561769" | "8567796" | "D358765" | "D401412" | "D467424" | "D467425" | "D467426" | "RE44656").PN. OR ("9550605").URPN.				
S62	10	("20050199623" | "5765707" | "5829595" | "6024223" | "7337908").PN. OR ("8146771").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:03
S63	42	("0621601" | "2761582" | "3113690" | "3616943" | "3643993" | "3823973" | "3828964" | "3977558" | "4000704" | "4042111" | "4416374" | "4678084" | "4887731" | "5011036" | "5022546" | "5105967").PN. OR ("5186330").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:05
S64	74	("0879455" | "2849151" | "3005282" | "3371816" | "3393858" | "3481502").PN. OR ("3616943").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:08
S65	36	("1234730" | "20020145022" | "20030010799" | "20040207225" | "20090212584" | "2578238" | "2883764" | "3002650" | "3131829" | "3351228" | "3374914" | "3616943" | "4754883" | "4838745" | "4941784" | "5025964" | "5392945" | "5469999" | "5538153" | "5671511" | "5676251" | "5687895" | "5855310" | "6471278" | "7159730" | "7329451" | "7537119" | "D264014" | "D333094").PN. OR ("9738198").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:09
S66	75	("0879455" | "20040178208" | "20060254947" | "2695115" | "2849151" | "2939603" | "3103278" | "3117692" | "3383009" | "3391824" | "3419184" | "3481502" | "3616943" | "3754645" | "3756396" | "3759416" | "3811747" | "3968879" | "4287997" | "4655360" | "4671411" | "4765252" | "4832200" | "4848605" | "5042674" | "5203494" | "5392945" | "5454477" | "5566824" | "5641090" | "5718350" | "5769230" | "5779051" | "6021916" | "6085467" | "6186345" | "6237758" | "6308858" | "6367630" | "6371364" | "6457599" | "6585090" | "6662950" | "7163122" | "D333094" | "D361715" | "D446017" | "D500924").PN. OR ("7537119").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:10
S67	45	("0491865" | "1142932" | "1665238" | "20060016812" | "20070108080" | "20080264820" | "20100084119" | "3144016" | "3259263" | "3369691" | "3384259" | "3828964" | "4109789" |	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:11

		"4655360" | "4760921" | "4901380" | "5086926" | "5203494" | "5461755" | "5564583" | "5671856" | "5699925" | "5769230" | "6024223" | "6085467" | "6186345" | "6237758" | "6273258" | "6457599" | "6715627" | "6840378" | "6851566" | "7510096" | "7537119" | "8056722" | "RE37518").PN. OR ("8813960").URPN.				
S68	32	("4506798" | "4626155" | "4741449" | "5109985" | "5123541" | "5190179" | "5722328" | "5862917").PN. OR ("6024223").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:12
S69	4	("1665238").URPN.	USPAT	OR	OFF	2018/04/05 22:15
S70	39	("2885135" | "3376046" | "3539071" | "3568879" | "3987829" | "4174950" | "4765252" | "4844263" | "D248015").PN. OR ("D333094").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:17
S71	53	("2761582" | "3117692" | "3360162" | "3379341" | "3392875" | "3419184" | "3675815" | "3759416" | "3979016" | "4093071" | "4106624" | "4189052" | "4379508").PN. OR ("4832200").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:19
S72	79	("3117692").URPN.	USPAT	OR	OFF	2018/04/05 22:22
S73	45	("1762635" | "2531671" | "2614399" | "3117692" | "3498494" | "3501044" | "3502241" | "3667647" | "3751852").PN. OR ("4279354").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:24
S74	13	("20060186186" | "20070209962" | "20080202976" | "2328689" | "2828059" | "3811566" | "4279354" | "4293071" | "6315126").PN. OR ("8684222").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:25
S75	45	("1762635" | "2531671" | "2614399" | "3117692" | "3498494" | "3501044" | "3502241" | "3667647" | "3751852").PN. OR ("4279354").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:26
S76	110	("2457842" | "2483464" | "2664219" | "2702142" | "3073466" | "3130855" | "3140007" | "3586204" | "3828964").PN. OR ("4287997").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:30
S77	63	("2461526" | "3078484" | "3114486" | "3233803" | "3749294" | "3902640" | "3915189" | "4082208" | "4287997" | "4307826" | "4366922" | "4424841" | "4491258" | "4545414" | "4673070" | "4790432" | "4813542" | "4884731" |	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:33

		"5131576" | "5184763" | "5321904" | "5419473").PN. OR ("5628443").URPN.				
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		"7093700" | "7097181" | "7097183" | "7143912" | "7226073" | "7232018" | "7237660" | "7281616" | "7284304" | "7318507" | "7328779" | "7350648" | "7374183" | "7426985" | "7441785" | "7478803" | "7594569" | "7597341" | "7780026" | "8607947").PN. OR ("9888752").URPN.				
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S81	35	("0922567" | "1084360" | "1567461" | "2372845" | "2428906" | "2801666" | "2858957" | "3837447" | "4098312" | "4122925" | "4142563" | "4257463" | "4286639" | "4673070" | "4744446").PN. OR ("4836343").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:39
S82	51	("0778785" | "1567461" | "2372845" | "2428906" | "2989998" | "3631572" | "3696850" | "4122925" | "4128194" | "4256245" | "4424841").PN. OR ("4673070").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:40
S83	33	("0842498" | "1689399" | "3114486" | "3698045" | "4231135" | "4673070" | "4799298" | "4934573" | "5205448" | "5259093" | "5465425" | "5604958" | "5632071" | "5724707" | "5815843" | "6108816" | "7080430" | "7251867").PN. OR ("7526842").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:41
S84	23	("2428906" | "2707035" | "3225951" | "3319744" | "3696850" | "3958731").PN. OR ("4122925").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:43

S85	33	("1973819" | "2007696" | "3373911").PN. OR ("4142563").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:46
S86	12	("2858957").URPN.	USPAT	OR	OFF	2018/04/05 22:48
S87	12	("20060071581" | "20080060964" | "2858957" | "3346137" | "3568879" | "4258847" | "4592601" | "4685565" | "4863222" | "7311202").PN. OR ("9724820").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:49
S88	43	("2128854" | "3743372").PN. OR ("4863222").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:49
S89	73	("2842420" | "2998128" | "3032381" | "3294463" | "3501044" | "3552817").PN. OR ("3743372").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:51
S90	36	("2011962" | "3514170" | "3552817" | "3743372" | "3851936" | "3999818" | "4198777" | "4238032" | "4353470" | "4589546" | "4744612" | "4782619" | "4874210" | "4907703" | "5046789" | "5137340" | "5176435" | "5191983" | "5344024" | "5399004" | "5454634").PN. OR ("6050657").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:53
S91	17	("3131829" | "3429632" | "3552579" | "3707023" | "4062302" | "4239306" | "5246284").PN. OR ("5454634").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:55
S92	55	("0511617" | "1890000" | "2492697" | "2557630" | "2807387" | "3203744" | "3283915" | "3514170" | "3743372" | "3758181" | "3918781" | "3999818" | "4026615" | "4056295" | "4120549").PN. OR ("4243279").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:59
S93	45	("2593998" | "2653072" | "2730423" | "3131829" | "3219400" | "3514170" | "3552817" | "3563624" | "3743372" | "3814489").PN. OR ("3999818").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 23:03
S94	14	("2593998").URPN.	USPAT	OR	OFF	2018/04/05 23:06
S95	52	("4081061" | "4621716" | "5316159" | "6213266" | "6213267" | "7976024" | "1084360" | "3749273" | "4570799" | "4995436" | "5779051" | "D447944" | "3103278" | "3374917" | "5000713" | "6585090" | "5098328" | "D359315" | "20030132184" | "20050199459" | "4813542" | "0480709" | "5062539" | "5186290" | "6276550" | "D346627" |	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 23:14

		"5310071" | "20040222059" | "3583590" | "3836043" | "4287997" | "4656840" | "5167336" | "5392945" | "6257381" | "20040000458" | "4573595" | "7644828" | "D483200" | "7648407" | "3811747" | "20010027902" | "5099968" | "5485920" | "5709304" | "5735422" | "3346137").PN.				
S96	22	("3131829" | "3194426" | "3338452" | "4258847" | "4328902" | "4428479" | "5016946" | "5050755" | "5310071" | "5316159" | "5503288" | "5845790").PN. OR ("6276550").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 23:16
S97	41	("2454438" | "2495132" | "3131829" | "3194426" | "3297196" | "3317081" | "3343705" | "3404805" | "3851936" | "4192422").PN. OR ("4328902").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 23:18
S98	43	("1092651" | "2565969" | "2891639" | "3028207" | "3032381" | "3506321").PN. OR ("3974898").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 23:29
S99	11	("0907507" | "1626482" | "2343525" | "3974898" | "4065014").PN. OR ("4423687").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 23:30
S100	32	("3481502").URPN.	USPAT	OR	OFF	2018/04/05 23:38
S101	8	(("1112943") or ("2255513") or ("2849151") or ("3371816")).PN.	USPAT; USOCR	OR	OFF	2018/04/05 23:41
S102	16	("2849151").URPN.	USPAT	OR	OFF	2018/04/05 23:41
S103	8	(("0993866") or ("1342909") or ("1514512") or ("1640368")).PN.	USPAT; USOCR	OR	OFF	2018/04/05 23:42
S104	21	("1112943").URPN.	USPAT	OR	OFF	2018/04/05 23:43
S105	16	("2849151").URPN.	USPAT	OR	OFF	2018/04/06 12:32
S106	8	(("0993866") or ("1342909") or ("1514512") or ("1640368")).PN.	USPAT; USOCR	OR	OFF	2018/04/06 12:33
S107	22	("879455").URPN.	USPAT	OR	OFF	2018/04/06 12:34
S108	16	("2849151").URPN.	USPAT	OR	OFF	2018/04/06 13:10
S109	8	(("0993866") or ("1342909") or ("1514512") or ("1640368")).PN.	USPAT; USOCR	OR	OFF	2018/04/06 13:11
S110	37	("3899229" | "4431237" | "4519655" | "4828341" | "4889254" | "5191983").PN. OR ("5469961").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 13:11

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S112	24	("1226708" | "2833137" | "2834121" | "2843943" | "3139744" | "3220229" | "3545235" | "3824813" | "4507942" | "4551996" | "4663948" | "4680948" | "4821535" | "4972687" | "4989426" | "5469961" | "5653416").PN. OR ("5951130").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 13:13
S113	118	(US-20130127129-$ or US-20110155613-$ or US-20110139665-$ or US-20040195793-$ or US-20020000440-$ or US-20120292213-$ or US-20070012694-$ or US-20150336710-$ or US-20020134700-$ or US-20100270764-$ or US-20100000893-$ or US-20050062244-$ or US-20040183266-$ or US-20020014488-$ or US-20020113386-$ or US-20030196860-$ or US-20170259956-$ or US-20160144500-$ or US-20160130034-$ or US-20150274362-$ or US-20110168599-$ or US-20090178989-$ or US-20100219193-$ or US-20060254946-$ or US-20070068757-$ or US-20090178946-$).did. or (US-20050199459-$ or US-20080308369-$ or US-20050077136-$).did. or (US-7503569-$ or US-9022234-$ or US-8875888-$ or US-8657307-$ or US-8590704-$ or US-3182856-$ or US-8459495-$ or US-7097036-$ or US-6193062-$ or US-9393684-$ or US-6637592-$ or US-D730088-$ or US-5833065-$ or US-5482162-$ or US-5244265-$ or US-4244509-$ or US-9643629-$ or US-7780026-$ or US-9132543-$ or US-8567796-$ or US-8226092-$ or US-8201837-$ or US-8132819-$ or US-7997594-$ or US-3010775-$ or US-9669930-$).did. or (US-4813542-$ or US-6585090-$ or US-6085925-$ or US-D776106-$ or US-6839238-$ or US-9609964-$ or US-7152752-$ or US-9506489-$ or US-3944282-$ or US-5241765-$ or US-4389078-$ or US-1849659-$ or US-4405057-$ or US-9802741-$ or US-8851287-$ or US-	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:03

		8763836-$ or US-8561769-$ or US-D808164-$ or US-9550605-$ or US-4887731-$ or US-9738198-$ or US-7537119-$ or US-8813960-$ or US-9669968-$ or US-6024223-$ or US-1665238-$ or US-D333094-$).did. or (US-3376046-$ or US-4832200-$ or US-D364558-$ or US-3419184-$ or US-3117692-$ or US-8684222-$ or US-2328689-$ or US-4287997-$ or US-5628443-$ or US-9888752-$ or US-9027722-$ or US-4673070-$ or US-7526842-$ or US-5465839-$ or US-9724820-$ or US-4863222-$ or US-3743372-$ or US-6050657-$ or US-5454634-$ or US-3851936-$ or US-5602721-$ or US-3999818-$ or US-5271515-$ or US-4243279-$ or US-6276550-$ or US-4328902-$ or US-7350648-$).did. or (US-5407074-$ or US-3481502-$ or US-2849151-$ or US-3616943-$ or US-5469961-$ or US-8677661-$ or US-5951130-$).did. or (US-3117692-$ or US-2593998-$).did.				
S115	286	B65D21/0223.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:05
S116	226	B65D21/0224.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:05
S117	2,198	B25H3/021,022,023,04,06.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:07
S118	436	A47B47/00.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:10
S119	1,076	A47B87/02,007,0276.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:10
S120	550	A47B67/04.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:11
S121	770	Y10T403/7045.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:12
S122	9	("7451578" | "6209278" | "4599841" | "6363677" | "6955020" | "7040068" | "6588166" | "6804926" | "6658808").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:14

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S129	3	("3351366").URPN.	USPAT	OR	OFF	2018/04/06 18:39
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S135	75	(Hoppe near2 Christopher).inv.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:49
S136	14	B65D25/2823.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:54
S137	351	B65D25/06.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:54
S138	73	(Milwaukee adj Electric).as. and (stack box)	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 19:01
S139	8	(Milwaukee adj Electric).as. and ("220" "206" "215").clas.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 19:02
S140	8	(Milwaukee and tool).as. and ("220" "206" "215").clas.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 19:02
S141	84	(Milwaukee and tool).as. and latch	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 19:03
S142	37	(Milwaukee and tool).as. and (stack stacked stacking)	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 19:04
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		3851936-$ or US-5602721-$ or US-3999818-$ or US-5271515-$ or US-4243279-$ or US-6276550-$ or US-4328902-$ or US-7350648-$).did. or (US-5407074-$ or US-3481502-$ or US-2849151-$ or US-3616943-$ or US-5469961-$ or US-8677661-$ or US-5951130-$ or US-7451578-$ or US-6122879-$ or US-3526420-$ or US-2740167-$ or US-9803375-$ or US-9663940-$ or US-7841144-$ or US-9616562-$ or US-5544751-$ or US-5429260-$ or US-7946609-$ or US-6578708-$ or US-6176559-$ or US-5927837-$ or US-5564805-$ or US-5595228-$ or US-6206063-$ or US-7000810-$ or US-4967944-$ or US-5988473-$).did. or (US-6641013-$ or US-2987358-$ or US-4576423-$ or US-4756394-$ or US-4896926-$ or US-5325966-$ or US-5697500-$ or US-6467681-$).did. or (US-3117692-$ or US-2593998-$).did.				
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S185	520	B65D21/0204.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 19:01
S186	868	A47B87/02.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 19:02
S187	2,232	312/107,111.ccls.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 19:02
S188	703	A47B88/90.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 19:15
S189	50	(("BRUNNER") near3 ("Yaron")).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 19:23
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S192	36	("1253546" | "1619761" | "1857640" | "2004900" | "3133771" | "3409162" | "3529878" | "3606506" | "3729242" | "3758181").PN. OR ("5246105").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 19:28
S193	16	("20080000899" | "20120312812" | "20130127129" | "3379482" | "3811559" | "4118048" | "4619363" | "5125697" | "5904269" | "6082539" | "6371320" | "6874634" | "6889838" | "7387350" | "7516842").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 20:02
S194	75	("0440957" | "1933637" | "2511949" | "2789828" | "2981549" | "3055723" | "3349924" | "3379482" | "3891230" | "3905662").PN. OR ("4118048").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 20:03
S195	45	("0273398" | "0325555" | "0825642" | "0953715" | "0953815" | "1143711" | "1365098" | "1495046" | "1611034" |	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 20:04

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S205	12	(US-0271616-$ | US-0320243-$ | US-1276744-$ | US-1477050-$ | US-15826201-$ | US-20080308369-$ | US-3616562-$ | US-3875888-$).DID.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/22 03:39
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S210	15	("2007/0194543").URPN.	USPAT	OR	OFF	2018/11/22 19:40
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S212	2	("2012/0292870").URPN.	USPAT	OR	OFF	2018/11/22 19:41
S213	52	("6264083" | "6666362" | "7204374" | "20120247044" | "4249684" | "6264220" | "6935641" | "7048320" | "7165702" | "20040194333" | "20040251227" | "20070210021" | "20100300996" | "20120199708" | "4944416" | "7487981" | "6615973" | "6786374" | "20070137532" | "5628534" | "7017254" | "6932406" | "20040051016" | "20050006539" | "20080296245" | "7740329" | "20060021985" | "5913380" | "6736265" | "20020100396" | "20120131872" | "3610429" | "6629654" | "4535897" | "6581920" | "20110107704" | "0332360" | "5406894" | "6474245" | "20050269792" | "5582269" | "20070012636" | "5687856" | "5899544" | "6247720" | "6814362" | "20040222176" | "20110168651" | "4630739" | "4961295" | "5730414").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/22 19:46
S214	39	("2320387" | "3052484" | "3179270" | "3734526" | "4281843" | "4363496" | "4790549" | "5464104" | "5465987" | "5474312" | "5595395" | "5671933").PN. OR ("6131926").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/22 23:52
S215	1	"12736715"	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/23 01:36
S216	1	("2011/0139665").URPN.	USPAT	OR	OFF	2018/11/23 01:36

S217	20	("2807387" | "20060220503" | "3219400" | "3424334" | "4293072" | "4643494" | "4782619" | "4996628" | "5184726" | "5246105" | "5427394" | "5544751" | "5699925" | "5901998" | "5924778" | "6367631" | "6983946").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/23 01:37
S218	36	("1253546" | "1619761" | "1857640" | "2004900" | "3133771" | "3409162" | "3529878" | "3606506" | "3729242" | "3758181").PN. OR ("5246105").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/23 01:38
S219	13	("3379482").URPN.	USPAT	OR	OFF	2018/11/23 02:28
S220	0	("2012/0152800").URPN.	USPAT	OR	OFF	2018/11/23 02:30
S221	12	("20080060964" | "3568879" | "4592601" | "4685565" | "20060071581" | "4258847" | "4863222" | "2858957" | "7311202" | "3346137").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/23 02:30
S222	1,041	B25H3/02.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/23 02:39
S223	140	S222 and (snap)	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/23 02:39
S224	67	(US-20170166352-$ or US-20110139665-$ or US-20170266804-$ or US-20170217464-$ or US-20170174392-$ or US-20160168880-$ or US-20160144500-$ or US-20160130034-$ or US-20140166516-$ or US-20120326406-$ or US-20100219193-$ or US-20090145866-$ or US-20070194543-$ or US-20070068757-$ or US-20060254946-$ or US-20060027475-$ or US-20150274362-$ or US-20110073516-$ or US-20090193748-$ or US-20080134607-$ or US-20080104921-$ or US-20180313094-$ or US-20180213934-$ or US-20150102717-$ or US-20180161975-$ or US-20140305829-$).did. or (US-20120312812-$ or US-20180290288-$ or US-20180162592-$ or US-20170239808-$ or US-20170121056-$ or US-20130127129-$ or US-20060038367-$ or US-20160114822-$ or US-20080308369-$ or US-20080169739-$ or US-20120292870-$).did. or (US-5628443-$ or US-9132543-$ or US-9506489-$ or US-8813960-$ or US-8677661-$ or US-8459495-$ or US-8132819-$ or US-6641013-$ or US-6085925-$ or US-5988473-$ or US-	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/23 14:36

		5595228-$ or US-3117692-$ or US-5429260-$ or US-7841144-$ or US-5407074-$ or US-4293072-$ or US-3506321-$ or US-3974898-$ or US-6109707-$ or US-4423687-$ or US-9872562-$ or US-6547347-$ or US-4619363-$ or US-4118048-$ or US-3891230-$ or US-9566990-$).did. or (US-5799958-$ or US-9616562-$ or US-5184726-$).did. or (US-2430200-$).did.				
S225	3	("20080308369" | "8875888" | "9616562").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/23 14:37
S226	28	(US-20170266804-$ or US-20170217464-$ or US-20170174392-$ or US-20170166352-$ or US-20160168880-$ or US-20160144500-$ or US-20160130034-$ or US-20140166516-$ or US-20120326406-$ or US-20100219193-$ or US-20090145866-$ or US-20070194543-$ or US-20070068757-$ or US-20060254946-$ or US-20060027475-$ or US-20110139665-$).did. or (US-9506489-$ or US-9132543-$ or US-8813960-$ or US-8677661-$ or US-8459495-$ or US-8132819-$ or US-6641013-$ or US-6085925-$ or US-5988473-$ or US-5628443-$ or US-5595228-$ or US-3117692-$).did.	US-PGPUB; USPAT	OR	OFF	2018/11/23 14:37
S227	37	S224 not (S225 S226)	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/23 14:37
S228	1	"20170174392".pn.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/23 14:54
S229	14	(US-20180290288-$ or US-20180161975-$ or US-20170239808-$ or US-20170121056-$ or US-20080169739-$ or US-20080134607-$ or US-20080104921-$ or US-20060038367-$).did. or (US-9872562-$ or US-9566990-$ or US-7841144-$ or US-6547347-$ or US-5429260-$).did. or (US-2430200-$).did.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/23 21:07
S230	716	((("MILWAUKEE") near3 ("ELECTRIC") near3 ("TOOL") near3 ("CORPORATION"))).AS,AANM.	USPAT	OR	OFF	2019/01/16 16:21
S231	51	((("Brunner") near3 ("Yaron"))).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:21

S232	33	((("Squiers") near3 ("Grant") near3 ("T"))).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:21
S233	56	((("Hoppe") near3 ("Christopher") near3 ("S"))).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:21
S234	114	((("Hyma") near3 ("Steven") near3 ("W"))).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:21
S235	0	("2017/0166352").URPN.	USPAT	OR	OFF	2019/01/16 16:23
S236	1	(("2012312812") or ("4974740")).PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:25
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S238	1	"20120312812".pn.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:26
S239	4	("2012/0312812").URPN.	USPAT	OR	OFF	2019/01/16 16:26
S240	0	("2018/0161975").URPN.	USPAT	OR	OFF	2019/01/16 16:29
S241	0	("2018/0044059").URPN.	USPAT	OR	OFF	2019/01/16 16:29
S242	68	("6082539" | "6874634" | "8875888" | "7503569" | "D462519" | "D467424" | "D753394" | "D753395" | "D753396" | "20010030403" | "20120152944" | "6761366" | "D437484" | "D439407" | "D449738" | "D564216" | "D629607" | "D636994" | "D668048" | "D700777" | "D709697" | "D753397" | "6371320" | "20140102928" | "D415894" | "D520237" | "D613560" | "D643217" | "D701697" | "7905353" | "20110181008" | "D348152" | "D647300" | "D663952" | "D674605" | "D710098" | "D713639" | "20110049824" | "20110139666" | "5022546" | "D467426" | "D527181" | "D572479" | "D630851" | "D701696" | "D711105" | "5437369" | "D693121" | "20070273114" | "20090145790" | "8602217" | "8789699" | "8851282" | "D630435" | "D702044" | "D703437" | "D709287" | "9393684" | "8505729" | "20040134818" | "D493284" | "D600912" | "D649350" | "D653832" |	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:30

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S244	23	("1192847" | "1891811" | "2053969" | "2828023").PN. OR ("5022546").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:37
S245	14	("2053969").URPN.	USPAT	OR	OFF	2019/01/16 16:38
S246	19	("2053969" | "3014604" | "3061134" | "3162320" | "3734308" | "4109789" | "4616752" | "6024223").PN. OR ("6840378").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:39
S247	22	("20040000550" | "2705575" | "3346137" | "4293072" | "5628443" | "5704625" | "6840378").PN. OR ("7780026").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:39
S248	21	("3081120" | "3162320" | "3653521").PN. OR ("3734308").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:41
S249	34	("3015407" | "3493258" | "3501193" | "3552557" | "3633777" | "3677599" | "3691595" | "3712661" | "3734308" | "3888536" | "3980185" | "4093090" | "4149747" | "4341495" | "4356145" | "4630856" | "4648645" | "5163726" | "5931617" | "6135524" | "7014234").PN. OR ("8177463").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:41
S250	65	("2053969" | "3014604" | "3691595" | "3712661").PN. OR ("3980185").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:42
S251	23	("0610816" | "20080099622" | "2357182" | "2431194" | "3380602" | "3765711" | "3980185" | "4128267" | "4341495" | "4881601" | "5161705" | "5328133" | "5344203" | "5593113" | "5836548" | "7014234" | "7549687" | "7887011" | "8177463").PN. OR ("9440741").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:42
S252	28	("2876726" | "3004772" | "3057315" | "3107024" | "3162320" | "3711902" | "3734308" | "3799100" | "3805721" | "3818854" | "3822667" | "3872555" | "3938461" | "3980185" | "4290382" | "4294185").PN. OR ("4695184").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:44

S253	899	B60P7/13,06.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:46
S254	110	410/84.ccls.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:47
S255	7	("6077006" | "7056081" | "6490766" | "8342786" | "8523501" | "7056061" | "8523401").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:47
S256	2	("1751571").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:49
S257	38	("3034256" | "3159368" | "3334953" | "3618795" | "4249684" | "4303367" | "4325531" | "4737055" | "4805859" | "4901961" | "5161700" | "5205602" | "5240214" | "5511842" | "5588631" | "5609451" | "5653366" | "5730414" | "5855310" | "5899544").PN. OR ("6666362").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:50
S258	25	("3334953" | "4249684" | "4938398" | "4993771" | "5255832" | "5395019").PN. OR ("5653366").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:51
S259	17	("2696962" | "4929973" | "5035389" | "5040712" | "5129613" | "5282554" | "5332183" | "5356105" | "5653366" | "5730348" | "5730406" | "6036071" | "6315182" | "7225958" | "8020821").PN. OR ("8448829").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:51
S260	37	("1252207" | "20060186290" | "20070097617" | "20070170336" | "20070230102" | "20080105803" | "2174140" | "5730406" | "5833189" | "5850996" | "6173931" | "6315255" | "6371424" | "6431510" | "6702604" | "6758454" | "6877641" | "7261264" | "7334762" | "7455271" | "7499272" | "7673838").PN. OR ("8020821").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:52
S261	10	("20050139745" | "4660793" | "5035389" | "5433416" | "5452874" | "5608603" | "5924790" | "6237886" | "6520463" | "6637707").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:52
S262	10	("5356104" | "5639522" | "5662375" | "5694123" | "5943208" | "5947440" | "6349911" | "6402106" | "6446915" | "6710828").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:53

S263	12	("5284311" | "5428502").PN. OR ("5608603").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:54
S264	788	248/224.7,225.21.ccls.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:56
S265	21	("1862466" | "2979300" | "3110467" | "3669035" | "4056250" | "4076204" | "4085867").PN. OR ("4660793").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:57
S266	25	("3334953" | "4249684" | "4938398" | "4993771" | "5255832" | "5395019").PN. OR ("5653366").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 17:01
S267	38	("3454250" | "3456929" | "4065092" | "4230248" | "4249684" | "4444427" | "4848629" | "4974766" | "4984837" | "5007568" | "5046652" | "5181639" | "5275320" | "5285942").PN. OR ("5395019").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 17:02
S268	42	("2680000" | "2897928" | "3631572" | "3881677" | "4346868" | "4618081" | "4948085" | "5181774").PN. OR ("5332183").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 17:05
S269	71	("2708088" | "3878589" | "3915189" | "3931893" | "4450989" | "4461445" | "4858869" | "5026016" | "5035389" | "5078279" | "5344032" | "5356038" | "5433416" | "5435511" | "5452874" | "5765699" | "5915572" | "D329192" | "D386298" | "D386304").PN. OR ("6637707").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 17:45
S270	32	("2103106" | "2703912" | "2879561" | "3237779" | "3399374" | "3403641" | "4029038" | "4068332" | "4266882" | "4340199" | "4376593" | "4389133" | "4430947").PN. OR ("4565465").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 17:55
S271	570	220/4.27.ccls.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:12
S272	319	B65D21/0223.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:12
S273	1,937	A45C5/14.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:12
S274	69	A45C7/005.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:12

S275	2,987	A45C13/02.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:13
S277	357	A45F3/10.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:13
S278	850	B25H1/04.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:14
S279	1,194	B25H3/02,021.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:14
S280	1,052	B62B1/14.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:14
S281	437	B65D21/0209.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:14
S282	164	B65D21/0228.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:15
S283	320	A45C7/0045.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:15
S284	436	B25H3/023.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:15
S285	752	B62B5/067.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:16
S286	23	B65D2255/00.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:16
S287	177	B65H2701/533.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:16
S288	121	(US-0000440-$ | US-0027475-$ | US-0038367-$ | US-0068757-$ | US-0104921-$ | US-0121056-$ | US-0127129-$ | US-0130034-$ | US-0134607-$ | US-0139665-$ | US-0144500-$ | US-0145866-$ | US-0155613-$ | US-0161975-$ | US-0166352-$ | US-0166516-$ | US-0168880-$ | US-0169739-$ | US-0174392-$ | US-0194543-$ | US-0195793-$ | US-0217464-$ | US-0219193-$ | US-0239808-$ | US-0254946-$ | US-0266804-$ | US-0271616-$ | US-	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:23

		0290288-$ | US-0308369-$ | US-0320243-$ | US-0326406-$ | US-1276744-$ | US-1477050-$ | US-2430200-$ | US-20020000440-$ | US-20040195793-$ | US-20060027475-$ | US-20060038367-$ | US-20060254946-$ | US-20070068757-$ | US-20070194543-$ | US-20080104921-$ | US-20080134607-$ | US-20080169739-$ | US-20080308369-$ | US-20090145866-$ | US-20100219193-$ | US-20110139665-$ | US-20110155613-$ | US-20120326406-$ | US-20130127129-$ | US-20140166516-$ | US-20160130034-$ | US-20160144500-$ | US-20160168880-$ | US-20170121056-$ | US-20170166352-$ | US-20170174392-$ | US-20170217464-$ | US-20170239808-$ | US-20170266804-$ | US-20180161975-$ | US-20180290288-$ | US-2608238-$ | US-3117692-$ | US-5240264-$ | US-5429260-$ | US-5595228-$ | US-5628443-$ | US-5988473-$ | US-6085925-$ | US-6547347-$ | US-6641013-$ | US-7503569-$ | US-7841144-$ | US-8132819-$ | US-8459495-$ | US-8677661-$ | US-8813960-$ | US-8875888-$ | US-9132543-$ | US-9506489-$ | US-9566990-$ | US-9616562-$ | US-9872562-$).DID.				
S289	4	(CN-2608238-$ | JP-1276744-$ | JP-1477050-$ | KR-300271616-$ | KR-300320243-$ | TW-135074-$ | TW-168686-$ | TW-174412-$ | VA-223131450-$ | WO-2016142935-$ | WO-2017028845-$).DID.	FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/01/16 21:24
S290	0	(15/826201).APP.	FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/01/16 21:25
S291	0	("150826201").APP.	FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/01/16 21:25
S292	0	"150826201"	FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/01/16 21:25
S293	45	("1699130" | "2072672" | "2551814" | "2633285" | "2736487" | "3010638" | "3361322" | "3623650" | "3632037" | "3713579" | "3905478" | "3905541" | "3921896" | "4002261" | "4023617" | "4187977" | "4230233" | "4245773" | "4251006" | "4277015" | "4291830" |	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:39

		"4389013" | "4482074" | "4643314" | "4685610" | "4762270" | "4763833" | "4828894" | "4884739" | "4911356" | "4948039" | "4993623" | "5038998" | "5116290" | "5190213").PN. OR ("5429260").URPN.				
S294	2	"2430200".pn.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:43
S295	70	("3861703" | "4738340" | "4951818" | "5038842" | "5048649" | "5178244" | "D294775" | "5373104" | "6213266" | "20030123965" | "3061057" | "3532355" | "4350194" | "5407039" | "6634496" | "6758334" | "7077252" | "20020104725" | "20050077136" | "4081061" | "4118048" | "4813521" | "5484045" | "20070068757" | "5927361" | "7232018" | "4693345" | "4122925" | "5484046" | "20060119060" | "20050072642" | "4792025" | "D453623" | "5186290" | "5890571" | "6073737" | "7380685" | "5109961" | "20070012694" | "3452846" | "4657135" | "5339934" | "5379870" | "5447216" | "6116390" | "6401890" | "5142445" | "7398868" | "7726483" | "6164425" | "6520327" | "6976566" | "3650216" | "2497173" | "20010027902" | "20030029750" | "4621716" | "5197579" | "5632496" | "5713439" | "7780002" | "7942282" | "3572253" | "6585090" | "3891230").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:50
S296	70	("3861703" | "4738340" | "4951818" | "5038842" | "5048649" | "5178244" | "D294775" | "5373104" | "6213266" | "20030123965" | "3061057" | "3532355" | "4350194" | "5407039" | "6634496" | "6758334" | "7077252" | "20020104725" | "20050077136" | "4081061" | "4118048" | "4813521" | "5484045" | "20070068757" | "5927361" | "7232018" | "4693345" | "4122925" | "5484046" | "20060119060" | "20050072642" | "4792025" | "D453623" | "5186290" | "5890571" | "6073737" | "7380685" | "5109961" | "20070012694" | "3452846" | "4657135" | "5339934" | "5379870" | "5447216" | "6116390" | "6401890" | "5142445" | "7398868" | "7726483" | "6164425" | "6520327" | "6976566" | "3650216" | "2497173" | "20010027902" | "20030029750" | "4621716" | "5197579" | "5632496" |	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:51

		"5713439" | "7780002" | "7942282" | "3572253" | "6585090" | "3891230").PN.				
S297	40	("20020096844" | "4066155" | "4813542" | "5099968" | "5564805" | "5906291" | "D439739").PN. OR ("6585090").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:53
S298	29	("2472491" | "2925283" | "3057636").PN. OR ("3891230").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:55
S299	59	("3194426" | "3338452" | "3441033" | "3862683" | "4426056" | "4523680" | "4589430" | "4804773").PN. OR ("4889254").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:59
S300	0	("2018/0127007").URPN.	USPAT	OR	OFF	2019/01/17 20:57
S301	3	("20110220531" | "5890613" | "6925834").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/17 20:58
S302	4	("20110139777" | "5301829" | "5427265" | "8602217").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/17 21:07
S303	1	("2014/0326693").URPN.	USPAT	OR	OFF	2019/01/17 21:08
S304	4	("20110139777" | "5301829" | "5427265" | "8602217").PN. OR ("9701443").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/17 21:09
S305	22	("3521764").URPN.	USPAT	OR	OFF	2019/01/17 21:15
S306	0	("2016/0082585").URPN.	USPAT	OR	OFF	2019/01/17 21:21
S307	11	("4887751" | "20080169739" | "20050045640" | "20090250470" | "20050211586" | "20140353191" | "4688674" | "20040016666" | "20080197756" | "4403638" | "5653337").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/17 21:22
S308	13	("2414708" | "4720021" | "4365725" | "5011013" | "4997090" | "5353948" | "5967322" | "7780036" | "0520505" | "4161261" | "4714158").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/17 21:24
S309	8	("6761366" | "0968633" | "6761366" | "0968633" | "5575401" | "20020030425" | "5575401" | "20050224384" | "20070012694" | "6371320").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/17 21:26
S310	12	("2006/0027475").URPN.	USPAT	OR	OFF	2019/01/17 21:29

S311	18	("1193809" | "1268124" | "1521310" | "3696850" | "4724976" | "4756394" | "4787488" | "5209279" | "5219423" | "5314046" | "5971119" | "0622263" | "0695149").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/17 21:29
S312	1	"20110073516".pn.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/19 21:16
S313	71	(US-20180290288-$ or US-20180161975-$ or US-20170239808-$ or US-20170121056-$ or US-20080169739-$ or US-20080134607-$ or US-20080104921-$ or US-20060038367-$ or US-20190002004-$ or US-20120312812-$ or US-20180044059-$ or US-20110181008-$ or US-20090145790-$ or US-20130121783-$ or US-20030034654-$ or US-20080105803-$ or US-20050139745-$ or US-20170174392-$ or US-20060254946-$ or US-20170318927-$ or US-20170259956-$ or US-20100147642-$ or US-20150274362-$ or US-20140262885-$ or US-20130127129-$ or US-20120152800-$).did. or (US-20060027475-$ or US-20030094392-$ or US-20080277221-$ or US-20110073516-$).did. or (US-9872562-$ or US-9566990-$ or US-7841144-$ or US-6547347-$ or US-5429260-$ or US-9725209-$ or US-8789699-$ or US-7503569-$ or US-5022546-$ or US-6840378-$ or US-3980185-$ or US-7780026-$ or US-8657307-$ or US-8177463-$ or US-9440741-$ or US-4341495-$ or US-5183375-$ or US-4695184-$ or US-3734308-$ or US-8342786-$ or US-6666362-$ or US-5653366-$ or US-8448829-$ or US-8020821-$ or US-5608603-$ or US-4660793-$).did. or (US-5395019-$ or US-9056586-$ or US-8387940-$ or US-5332183-$ or US-8398315-$ or US-5129613-$ or US-6637707-$ or US-4565465-$ or US-2053969-$ or US-6585090-$ or US-8561769-$ or US-3891230-$ or US-4889254-$ or US-9701443-$).did. or (US-2430200-$).did.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/19 21:16
S314	121	(US-20180290288-$ or US-20180161975-$ or US-20170266804-$ or US-20170239808-$ or US-20170217464-$ or US-20170174392-$ or US-20170166352-$ or US-20170121056-$ or US-20160168880-$	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/19 21:16

		or US-20160144500-$ or US-20160130034-$ or US-20140166516-$ or US-20130127129-$ or US-20120326406-$ or US-20110155613-$ or US-20110139665-$ or US-20100219193-$ or US-20090145866-$ or US-20080308369-$ or US-20080169739-$ or US-20080134607-$ or US-20080104921-$ or US-20070194543-$ or US-20070068757-$ or US-20060254946-$ or US-20060038367-$).did. or (US-20060027475-$ or US-20040195793-$ or US-20020000440-$).did. or (US-9872562-$ or US-9616562-$ or US-9566990-$ or US-9506489-$ or US-9132543-$ or US-8875888-$ or US-8813960-$ or US-8677661-$ or US-8459495-$ or US-8132819-$ or US-7841144-$ or US-7503569-$ or US-6641013-$ or US-6547347-$ or US-6085925-$ or US-5988473-$ or US-5628443-$ or US-5595228-$ or US-5429260-$ or US-5240264-$ or US-3117692-$ or US-2608238-$ or US-2430200-$ or US-1477050-$ or US-1276744-$ or US-0326406-$).did. or (US-0320243-$ or US-0308369-$ or US-0290288-$ or US-0271616-$ or US-0266804-$ or US-0254946-$ or US-0239808-$ or US-0219193-$ or US-0217464-$ or US-0195793-$ or US-0194543-$ or US-0174392-$ or US-0169739-$ or US-0168880-$ or US-0166516-$ or US-0166352-$ or US-0161975-$ or US-0155613-$ or US-0145866-$ or US-0144500-$ or US-0139665-$ or US-0134607-$ or US-0130034-$ or US-0127129-$ or US-0121056-$ or US-0104921-$ or US-0068757-$).did. or (US-0038367-$ or US-0027475-$ or US-0000440-$).did. or (US-3117692-$ or US-2608238-$ or US-2430200-$ or US-1477050-$ or US-1276744-$ or US-0326406-$ or US-0320243-$ or US-0308369-$ or US-0290288-$ or US-0271616-$ or US-0266804-$ or US-0254946-$ or US-0239808-$ or US-0219193-$ or US-0217464-$ or US-0195793-$ or US-0194543-$ or US-0174392-$ or US-0169739-$ or US-0168880-$ or US-0166516-$ or US-0166352-$ or US-0161975-$ or US-0155613-$ or US-0145866-$ or US-0144500-$).did. or (US-0139665-$ or US-				

		0134607-$ or US-0130034-$ or US-0127129-$ or US-0121056-$ or US-0104921-$ or US-0068757-$ or US-0038367-$ or US-0027475-$ or US-0000440-$).did.				
S315	52	S313 not S314	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/19 21:17
S316	1	"20120207571".pn.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/06/06 19:39
S317	1	"20080115312".pn.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/06/06 19:47
S318	13	(US-0023349-$ | US-0115312-$ | US-0186624-$ | US-0207571-$ | US-20060186624-$ | US-20080115312-$ | US-20120207571-$ | US-20160023349-$ | US-6848980-$).DID.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/06/06 20:25
S319	2,000	A45C5/14.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/06/09 16:14
S320	380	A45C7/0045,005.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/06/09 16:15
S321	700	F16B12/24,44.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/06/09 16:34
S322	13	("7534065" | "9506489" | "20100254757" | "3944282" | "4995176" | "6612078" | "20110085853" | "4900090" | "6830236" | "6877824" | "8464408" | "20070145864" | "7152752").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/06/09 16:36
S355	14	(US-20110073516-$ or US-20190002004-$ or US-20180044059-$ or US-20170318927-$ or US-20130121783-$ or US-20110181008-$ or US-20100147642-$ or US-20090145790-$ or US-20080277221-$ or US-20050139745-$ or US-20080115312-$ or US-20170138382-$ or US-20070145864-$).did. or (US-9506489-$).did.	US-PGPUB; USPAT	OR	OFF	2019/06/09 21:00
S356	14	("20050139745" | "20080277221" | "20090145790" | "20100147642" | "20110073516" | "20110181008" | "20130121783" | "20170318927" | "20180044059" | "20190002004" |	US-PGPUB; USPAT	OR	OFF	2019/06/09 21:00

		"5608603" | "6637707" | "8177463" | "9701443").PN.				
S357	4	S355 not S356	US-PGPUB; USPAT	OR	OFF	2019/06/09 21:01
S359	11	("20070145864" | "20100254757" | "20110085853" | "3944282" | "4900090" | "4995176" | "6612078" | "6830236" | "6877824" | "7152752" | "8464408").PN. OR ("9506489").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/09/03 21:43
S380	1	(US-20170138382-$).did.	US-PGPUB	OR	OFF	2019/09/04 13:40
S381	1	(US-20170138382-$).did.	US-PGPUB	OR	OFF	2019/09/04 13:42
S382	1	(US-20170138382-$).did.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/09/04 13:42
S386	1	"16752441"	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 21:31
S387	30	(US-0031222-$ | US-0055534-$ | US-0068903-$ | US-0076759-$ | US-0153312-$ | US-0154218-$ | US-0236482-$ | US-0274362-$ | US-0349013-$ | US-20090236482-$ | US-20130068903-$ | US-20130154218-$ | US-20140076759-$ | US-20150274362-$ | US-20170349013-$ | US-20180153312-$ | US-20190031222-$ | US-20200055534-$ | US-5538213-$ | US-7779764-$ | US-D871013-$).DID.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 21:38
S388	7	(("7779764") or ("20090236482") or ("2011174939") or ("20130154218") or ("D437669") or ("D456972") or ("D828671") or ("D871013")).PN. or ((2013/0068903) or (2013/146551) or (2014/0076759) or (2015/0274362) or (2017/0349013) or (2018/0153312) or (2019/0031222) or (2020/0055534)).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 21:41
S389	14	(("7779764") or ("20090236482") or ("2011174939") or ("20130154218") or ("20130068903") or ("2013146551") or ("20140076759") or ("20150274362") or ("20170349013") or ("20180153312") or ("20190031222") or ("20200055534") or ("D437669") or ("D456972") or ("D828671") or ("D871013")).PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 21:41
S390	2	(("D668869") or ("D815831")).PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 21:43

S391	980	((("MILWAUKEE") near3 ("ELECTRIC") near3 ("TOOL") near3 ("CORPORATION"))).AS,AANM.	USPAT	OR	OFF	2020/09/17 21:48
S392	67	((("Brunner") near3 ("Yaron"))).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 21:48
S393	55	((("Squiers") near3 ("Grant") near3 ("T"))).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 21:48
S394	89	((("Hoppe") near3 ("Christopher") near3 ("S"))).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 21:48
S395	162	((("Hyma") near3 ("Steven") near3 ("W"))).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 21:48
S396	12	(("8505729") or ("8567796") or ("8979100") or ("9511491") or ("20090026901") or ("20150376917") or ("D395533") or ("D653832") or ("D661858") or ("D738106") or ("D816334") or ("D826510")).PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 21:51
S397	262	(US-0000440-$ | US-0002004-$ | US-0006770-$ | US-0023349-$ | US-0024468-$ | US-0027475-$ | US-0031731-$ | US-0031732-$ | US-0038367-$ | US-0039781-$ | US-0044059-$ | US-0052276-$ | US-0062244-$ | US-0068757-$ | US-0071990-$ | US-0073516-$ | US-0090616-$ | US-0103494-$ | US-0104308-$ | US-0104921-$ | US-0106244-$ | US-0115312-$ | US-0115715-$ | US-0119060-$ | US-0121056-$ | US-0121547-$ | US-0121783-$ | US-0127129-$ | US-0130034-$ | US-0134607-$ | US-0138382-$ | US-0139566-$ | US-0139665-$ | US-0139745-$ | US-0144500-$ | US-0145700-$ | US-0145790-$ | US-0145866-$ | US-0145913-$ | US-0146589-$ | US-0147642-$ | US-0155613-$ | US-0160886-$ | US-0161518-$ | US-0161975-$ | US-0165828-$ | US-0166352-$ | US-0166516-$ | US-0168880-$ | US-0169739-$ | US-0171228-$ | US-0174392-$ | US-0178946-$ | US-0180250-$ | US-0181008-$ | US-0184034-$ | US-0186624-$ | US-0194543-$ | US-0195793-$ | US-0205877-$ | US-0206656-$ | US-0207571-$ | US-0217464-$ | US-0219193-$ | US-0220531-$ | US-0220758-$ | US-0223971-$ | US-0225371-$ | US-0239808-$ | US-0254946-$ | US-0257958-$ | US-0266804-$ | US-	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 21:53

		0271280-$ | US-0271616-$ | US-0277221-$ | US-0290288-$ | US-0308369-$ | US-0318927-$ | US-0320243-$ | US-0326406-$ | US-10434638-$ | US-1276744-$ | US-1477050-$ | US-2042387-$ | US-2430200-$ | US-2970358-$ | US-20020000440-$ | US-20020171228-$ | US-20030115715-$ | US-20030146589-$ | US-20030184034-$ | US-20030205877-$ | US-20040103494-$ | US-20040195793-$ | US-20040206656-$ | US-20050062244-$ | US-20050104308-$ | US-20050139745-$ | US-20060006770-$ | US-20060027475-$ | US-20060038367-$ | US-20060119060-$ | US-20060186624-$ | US-20060254946-$ | US-20070068757-$ | US-20070090616-$ | US-20070145700-$ | US-20070194543-$ | US-20080104921-$ | US-20080115312-$ | US-20080121547-$ | US-20080134607-$ | US-20080169739-$ | US-20080271280-$ | US-20080277221-$ | US-20080308369-$ | US-20090071990-$ | US-20090145790-$ | US-20090145866-$ | US-20090145913-$ | US-20090178946-$ | US-20100052276-$ | US-20100139566-$ | US-20100147642-$ | US-20100219193-$ | US-20110073516-$ | US-20110139665-$ | US-20110155613-$ | US-20110181008-$ | US-20110220531-$ | US-20120160886-$ | US-20120180250-$ | US-20120207571-$ | US-20120326406-$ | US-20130024468-$ | US-20130031731-$ | US-20130031732-$ | US-20130121783-$ | US-20130127129-$ | US-20130223971-$ | US-20140161518-$ | US-20140166516-$ | US-20140000-$ | US-20160023349-$ | US-20160130034-$ | US-20160144500-$ | US-20160168880-$ | US-20170121056-$ | US-20170138382-$ | US-20170165828-$ | US-20170166352-$ | US-20170174392-$ | US-20170217464-$ | US-20170239808-$ | US-20170257958-$ | US-20170266804-$ | US-20170318927-$ | US-20180044059-$ | US-20180161975-$ | US-20180220758-$ | US-20180290288-$ | US-20190002004-$ | US-20190039781-$ | US-20190106244-$ | US-20190225371-$ | US-2608238-$ | US-3117692-$ | US-3506321-$ | US-3974898-$ | US-4168076-$ | US-5035445-$ | US-5105947-$ | US-5240264-$ | US-5301829-$ | US-5429260-$).DID.				
S398	53	(US-5595228-$ | US-5608603-$ | US-5628443-$ | US-5797617-$ | US-5951037-$ | US-5988473-$ | US-6050660-$ | US-	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 21:53

		6085925-$ | US-6109627-$ | US-6176559-$ | US-6347847-$ | US-6367631-$ | US-6371320-$ | US-6431580-$ | US-6547347-$ | US-6601930-$ | US-6619772-$ | US-6637707-$ | US-6641013-$ | US-6945546-$ | US-6948691-$ | US-6983946-$ | US-7044484-$ | US-7066475-$ | US-7147243-$ | US-7263742-$ | US-7367571-$ | US-7503569-$ | US-7658887-$ | US-7780026-$ | US-7841144-$ | US-7212840-$ | US-8028845-$ | US-8132819-$ | US-8177463-$ | US-8191910-$ | US-8454033-$ | US-8459495-$ | US-8677661-$ | US-8689396-$ | US-8714355-$ | US-8813960-$ | US-8875888-$ | US-8985922-$ | US-9132543-$ | US-9506489-$ | US-9566990-$ | US-9616562-$ | US-9643629-$ | US-9701443-$ | US-9872562-$ | US-9750543-$ | US-D701696-$).DID.				
S399	570	220/4.27.ccls.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 22:01
S400	392	B65D21/0223.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 22:01
S401	2,201	A45C5/14,0045.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 22:02
S402	3,330	A45C13/02.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 22:02
S403	423	A45F3/10.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 22:02
S404	923	B25H1/04.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 22:02
S405	1,163	B25H3/02.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 22:02
S406	197	B25H3/021.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 22:02
S407	1,141	B62B1/14.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 22:03

S408	717	B65D21/0209,0228.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 22:03
S409	468	B25H3/023.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 22:03
S410	940	B62B5/067.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 22:03
S411	38	B65D2255/00.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 22:03
S412	203	B65H2701/533.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 22:03
S413	2	(("10583962") or ("10703534")).PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 22:05
S414	1	"15826201"	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 22:08
S415	5	"15826232"	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 22:08
S416	3	"16216724"	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 22:09
S417	1	"10703534".pn.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 22:19
S418	0	"15826201".a[.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 22:20
S419	0	"15826201".ap.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 22:20
S420	0	"15826201".did.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 22:20
S421	4	("2018/0161975").URPN.	USPAT	OR	OFF	2020/09/17 22:21
S422	188	(US-0271616-$ | US-0320243-$ | US-10434638-$ | US-1276744-$ | US-1321247-$ | US-14125488-$ | US-1428764-$ | US-1477050-$ | US-1819487-$ | US-19750543-$ | US-2042387-$ | US-2970358-$ | US-20140000-$ | US-20218996-$ | US-	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/17 22:31

		2047181-$ | US-2289671-$ | US-2330521-$ | US-2346741-$ | US-2406331-$ | US-2413265-$ | US-2456341-$ | US-2555660-$ | US-2555661-$ | US-2608238-$ | US-2805799-$ | US-29708343-$ | US-3117692-$ | US-3974898-$ | US-3141354-$ | US-3510307-$ | US-4168076-$ | US-4415638-$ | US-5035445-$ | US-5105947-$ | US-5240264-$ | US-5301829-$ | US-5595228-$ | US-5608603-$ | US-5628443-$ | US-5797617-$ | US-5951037-$ | US-5988473-$ | US-6050660-$ | US-6085925-$ | US-6109627-$ | US-6176559-$ | US-6347847-$ | US-6367631-$ | US-6371320-$ | US-6431580-$ | US-6601930-$ | US-6619772-$ | US-6637707-$ | US-6641013-$ | US-6945546-$ | US-6948691-$ | US-6983946-$ | US-7044484-$ | US-7066475-$ | US-7147243-$ | US-7263742-$ | US-7367571-$ | US-7503569-$ | US-7658887-$ | US-7779764-$ | US-7780026-$ | US-8028845-$ | US-8177463-$ | US-8191910-$ | US-8454033-$ | US-8505729-$ | US-8567796-$ | US-8689396-$ | US-8714355-$ | US-8979100-$ | US-8985922-$ | US-9511491-$ | US-9566990-$ | US-9616562-$ | US-9643629-$ | US-9313802-$ | US-D395533-$ | US-D437669-$ | US-D456972-$ | US-D525789-$ | US-D630851-$ | US-D653832-$ | US-D661858-$ | US-D663952-$ | US-D664354-$ | US-D674605-$ | US-D701696-$ | US-D738106-$ | US-D753394-$ | US-D753395-$ | US-D765974-$ | US-D770179-$ | US-D790221-$ | US-D814187-$ | US-D816334-$ | US-D826510-$ | US-D828671-$ | US-D833744-$ | US-D837515-$ | US-D871013-$ | US-20020000440-$ | US-20020171228-$ | US-20030115715-$ | US-20030146589-$ | US-20030184034-$ | US-20030205877-$ | US-20040103494-$ | US-20040195793-$ | US-20040206656-$ | US-20050062244-$ | US-20050104308-$ | US-20050139745-$ | US-20060006770-$ | US-20060027475-$ | US-20060119060-$ | US-20060186624-$ | US-20060254946-$ | US-20070068757-$ | US-20070090616-$ | US-20070145700-$ | US-20070194543-$ | US-20080115312-$ | US-20080121547-$ | US-20080169739-$ | US-20080271280-$ | US-20080277221-$ | US-20090026901-$ | US-20090071990-$ | US-20090145790-$ | US-20090145866-$ | US-20090145913-$ | US-20090178946-$ | US-20100052276-$ | US-			

		20100139566-$ | US-20100147642-$ | US-20100219193-$ | US-20110139665-$ | US-20110155613-$ | US-20110181008-$ | US-20120160886-$ | US-20120180250-$ | US-20120207571-$ | US-20130024468-$ | US-20130031731-$ | US-20130031732-$ | US-20130121783-$ | US-20130127129-$ | US-20130154218-$ | US-20130223971-$ | US-20140076759-$ | US-20150274362-$ | US-20150376917-$ | US-20160023349-$ | US-20170138382-$ | US-20170165828-$ | US-20170174392-$ | US-20170217464-$ | US-20170257958-$ | US-20170349013-$ | US-20180044059-$ | US-20180220758-$ | US-20190031222-$ | US-20190106244-$ | US-20190225371-$ | US-20200055534-$).DID.				
S423	6	("2016/0144500").URPN.	USPAT	OR	OFF	2020/09/18 00:00
S424	13	("20030094392" | "20070034539" | "20120024739" | "20120312812" | "20160008972" | "20160144500" | "5325966" | "6082539" | "7523827").PN. OR ("9725209").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/18 00:01
S425	146	(US-10434638-$ | US-2042387-$ | US-2970358-$ | US-3117692-$ | US-3974898-$ | US-4168076-$ | US-5035445-$ | US-5105947-$ | US-5240264-$ | US-5301829-$ | US-5595228-$ | US-5608603-$ | US-5628443-$ | US-5797617-$ | US-5951037-$ | US-5988473-$ | US-6050660-$ | US-6085925-$ | US-6109627-$ | US-6176559-$ | US-6347847-$ | US-6367631-$ | US-6371320-$ | US-6431580-$ | US-6601930-$ | US-6619772-$ | US-6637707-$ | US-6641013-$ | US-6945546-$ | US-6948691-$ | US-6983946-$ | US-7044484-$ | US-7066475-$ | US-7147243-$ | US-7263742-$ | US-7367571-$ | US-7503569-$ | US-7658887-$ | US-7779764-$ | US-7780026-$ | US-8028845-$ | US-8177463-$ | US-8191910-$ | US-8454033-$ | US-8505729-$ | US-8567796-$ | US-8689396-$ | US-8714355-$ | US-8979100-$ | US-8985922-$ | US-9511491-$ | US-9566990-$ | US-9616562-$ | US-9643629-$ | US-D395533-$ | US-D437669-$ | US-D456972-$ | US-D525789-$ | US-D630851-$ | US-D653832-$ | US-D661858-$ | US-D663952-$ | US-D664354-$ | US-D674605-$ | US-D701696-$ | US-D738106-$ | US-D753394-$ | US-D753395-$ | US-D765974-$ | US-D770179-	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/22 19:41

		$ | US-D790221-$ | US-D814187-$ | US-D816334-$ | US-D826510-$ | US-D828671-$ | US-D833744-$ | US-D837515-$ | US-D871013-$ | US-20020000440-$ | US-20020171228-$ | US-20030115715-$ | US-20030146589-$ | US-20030184034-$ | US-20030205877-$ | US-20040103494-$ | US-20040195793-$ | US-20040206656-$ | US-20050062244-$ | US-20050104308-$ | US-20050139745-$ | US-20060006770-$ | US-20060027475-$ | US-20060119060-$ | US-20060186624-$ | US-20060254946-$ | US-20070068757-$ | US-20070090616-$ | US-20070145700-$ | US-20070194543-$ | US-20080115312-$ | US-20080121547-$ | US-20080169739-$ | US-20080271280-$ | US-20080277221-$ | US-20090026901-$ | US-20090071990-$ | US-20090145790-$ | US-20090145866-$ | US-20090145913-$ | US-20090178946-$ | US-20100052276-$ | US-20100139566-$ | US-20100147642-$ | US-20100219193-$ | US-20110139665-$ | US-20110155613-$ | US-20110181008-$ | US-20120160886-$ | US-20120180250-$ | US-20120207571-$ | US-20130024468-$ | US-20130031731-$ | US-20130031732-$ | US-20130121783-$ | US-20130127129-$ | US-20130154218-$ | US-20130223971-$ | US-20140076759-$ | US-20150274362-$ | US-20150376917-$ | US-20160023349-$ | US-20170138382-$ | US-20170165828-$ | US-20170174392-$ | US-20170217464-$ | US-20170257958-$ | US-20170349013-$ | US-20180044059-$ | US-20180220758-$ | US-20190031222-$ | US-20190106244-$ | US-20190225371-$ | US-20200055534-$).DID.				
S426	13	(US-20170138382-$ or US-20150274362-$ or US-20190225371-$ or US-20180161975-$ or US-20190106244-$).did. or (US-9506489-$ or US-D816334-$ or US-8979100-$ or US-9701443-$ or US-10583962-$ or US-D895967-$ or US-5608603-$ or US-9725209-$).did.	US-PGPUB; USPAT	OR	OFF	2020/09/22 19:42
S427	146	(US-20200055534-$ or US-20190225371-$ or US-20190106244-$ or US-20190031222-$ or US-20180220758-$ or US-20180044059-$ or US-20170349013-$ or US-20170257958-$ or US-20170217464-$ or US-20170174392-$ or US-20170165828-$ or US-20170138382-$ or US-20160023349-$ or US-20150376917-$ or US-20150274362-$ or US-20140076759-$	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/22 19:42

		or US-20130223971-$ or US-20130154218-$ or US-20130127129-$ or US-20130121783-$ or US-20130031732-$ or US-20130031731-$ or US-20130024468-$ or US-20120207571-$ or US-20120180250-$ or US-20120160886-$).did. or (US-20110181008-$ or US-20110155613-$ or US-20110139665-$ or US-20100219193-$ or US-20100147642-$ or US-20100139566-$ or US-20100052276-$ or US-20090178946-$ or US-20090145913-$ or US-20090145866-$ or US-20090145790-$ or US-20090071990-$ or US-20090026901-$ or US-20080277221-$ or US-20080271280-$ or US-20080169739-$ or US-20080121547-$ or US-20080115312-$ or US-20070194543-$ or US-20070145700-$ or US-20070090616-$ or US-20070068757-$ or US-20060254946-$ or US-20060186624-$ or US-20060119060-$ or US-20060027475-$ or US-20060006770-$).did. or (US-20050139745-$ or US-20050104308-$ or US-20050062244-$ or US-20040206656-$ or US-20040195793-$ or US-20040103494-$ or US-20030205877-$ or US-20030184034-$ or US-20030146589-$ or US-20030115715-$ or US-20020171228-$ or US-20020000440-$).did. or (US-D871013-$ or US-10434638-$ or US-D837515-$ or US-D833744-$ or US-D828671-$ or US-D826510-$ or US-D816334-$ or US-D814187-$ or US-D790221-$ or US-9643629-$ or US-9616562-$ or US-9566990-$ or US-9511491-$ or US-D770179-$ or US-D765974-$ or US-D753395-$ or US-D753394-$ or US-D738106-$ or US-8985922-$ or US-8979100-$ or US-8714355-$ or US-8689396-$ or US-D701696-$ or US-8567796-$ or US-8505729-$ or US-8454033-$).did. or (US-D674605-$ or US-D664354-$ or US-D663952-$ or US-D661858-$ or US-8191910-$ or US-8177463-$ or US-D653832-$ or US-8028845-$ or US-D630851-$ or US-7780026-$ or US-7779764-$ or US-7658887-$ or US-7503569-$ or US-7367571-$ or US-7263742-$ or US-7147243-$ or US-D525789-$ or US-7066475-$ or US-7044484-$ or US-6983946-$ or US-6948691-$ or US-6945546-$ or US-6641013-$ or US-6637707-$ or US-				

		6619772-$ or US-6601930-$ or US-6431580-$).did. or (US-D456972-$ or US-6371320-$ or US-6367631-$ or US-6347847-$ or US-D437669-$ or US-6176559-$ or US-6109627-$ or US-6085925-$ or US-6050660-$ or US-5988473-$ or US-5951037-$ or US-5797617-$ or US-D395533-$ or US-5628443-$ or US-5608603-$ or US-5595228-$ or US-5301829-$ or US-5240264-$ or US-5105947-$ or US-5035445-$ or US-4168076-$ or US-3974898-$ or US-3117692-$ or US-2970358-$ or US-2042387-$).did. or (US-3117692-$ or US-2970358-$ or US-2042387-$).did.				
S428	6	S426 not S425	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/22 19:43
S430	1	"20120074022".pn.	US-PGPUB; USPAT; USOCR	OR	OFF	2021/01/02 18:34
S431	0	("2012/0074022").URPN.	USPAT	OR	OFF	2021/01/02 18:34
S432	26	(US-0074158-$ | US-0127146-$ | US-0168376-$ | US-0242144-$ | US-0296443-$ | US-10758065-$ | US-20050242144-$ | US-20080296443-$ | US-20090127146-$ | US-20120074158-$ | US-20190168376-$ | US-3514170-$ | US-3743372-$ | US-4805859-$ | US-5282554-$ | US-5653366-$ | US-5775046-$ | US-5890613-$ | US-5957421-$ | US-8448829-$).DID.	US-PGPUB; USPAT; USOCR	OR	OFF	2021/01/02 18:35
S433	73	(US-0034515-$ | US-0094393-$ | US-0099405-$ | US-0125072-$ | US-0186513-$ | US-0221177-$ | US-0243925-$ | US-0292213-$ | US-0299027-$ | US-10106180-$ | US-10583962-$ | US-20020125072-$ | US-20030094393-$ | US-20120292213-$ | US-20150034515-$ | US-20160221177-$ | US-20180099405-$ | US-20180186513-$ | US-20200243925-$ | US-20200299027-$ | US-3225865-$ | US-4971201-$ | US-5098235-$ | US-6305498-$ | US-9506489-$ | US-9725209-$ | US-D232798-$ | US-D319016-$ | US-D325324-$ | US-D326815-$ | US-D340167-$ | US-D352208-$ | US-D361511-$ | US-D415393-$ | US-D420860-$ | US-D527225-$ | US-D536580-$ | US-D649350-$ | US-D738105-$ | US-D753396-$ | US-D777426-$ | US-D784089-$ | US-	US-PGPUB; USPAT; USOCR	OR	OFF	2021/01/02 18:37

		D803631-$ | US-D806483-$ | US-D831352-$ | US-D836995-$ | US-D839681-$ | US-D845080-$ | US-D845081-$ | US-D857387-$ | US-D873085-$ | US-D880252-$ | US-D880951-$ | US-D883752-$ | US-D887788-$ | US-D888422-$ | US-D888503-$ | US-D891193-$ | US-D891195-$ | US-D891875-$ | US-D892565-$ | US-D895375-$).DID.				
S434	2,094	B65D21/02,0204,0213,0219,064,083.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2021/01/02 18:43
S436	194	B65D2251/1025.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2021/01/02 18:44
S437	1,248	206/373,478.ccls.	US-PGPUB; USPAT; USOCR	OR	OFF	2021/01/02 18:45
S438	3,180	220/23.4,481,735,810.ccls.	US-PGPUB; USPAT; USOCR	OR	OFF	2021/01/02 18:45
S439	1,440	248/220.21,224.51,225.11.ccls.	US-PGPUB; USPAT; USOCR	OR	OFF	2021/01/02 18:46
S440	642	52/592.6,590.1.ccls.	US-PGPUB; USPAT; USOCR	OR	OFF	2021/01/02 18:46

EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	1,046	A45C5/14.cpc.	USPAT	OR	OFF	2021/01/02 19:50
L2	181	A45C7/0045,005.cpc.	USPAT	OR	OFF	2021/01/02 19:50
L4	1,531	A45C13/02.cpc.	USPAT	OR	OFF	2021/01/02 19:50
L5	208	A45F3/10.cpc.	USPAT	OR	OFF	2021/01/02 19:52
L6	609	A47B47/00,04.cpc.	USPAT	OR	OFF	2021/01/02 19:52
L7	322	A47B67/04.cpc.	USPAT	OR	OFF	2021/01/02 19:53

L8	612	A47B87/02,007,0276.cpc.	USPAT	OR	OFF	2021/01/02 19:53
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ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /G.R.W/

PTO/SB/08 (09-06)
Approved for use through 03/31/2007. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
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Substitute for form 1449/PTO				***Complete if Known***	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				**Application Number**	16/752,441
Date Submitted: December 22, 2020				**Filing Date**	January 24, 2020
				First Named Inventor	Yaron Brunner
(use as many sheets as necessary)				Art Unit	3736
				Examiner Name	WEINERTH, GIDEON R
Sheet	1	of	2	Attorney Docket Number	066749-2584

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UNPUBLISHED U.S. PATENT APPLICATION DOCUMENTS

Examiner Initials*	Cite No.[1]	U.S. Patent Application Document Serial Number-Kind Code[2] (*if known*)	Filing Date of Cited Document MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear

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Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]-Number[4]-Kind Code[5] (*if known*)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Documents	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[6]

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 1 Applicant's unique citation designation number (optional). 2 See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. 3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). 4 For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. 5 Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. 6 Applicant is to place a check mark here if English language Translation is attached.

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PTO/SB/08 (09-06)
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U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
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Substitute for form 1449/PTO				***Complete if Known***	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				**Application Number**	16/752,441
				Filing Date	January 24, 2020
Date Submitted: December 22, 2020				**First Named Inventor**	Yaron Brunner
				Art Unit	3736
(use as many sheets as necessary)				Examiner Name	WEINERTH, GIDEON R
Sheet	2	of	2	Attorney Docket Number	066749-2584

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No.[1]	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, page(s), volume-issue number(s), publisher, city and/or country where published.	T[6]

Examiner Signature	/GIDEON R WEINERTH/	Date Considered	01/02/2021

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If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Bibliographic Data

Application No: 16/752,441

Foreign Priority claimed: ○ Yes ◉ No

35 USC 119 (a-d) conditions met: ☐ Yes ☑ No ☐ Met After Allowance

Verified and Acknowledged: /GIDEON R WEINERTH/ (Examiner's Signature) G.R.W (Initials)

Title: Utility Assembly and Coupling Mechanism

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
01/24/2020	220	3736	066749-2584
RULE			

APPLICANTS

Milwaukee Electric Tool Corporation, Brookfield, WI, UNITED STATES

Keter Plastic LTD., Herzelyia, ISRAEL

INVENTORS

Yaron Brunner, Kibbutz Gvat, ISRAEL

Grant T. Squiers, Cudahy, WI, UNITED STATES

Christopher S. Hoppe, Milwaukee, WI, UNITED STATES

Steven W. Hyma, Milwaukee, WI, UNITED STATES

CONTINUING DATA

This application is a CON of 16216724 12/11/2018 PAT 10583962

16216724 is a CON of 15826232 11/29/2017 PAT 10703534

15826232 is a CON of PCT/IL2017/050481 04/30/2017

PCT/IL2017/050481 has PRO of 62459076 02/15/2017

PCT/IL2017/050481 has PRO of 62330334 05/02/2016

FOREIGN APPLICATIONS

IF REQUIRED, FOREIGN LICENSE GRANTED**

02/12/2020

STATE OR COUNTRY

ISRAEL

ADDRESS

Reinhart (Milwaukee Tool)

ATTN: TRAVIS MCDONNELL, PARALEGAL

1000 NORTH WATER STREET

SUITE 2100

MILWAUKEE, WI 53202
UNITED STATES

FILING FEE RECEIVED

$1,720

PTO/SB/08 (09-06)
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Substitute for form 1449/PTO				***Complete if Known***	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				**Application Number**	16/752,441
				Filing Date	January 24, 2020
Date Submitted: January 7, 2021				**First Named Inventor**	Yaron Brunner
				Art Unit	3736
(use as many sheets as necessary)				Examiner Name	WEINERTH, GIDEON R
Sheet	1	of	3	Attorney Docket Number	066749-2584

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] (*if known*)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear

UNPUBLISHED U.S. PATENT APPLICATION DOCUMENTS

Examiner Initials*	Cite No.[1]	U.S. Patent Application Document Serial Number-Kind Code[2] (*if known*)	Filing Date of Cited Document MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]-Number[4]-Kind Code[5] (*if known*)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Documents	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[6]

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.[1]	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, page(s), volume-issue number(s), publisher, city and/or country where published.	T[6]
	A1	Inter Partes Review No. 2021-00373, "Petition for Inter Partes Review of U.S. Pat. No. 10,583,962," filed January 5, 2021, 198 pages.	
	A2	Exhibit 1001 in Petition for Inter Partes Review of U.S. Pat. No. 10,583,962, filed January 5, 2021, 64 pages.	
	A3	Exhibit 1002 in Petition for Inter Partes Review of U.S. Pat. No. 10,583,962, filed January 5, 2021, 75 pages.	
	A4	Exhibit 1003 in Petition for Inter Partes Review of U.S. Pat. No. 10,583,962, filed January 5, 2021, 13 pages.	
	A5	Exhibit 1004 in Petition for Inter Partes Review of U.S. Pat. No. 10,583,962, filed January 5, 2021, 18 pages.	

Examiner Signature		Date Considered	

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Substitute for form 1449/PTO				***Complete if Known***	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				**Application Number**	16/752,441
				Filing Date	January 24, 2020
Date Submitted: January 7, 2021				**First Named Inventor**	Yaron Brunner
				Art Unit	3736
(use as many sheets as necessary)				Examiner Name	WEINERTH, GIDEON R
Sheet	2	of	3	Attorney Docket Number	066749-2584

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No.[1]	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, page(s), volume-issue number(s), publisher, city and/or country where published.	T[6]
	A6	Exhibit 1005 in Petition for Inter Partes Review of U.S. Pat. No. 10,583,962, filed January 5, 2021, 9 pages.	
	A7	Exhibit 1006 in Petition for Inter Partes Review of U.S. Pat. No. 10,583,962, filed January 5, 2021, 176 pages.	
	A8	Exhibit 1007 in Petition for Inter Partes Review of U.S. Pat. No. 10,583,962, filed January 5, 2021, 22 pages.	
	A9	Exhibit 1008 in Petition for Inter Partes Review of U.S. Pat. No. 10,583,962, filed January 5, 2021, 6 pages.	
	A10	Exhibit 1009 in Petition for Inter Partes Review of U.S. Pat. No. 10,583,962, filed January 5, 2021, 24 pages.	
	A11	Exhibit 1010 in Petition for Inter Partes Review of U.S. Pat. No. 10,583,962, filed January 5, 2021, 19 pages.	
	A12	Exhibit 1011 in Petition for Inter Partes Review of U.S. Pat. No. 10,583,962, filed January 5, 2021, 26 pages.	
	A13	Exhibit 1012 in Petition for Inter Partes Review of U.S. Pat. No. 10,583,962, filed January 5, 2021, 3 pages.	
	A14	Exhibit 1013 in Petition for Inter Partes Review of U.S. Pat. No. 10,583,962, filed January 5, 2021, 168 pages.	
	A15	Exhibit 1014 in Petition for Inter Partes Review of U.S. Pat. No. 10,583,962, filed January 5, 2021, PART A pages 1-166 of 481 pages.	
	A16	Exhibit 1014 in Petition for Inter Partes Review of U.S. Pat. No. 10,583,962, filed January 5, 2021, PART B pages 167-320 of 481 pages.	
	A17	Exhibit 1014 in Petition for Inter Partes Review of U.S. Pat. No. 10,583,962, filed January 5, 2021, PART C pages 321-481 of 481 pages.	
	A18	Exhibit 1015 in Petition for Inter Partes Review of U.S. Pat. No. 10,583,962, filed January 5, 2021, 6 pages.	

Examiner Signature		Date Considered	

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Substitute for form 1449/PTO				***Complete if Known***	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				**Application Number**	16/752,441
				Filing Date	January 24, 2020
Date Submitted: January 7, 2021				**First Named Inventor**	Yaron Brunner
				Art Unit	3736
(use as many sheets as necessary)				Examiner Name	WEINERTH, GIDEON R
Sheet	3	of	3	Attorney Docket Number	066749-2584

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No.[1]	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, page(s), volume-issue number(s), publisher, city and/or country where published.	T[6]
	A19	Exhibit 1016 in Petition for Inter Partes Review of U.S. Pat. No. 10,583,962, filed January 5, 2021, 242 pages.	
	A20	Exhibit 1017 in Petition for Inter Partes Review of U.S. Pat. No. 10,583,962, filed January 5, 2021, 6 pages.	
	A21	Exhibit 1018 in Petition for Inter Partes Review of U.S. Pat. No. 10,583,962, filed January 5, 2021, 250 pages.	
	A22	Exhibit 1019 in Petition for Inter Partes Review of U.S. Pat. No. 10,583,962, filed January 5, 2021, 44 pages.	
	A23	Exhibit 1020 in Petition for Inter Partes Review of U.S. Pat. No. 10,583,962, filed January 5, 2021, 5 pages.	
	A24	Exhibit 1021 in Petition for Inter Partes Review of U.S. Pat. No. 10,583,962, filed January 5, 2021, 1 page.	
	A25	Exhibit 1022 in Petition for Inter Partes Review of U.S. Pat. No. 10,583,962, filed January 5, 2021, 1 page.	
	A26	Exhibit 1023 in Petition for Inter Partes Review of U.S. Pat. No. 10,583,962, filed January 5, 2021, 24 pages.	
	A27	Exhibit 1024 in Petition for Inter Partes Review of U.S. Pat. No. 10,583,962, filed January 5, 2021, 28 pages.	

Examiner Signature		Date Considered	

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Electronic Patent Application Fee Transmittal	
Application Number:	16752441
Filing Date:	24-Jan-2020
Title of Invention:	Utility Assembly and Coupling Mechanism
First Named Inventor/Applicant Name:	Yaron Brunner
Filer:	Derek Howard Campbell/Andrea Dietzel
Attorney Docket Number:	066749-2584
Filed as Large Entity	
Filing Fees for Utility under 35 USC 111(a)	

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:	41575513
Application Number:	16752441
International Application Number:	
Confirmation Number:	9540
Title of Invention:	Utility Assembly and Coupling Mechanism
First Named Inventor/Applicant Name:	Yaron Brunner
Customer Number:	142078
Filer:	Derek Howard Campbell/Andrea Dietzel
Filer Authorized By:	Derek Howard Campbell
Attorney Docket Number:	066749-2584
Receipt Date:	07-JAN-2021
Filing Date:	24-JAN-2020
Time Stamp:	13:04:45
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	$260
RAM confirmation Number	E202117D05252558
Deposit Account	180882
Authorized User	Andrea Dietzel
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: 37 CFR 1.16 (National application filing, search, and examination fees) 37 CFR 1.17 (Patent application and reexamination processing fees)	

37 CFR 1.19 (Document supply fees)

37 CFR 1.20 (Post Issuance fees)

37 CFR 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Non Patent Literature	IPR_Petition.pdf	13540134 32953caa9145135ff689ecf81f2450b94b6ff69d	no	198
Warnings:					
Information:					
2	Non Patent Literature	Exhibit_1001.pdf	10112880 9c7d2b82523c7800aeed1d125ceb8a39fd2fe523	no	64
Warnings:					
Information:					
3	Non Patent Literature	Exhibit_1002.pdf	6352951 ac33a96acb5ae38b6324ce82f10eecf9c5de7e08	no	75
Warnings:					
Information:					
4	Non Patent Literature	Exhibit_1003.pdf	1417733 b35daba984d6581b91ca86ec6f6a4a7d9c8758ee	no	13
Warnings:					
Information:					
5	Non Patent Literature	Exhibit_1004.pdf	1572415 2ddfc238216a958a624c30a610a6f64514184 7bc	no	18
Warnings:					
Information:					
6	Non Patent Literature	Exhibit_1005.pdf	591768 dc7181b9c5d92dd9d4fe5f4b0a94a00246d7c377	no	9
Warnings:					
Information:					

7	Non Patent Literature	Exhibit_1006.pdf	24299284 382a6871d3d49ba2e610bd711956806f5d6f0b44	no	176
Warnings:					
Information:					
8	Non Patent Literature	Exhibit_1007.pdf	2995943 08bc3715ea7c6f0dcc23fe051d31a778465d5909	no	22
Warnings:					
Information:					
9	Non Patent Literature	Exhibit_1008.pdf	376920 75c2732f079b104ff730501adcf7fac01aae968d	no	6
Warnings:					
Information:					
10	Non Patent Literature	Exhibit_1009.pdf	5678033 86431f35a532305f558339022aa91f384c8e5d38	no	24
Warnings:					
Information:					
11	Non Patent Literature	Exhibit_1010.pdf	2791427 8f636533f6646d2db3b71a6652b47e4a3ccd412f	no	19
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Information:					
12	Non Patent Literature	Exhibit_1011.pdf	5246461 7f9acbe61d72db5c3c973568e67e46ec9ffbeaf6	no	26
Warnings:					
Information:					
13	Non Patent Literature	Exhibit_1012.pdf	509327 5a57e8c759e38ecfffa1b7f74a2e93f74a0b7cb8	no	3
Warnings:					
Information:					

14	Non Patent Literature	Exhibit_1013.pdf	22273724 bd0d1b1cffa3f31095bb08d3fc63d1d80d4f4de5	no	168
Warnings:					
Information:					
15	Non Patent Literature	Exhibit_1017.pdf	633720 4d2f37a2318f2e8b7af4f7b59c9129c892493d5b	no	6
Warnings:					
Information:					
16	Non Patent Literature	Exhibit_1016.pdf	20594463 711162fca74e3c07e00adaa4c3689cd62f68ccfd	no	242
Warnings:					
Information:					
17	Non Patent Literature	Exhibit_1015.pdf	546604 0511ce8bf0bd7f06be6d8bc03ca61976d0b161a1	no	6
Warnings:					
Information:					
18	Non Patent Literature	Exhibit_1018.pdf	20986396 b95e03d837a2e45d96b220447534ad3d9afe8984	no	250
Warnings:					
Information:					
19	Non Patent Literature	Exhibit_1019.pdf	5995377 767956a190b23050480502bede0f6102145 3c233	no	44
Warnings:					
Information:					
20	Non Patent Literature	Exhibit_1020.pdf	597816 e3f6af79e65764abd22a897614648d5aa3294cfc	no	5
Warnings:					
Information:					

21	Non Patent Literature	Exhibit_1021.pdf	57187 a1a152078572e06d8bfd7cbd73647492b5e1a043	no	1
Warnings:					
Information:					
22	Non Patent Literature	Exhibit_1022.pdf	93554 2043198bc1001789c82367b5b2ebf627c2930864	no	1
Warnings:					
Information:					
23	Non Patent Literature	Exhibit_1023.pdf	2800070 414481021f4f45d2fbc941ceb6a822a6cae6f2d0d	no	24
Warnings:					
Information:					
24	Non Patent Literature	Exhibit_1024.pdf	3131565 7d42cc7b33d8b1567a1800c6ad4073266f0c6ad4	no	28
Warnings:					
Information:					
25	Non Patent Literature	Exhibit_1014_Part_A.pdf	16168233 04798cd861effb87d61170904641d1cb4da110e9	no	166
Warnings:					
Information:					
26	Non Patent Literature	Exhibit_1014_Part_B.pdf	16281023 57b37064777d6edd16f379034da702e177e2abb2	no	154
Warnings:					
Information:					
27	Non Patent Literature	Exhibit_1014_Part_C.pdf	18099348 0a2a23c1c727fbe1ec76ada98920550e62bb2557	no	161
Warnings:					
Information:					

28	Transmittal Letter	066749-2584_IDS_Transmittal.pdf	82197 896b0d08ffb8b741b6dc1c91209601d30558ea69	no	2
Warnings:					
Information:					
29	Information Disclosure Statement (IDS) Form (SB08)	066749-2584_SB08.pdf	113551 3d01a7f201dfb093eba951db9aa92a5cf09a2ff6	no	3
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
30	Fee Worksheet (SB06)	fee-info.pdf	30732 ab1b78df9fcdf854dd51a66719fbf44761ce e57d	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	203970836		

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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.
<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.
<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.

US010583962B2

(12) **United States Patent**
Brunner et al.

(10) **Patent No.: US 10,583,962 B2**
(45) **Date of Patent: Mar. 10, 2020**

(54) **UTILITY ASSEMBLY AND COUPLING MECHANISM**

(71) Applicant: **Milwaukee Electric Tool Corporation**, Brookfield, WI (US)

(72) Inventors: **Yaron Brunner**, Kibbutz Gvat (IL); **Grant T. Squiers**, Cudahy, WI (US); **Christopher S. Hoppe**, Milwaukee, WI (US); **Steven W. Hyma**, Milwaukee, WI (US)

(73) Assignees: **Milwaukee Electric Tool Corporation**, Brookfield, WI (US); **Keter Plastic Ltd.**, Herzelyia (IL)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **16/216,724**

(22) Filed: **Dec. 11, 2018**

(65) **Prior Publication Data**

US 2019/0106244 A1 Apr. 11, 2019

Related U.S. Application Data

(63) Continuation of application No. 15/826,232, filed on Nov. 29, 2017, which is a continuation of application No. PCT/IL2017/050481, filed on Apr. 30, 2017.
(Continued)

(51) **Int. Cl.**
B65D 21/02 (2006.01)
B65D 21/028 (2006.01)
(Continued)

(52) **U.S. Cl.**
CPC ***B65D 21/0223*** (2013.01); ***A45C 5/14*** (2013.01); ***A45C 7/005*** (2013.01); ***A45C 13/02*** (2013.01);
(Continued)

(58) **Field of Classification Search**
CPC A45C 5/14; A45C 7/0045; A45C 7/005; A45C 13/02; A45F 3/10; A47B 47/00;
(Continued)

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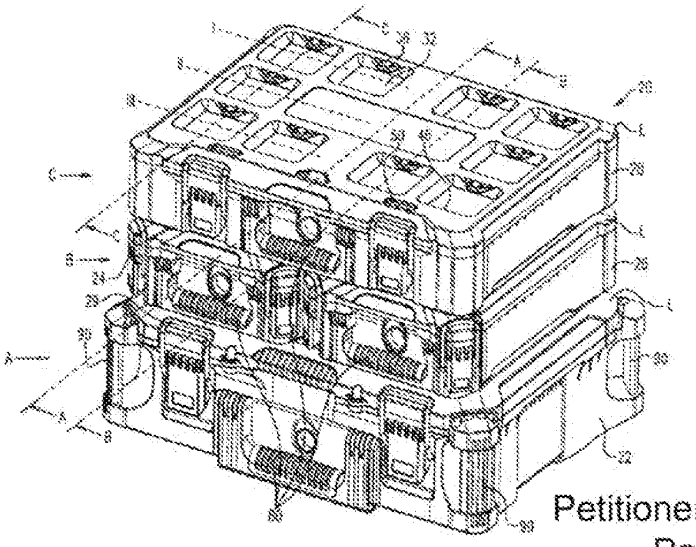
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(Continued)

Primary Examiner — Gideon R Weinerth
(74) *Attorney, Agent, or Firm* — Reinhart Boerner Van Deuren s.c.

(57) **ABSTRACT**

The present disclosure concerns a coupling mechanism for detachably attaching two or more utility modules to one another, utility assembles, mobile carriers and other attachable modules and articles.

12 Claims, 48 Drawing Sheets



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Related U.S. Application Data

(60) Provisional application No. 62/459,076, filed on Feb. 15, 2017, provisional application No. 62/330,334, filed on May 2, 2016.

(51) **Int. Cl.**

A45C 13/02	(2006.01)
B25H 3/02	(2006.01)
A45C 5/14	(2006.01)
A45C 7/00	(2006.01)
A45F 3/10	(2006.01)
B25H 1/04	(2006.01)
B62B 1/14	(2006.01)
B62B 5/06	(2006.01)

(52) **U.S. Cl.**

CPC ***A45F 3/10*** (2013.01); ***B25H 1/04*** (2013.01); ***B25H 3/02*** (2013.01); ***B25H 3/021*** (2013.01); ***B62B 1/14*** (2013.01); ***B65D 21/0209*** (2013.01); ***B65D 21/0228*** (2013.01); *A45C 7/0045* (2013.01); *B25H 3/023* (2013.01); *B62B 5/067* (2013.01); *B65D 2255/00* (2013.01); *B65H 2701/533* (2013.01)

(58) **Field of Classification Search**

CPC A47B 47/04; A47B 67/04; A47B 87/02; A47B 87/007; A47B 87/0276; A47B 88/90; A47B 2210/19; B25H 1/04; B25H 3/021; B25H 3/022; B25H 3/023; B25H 3/04; B25H 3/06; B25H 3/02; B62B 1/14; B62B 5/067; B65D 21/0217; B65D 21/0219; B65D 21/0222; B65D 21/0228; B65D 21/023; B65D 21/0224; B65D 21/02; B65D 21/0223; B65D 21/0212; B65D 21/0204; B65D 21/0209; B65D 2255/00; B65D 25/2823; B65D 25/06; B65H 2701/533; B60P 7/13; B60P 7/06; E04F 2201/013; E04F 2201/0146; E04F 220/023; E04F 2201/05; Y10S 292/38; Y10S 292/53; Y10T 403/7045; F16B 12/24; F16B 12/44

USPC 206/508, 511, 504, 503, 501; 220/4.27; 280/47.18, 47.19, 47.26, 79.2, 47.28, 652; 312/107, 111; 410/84; 248/224.7, 248/225.21

See application file for complete search history.

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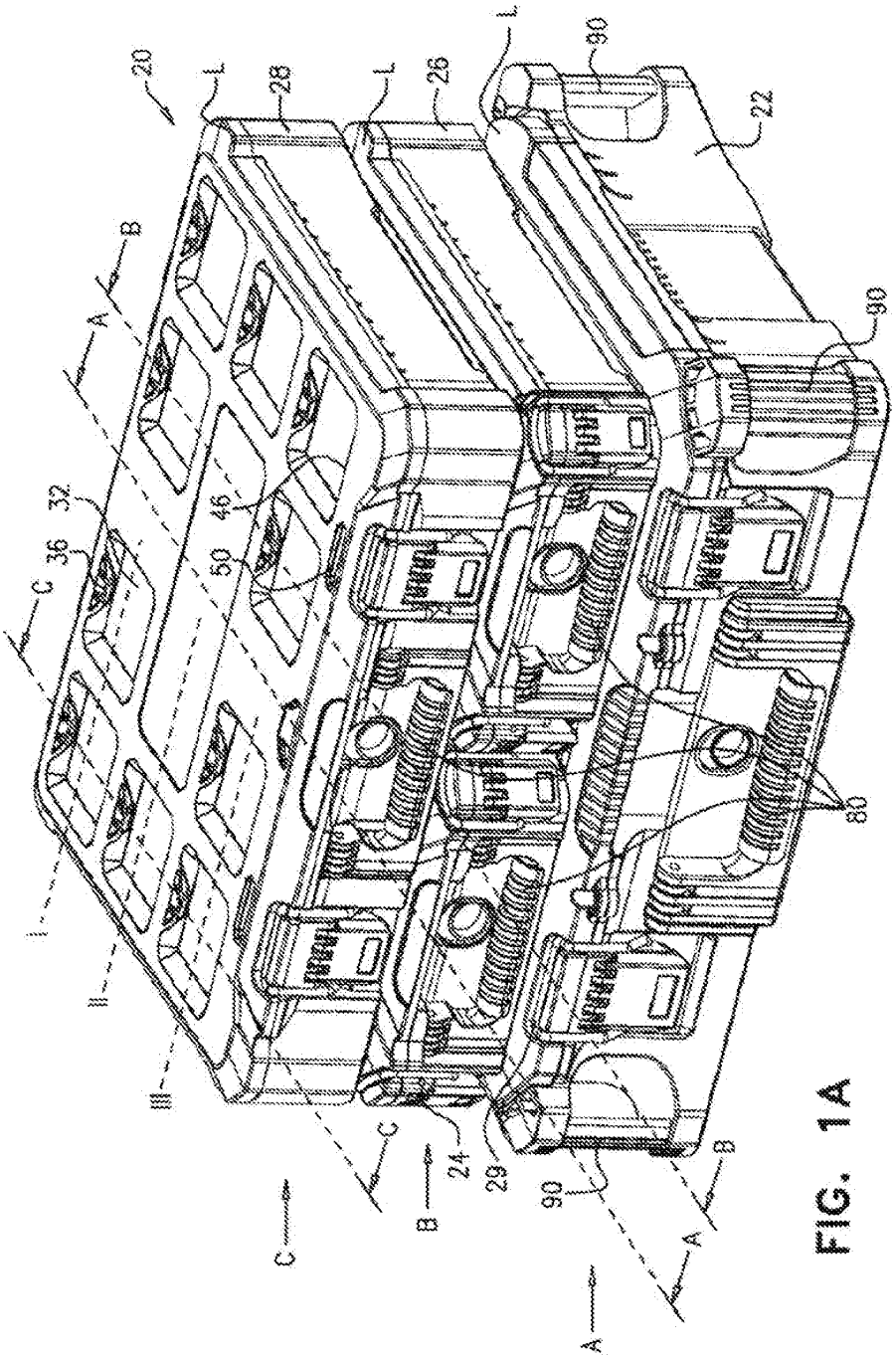


FIG. 1A

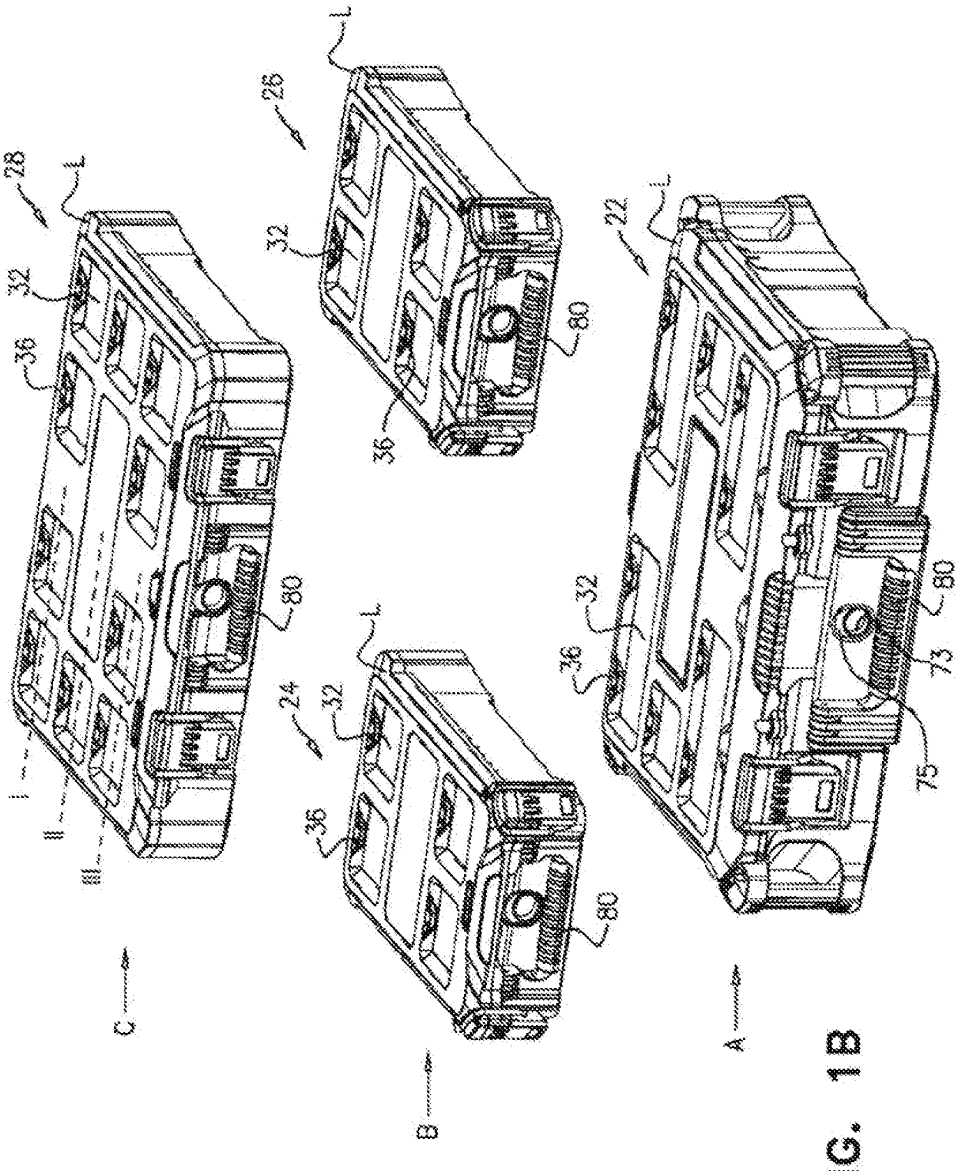
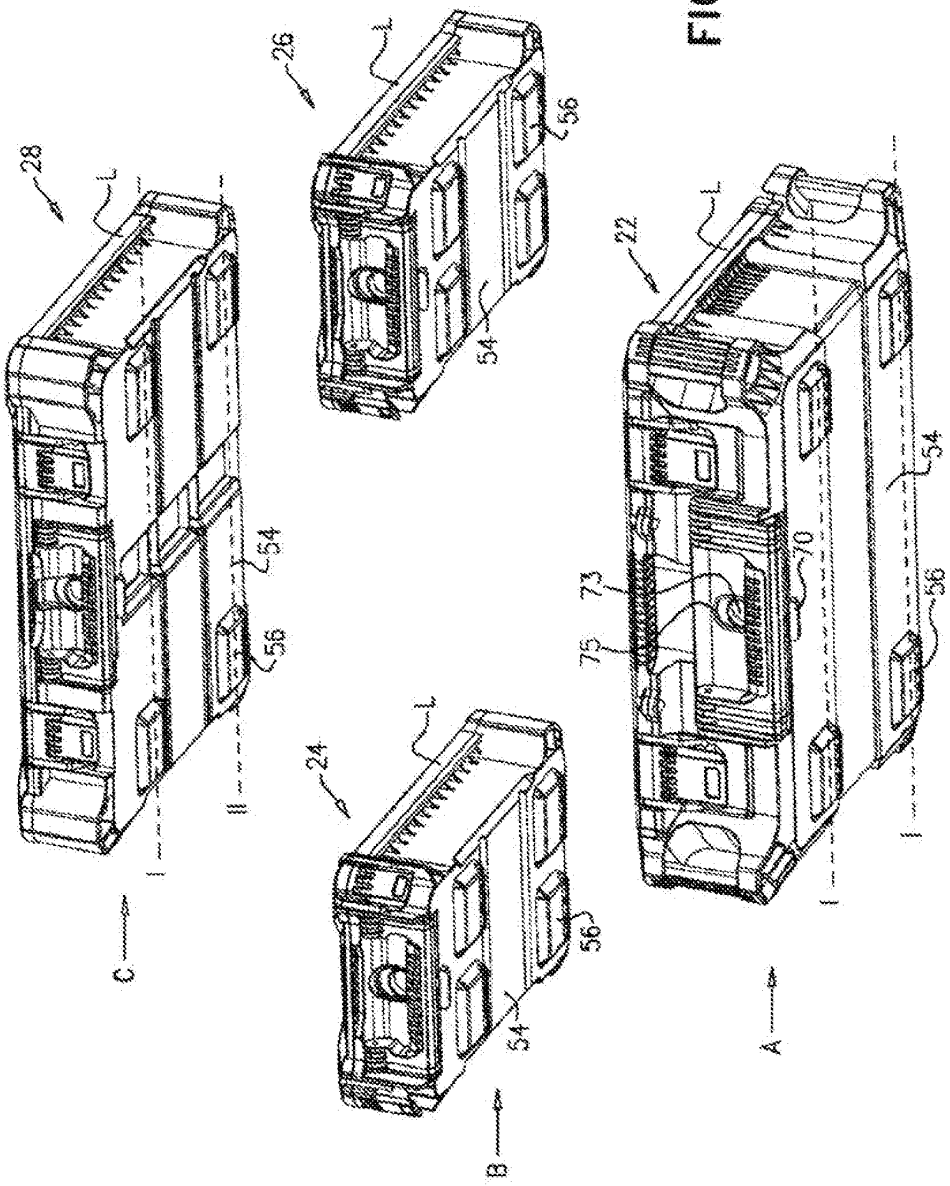


FIG. 1B

FIG. 1C



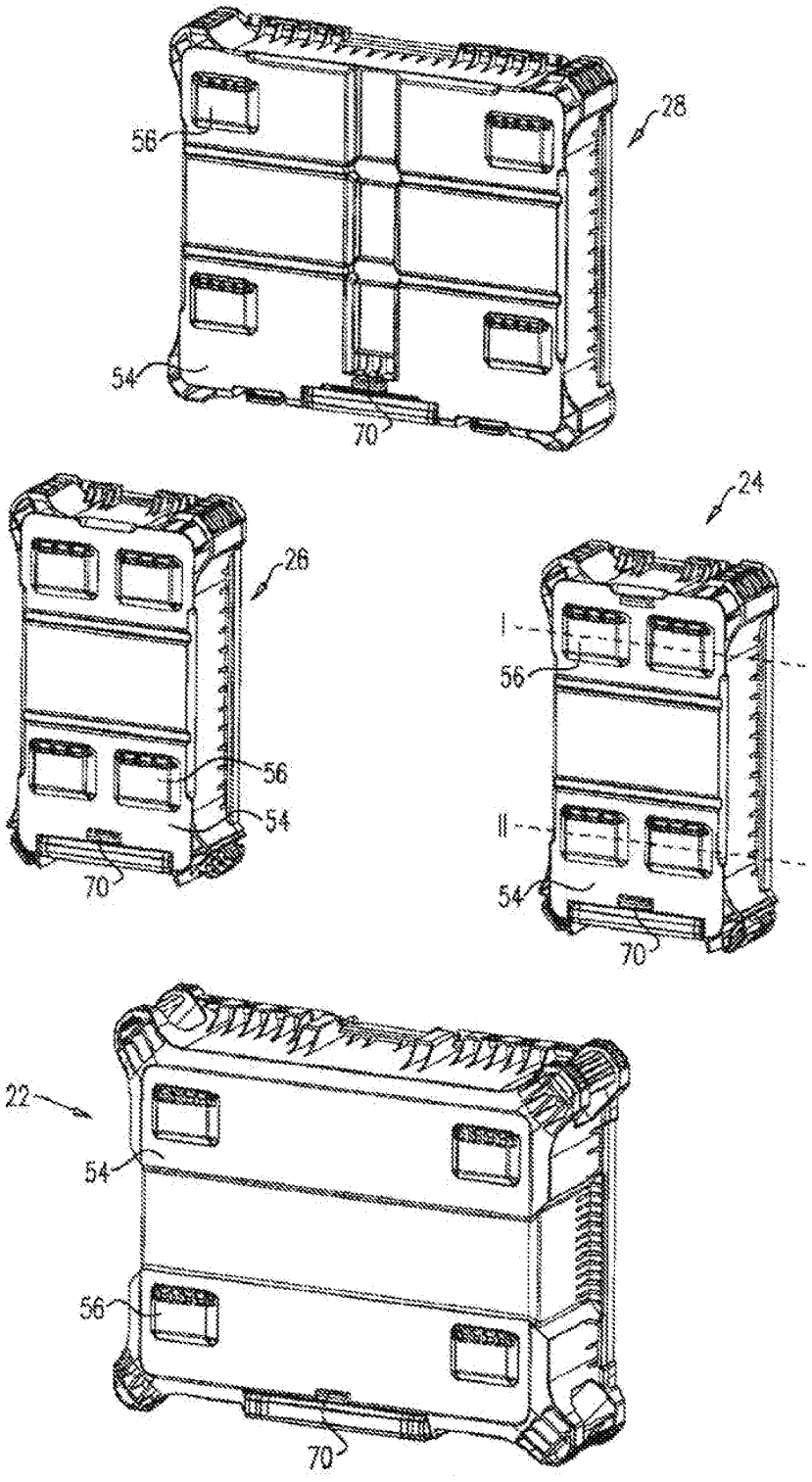


FIG. 1D

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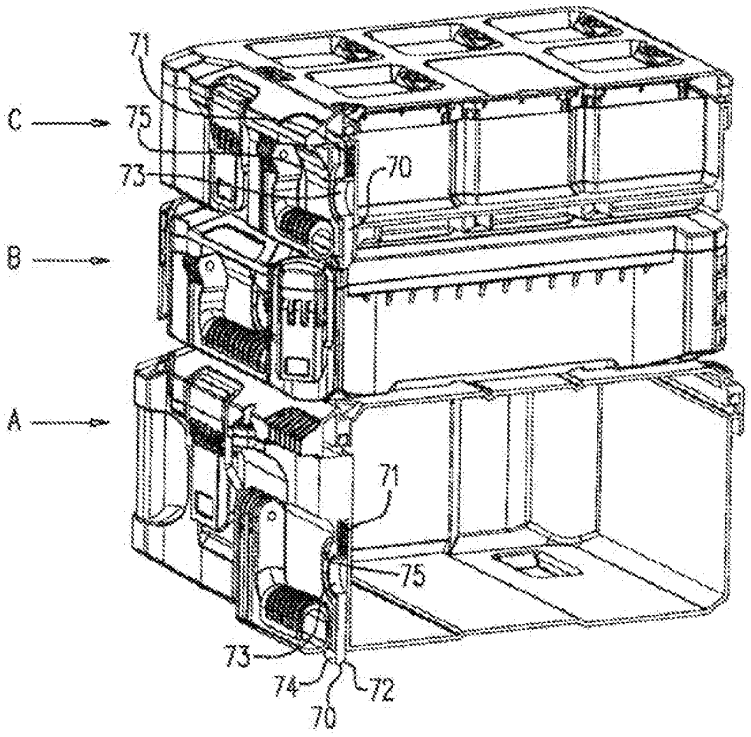


FIG. 2A

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2003 - Page 257
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IPR2024-01400

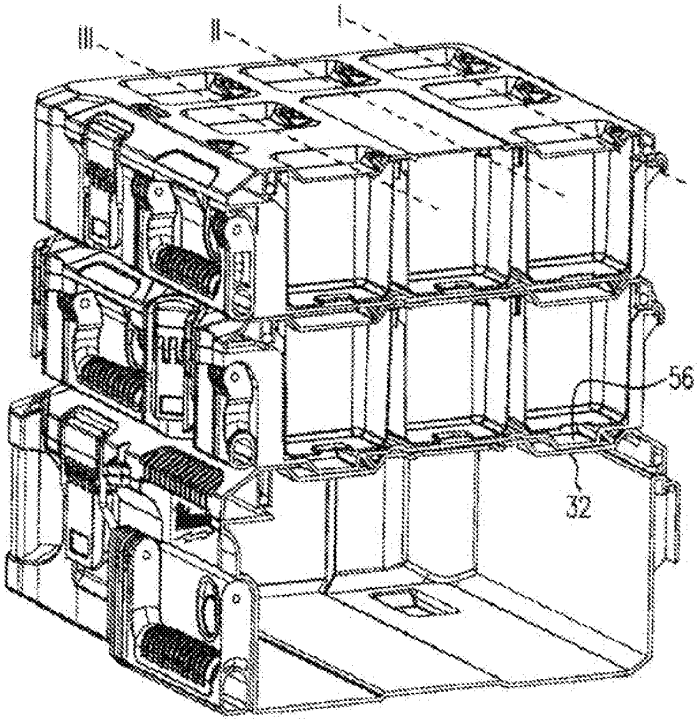


FIG. 2B

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2003 - Page 258
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

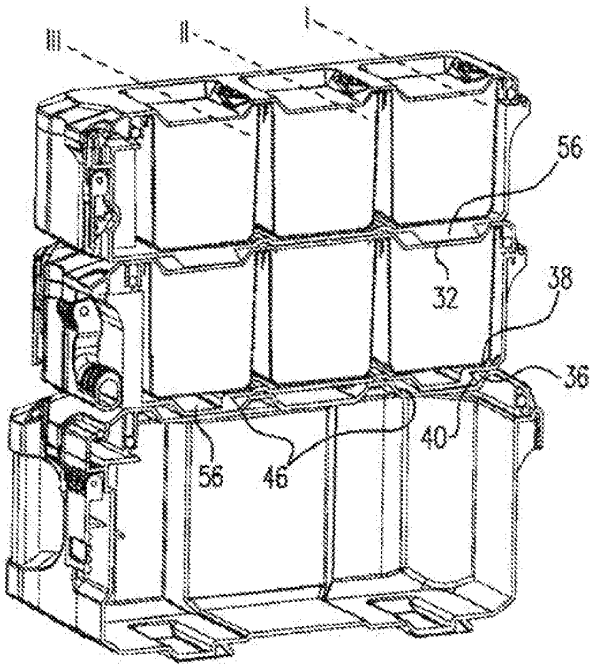


FIG. 2C

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2003 - Page 259
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

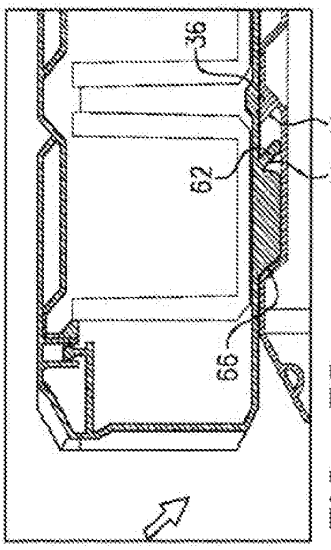


FIG. 3B

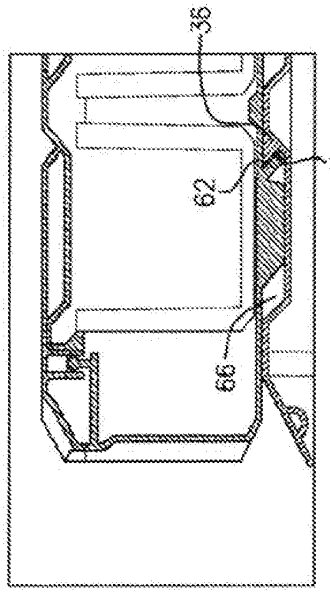


FIG. 3D

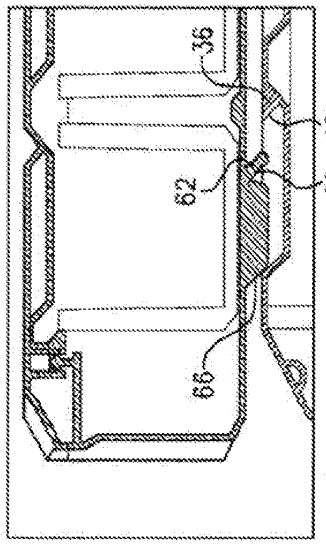


FIG. 3A

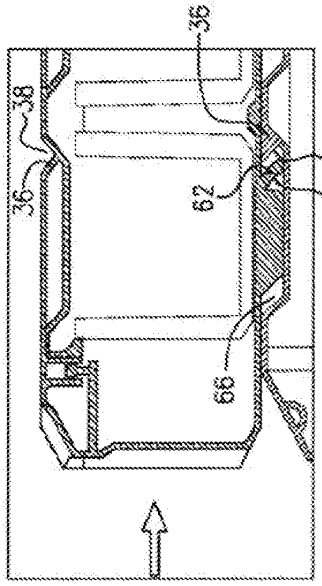


FIG. 3C

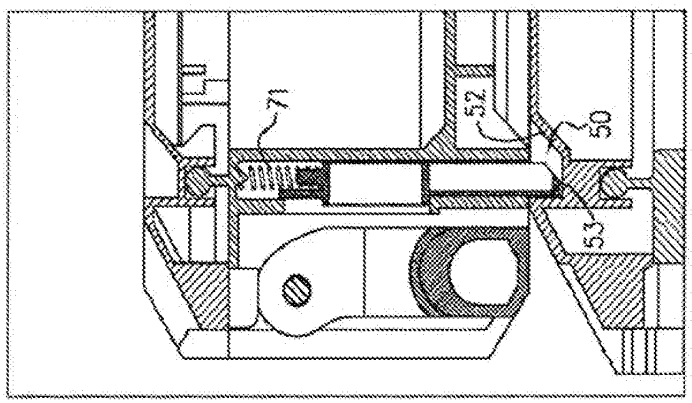


FIG. 4D

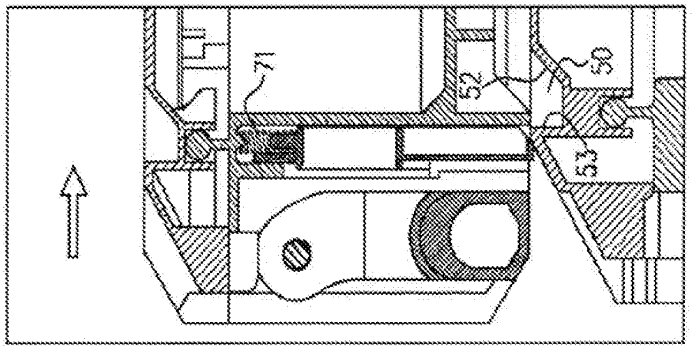


FIG. 4C

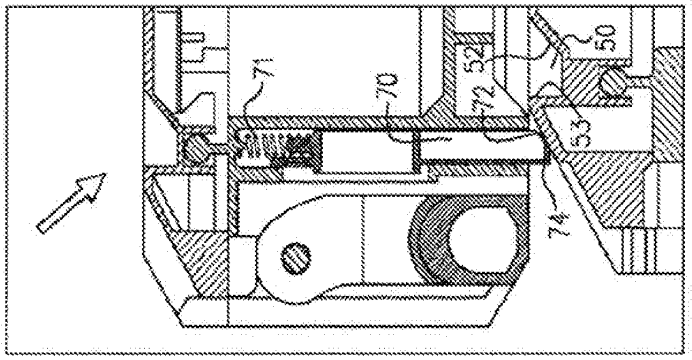


FIG. 4B

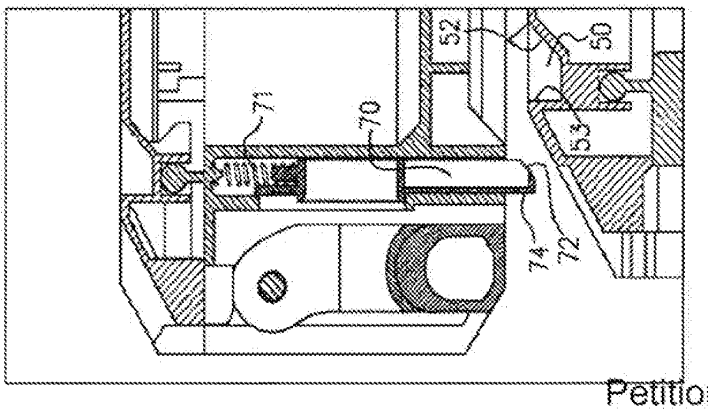


FIG. 4A

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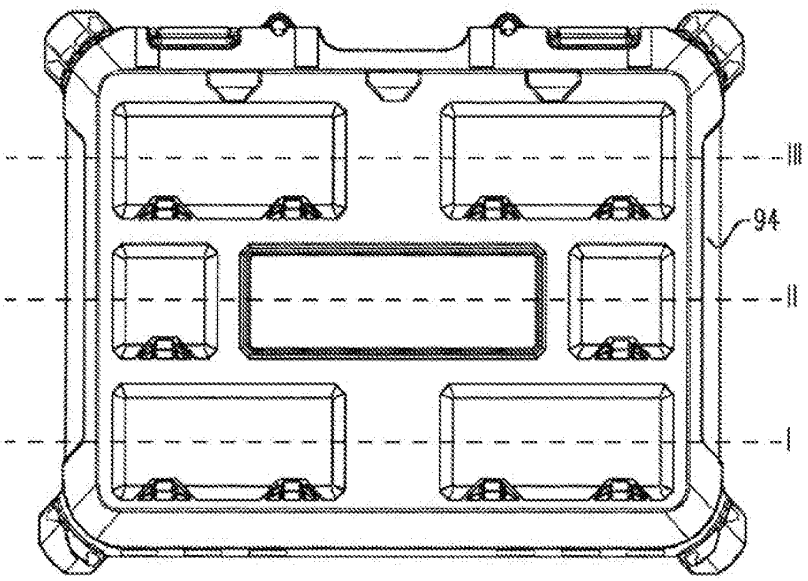


FIG. 5A

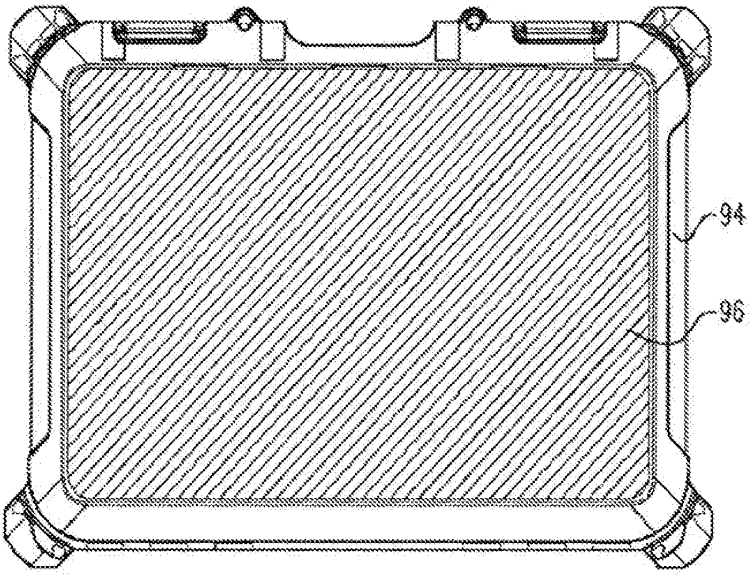


FIG. 5B

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Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

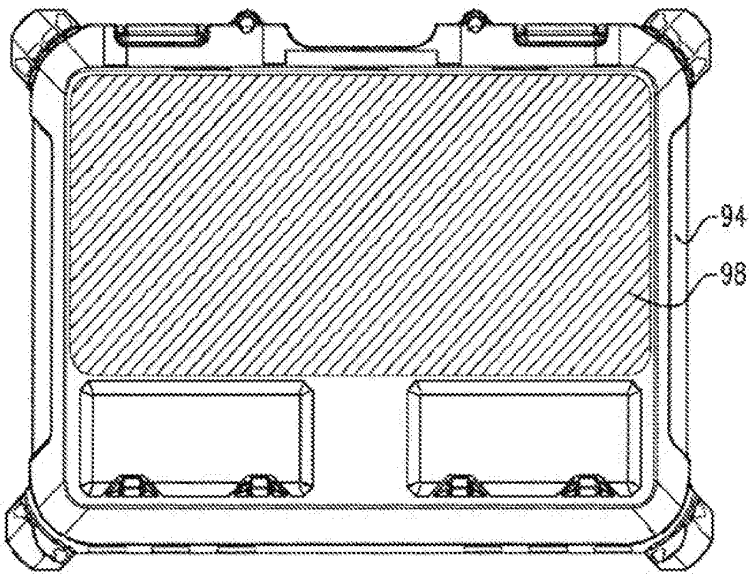


FIG. 5C

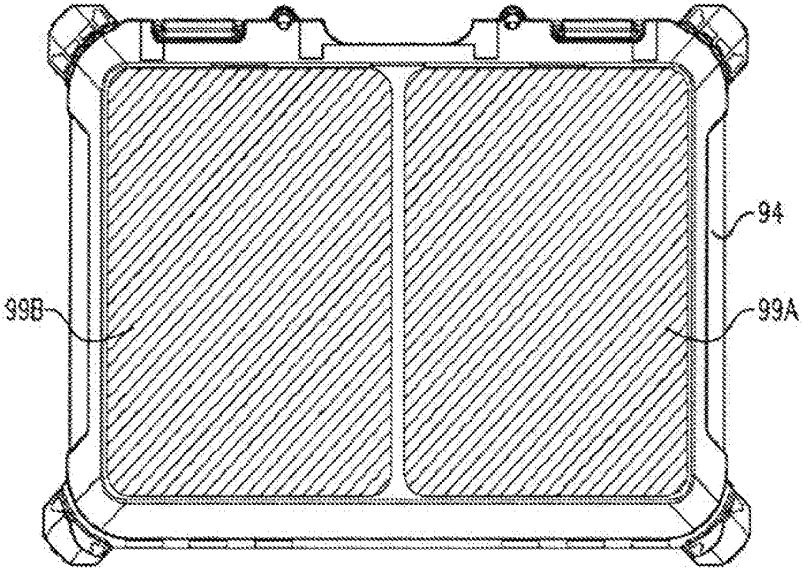


FIG. 5D

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2003 - Page 263
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

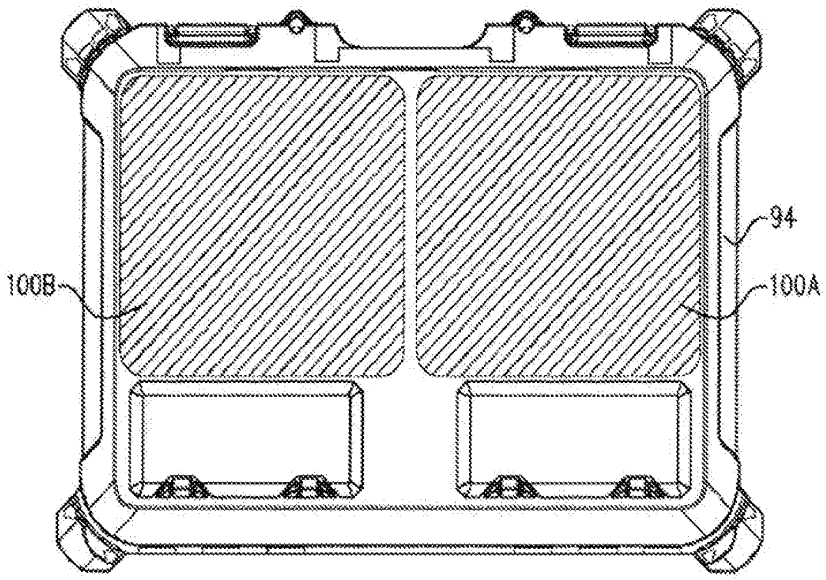


FIG. 5E

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IPR2024-01400

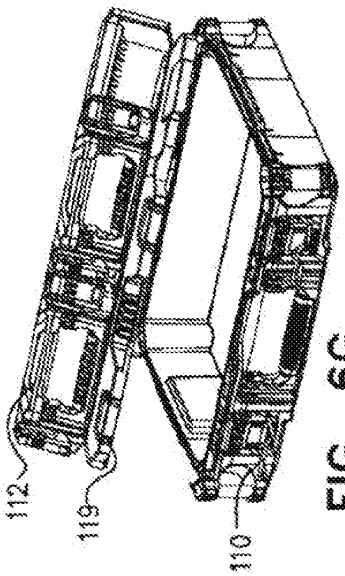


FIG. 6G

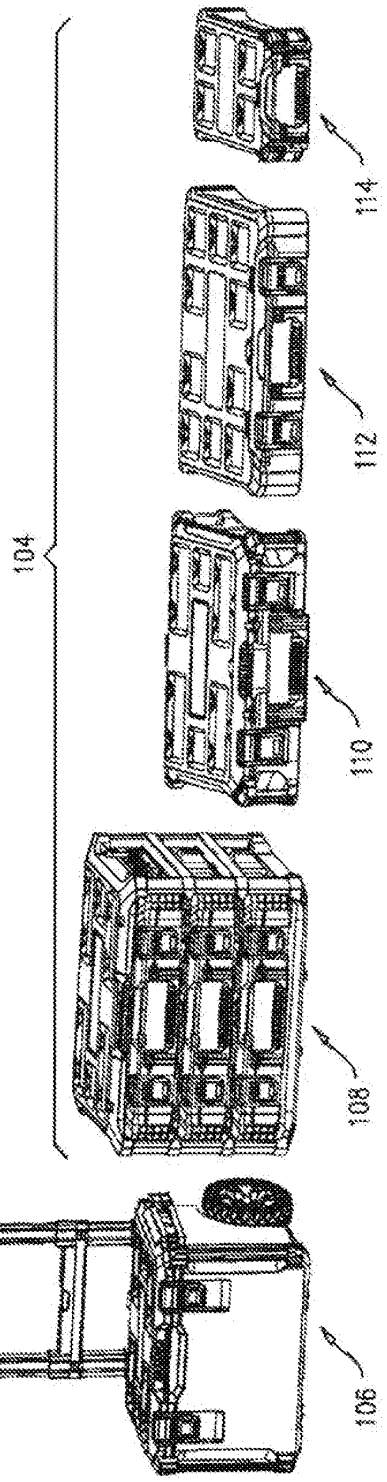


FIG. 6A

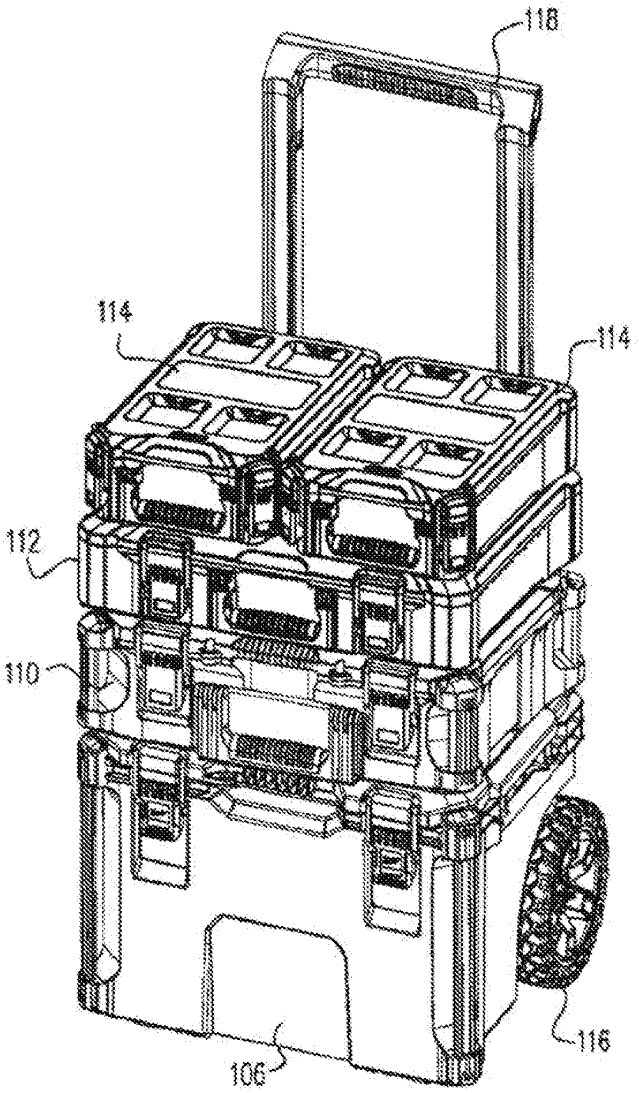


FIG. 6B

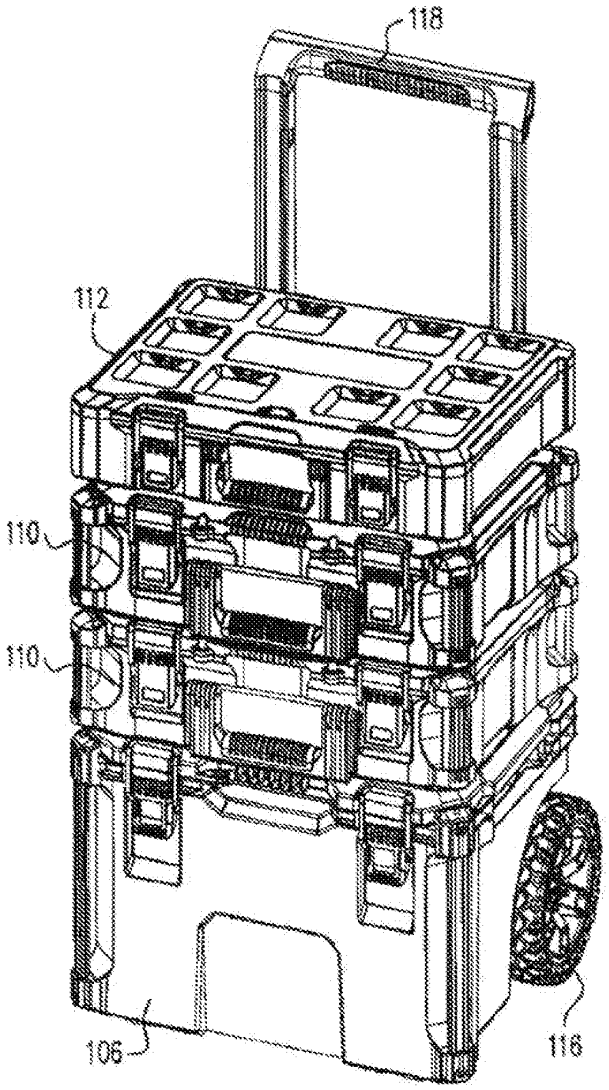


FIG. 6C

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2003 - Page 267
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

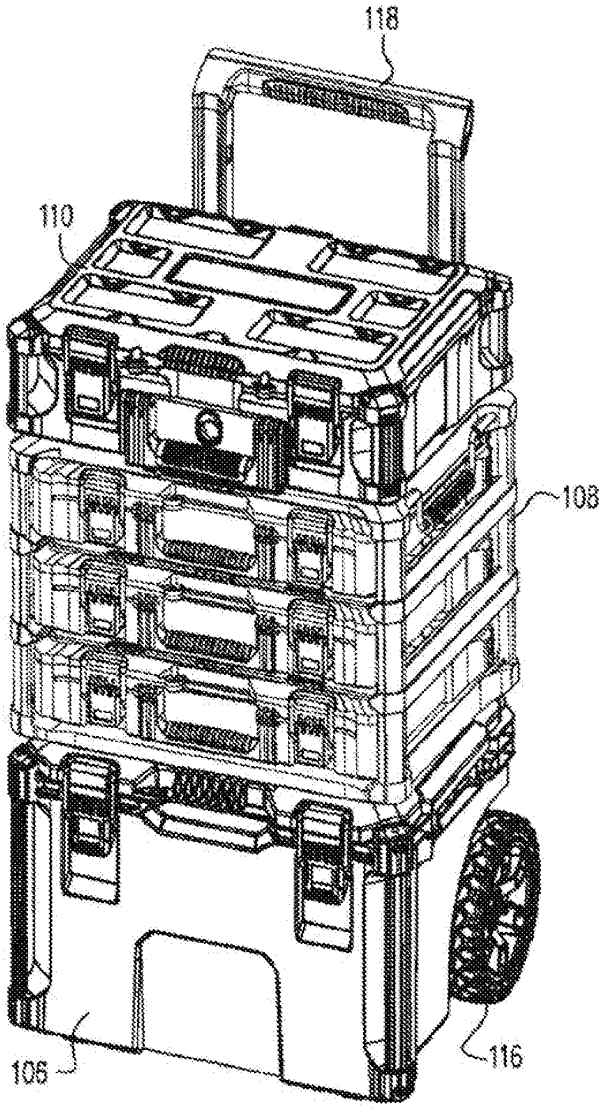


FIG. 6D

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2003 - Page 268
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

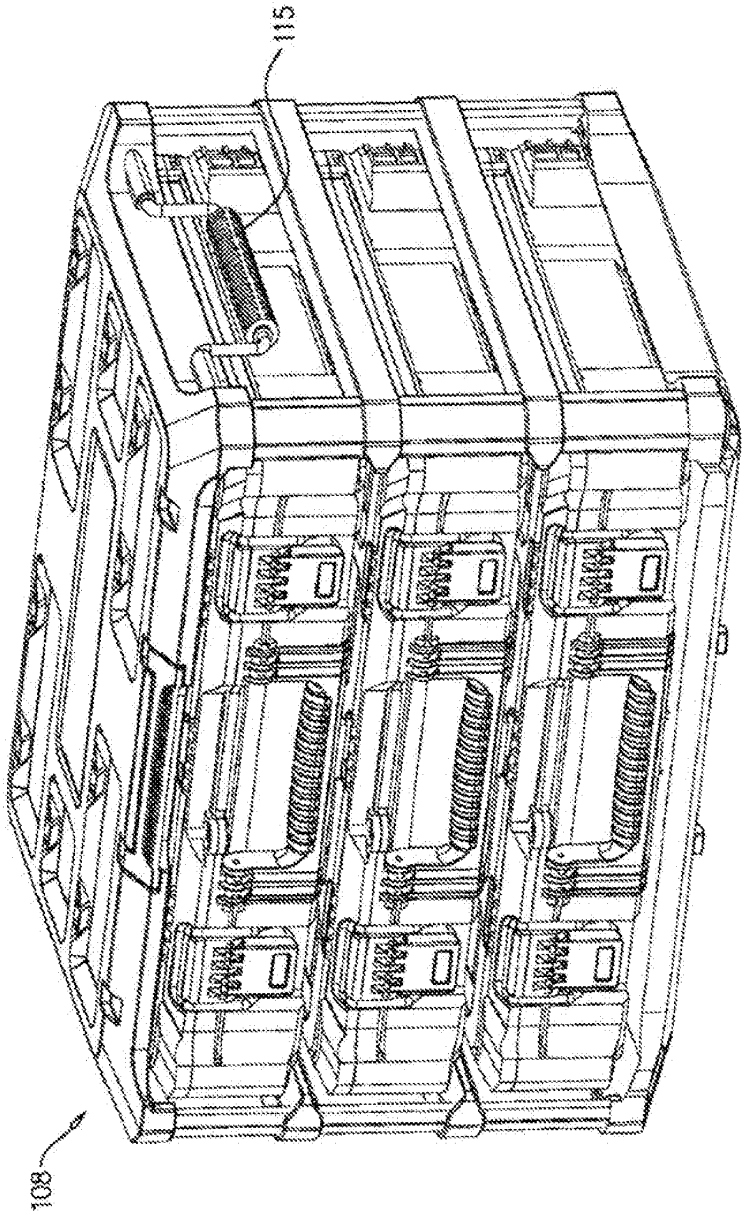


FIG. 6E

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2003 - Page 269
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

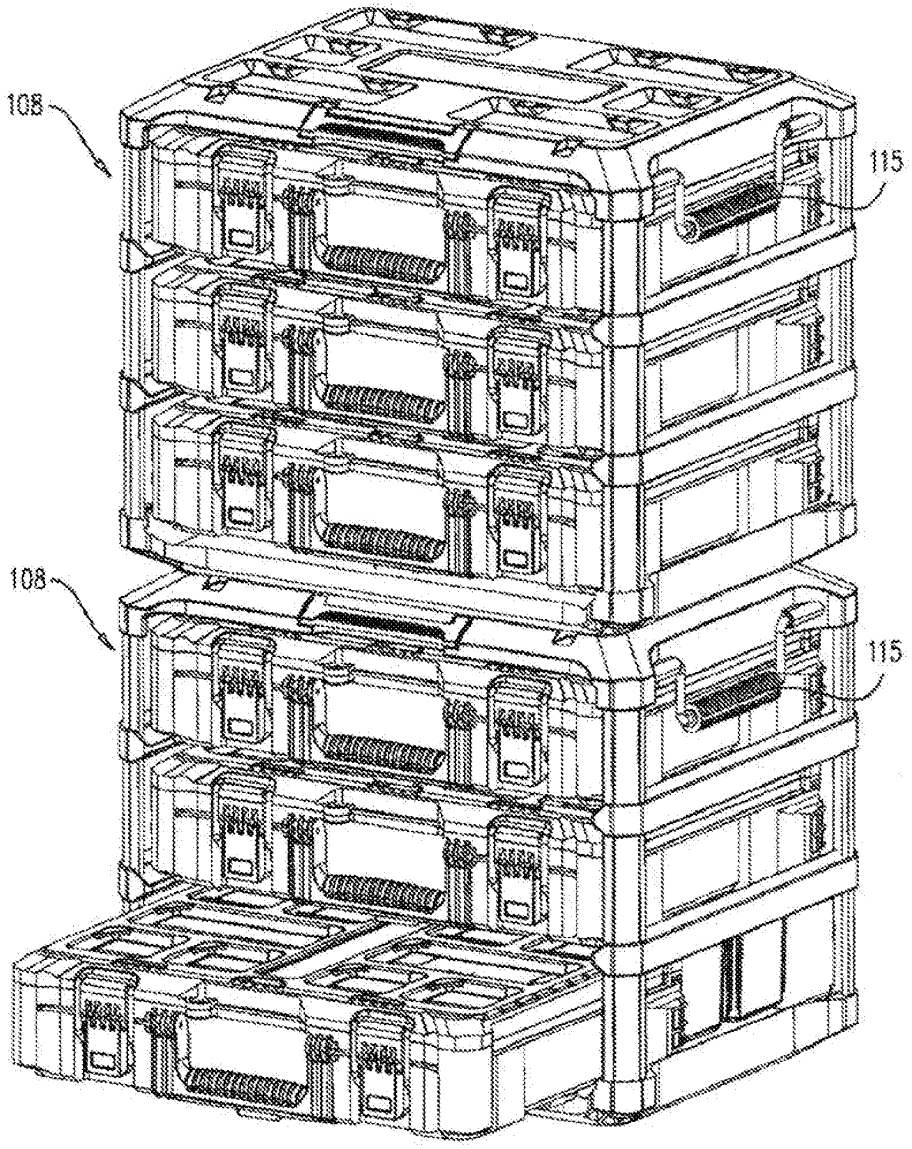


FIG. 6F

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2003 - Page 270
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
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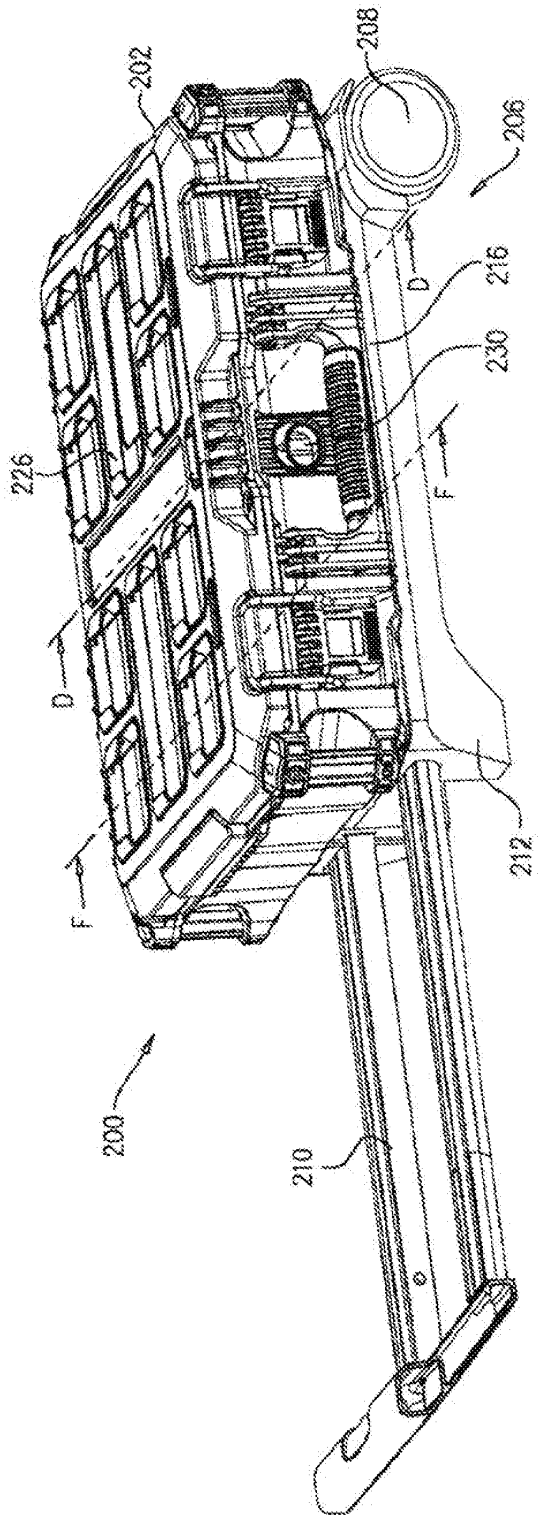


FIG. 7A

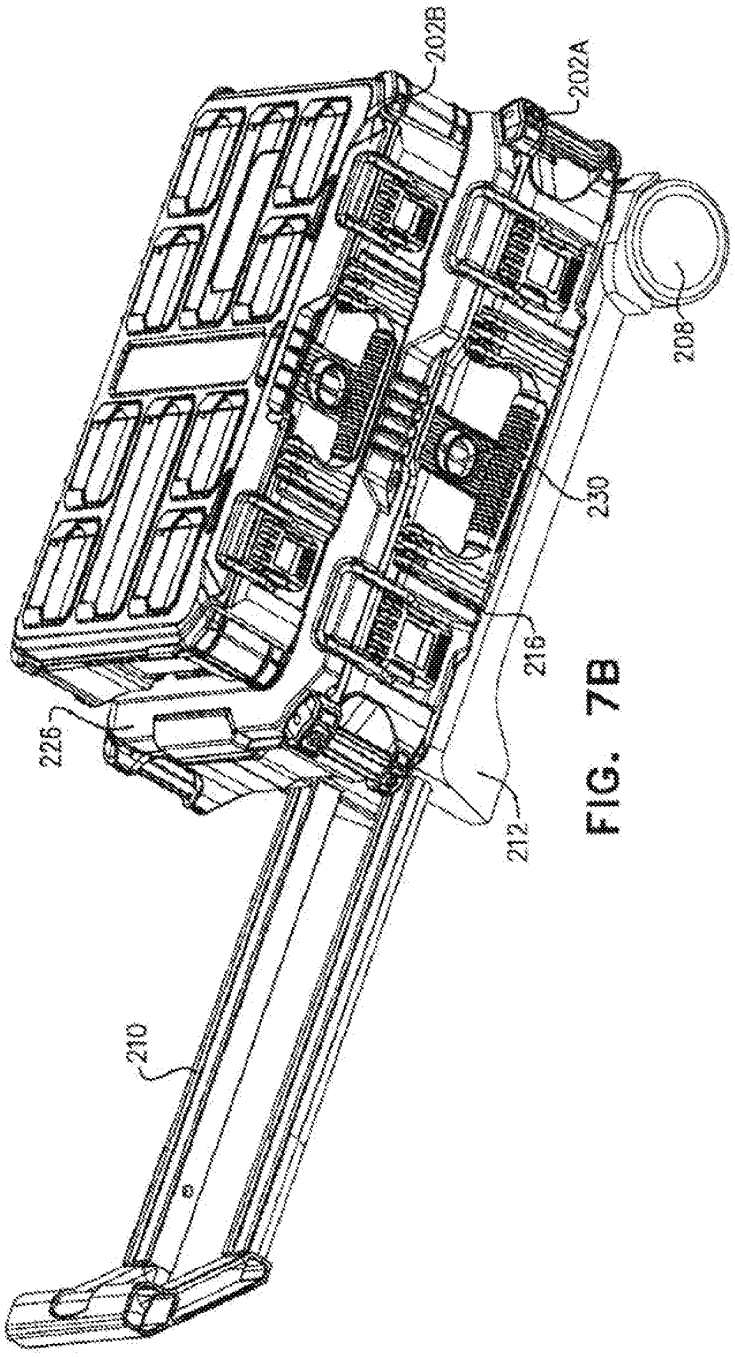


FIG. 7B

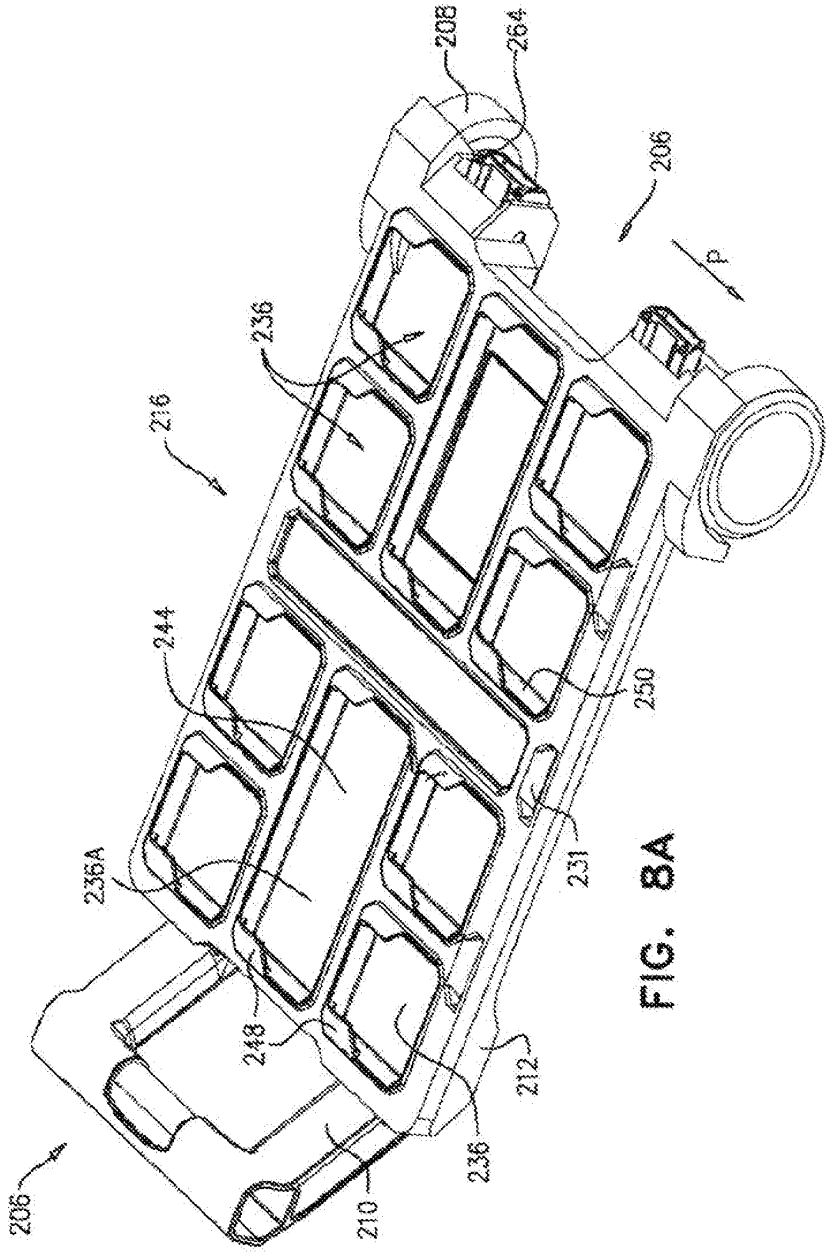


FIG. 8A

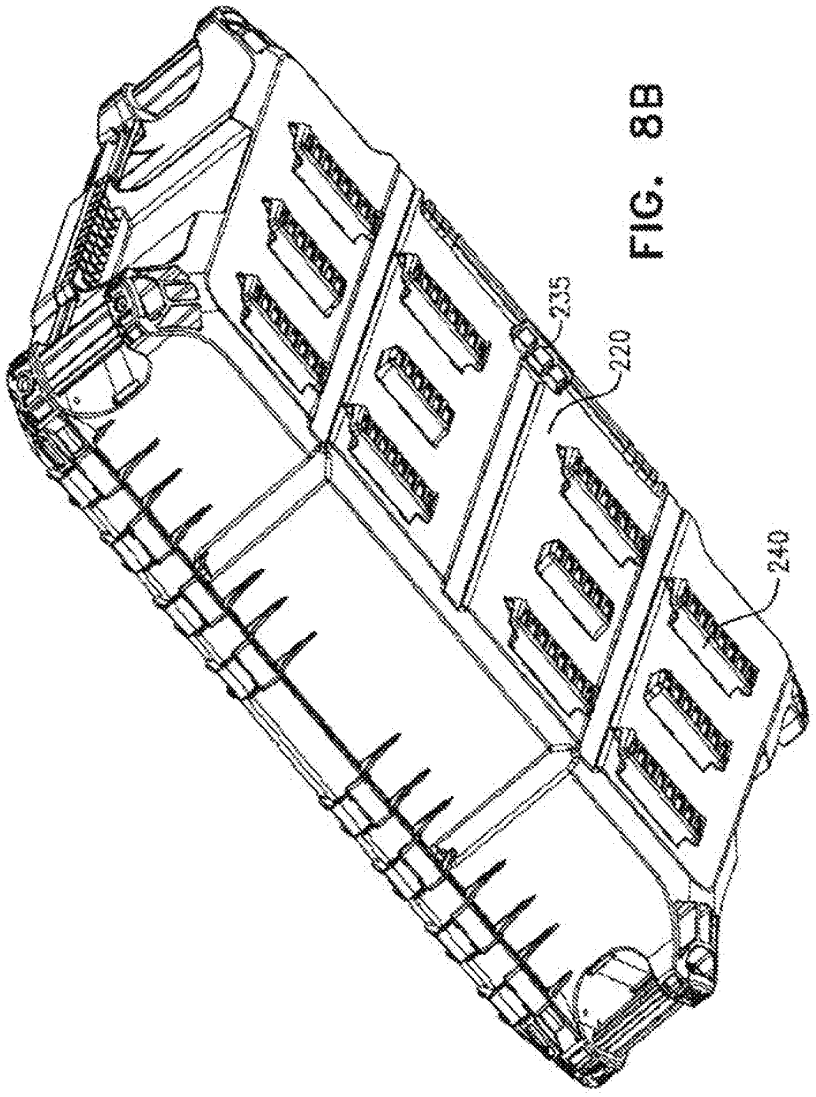


FIG. 8B

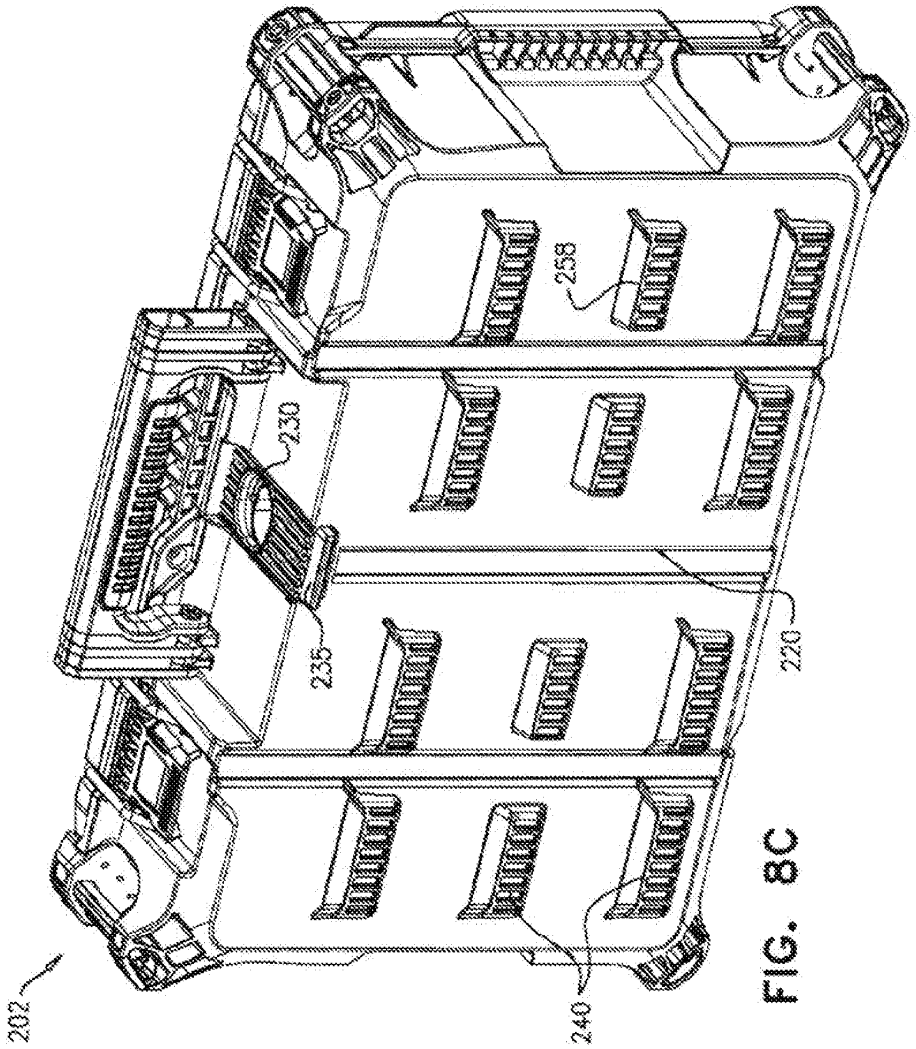


FIG. 8C

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Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
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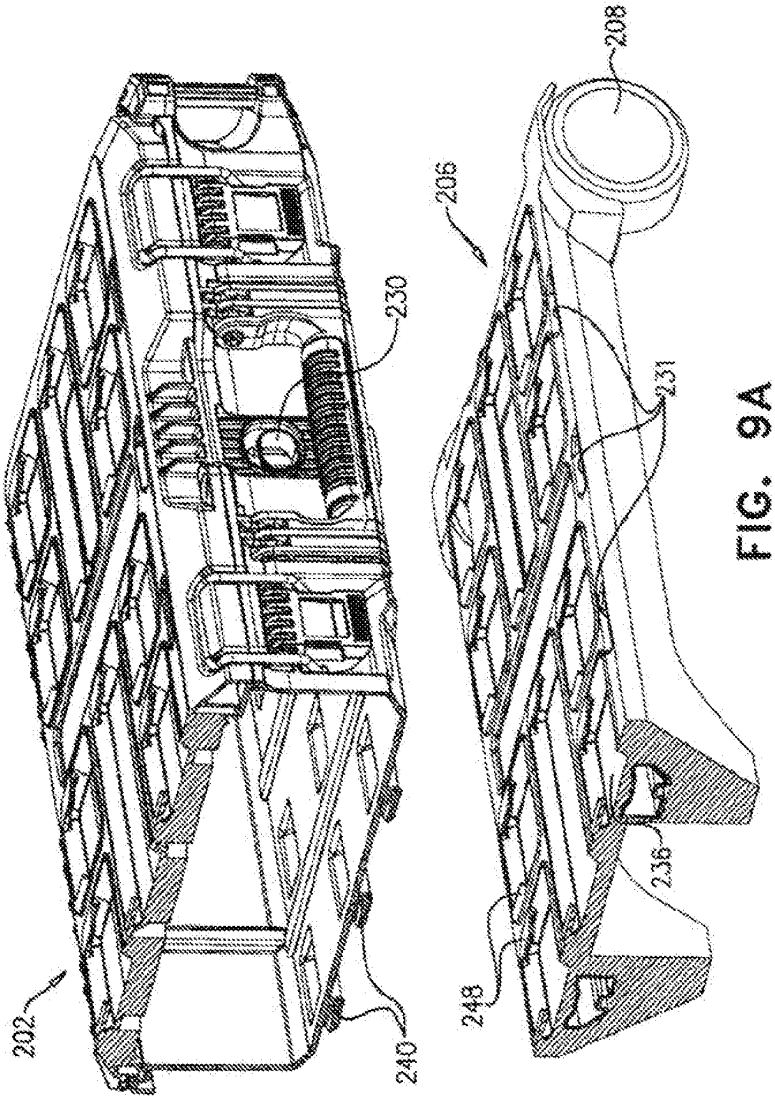


FIG. 9A

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2003 - Page 276
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
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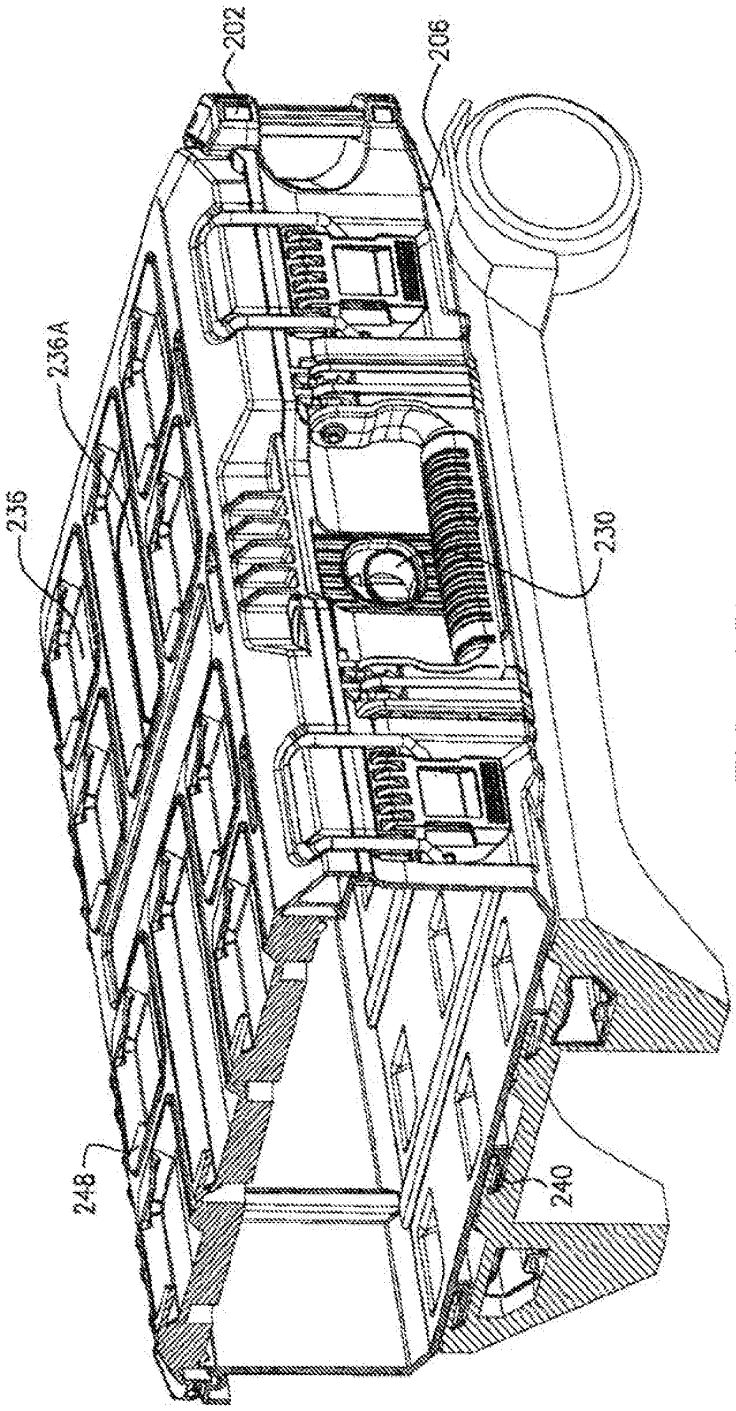


FIG. 9B

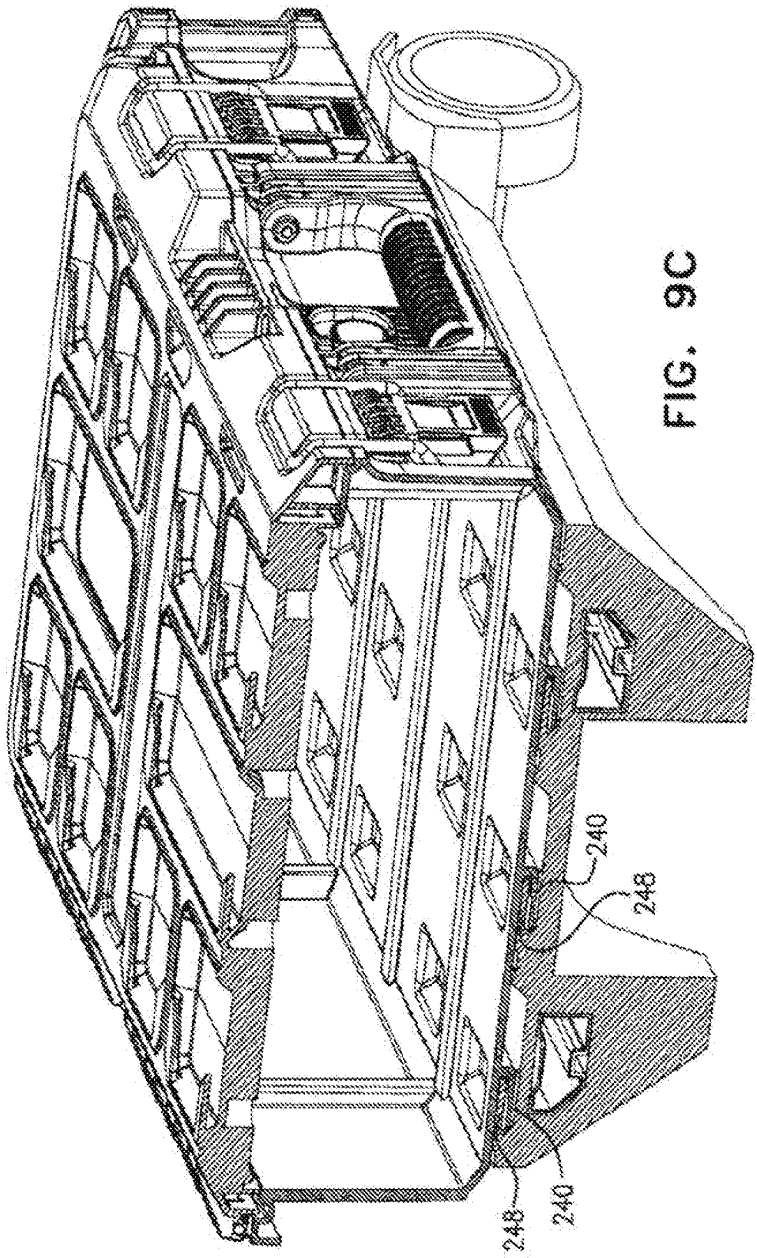


FIG. 9C

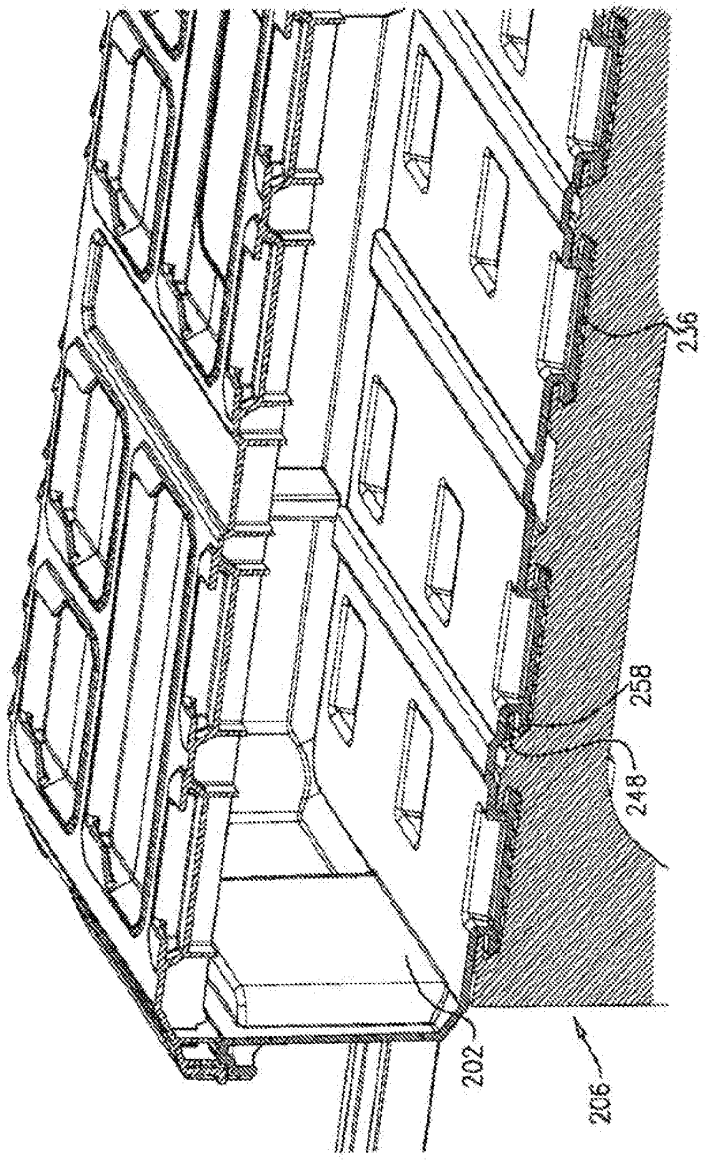


FIG. 9D

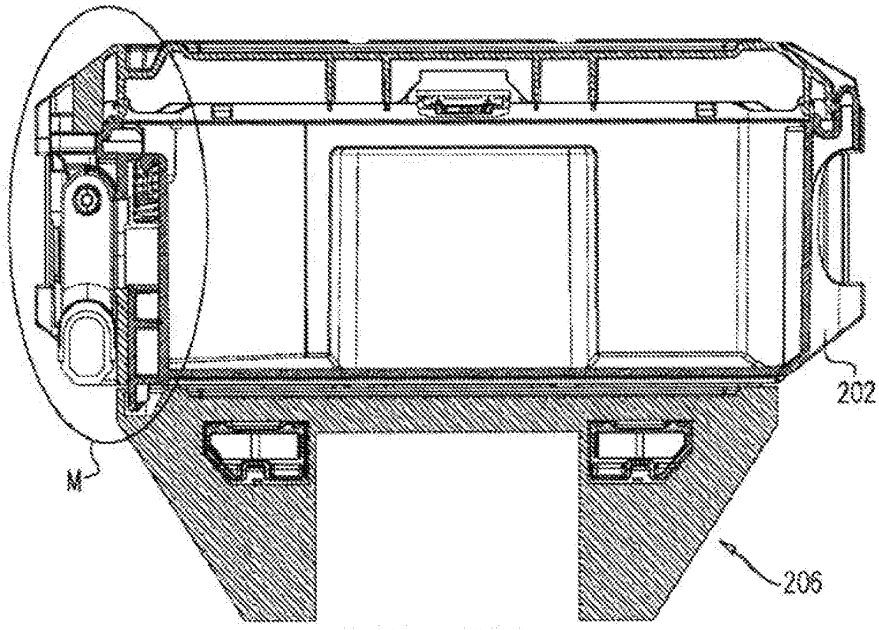


FIG. 10A

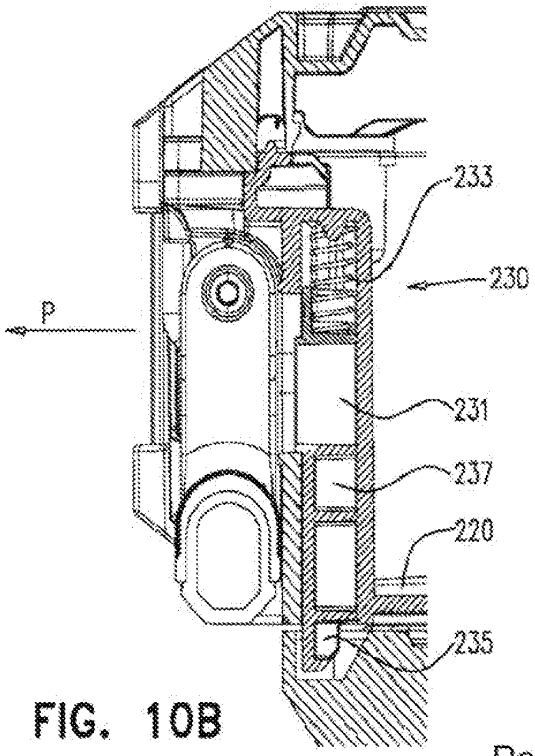


FIG. 10B

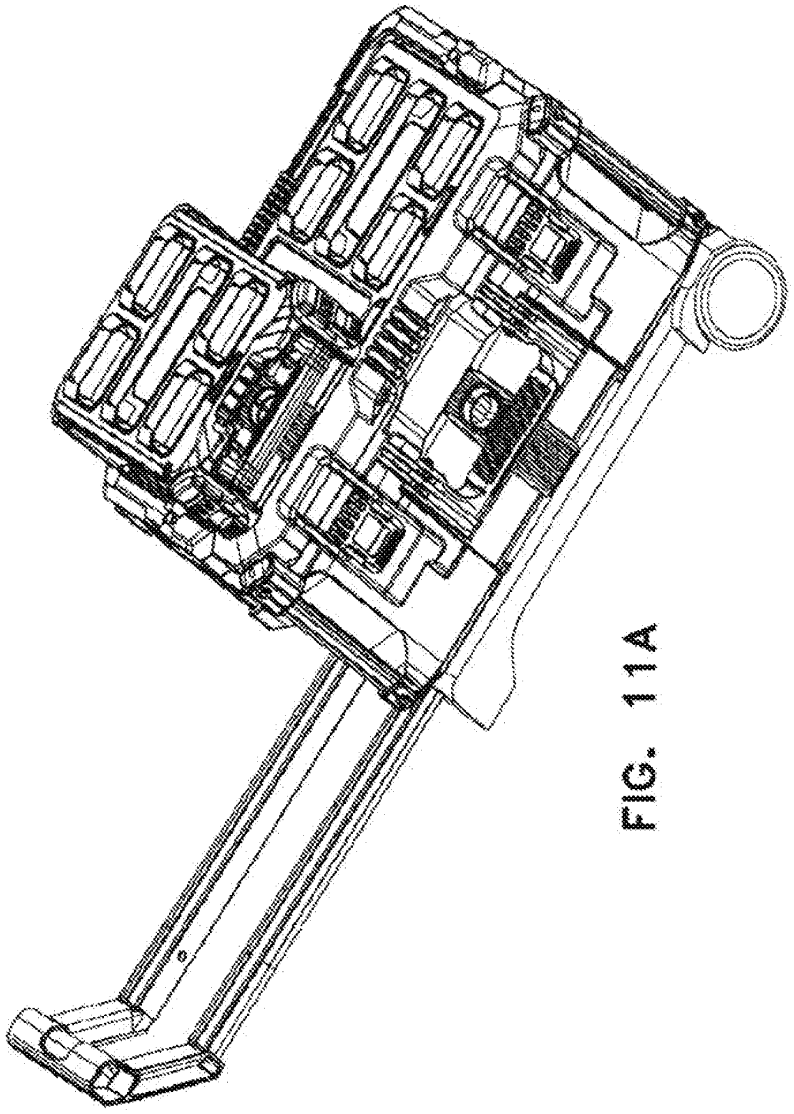


FIG. 11A

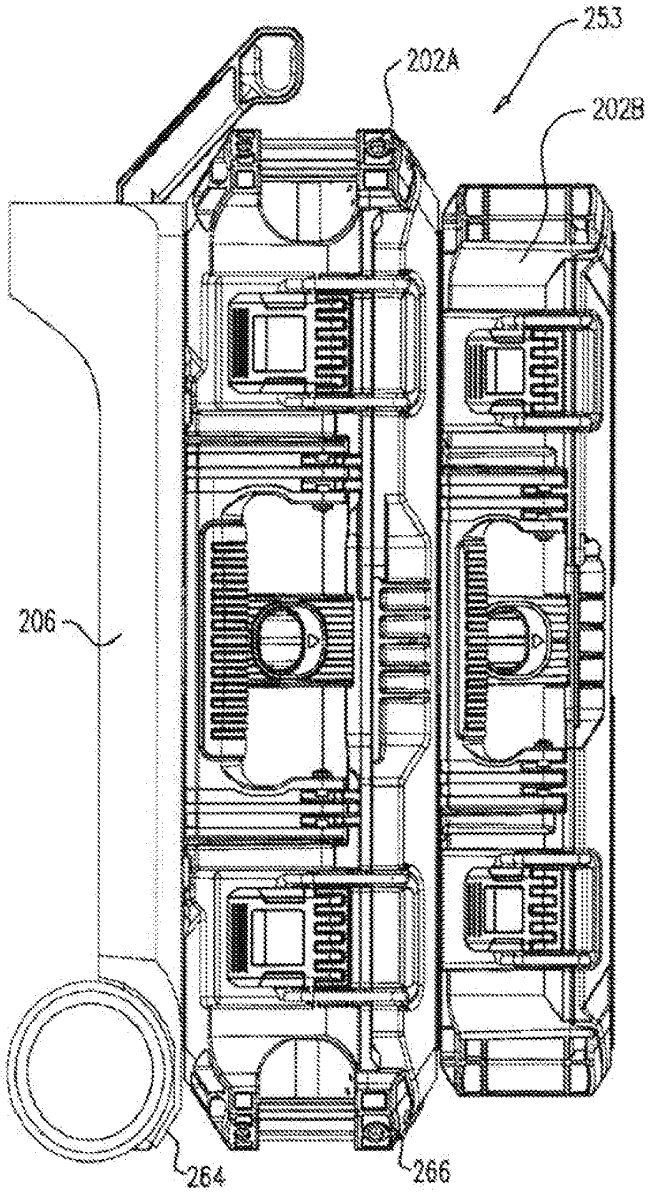


FIG. 11B

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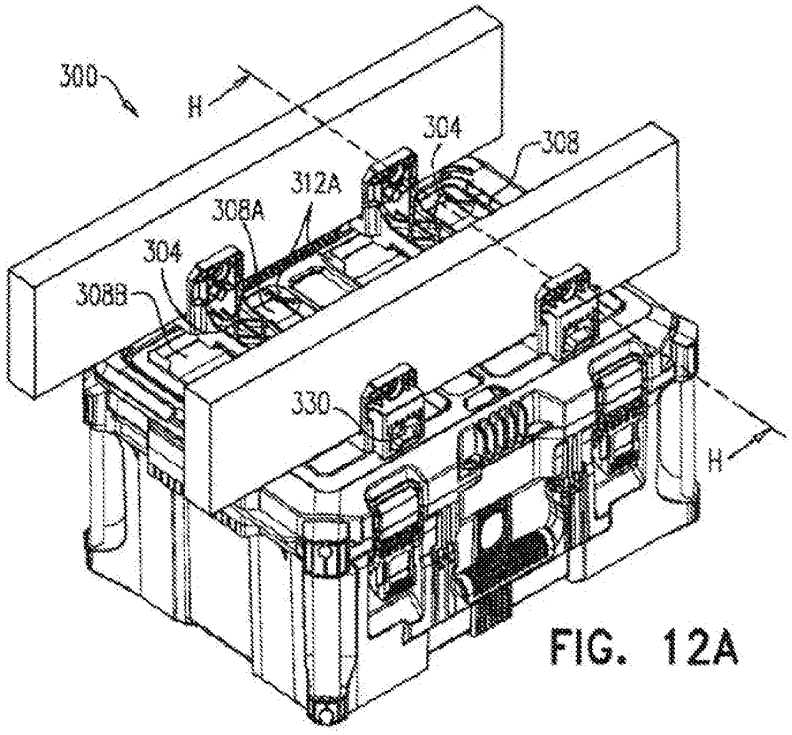


FIG. 12A

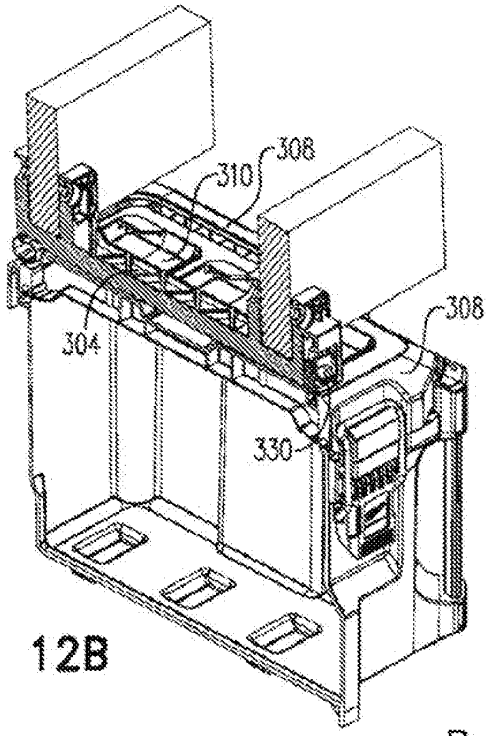
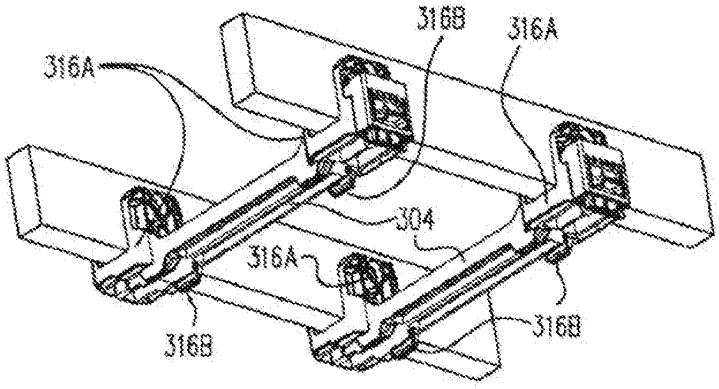


FIG. 12B



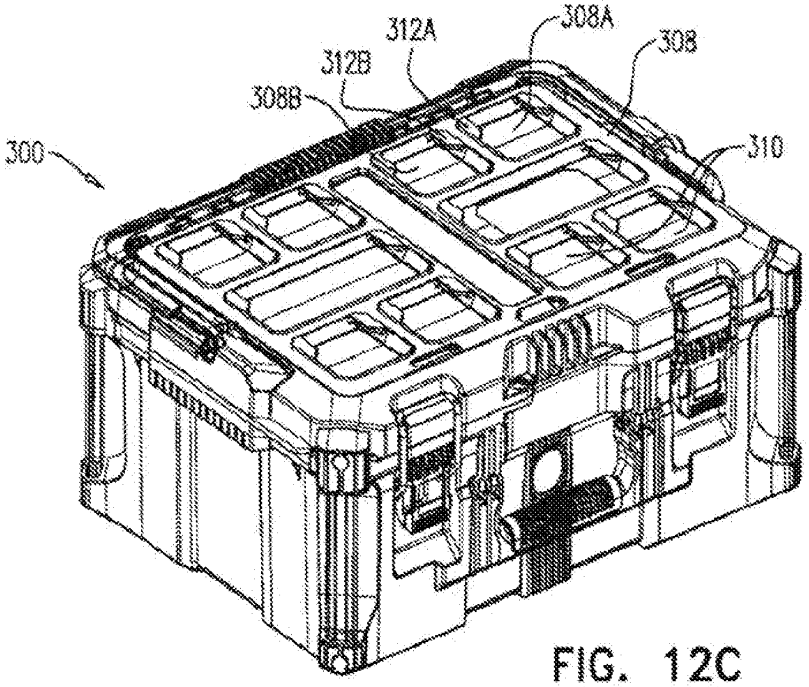


FIG. 12C

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2003 - Page 284
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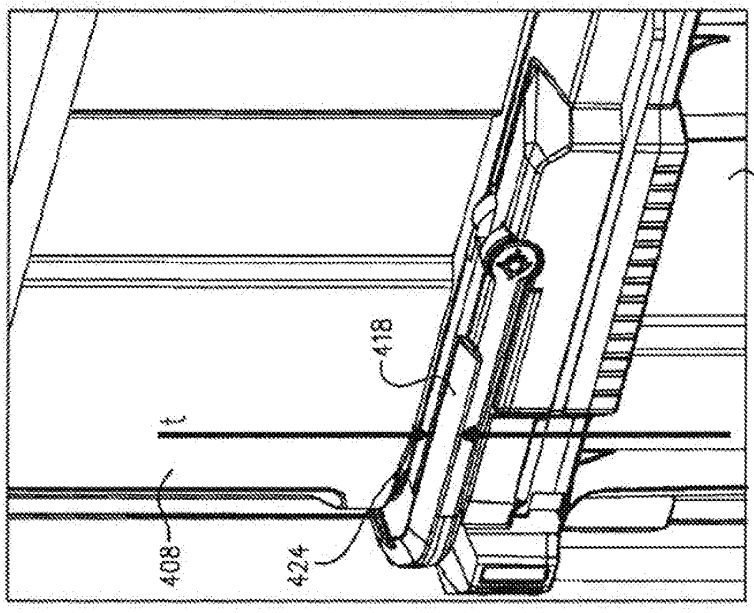


FIG. 13B

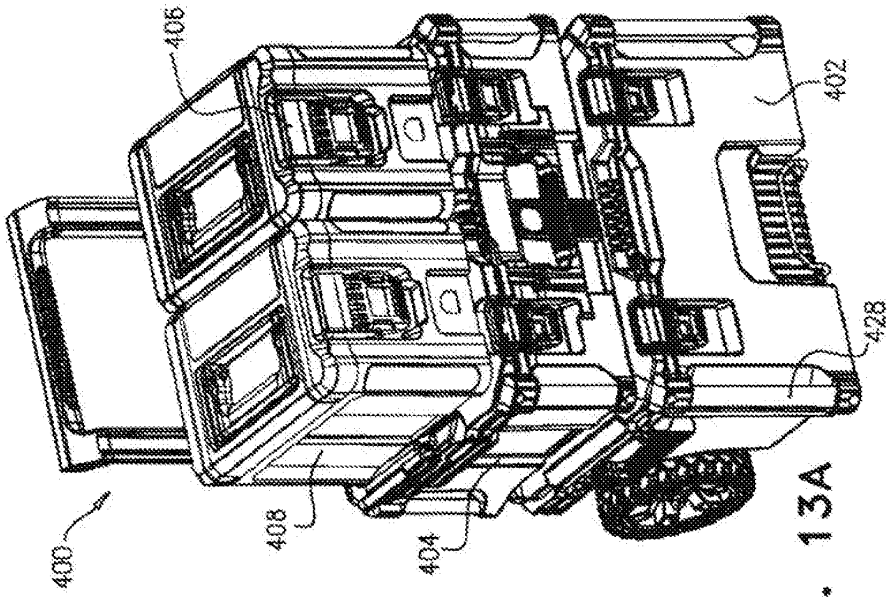


FIG. 13A

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2003 - Page 285
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
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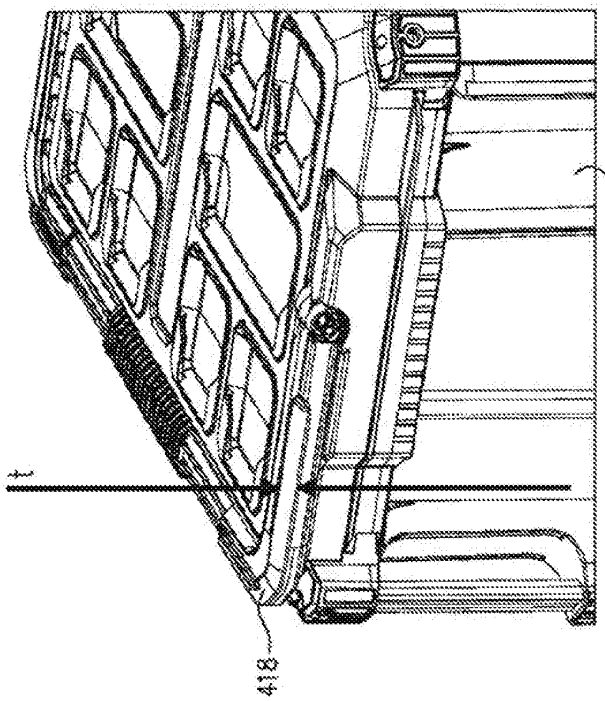


FIG. 13D

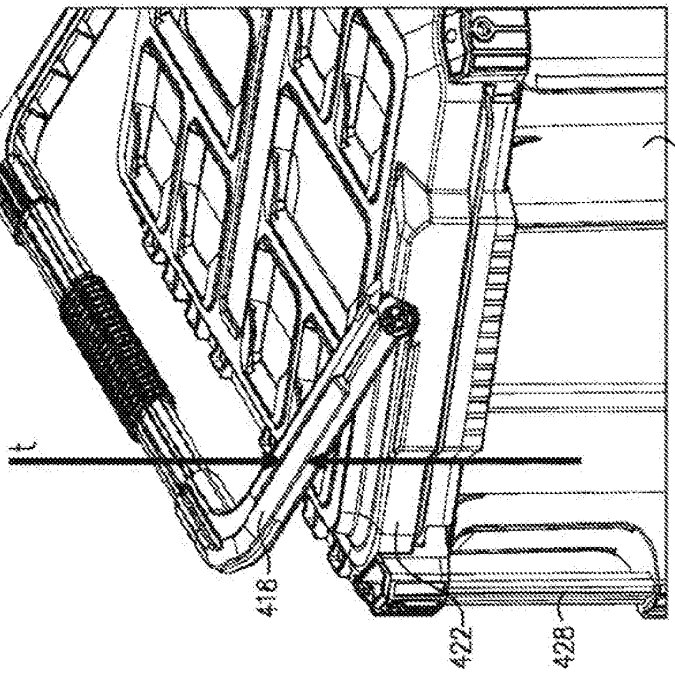


FIG. 13C

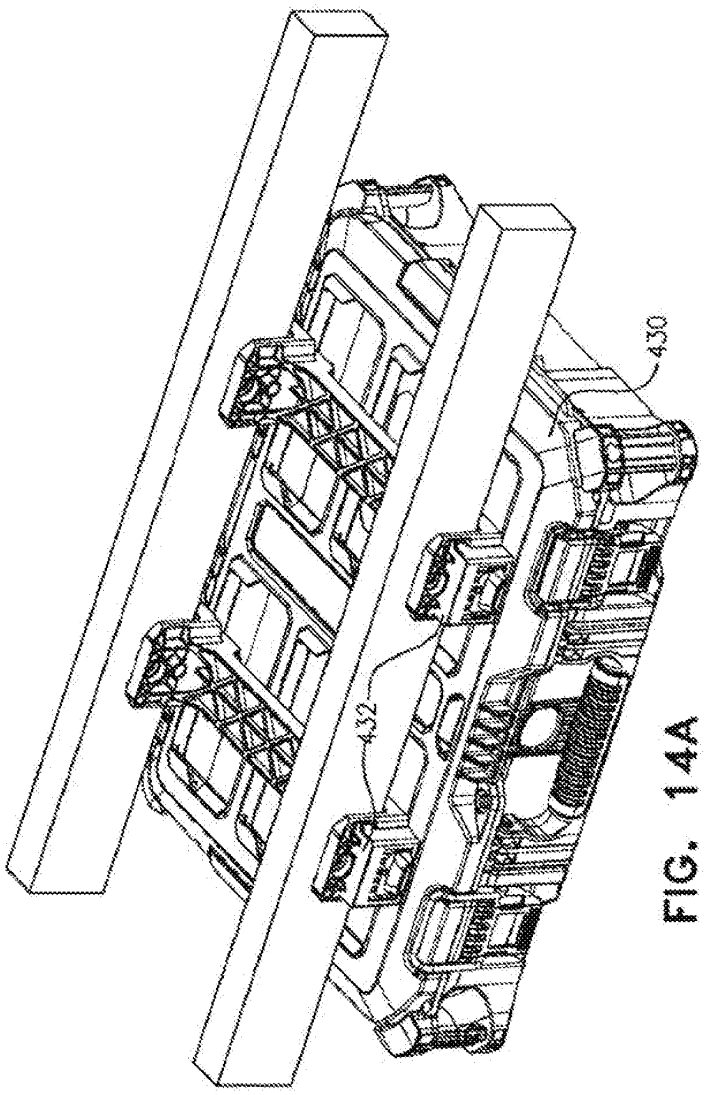


FIG. 14A

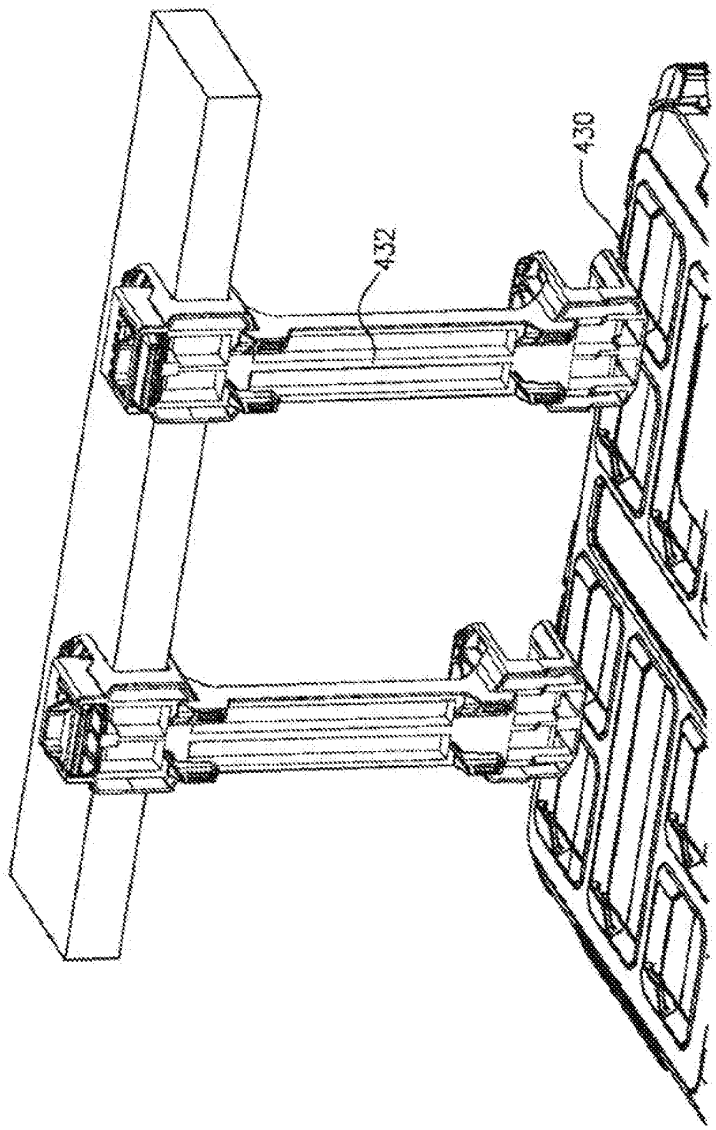


FIG. 14B

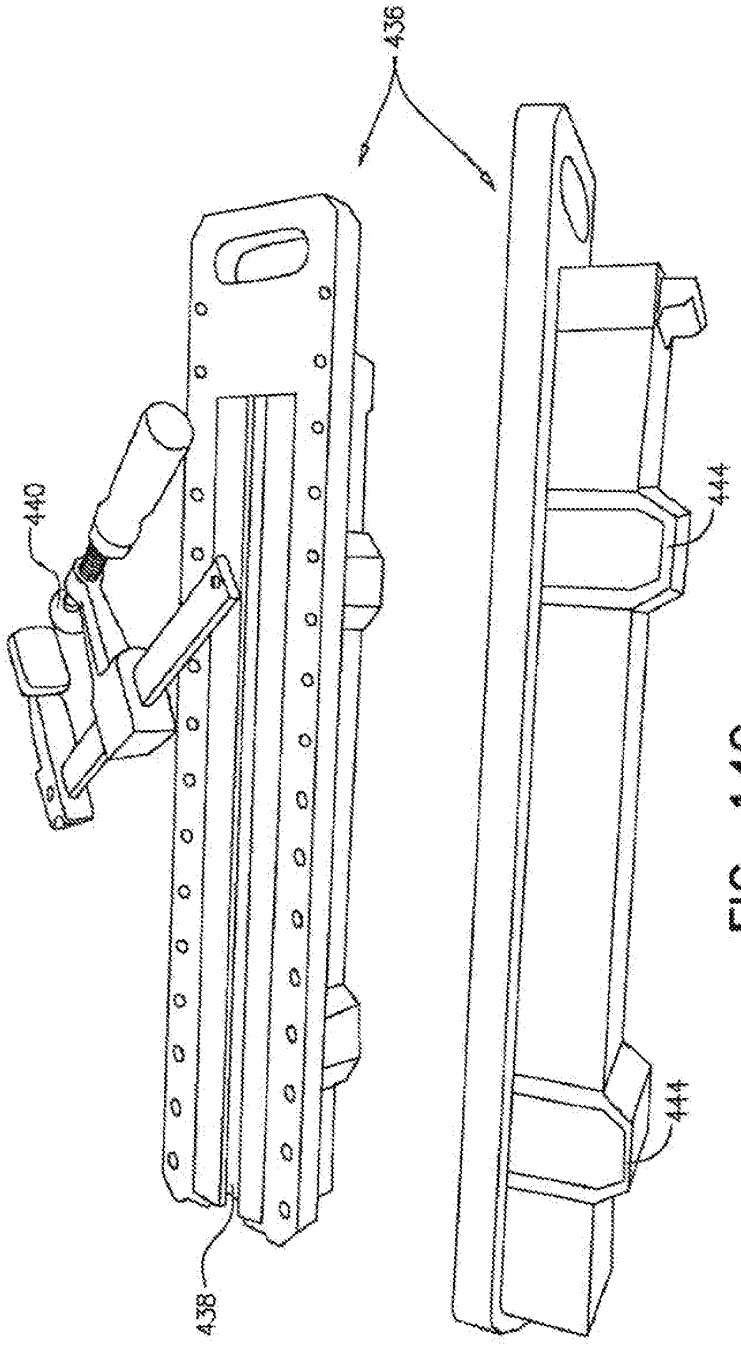


FIG. 14C

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2003 - Page 289
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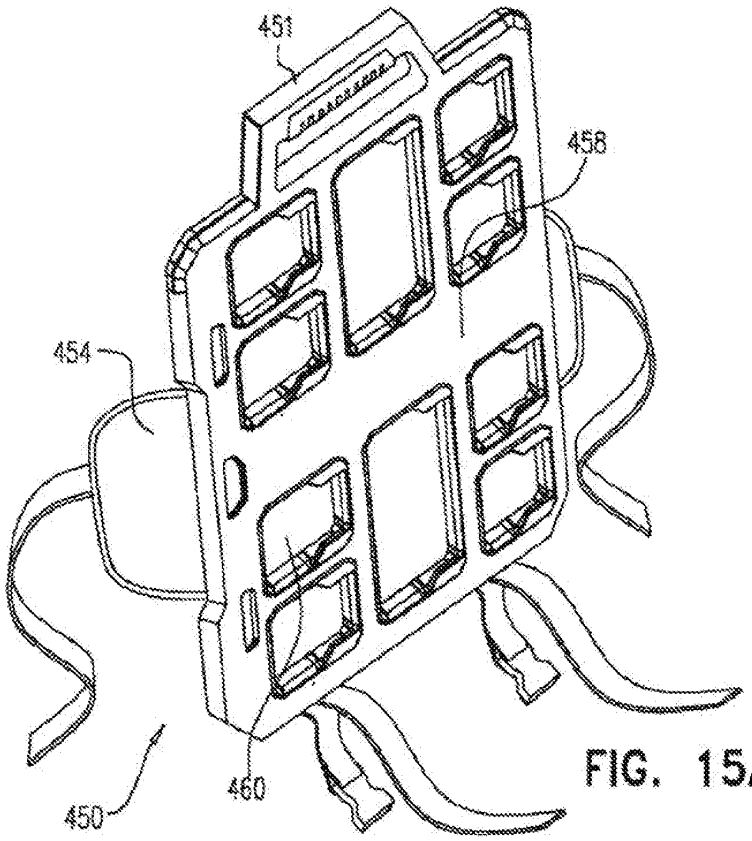


FIG. 15A

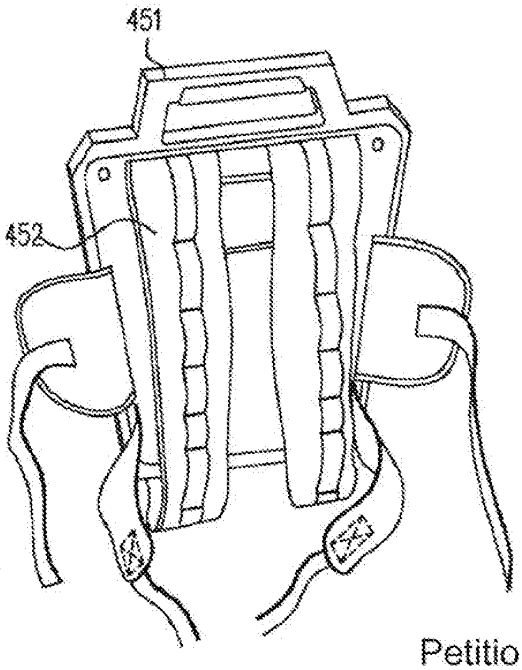


FIG. 15B

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2003 - Page 290
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
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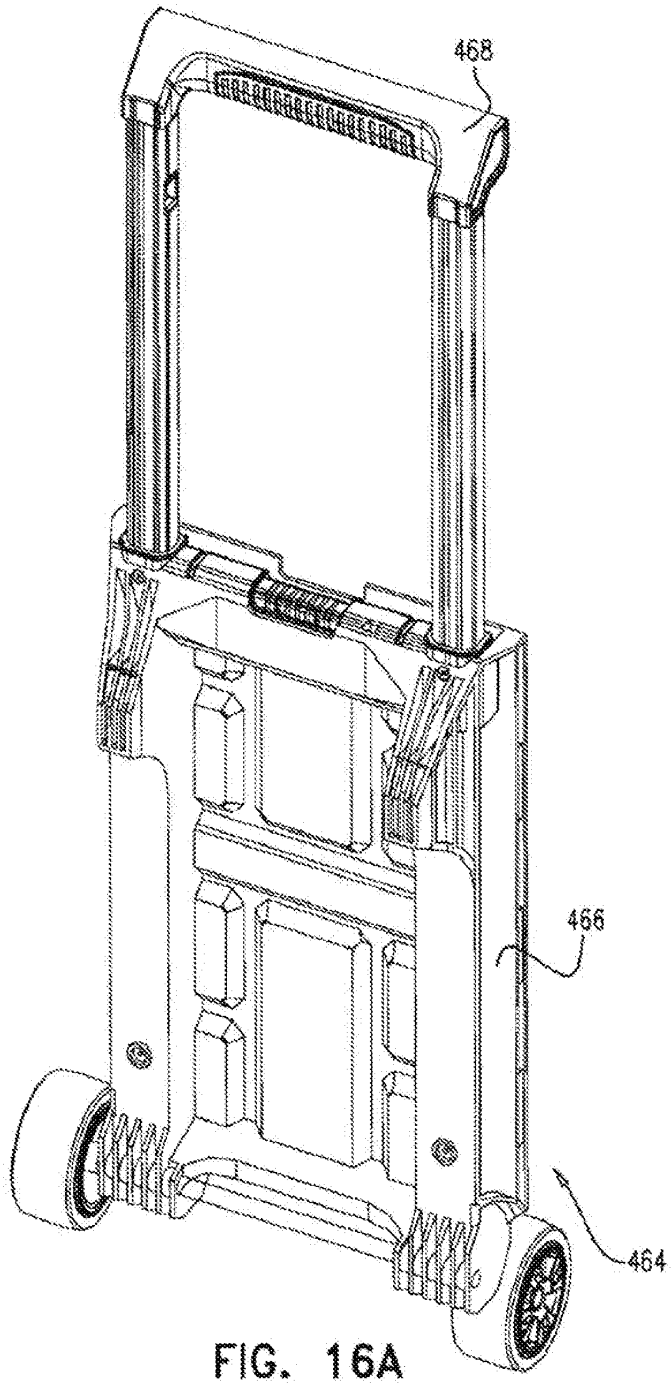


FIG. 16A

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2003 - Page 291
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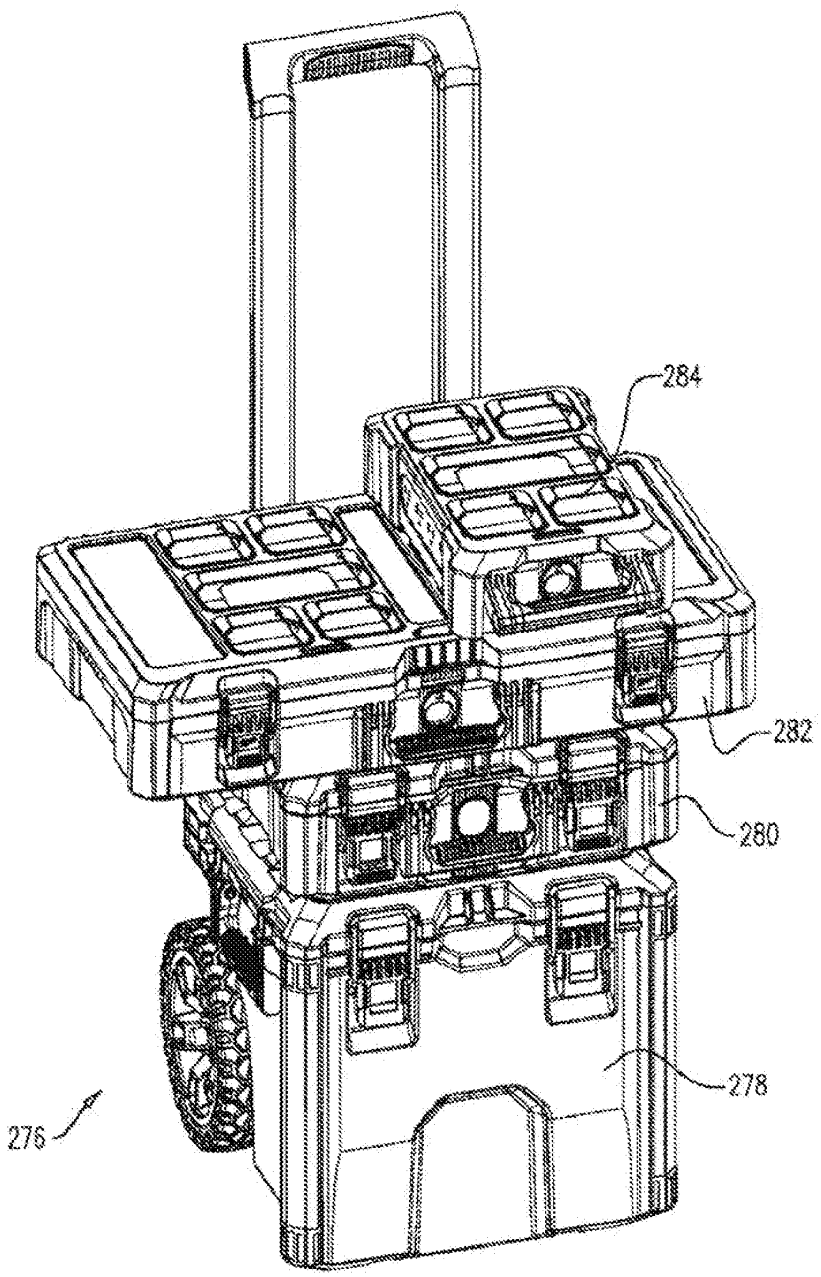


FIG. 16B

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2003 - Page 292
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

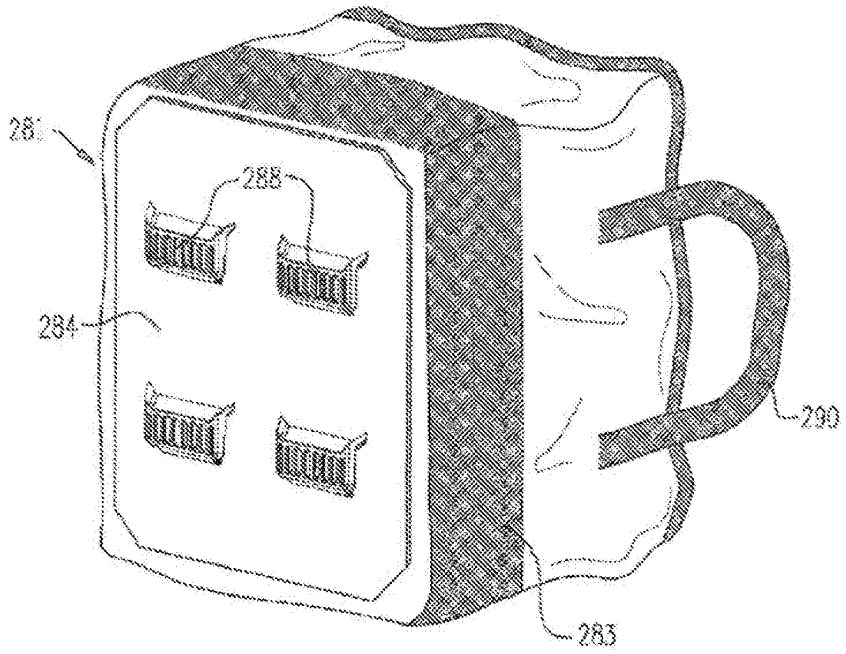


FIG. 17

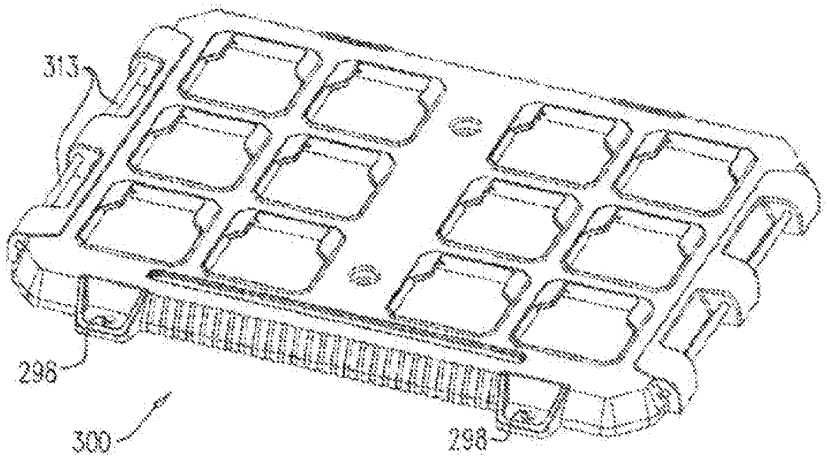


FIG. 18A

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2003 - Page 293
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

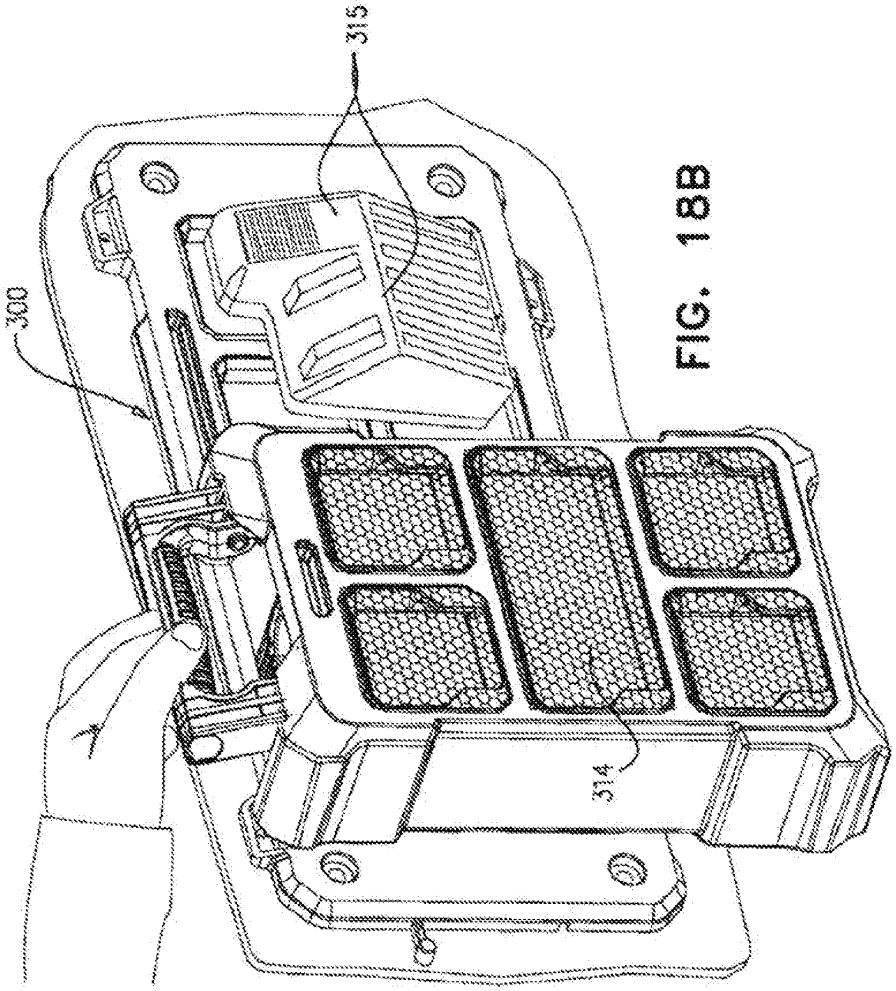


FIG. 18B

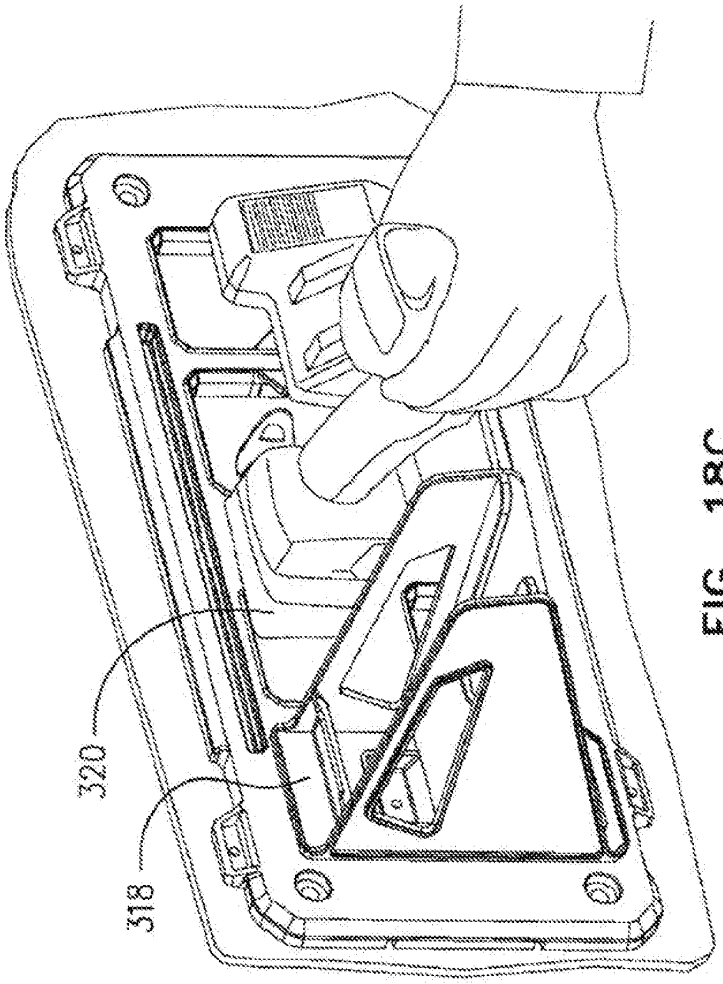


FIG. 18C

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2003 - Page 295
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

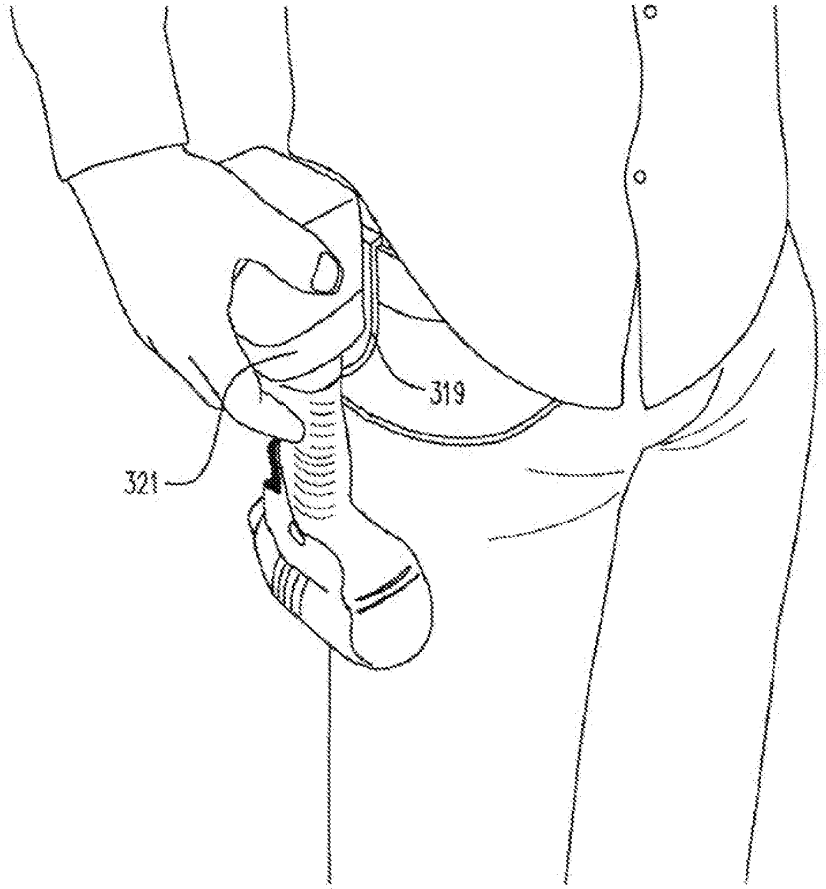
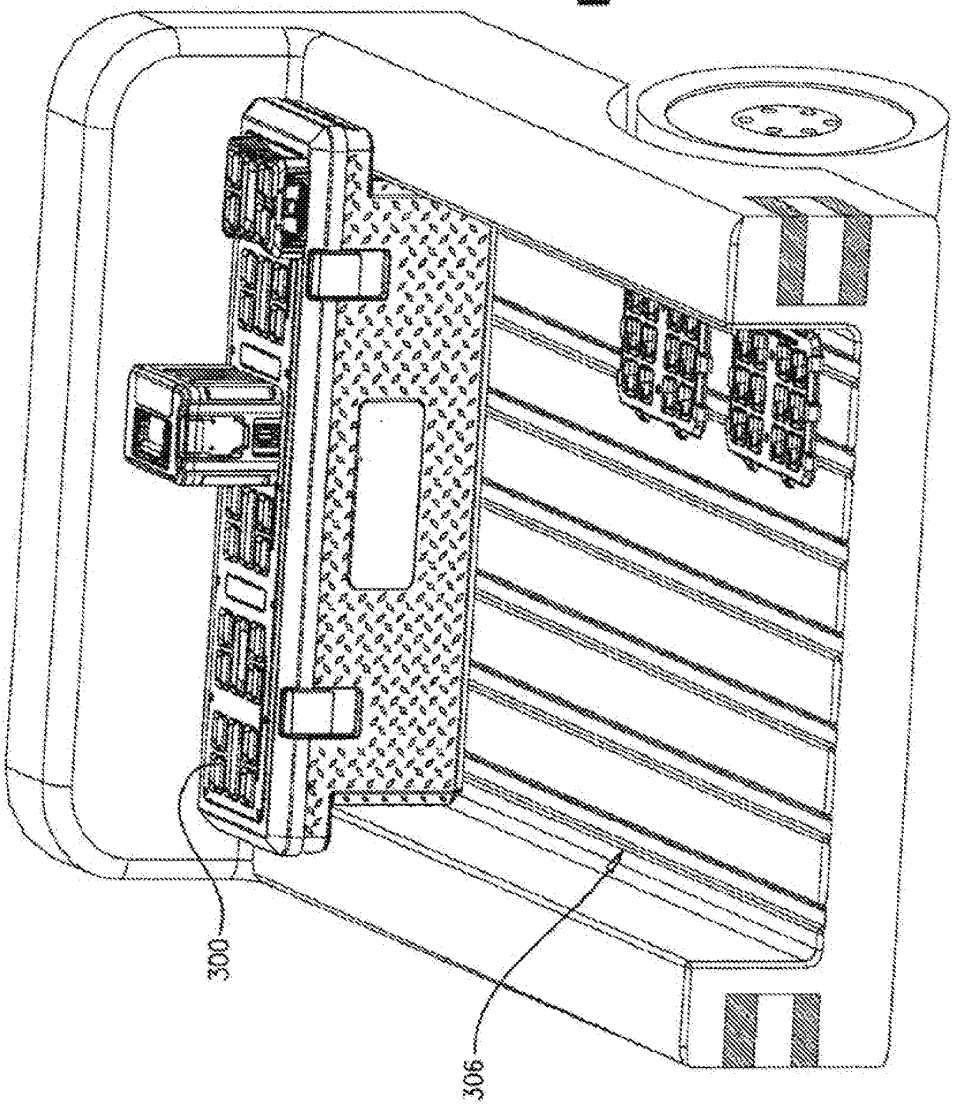


FIG. 19

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2003 - Page 296
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IPR2024-01400

FIG. 20



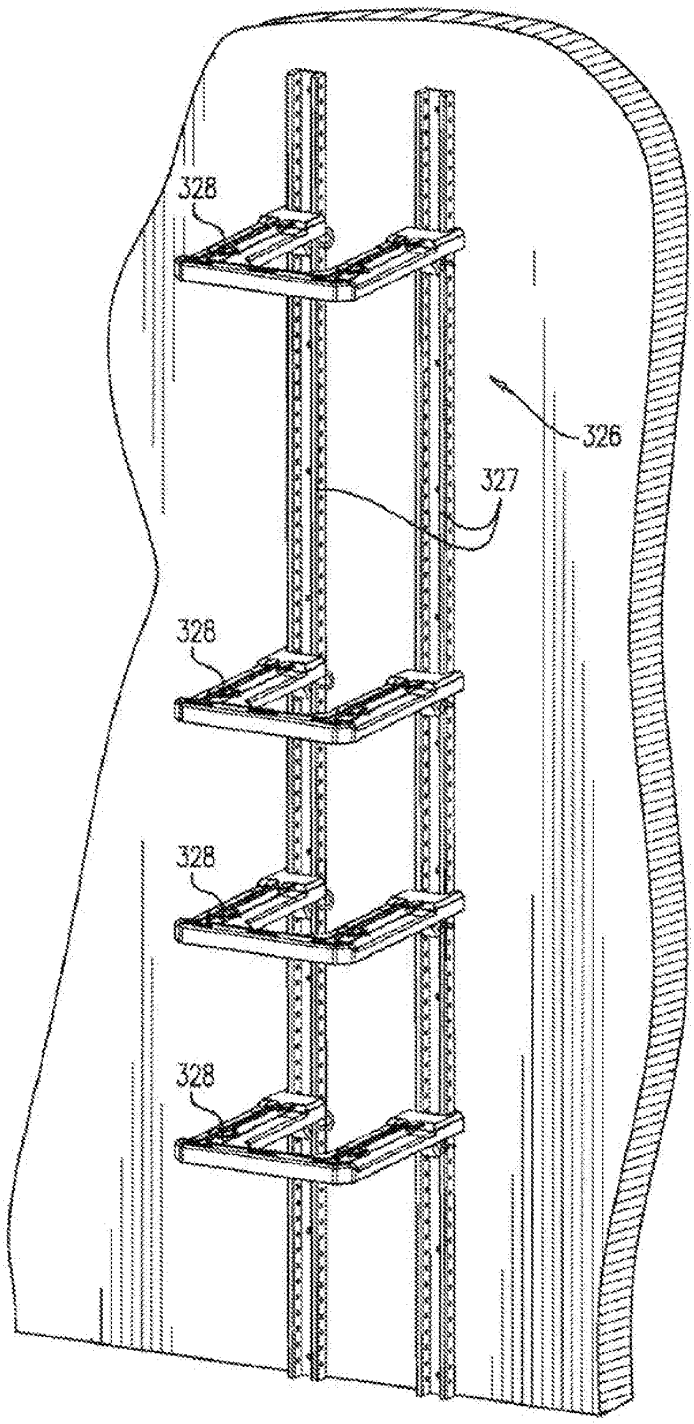


FIG. 21

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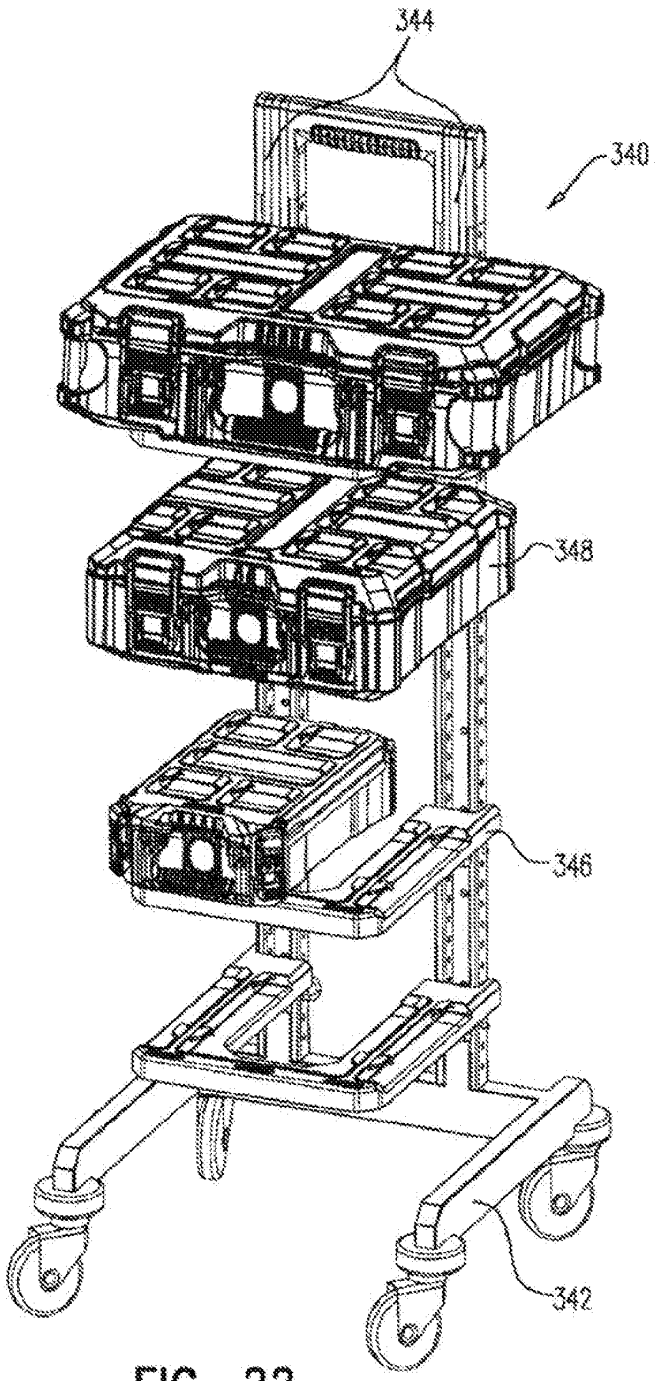


FIG. 22

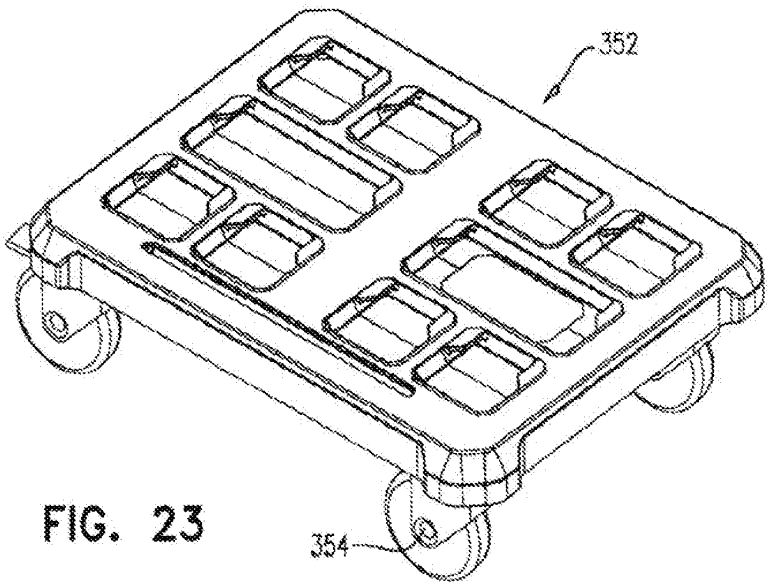


FIG. 23

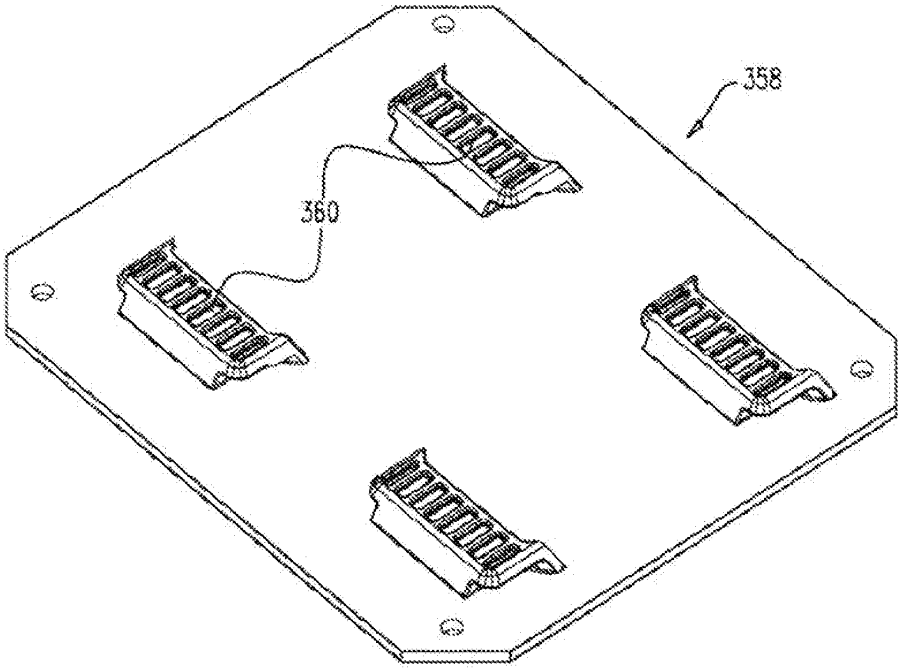


FIG. 24

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IPR2024-01400

UTILITY ASSEMBLY AND COUPLING MECHANISM

CROSS-REFERENCE TO RELATED PATENT APPLICATION

This application is a continuation of U.S. application Ser. No. 15/826,232, filed Nov. 29, 2017, which is a continuation of International Application No. PCT/IL2017/050481, filed Apr. 30, 2017, which claims priority to U.S. Provisional Application No. 62/459,076, filed Feb. 15, 2017 and to U.S. Provisional Application No. 62/330,334, filed May 2, 2016, which are incorporated herein by reference in their entireties.

TECHNOLOGICAL FIELD

The present disclosure is directed to a container assembly and more specifically to a utility assembly comprising two or more detachably attachable utility modules. The disclosure is further concerned with a coupling mechanism facilitating detachably attaching the utility modules to one another.

The term 'utility module' is used hereinafter in its broad meaning and is meant to denote a variety of articles such as, storage containers, travel luggage, tool boxes, organizers, compacted work benches, cable storage, tools (e.g. hand tools, power generators and power sources), communication modules, carrying platforms, locomotion platforms, etc., of any shape and size, and wherein any utility module can be detachably attached to any other utility module.

The term 'utility assembly' as used herein denotes any set of utility modules configured for articulation to one another, either as a stationary unit or locomotive.

GENERAL DESCRIPTION

A first aspect of the disclosure concerns a coupling mechanism configured for readily detachably attaching any first article to any second article, wherein any first article and any second article can be any utility module.

The coupling mechanism comprises a male coupler at a face of one of the first utility module and the second utility module, and a female coupler at a face of the other one of the first utility module and the second utility module, said female coupler has a depressed locking location configured with at least one locking rib extending above a depressed surface and along a sliding path, and having an open edge facing in a first sense; said male coupler has a projecting locking location disposed in register with said depressed locking location and configured with at least one locking tongue extending along said engaging sliding path at a second sense, opposite to said first sense, and configured for arresting engagement at a space between said locking rib and depressed surface, the coupling mechanism further comprises at least one locking member for arresting the first utility module with respect to said second utility module and preventing sliding displacement along said sliding path.

The arrangement is such that at a locked position of a utility assembly the at least one locking tongue of the male coupler engages below said at least one locking rib of the female coupler and the at least one locking member is engaged, thus preventing any respective displacement between the first utility module and the second utility module, and retaining the coupling mechanism at an engaged and locked position.

The term 'first utility module' as used herein denotes any utility module bearing at least one second utility module over a first surface thereof. The second utility module of a utility assembly may comprise three or more stages of utility modules, and functions as first utility module with respect to a third stage utility module mounted thereover and serving in turn as a second utility module.

According to certain embodiments, one or more female couplers are configured at the top face of the first utility module, and one or more male couplers are configured at the bottom face of the second utility module

The disclosed subject-matter is directed to a utility module configured with at least one of a male coupling mechanism and a female coupling mechanism of the disclosure, a module assembly comprising one or more utility modules of the aforementioned type and a set of utility modules of the aforementioned type.

According to a configuration of the first aspect, there is provide a utility assembly comprising at least a first utility module and at least a second utility module, and comprising a coupling mechanism configured between the first utility module and the second utility module; said coupling mechanism comprising at one of a top face of the first utility module and a bottom face of the second utility module one or more depressed locking locations each configured with a locking rib, and at least one locking latch arresting location; and the other one of said top face of the first utility module and a bottom face of the second utility module comprises one or more projecting portions each configured with a locking tongue disposed in register with said one or more depressed locking locations, and at least one locking latch disposed in register with said at least one locking latch arresting location.

The arrangement is such that, at a locked position, the bottom face of the second utility module at least partially rests over the top face of the first utility module, and the one or more projecting tongues are arrested by the corresponding one or more locking ribs, and the at least one locking latch is arrested by corresponding at least one locking latch arresting location, thereby preventing sliding displacement between the first utility module and the second utility module, and further wherein disengaging the second utility module from the first utility module is facilitated by disengaging the at least one locking latch from the at least one locking latch arresting location.

Locking engagement between the second utility module and the first utility module is obtained when the one or more depressed locking locations and the one or more projecting portions are disposed behind one another (though not necessarily aligned).

According to a particular configuration of the coupling mechanism, the one or more depressed locking locations and the one or more locking latch arresting locations are configured at the top face of the first utility module, and the one or more projecting portions and the at least one locking latch are configured at the bottom face of the second utility module. According to this configuration, locking between the first utility module and the second utility module is obtained by positioning the second utility module over the second utility module such that one or more locking tongues of the projecting portions engages with one or more respective locking ribs of the depressed locking locations, and wherein the locking latch interlocks with the respective locking latch arresting location.

The arrangement being such that the attaching engagement between the second utility module and the first utility module takes place when the one or more locking tongues

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and the corresponding one or more respective locking ribs are engaged, thereby preventing vertical separation between the utility modules (i.e. preventing lifting of the second utility module of the first utility module), and further when the locking latch is arrested by the respective locking latch arresting location, thereby preventing sliding displacement of the utility modules one with respect to the other (i.e. sliding displacement of the second module over the first module).

Disengaging the second utility module from the first utility module can be facilitated only after disengaging the locking latch from said locking latch arresting location.

According to a second aspect of the disclosure there is disclosed a coupling mechanism for a utility assembly comprising at least a first utility module and at least a second utility module, said coupling mechanism is configured between the first utility module and the second utility module and comprises at one of a top face of the first utility module and a bottom face of the second utility module with at least one depressed locking location configured with a locking rib, and at least one locking latch arresting location; and the other one of said top face of the first utility module and a bottom face of the second utility module comprises at least one projecting portion with a locking tongue disposed in register with said at least one depressed locking location, and at least one locking latch disposed in register with said at least one locking latch arresting location; and wherein at a locked position the bottom face at least partially rests over the top face, and the at least one projecting tongue is arrested by the corresponding at least one locking rib and the at least one locking latch is arrested by corresponding at least one locking latch arresting location, and further wherein disengaging the second utility module from the first utility module is facilitated by disengaging the at least one locking latch from the at least one locking latch arresting location.

Engaging the first and second utility modules into the locked position is provided by sliding the second utility module with respect to the first utility module along a sliding path defined by at least one of said at least one locking rib and said at least one locking tongue.

According to one particular configuration the at least one locking rib extends substantially parallel to the sliding path and according to another configuration the at least one locking rib extends substantially perpendicular and intersects the sliding path. A third aspect of the present disclosure is directed to a utility module being a mobile carrier unit and comprising at least one carrier engagement surface, compatible for interlocking engagement in a detachable manner with a first engagement surface of a utility module.

The term carrier unit as used herein denotes any kind of propelled cart configured for detachably attaching and carrying load. The carrier unit may be a hand cart, a mobile tool cart, a mobile workshop, traveling luggage cart, a trolley, etc.

With particular reference to the third aspect, the carrier engagement surface can be larger than the utility module's first engagement surface corresponding with it. In this case, several utility modules may be interlocked simultaneously upon one carrier unit. According to one configuration there is disclosed a carrier unit comprising a manipulating arrangement, a locomotion system, and an engagement surface comprising one or more engaging elements. The carrier unit is designated for detachable interlocking engagement with one or more utility modules, each comprising a first engagement surface configured with one or more first engaging elements compatible for detachable interlocking engagement with the carrier engaging elements.

According to yet configuration there is disclosed an assembly comprising a carrier unit comprising an engagement surface comprising one or more engaging elements, and at least one utility module configured with at least one first engagement surface comprising one or more first engaging elements compatible for detachable interlocking engagement with the carrier unit's engaging elements.

According to a modification of this aspect, there is also provided a container unit comprising a top member configured with a second engagement surface of the utility module, said top member, according to one example constitutes a cover of the utility module.

The arrangement is such that a container unit can be readily and easily applied over and interlockingly articulated to a carrier unit, or over a utility module configured with a second engagement surface mimicking the first engagement surface second engagement surface mimicking the first engagement surface of the carrier unit.

Engagement between the carrier unit and the container, and further between two containers, is facilitated by any locking mechanism of the disclosure hereinabove and hereinafter.

According to a specific example, there is a latching mechanism, wherein the first engaging elements of the carrier unit are configured for interlocking engagement with engaging elements of the mating surface of the respective utility module. The latching mechanism may assume various configurations, e.g. male-female couplings, dovetail couplings, and the like. The arrangement being such that only a minor displacement is required in order to lockingly mount, and respectively detach, a utility module over the carrier unit.

According to one specific configuration, the detachable interlocking engagement mechanism between the carrier engaging elements and the utility module's first engaging elements is a dovetail engagement mechanism, comprising laterally projecting shoulders configured on one of the carrier engagement surfaces and the first engagement surface of a utility module, and a shoulder receiving recess configured on the other one of one of the carrier engagement surfaces and the first engagement surface of a utility module; where said laterally projecting shoulders are configured for sliding engagement with said shoulder receiving recess.

According to a particular configuration, one or both of the carrier engagement surfaces and the first engagement surface of a respective utility module are configured with depressions, each accommodating respective laterally projecting locking shoulders. Said dovetail engagement mechanism members constitute said engaging elements, wherein said carrier engaging elements comprise one of said dovetail engagement members, while the utility module's first engaging element comprises the respective said dovetail engagement member.

According to another configuration, the detachable interlocking engagement mechanism between the carrier engaging elements and the utility module's first engaging elements is an undercut engagement mechanism, comprising lateral projections configured on one of the carrier engagement surfaces and the first engagement surface of a container unit, and a receiving recess configured on the other one of one of the carrier engagement surfaces and the first engagement surface of a utility module; where said lateral projections are configured for engagement with said receiving recess.

Interlocking engagement of the utility module and the carrier unit takes place by placing the first engagement surface of a utility module [illegible] surface, such that the utility module's first engaging ele-

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ments are disposed shifted over the respective carrier engaging elements of the carrier unit, and are then slidingly shifted to obtain sliding interlocking engagement therebetween.

The detachable interlocking engagement mechanism may further comprise a locking mechanism configured for preventing unintentional detaching of the slidingly engaging elements once they are fully interlocked, i.e. to prevent detaching of the utility module from the carrier unit or from another utility module.

According to one configuration, the locking mechanism, comprises a locking pin that is configured for snapingly protruding from one of the engagement surfaces into a designated nook on the other engagement surface. This prevents the engaging surfaces from sliding relatively to each other, and by thus it prevents said engaging elements from being slidingly separated once interlocked.

According to one configuration, the carrier engagement surface of the carrier unit constitutes a top wall of the carrier unit, when the carrier unit is balanced horizontally to the ground, and wherein the utility module's first engagement surface constitutes a bottom wall of the container unit, when the utility module is balanced horizontally to the ground. The utility module can further comprise a second engagement surface constituting its top wall, or a cover, when the utility module is balanced horizontally to the ground. The second engagement surface of the utility module simulates the carrier engagement surface as it is compatible for engaging with another utility module's first engagement surface.

Any one or more of the following features, designs and configurations, can be implemented in a utility module, a utility assembly, locking mechanism, and the carrier unit and assembly according to the present disclosure, individually or in various combinations thereof:

A single locking rib can extend at rear end of a depressed locking location (i.e. the female coupler may comprise a single locking rib) and substantially perpendicular to the sliding path;

Two locking ribs can extend at side edges of a depressed locking location (i.e. the female coupler may comprise two locking ribs) and disposed substantially parallel to the sliding path;

Two locking ribs can each extend at a respective side edge of two neighboring depressed locking locations, said locking ribs disposed substantially parallel to the sliding path;

The utility assembly can be modular wherein a top face of a first utility module can interlock with a bottom face of a second utility module disposed thereover in a substantially fully overlapping relation, or with a bottom face of at least one second utility module only partially overlapping therewith;

A second utility module overlapping a significant portion of a first utility module can be configured with a single release latch for displacing several locking latches articulaxi therewith;

Two or more second utility modules can be mounted over a first utility module, each being independently detachable attachable over the first utility module;

The at least one second utility module is configured for snap-type locking over the first utility module;

A release latch for displacing the locking latch into disengagement from the locking latch arresting location can be disposed at a front face of the respective second utility module;

The at least one locking latch and the at least one locking latch arresting location can be disposed at a front portion of the respective utility modules;

At least one of the first utility module and the second utility module are configured with a gliding surface facilitating displacement and positioning the respective second utility module at the locking position with respect to the first utility module;

The gliding surface reduces tolerances between the projecting portion and the depressed locking location receiving same;

One or both of the locking tongue and locking rib can be configured with a slanting surface at corresponding orientation, along the sliding path, for reducing or substantially elimination tolerance therebetween;

One or both of a front edge of the projecting portion and a corresponding front edge of the depressed locking location can be slanted for gliding positioning of the second utility module into true locking position over the first utility module;

The locking latch can be configured for displacement in a direction substantially normal to a respective face of a utility module;

The locking latch can be spring biased and configured for normally projecting from a face of the respective first or second utility module;

The locking latch can be manipulable to be opened through an opening configured at a front wall of the respective utility module;

Corners of the utility modules can be reinforced;

One or more of the utility modules can be a container module, and the utility assembly can be a container assembly/tool caddy;

The container module can be compartmented and can be configured with sub-containers and sub-compartments;

The top face of the container module can be configured as a lid or as a functional component of the container module;

A lid of a second container can be opened also when articulated and locked in position over a first container;

A lid of a first container can be opened also when a second container is articulated and locked in position thereabove;

At least one of the container modules can be a locomoting container and can be configured with an arrangement for locomoting said container module. Where the locomoting container is attached to other container modules it can facilitate for locomoting the utility assembly;

The container modules can be configured with carrying arrangement disposed at any one or more of its faces. According to a particular configuration, a front face of the container modules is configured with a carrying handle and according to another configuration side faces of the container modules can be configured with a carrying handle;

Examples of utility modules can be any one or more of a cooler box, a workpiece grip, a power supply (e.g. power bank, generator), hand tools, power tools, a locomotive platform (e.g. a work dolly), powered or not, a tactical unit (e.g. military gear, scientific equipment, communications equipment, personal gear, outdoor gear, etc.);

A tool caddy can be configured with a carrying handle (e.g. telescopic);

A utility module can be a soft-shell container with at least a rigid face portion configured with a male/female coupler;

The utility module can be an interface coupling module, i.e. functions only as a coupling interface;

The interface coupling module can be attached to a surface of any element or object and by different arrangements, fixedly or detachably;

The interface coupling module can be a cargo interface module for a utility vehicle configured for coupling one or more utility modules to the vehicle;

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The cargo interface module can be a bed cargo module, a roof rack module, etc.;

The interface coupling module can be a surface mount for attaching utility modules, e.g. a floor mount, wall mount, wall rack, etc.;

The interface coupling module can be a tool mount/rack;

The interface coupling module can be belt mount for mounting of utility modules (e.g. a hand tool) to a workers belt;

The interface coupling module can be an interface mount module for coupling two utility modules to one another, e.g. for articulating two utility modules, both configured with a similar male coupler or a female coupler, and wherein the interface mount module is configured at both faces with another of male coupler or a female coupler;

The interface coupling module can be a back pack carrying module, for facilitating attachment and carrying of utility modules;

A top face of a utility module can be configured with a carrying handle, said carrying handle displaceable between a stowed position and a carrying position, wherein at the stowed position said carrying handle at least partially extends within a niche and does not to interfere with the coupling mechanism;

The carrier unit may include one or more auxiliary engagement surfaces positioned on an exterior face of the carrier unit. For example, an auxiliary engagement surface can be configured at a bottom face of the carrier unit;

The carrier unit may include a second engagement surface simulating/mimicking the first engagement surface of the utility module;

A utility module may be configured with one or more auxiliary first and second engagement surfaces;

The carrier engagement surface may be a connectivity platform detachably attached to the exterior surface of the carrier unit, facilitating a cart unit or a carrier unit according to the present disclosure;

One or both of the utility module's first and second engagement surfaces may be detachably attached to an exterior surface of the utility module;

The carrier engagement surface and the utility module's first engagement surface may be like elements;

The utility module's first and second engagement surfaces may be like elements;

The carrier unit's engaging elements and the utility module's first engaging elements may be similar elements;

One engagement surface may include several engaging elements and one locking mechanism;

The coupling mechanism is configured for spontaneous displacement into locking engagement within a locking receptacle, wherein manual interference is required only for unlocking the locking mechanism and detaching a utility module from a respective utility module or carrier unit;

The coupling mechanism can be a spring biased locking pin, normally projecting from a respective engagement surface;

One or both of the carrier unit and the utility module may further include a locking mechanism designated to prevent unintentional separation of the engagement surfaces while they are interlocked;

The locking mechanism is manipulable between an unlocked position in which said engagement surfaces may slide upon each other, and a locked state in which the engagement surfaces may not slide upon each other;

The locking mechanism may be configured with a biasing mechanism for snap arresting at least at its locked state;

The locking mechanism may be configured with a manually operated activating portion for switching between said unlocked and locked positions.

The carrier unit may be assembled together with other carrier units the same way it's assembled with the utility modules;

The locomotion system of the carrier unit may comprise a wheel system (e.g. axially fixed roller wheels, swivel wheels, etc.), a sliding platform, caterpillar tracks, etc;

The locomotion system of the carrier unit comprises, according to a particular example, several fixed axis wheels, wherein the perimeter of said wheels is tangent with a base edge of the carrier unit;

At an assembled configuration, where one or more utility modules are attached to the carrier unit, the assembly can be positioned vertically wherein a side face of the one or more containers rest over a supporting surface. According to a particular example, at this position the carrier unit and container assembly are configured with stability members for retaining their stability while positioned vertically to the ground;

The carrier unit may be stable while positioned horizontally to the ground, by a support system projecting from a bottom face thereof. The support system may comprise friction enhancing surfaces to restrict displacement of the assembly while placed over a bearing surface;

The carrier unit may be foldable to a more compact configuration;

The carrier unit may comprise an external storage box detachably interconnectable to its exterior walls;

The carrier unit may comprise a power supply detachably interconnectable to its exterior walls;

The carrier unit's transporting system may be motorized while powered via said power supply;

The carrier unit may further include a locking mechanism to insure interlocking connection of the engagement surfaces;

The container unit may comprise non-rigid portions.

The carrier unit may comprise at least one manipulating arrangement, configurable between a stowed position in which the manipulating arrangement is retracted, and a manipulating position in which the manipulating arrangement is extracted. The manipulating arrangement may be a telescopic or foldable handle;

The manipulating arrangement may be a gripping handle, a D-grip handle, a T-grip handle, a flexible strap, etc.

EMBODIMENTS

The present disclosure also encompasses embodiment as defined in the following numbered phrases. It should be noted that these numbered embodiments intended to add to this disclosure and is not intended in any way to be limiting.

1. A coupling mechanism configured for readily detachably attaching a first utility module to a second utility module, the coupling mechanism comprising a male coupler at a face of one of the first utility module and the second utility module, and a female coupler at a face of the other one of the first utility module and the second utility module, said female coupler having a depressed locking location configured with at least one locking rib extending above a depressed surface and along a sliding path, and having an open edge facing in a first sense; said male coupler having a projecting locking location disposed in register with said depressed locking location and configured with at least one locking tongue extending [illegible] a second sense, opposite to said first sense, and configured

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for arresting engagement at a space between said locking rib and depressed surface, the coupling mechanism further comprises at least one locking member for arresting the first utility module with respect to said second utility module and preventing sliding displacement along said sliding path.

2. The coupling mechanism of embodiment 1, wherein said female coupler is configured at the top face of the first utility module, and the male coupler is configured at the bottom face of the second utility module.

3. The coupling arrangement of embodiment 1 or 2, wherein the at least one locking rib extends substantially parallel to the sliding path.

4. The coupling arrangement of embodiment 1 or 2, wherein the at least one locking rib extends substantially perpendicular and intersects the sliding path.

5. The coupling arrangement of embodiment 1 or 2, wherein the female coupler comprises a single locking rib extends at rear end of a depressed locking location and substantially perpendicular to the sliding path.

6. The coupling arrangement of embodiment 1 or 2, wherein the female coupler comprises two locking ribs extend at side edges of a depressed locking location and disposed substantially parallel to the sliding path.

7. The coupling arrangement of embodiment 1 or 2, wherein the female coupler comprises two locking ribs each extend at a respective side edge of two neighboring depressed locking locations, said locking ribs disposed substantially parallel to the sliding path.

8. A coupling mechanism for a utility assembly that comprises at least a first utility module and at least a second utility module, said coupling mechanism is configured between the first utility module and the second utility module; one of a top face of the first utility module and a bottom face of the second utility module comprises at least one depressed locking location configured with a locking rib, and at least one locking latch arresting location; and the other one of said top face of the first utility module and a bottom face of the second utility module comprises at least one projecting portion with a locking tongue disposed in register with said at least one depressed locking location, and at least one locking latch disposed in register with said at least one locking latch arresting location; and wherein at a locked position the bottom face at least partially rests over the top face, and the at least one projecting tongue is arrested by the corresponding at least one locking rib and the at least one locking latch is arrested by corresponding at least one locking latch arresting location, and further wherein disengaging the second utility module from the first utility module is facilitated by disengaging the at least one locking latch from the at least one locking latch arresting location, such that engaging the first and second utility modules into the locked position is provided by sliding the second utility module with respect to the first utility module along a sliding path defined by at least one of said at least one locking rib and said at least one locking tongue.

9. The coupling arrangement of embodiment 8, wherein the at least one locking rib extends substantially parallel to the sliding path.

10. The coupling arrangement of embodiment 8, wherein the at least one locking rib extends substantially perpendicular and intersects the sliding path.

11. The coupling arrangement of embodiment 8, wherein a single locking rib extends at rear end of a depressed locking location and substantially perpendicular to the sliding path.

12. The coupling arrangement of embodiment 8, wherein two locking ribs extend at side edges of a depressed locking location and disposed substantially parallel to the sliding path.

13. The coupling arrangement of embodiment 8, wherein two locking ribs each extend at a respective side edge of two neighboring depressed locking locations, said locking ribs disposed substantially parallel to the sliding path.

14. The coupling arrangement of any one of embodiments 8 to 13, further comprising a release latch for displacing the locking latch into disengagement from the locking latch arresting location can be disposed at a front face of the respective second utility module.

15. The coupling arrangement of any one of embodiments 8 to 14, wherein the at least one locking latch and the at least one locking latch arresting location are disposed at a front portion of the respective utility modules.

16. The coupling arrangement of any one of embodiments 8 to 15, wherein the locking latch is configured for displacement in a direction substantially normal to a respective face of a utility module.

17. The coupling arrangement of any one of embodiments 8 to 16, wherein locking latch is spring biased and configured for normally projecting from a face of the respective first or second utility module.

18. The coupling arrangement of any one of embodiments 8 to 17, wherein the locking latch is manipulable to be opened through an opening configured at a front wall of the respective utility module.

19. The coupling arrangement of any one of embodiments 1 to 18, wherein one or both of the locking tongue and locking rib are configured with a slanting surface at corresponding orientation along the sliding path.

20. The coupling arrangement of any one of embodiments 1 to 19, wherein one or both of a front edge of the projecting portion (or the projecting locking location) and a corresponding front edge of the depressed locking location are slanted for gliding positioning of the second utility module into locking position over the first utility module.

21. The coupling mechanism of any one of embodiments 1 to 20, wherein the first utility module is configured for detachably attaching one or more second utility modules thereto.

22. A coupling mechanism for a utility assembly comprising at least a first utility module and at least a second utility module, said coupling mechanism is configured between the first utility module and the second utility module and comprises at one of a top face of the first utility module and a bottom face of the second utility module with at least one depressed locking location configured with a locking rib, and at least one locking latch arresting location; and the other one of said top face of the first utility module and a bottom face of the second utility module comprises at least one projecting portion with a locking tongue disposed in register with said at least one depressed locking location, and at least one locking latch disposed in register with said at least one locking latch arresting location; and wherein at a locked position the bottom face at least partially rests over the top face, and the at least one projecting tongue is arrested by the corresponding at least one locking rib and the at least one locking latch is arrested by corresponding at least one locking latch arresting location, and further wherein disengaging the second utility module from the first utility module is facilitated by disengaging the at least one locking latch from the at least one locking latch arresting location.

23. A utility assembly [illegible] module and at least a second utility module, and comprising

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a coupling mechanism according to any one of embodiments 1 to 21, the coupling mechanism being configured between the first utility module and the second utility module.

24. A utility assembly comprising at least a first utility module and at least a second utility module, and comprising a coupling mechanism for readily detachably attaching the first and second utility modules, the coupling mechanism being configured between the first utility module and the second utility module; said coupling mechanism comprising at one of a top face of the first utility module and a bottom face of the second utility module one or more depressed locking locations each configured with a locking rib, and at least one locking latch arresting location; and the other one of said top face of the first utility module and a bottom face of the second utility module comprises one or more projecting portions each configured with a locking tongue disposed in register with said one or more depressed locking locations, and at least one locking latch disposed in register with said at least one locking latch arresting location, such that at a locked position, the bottom face of the second utility module at least partially rests over the top face of the first utility module, and the one or more projecting tongues are arrested by the corresponding one or more locking ribs, and the at least one locking latch is arrested by corresponding at least one locking latch arresting location, thereby preventing sliding displacement between the first utility module and the second utility module, and disengaging the second utility module from the first utility module is facilitated by disengaging the at least one locking latch from the at least one locking latch arresting location.

25. The utility assembly of embodiment 24, wherein the first and second utility modules are in a locking engagement when said one or more depressed locking locations and the one or more projecting portions are disposed behind one another.

26. The utility assembly of embodiment 24 or 25, wherein said one or more depressed locking locations and said one or more locking latch arresting locations are configured at the top face of the first utility module, and the one or more projecting portions and the at least one locking latch are configured at the bottom face of the second utility module.

27. The utility assembly of any one of embodiments 24 to 26, wherein at least one second utility module is configured for snap-type locking over the first utility module.

28. The utility assembly of any one of embodiments 24 to 27 wherein engaging the first and second utility modules into the locked position is provided by sliding the second utility module with respect to the first utility module along a sliding path defined by at least one of said at least one locking rib and said at least one locking tongue.

29. The utility assembly of any one of embodiments 24 to 28, wherein the at least one locking rib extends substantially parallel to the sliding path.

30. The utility assembly of embodiment 29, wherein the at least one locking rib extends substantially perpendicular and intersects the sliding path.

31. The utility assembly of embodiment 29, wherein a single locking rib extends at rear end of a depressed locking location and substantially perpendicular to the sliding path.

32. The utility assembly of embodiment 29 wherein two locking ribs extend at side edges of a depressed locking location and disposed substantially parallel to the sliding path.

33. The utility assembly of embodiment 29, wherein two locking ribs each extend at a respective side edge of two neighboring depressed locking locations, said locking ribs disposed substantially parallel to the sliding path.

34. The utility assembly of any one of embodiments 24 to 33, wherein a top face of a first utility module interlocks with a bottom face of a second utility module disposed thereover in a substantially fully overlapping relation, or with a bottom face of at least one second utility module only partially overlapping therewith.

35. The utility assembly of any one of embodiments 24 to 33, wherein the second utility module overlaps a significant portion of a first utility module and is configured with a single release latch for displacing several locking latches articulated therewith.

36. The utility assembly of any one of embodiments 24 to 35, further comprising a release latch for displacing the locking latch into disengagement from the locking latch arresting location can be disposed at a front face of the respective second utility module.

37. The utility assembly of any one of embodiments 24 to 36, wherein the locking latch is configured for displacement in a direction substantially normal to a respective face of a utility module.

38. The utility assembly of any one of embodiments 24 to 37, wherein the locking latch is spring biased and configured for normally projecting from a face of the respective first or second utility module.

39. The utility assembly of any one of embodiments 24 to 38, wherein two or more second utility modules can be mounted over a first utility module, each being independently detachable attachable over the first utility module.

40. The utility assembly of any one of embodiments 24 to 39, wherein at least one of the first utility module and the second utility module are configured with a gliding surface facilitating displacement and positioning the respective second utility module at the locking position with respect to the first utility module.

41. The utility assembly of any one of embodiments 24 to 40, wherein one or more of the utility modules is a container module, and the utility assembly is a container assembly or a tool caddy.

42. The utility assembly of embodiment 41, wherein the container module is compartmented and optionally configured with sub-containers and sub-compartments.

43. The utility assembly of embodiment 41 or 42, wherein a top face of the container module is configured as a lid or as a functional component of the container module.

44. The utility assembly of any one of embodiments 41 to 43, wherein the container modules is a locomoting container, configured with an arrangement for locomoting said utility assembly.

45. The utility assembly of any one of embodiments 41 to 44, wherein the container modules is configured with a carrying arrangement disposed at any one or more of its faces, optionally being a carrying handle.

46. The utility assembly of any one of embodiments 24 to 40, wherein one or more of the utility modules is a soft-shell container with at least a rigid face portion.

47. The utility assembly of any one of embodiments 24 to 40, wherein said first utility module is a mobile carrier unit.

48. The utility assembly of any one of embodiments 24 to 47, further comprising a locking mechanism for preventing unintentional separation of the modules while they are interlocked.

49. The utility assembly of any one of embodiments 24 to 48, wherein the first utility module is configured for detachably attaching at least two second utility modules thereto.

50. A mobile carrier unit comprising at least one service engagement surface, configured for detachably engaging a utility assembly in a detachable manner with a first engagement surface.

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of a utility module, said carrier engagement surface having (i) one or more depressed locking locations each configured with a locking rib and at least one locking latch arresting location, configured for engagement with said first engagement surface of a utility module that comprises at least one locking latch and one or more projecting portions, each projecting portion being configured with a locking tongue, or (ii) at least one locking latch and one or more projecting portions each configured with a locking tongue for engagement with said first engagement surface of a utility module that comprises one or more depressed locking locations, each depressed locking locations configured with a locking rib and at least one locking latch arresting location.

51. The mobile carrier unit of embodiment 50, wherein once associated with the utility module, said locking tongue becomes disposed in register with said one or more depressed locking locations, and at least one locking latch become disposed in register with said at least one locking latch arresting location.

52. The mobile carrier unit of embodiment 50 or 51, configured for detachable interlocking engagement with one or more utility modules, each utility module comprising a first engagement surface.

53. The mobile carrier unit of any one of embodiments 50 to 52, further comprising at least one of a manipulating arrangement and a locomotion system.

54. An assembly comprising a mobile carrier unit of any one of embodiments 50 to 53 having at least one carrier engagement surface, and at a least one utility module having a first engagement surface, the utility module being detachably interlocked with the mobile carrier unit by engaging said first engagement surface with said carrier engagement surface.

55. The assembly of embodiment 54, wherein the mobile carrier unit and the at least one utility module are detachably interlocked with one another by a dovetail engagement mechanism, that comprises laterally projecting shoulders configured on one of the carrier engagement surfaces and the first engagement surface of a utility module, and a shoulder receiving recess configured on the other one of one of the carrier engagement surfaces and the first engagement surface of a utility module; where said laterally proj ecting shoulders are configured for sliding engagement with said shoulder receiving recess.

56. The assembly of embodiment 55, wherein one or both of the carrier engagement surfaces and the first engagement surface of a respective utility module are configured with depressions, each accommodating respective laterally projecting locking shoulders.

57. The assembly of embodiment 54, wherein the mobile carrier unit and the at least one utility module are detachably interlocked with one another by an undercut engagement mechanism, comprising lateral projections configured on one of the carrier engagement surfaces and the first engagement surface of a container unit, and a receiving recess configured on the other one of one of the carrier engagement surfaces and the first engagement surface of a utility module; where said lateral projections are configured for engagement with said receiving recess, such that interlocking engagement of the utility module and the carrier unit takes place by placing the first engagement surface of a utility module over the carrier engagement surface, such that the utility module's first engaging elements are disposed shifted over the respective carrier engaging elements of the carrier unit, and are then slidingly shifted to obtain sliding interlocking engagement therebetween.

58. The assembly of any one of embodiments 54 to 57, further comprising a locking mechanism configured for preventing unintentional detaching of the utility module from the carrier unit.

59. The assembly of embodiment 58, wherein the locking mechanism comprises a locking pin that is configured for snapingly protruding from one of the engagement surfaces into a designated nook on the other engagement surface.

60. An interface coupling module comprising at least one engagement surface, compatible for interlocking engagement in a detachable manner with a first engagement surface of a utility module, said interface coupling module comprising an engagement surface having (i) one or more depressed locking locations each configured with a locking rib and at least one locking latch arresting location, configured for engagement with said first engagement surface of a utility module that comprises at least one locking latch and one or more projecting portions, each projecting portion being configured with a locking tongue, or (ii) at least one locking latch and one or more projecting portions each configured with a locking tongue for engagement with said first engagement surface of a utility module that comprises one or more depressed locking locations, each depressed locking locations configured with a locking rib and at least one locking latch arresting location.

61. The interface coupling module of embodiment 60, being configured for detachable or fixed attachment to a surface of an object.

62. The interface coupling module of embodiment 60 or 61, being a cargo interface module for a utility vehicle configured for attaching one or more utility modules to the vehicle.

63. The interface module of embodiment 60 or 61, being a surface mount for attaching utility modules.

64. The interface module of embodiment 60 or 61, being a tool mount or a tool rack.

65. The interface module of embodiment 60 or 61, being a belt mount for mounting of utility modules to a workers belt.

66. The interface module of embodiment 60 or 61, being an interface mount module for coupling two utility modules to one another.

BRIEF DESCRIPTION OF THE DRAWINGS

In order to better understand the subject matter that is disclosed herein and to exemplify how it may be carried out in practice, embodiments will now be described, by way of non-limiting examples only, with reference to the accompanying drawings, in which: FIGS. 1A to 6G are directed to a first example of a locking mechanism, wherein:

FIG. 1A is a top perspective view of a container assembly according to an example of the present disclosure;

FIG. 1B is an exploded perspective view of the container assembly of FIG. 1A;

FIG. 1C is a bottom, front perspective view of FIG. 1B;

FIG. 1D is a bottom, rear perspective view of FIG. 1B;

FIG. 2A is a sectioned portion along line A-A in FIG. 1A;

FIG. 2B is a sectioned portion along line B-B in FIG. 1A;

FIG. 2C is a sectioned portion along line C-C in FIG. 1A;

FIGS. 3A to 3D are consecutive steps illustrating locking engagement of the locking tongue of the second container with the respective locking rib of the first container;

FIGS. 4A to 4D are consecutive steps illustrating locking engagement of the locking latch of the second container with the respective locking [illegible] container;

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FIGS. **5**A to **5**E schematically demonstrate modularity of a container assembly according to the disclosure;

FIGS. **6**A to **6**G are various combinations of a modular container assembly according to examples of the present disclosure.

FIGS. **7** to **12** are directed to a carrier unit and another example of a locking mechanism, wherein:

FIG. **7**A is container carrier assembly according to an example of the disclosure, illustrating a top, left perspective view of a container unit, mounted on top of a carrier unit;

FIG. **7**B is a top, left perspective view of a second container unit, mounted on top of a first container unit, which in turn is mounted on top of a carrier unit according to an example of the present disclosure;

FIG. **8**A is a top, left perspective view of a carrier unit, illustrating the carrier engagement surface in further detail;

FIGS. **8**B and **8**C are a top and a bottom perspective view of a carrier unit, illustrating the container unit's first engagement surface in further detail;

FIG. **9**A is a side section along line F-F in FIG. **7**A, illustrating the container unit and the carrier unit unattached;

FIG. **9**B is a side section along line F-F in FIG. **7**A illustrating the container unit and the carrier unit attached;

FIG. **9**C is a close-up view of FIG. **9**B;

FIG. **9**D is a sectional view along line F-F in FIG. **7**A illustrating the interlocking engagement of the carrier engaging elements together with the container unit's first engaging elements;

FIG. **10**A is a sectioned view along line D-D in FIG. **7**A, illustrating the locking mechanism;

FIG. **10**B is an enlarged image of the portion marked M in FIG. **10**A;

FIG. **11**A illustrates different sizes of container units forming an assembly, at a tilted orientation;

FIG. **11**B illustrates an assembled configuration balanced vertically relatively to the ground;

FIG. **12**A shows a container assembly wherein the female coupler comprises two locking ribs extending at respective side edges of two neighboring depressed locking locations;

FIG. **12**B is a section along line H-H in FIG. **12**A;

FIG. **12**C illustrates the utility module apart from the container and flipped, so as to expose the mating coupling mechanism.

FIGS. **13**A-**13**D, **14**A-**14**C, **15**A-**15**B, **16**A-**16**B, **17**, **18**A-**18**C, and **19**-**24** are different embodiments and configurations of utility modules and utility assemblies according examples of this disclosure.

DETAILED DESCRIPTION OF EMBODIMENTS

Reference is first being made to FIGS. **1**A to **6**G, directed to a first configuration of a coupling mechanism. For sake of convenience the utility modules are exemplified as containers and respectively the utility assembly is illustrates as a tool caddy. It is however appreciated that the utility modules can be of any type, shape or size, as discussed hereinabove and as will be exemplified below.

Attention is first directed to FIGS. **1**A to **4**D, illustrating a container assembly generally designated **20**, comprising four containers **22**, **24**, **26** and **28** disposed in a triple stage configuration, the stages designated A, B and C. In the illustrated example containers **24** and **26** of the second stage are half-size and overlap the footprint of the first stage container **22** and the third stage container **28**, wherein the first container **22** is for example a hand tool container and containers **24** to **28** are organizers or the like.

The term 'first container' as used herein denotes a container bearing over a top face thereof at least one other container, said at least one other container denoted herein as a 'second container'. It is thus appreciated that a second container of a container assembly comprising three or more stages of containers' serves as second container when referred to the first stage container, and as a first container when referred to a third stage container mounted thereover. Accordingly, in the illustrated example of FIGS. **1**A-**2**C, container **22** is a first container and containers **24** and **26** are second containers, whilst they function as first containers when discussing locking arrangement with respect to third stage container **28**.

Each of the containers is configured with a lid L constituting a top face of the respective container, said lids being pivotally attached and securely articulated to the respective container through a toggle locking latch **29**. Each top face (see FIG. **1**B) is configured with several depressed locking locations **32** and it is seen that the at least two depressed locking locations are disposed behind one another along imaginary lines I, II and III (though not necessarily aligned).

Each such depressed locking location is in turn configured with a laterally projecting locking rib **36** extending from a rear portion of the depressed locking location **32** towards a front face of the container. The locking rib **36** has a flat top surface **38** substantially flush with a top surface of the respective lid L, and a slanting bottom surface **40**. A front portion **46** of the depressed locking location **32** is slanted too, in the same orientation as bottom surface **40** (i.e. substantially parallel thereto).

Furthermore, the top face, namely lid L of the containers, is configured with at least one locking latch arresting location in the form of a recess **50** disposed at a front portion of the respective top face and configured with a slanted rear wall portion **52** and a right angled front wall portion **53**.

A bottom face **54** of each container **22**, **24**, **26** and **28** is configured with several projecting portions **56**, extending in register with the depressed locking locations **32**, and it is seen that the at least two projecting portions **56** are disposed behind one another along the imaginary lines I, II and III (though not necessarily aligned).

Each projecting portions **56** is configured with a locking tongue **60** laterally projecting rearwards and having a slanted surface **62** corresponding with slanting surface **40** of locking rib **36**. Also, a front portion **66** of the projecting portions **56** slants substantially parallel to the slanted surface **62** of the locking tongue **60**.

It is essential that the at least two depressed locking locations **32** and the at least two projecting portions **56** be disposed behind one another (though not necessarily aligned), as exemplified by imaginary lines I, II and III (though not necessarily aligned).

A plunger-like locking latch **70** is disposed at a front portion of each container, said locking latch **70** disposed in register with the recesses **50** and configured with a slanting rear wall portion **72** and a right angled front wall portion **74**, corresponding with the sloping wall portions of the recesses **50**. The locking latch **70** has an elongate finger engaging aperture **73** (FIG. **2**A) accessible through an aperture **75** formed in register at a front wall face of the respective second container, said locking latch **70** being normally biased to project under force of coiled spring **71**, such that the locking latch **70** is axially displaceable between a projecting, locked position and a temporary retracted position during transition into the locked position.

The locking latch **70** is [illegible] displaceable between its locking position and its release position.

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such that manipulation of the locking latch to disengage it from the locking latch arresting location **50** can be easily facilitated using one hand simultaneously with gripping the carrying handle **80**. As seen in FIGS. **1A-2C**, manipulating the finger engaging aperture **73**, being part of locking latch **70**, is disposed opposite to and at finger-reach distance from the carrying handle **80** when the handle is at its carrying position tilted upwards. This enables a grab, release and go detachment of the second utility module from the first utility module in a simple single-handed operation.

When it is required to detachably attach a second container over a first container, the former is placed over the later (FIG. **3A**), placing the projecting portions **56** within the depressed locking location **32** (FIG. **3B**) with the locking tongues **60** engaging below and being gradually arrested by the respective locking ribs **36** arresting is obtained (FIG. **3C**) until complete arresting is obtained (FIG. **3D**). Simultaneously, as the locking tongues **60** arrest by the locking ribs **36**, the locking latch **70** of the second container slides into the locking latch arresting location (recess **50**) and finally snaps into locking engagement therewith. It is noted (FIGS. **4A** to **4D**) that first (FIGS. **4B** and **4C**) the locking latch **70** displaces upwards against the biasing effect of spring **71**, and when the second container reaches the final locking position over the first container, the locking latch **70** plunges into arresting position within the recess **50**.

At the locked position the second container is attached over the top face of the first container, such that they can be moved as an integrated unit. Detaching of a second container from a first container is easily facilitated by unlocking, obtained by displacing the locking latch **70** upwards against the biasing effect of spring **71**, whereby the second container can be displaced with respect to the first container and detached therefrom.

As further seen in FIGS. **1A-4D**, each of the containers **22**, **24**, **26** and **28**, is configured at a front face thereof with a tiltable carrying handle **80**, for carrying a respective container or the entire container assembly **20**. Also seen, some of the containers can be configured with fender-like protectors **90** at their corners.

Further attention is now directed to FIGS. **5A** to **5E** demonstrating examples of modularity of a container assembly according to the disclosure. FIG. **5A** is a planner top view of a first container **94** and FIGS. **5B** to **5E** illustrate second containers superimposed over the first container **94**. In FIG. **5B** a second container **96** is substantially as big as the first container **94**, i.e. having the same footprint. In FIG. **5C** a second container **98** is as wide as the first container **94**, however narrower in depth, and disposed at a front portion of the first container. In FIG. **5D** two second containers **99A** and **99B** are mounted over the first container **94** and occupy substantially the entire footprint thereof, whereby each of containers **99A** and **99B** is independently attachable and detachable from the first container **94**, as exemplified hereinabove. In FIG. **5E** two second containers **100A** and **100B** are positioned over the first container **94**, occupying the entire width though narrower in depth and extending from a front portion of the first container **94**.

Turning now to FIGS. **6A** to **6K**, there are illustrated several examples of container assemblies, subassemblies and their components. FIG. **6A** illustrates a disassembled container assembly collectively designated **104** and comprising a base container **106**, a chest of drawers module **108** comprising three drawers, a tool caddy module **110**, a compartmented storage module **112** and a half-sized compartmented storage module **114** (typically two of which). It is noted that the base container is configured for locomoting and comprises at a rear thereof wheels **116** and a telescopic handle **118**.

As can be appreciated from FIGS. **6B** through **6D**, various container assemblies are illustrated, the arrangement is such that in practice any module can constitute either a first container or a second container, as defined hereinabove (though it is more likely that base container **106** serves as a first container).

FIGS. **6E** and **6F** illustrate a chest of drawers module **108**, illustrated separately in FIG. **6E** and mounted over a similar drawer module **108** in FIG. **6F**. It is appreciated that the drawers of each module can be locked at their closed position to prevent spontaneous opening thereof whilst carrying a module. Furthermore, each module **108** is configured with a pair of carrying handles **115** disposed at top side wall portions thereof, to facilitate carrying of the module.

In FIG. **6G** there is illustrated a subassembly comprising a first container in the form of a tool caddy module **110** and second container in the form of a compartmented storage module **112** attached thereto, whilst the lid **119** of the first container is open facilitating access to the contents thereof.

Further attention is now directed to FIGS. **7A** to **16B**, showing a third aspect of the disclosure, namely a utility module being a mobile carrier unit and comprising at least one carrier engagement surface, compatible for interlocking engagement in a detachable manner with a first engagement surface of a second utility module. For sake of example only, the second utility module exemplified in the annexed drawings is in the form of a utility container. It is however appreciated that the utility modules can be of any type, shape or size, as discussed hereinabove and as will be exemplified below. Accordingly, the term container unit as used in the following description denotes any type of a utility module, as discussed herein the specification.

Attention is first directed to FIG. **7A**, illustrating a container carrier assembly generally designated **200** comprising a container unit **202** (utility module) mounted on top of a carrier unit **206**. The carrier unit **206** is equipped with a telescopic manipulating handle **210**, a pair of rear wheels **208** and a set of horizontally stabilizing support legs **212** at a front portion of the carrier unit **206**. The carrier unit **206** and the container unit **202** are engaged in an interlocking engagement via their engagement surfaces, i.e. a carrier engagement surface **216** at a top face of the a carrier unit **206** (best seen in FIG. **8A**), and the container unit's first engagement surface **220** (namely its bottom face; best seen in FIGS. **8B** and **8C**). The container unit **202** is configured with yet a second engagement surface **226** (namely the container's top face), simulating the carrier engagement surface **216**. The container unit **202** further comprises a locking mechanism **230** configured for arresting within a respective notch **231** at the carrier engagement surface **216**, to thereby to prevent displacement and separation of the engagement surfaces **216** and **220** once they are interlocked, as later will be explained.

The carrier engagement surface **216** seen in greater detail in FIG. **8A**, illustrates a top perspective view of a carrier unit **206** with the telescopic handle **210** in a retracted position. The carrier engagement surface **216** comprises multiple carrier engaging elements **236**, depressed from the surface, and designated for interlockingly receiving respective container unit's first engaging elements **240**, projecting from the first engagement surface (bottom face) **220** of the container unit **202**.

Each carrier engaging element [illegible] coupler and has a depressed locking location configured

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with at least one locking rib extending above a depressed surface and along a sliding path and having an open edge facing in a first sense. As seen in the drawings, it is generally constituted by a receiving recessed depression **244** in the carrier engagement surface **216**, configured with a pair of facing locking ribs **248**, forming the aforementioned recess. The locking ribs **248** extend substantially parallel to sliding path of the container unit **202** with respect to the carrier unit **206**, said path (designated P in FIGS. **7A** and **10B**). Further noted, side walls **250** of depressions **244** are sloped in order to allow directing of a container unit's first engaging element **240**, mounted upon it, to its interlocking position.

A corresponding coupler configured at the container unit is a so-called male coupler comprising a projecting locking location disposed in register with said depressed locking location and configured with at least one locking tongue extending along said engaging sliding path at a second sense, opposite to said first sense, and configured for arresting engagement at a space between said locking rib and depressed surface. As seen, a single container unit's engaging element **240** is generally constituted a downwardly projecting outwards protrusion **258**, projecting from the bottom face **220** of the container **202**.

In order to lock the container **202** over the carrier unit **206**, upon placing the container **202** over the carrier engagement surface **216** of carrier unit **206** one must mount the container unit's first engaging elements **240** into the depressions **244** and then slide the container **202** along the sliding path P (i.e. towards the locking ribs **248**) so that the engaging elements **240** engage below said projecting ribs/shoulders **248** and the engaging elements **240** are thus arrested at a space between said locking ribs and the depressed surface, as seen in FIG. **9C**. Interlocking engagement of the container (or any other utility module) can be facilitated by a single male-female locking mechanism of the aforementioned type, or by a plurality of such locking mechanism, at any location over the carrier unit **206**.

The shape and size of the locking members is modular as far as the depression **244** in the carrier engagement surface **216**, can be single or double in size (e.g. **236** and **236A** in FIG. **8A**, respectively), so it is large enough to accommodate two container unit's first engaging elements **240**, or two neighboring container unit's first engaging elements.

Locking/engaging and detaching of this configuration is similar to a single locking module.

The engagement and locking mechanism is modular in the sense that any first article can be easily and readily articulated to a surface of any second article, wherein the articulation is strong and firm (i.e. substantially motionless).

With further reference to FIG. **7B**, there are illustrated two containers **202A** and **202B** articulated over one another, the arrangement being such that the bottom face of the intermediate container **202A** serves for engaging with the top face of the carrier unit **206** and likewise, the top face of the intermediate container **202A** serves for engaging with the bottom face of the top container **202B**, as discussed herein above. The arrangement is such that each stage is lockingly secured by the locking mechanism **230**, wherein each stage can be detached from the stage below upon releasing locking engagement of the respective locking mechanism **230**.

The locking mechanism **230** is shown in further detail in FIGS. **10A** and **10B**. The locking mechanism comprises a locking pin **231** normally biased by spring **233** such that a tip **235** projects from a bottom surface of the container **202** (see also FIG. **8B**) and is configured for snap arresting within a respective notch **231** configured at the engagement surface **216** of the carrier unit **206** (seen also in FIG. **8A**).

The locking pin **231** is slidable within a race at the side wall of the container, and comprises a finger manipulating portion at **237** (accessible through an opening at the side wall of the container), for displacing the locking pin, against the biasing effect of spring **233**, into its disengaged position, thus facilitating sliding the container along the path P into disengagement from the carrier unit (or respective other container or utility module). The carrier unit **206** is further configured at a bottom end, with a pair of stability supports **264** (FIGS. **8A**, **11B**), configured for supporting the carrier unit, with or without a container attached thereto, at an upright, i.e. vertical position, thus preventing it from tipping over, in particular with containers or any other utility module articulated thereto. Stability supports **264** can be, according to a particular configuration, an extension of the telescopic handle **210**, whereby the stability supports are functional as such only when the handle is fully contracted. However, in the illustration of FIGS. **16A-16B** the utility assembly **253** is maintained at its upright position owing to said stability supports **264** and further bearing over a side face **266** of the intermediate container **202A**, being substantially flush with a bottom face of the stability supports **264**.

With further reference to FIGS. **12A** to **12C** there is illustrated a modification of articulation between a first utility module (container **300** in the particular example) and a second utility module (two work-piece supports **304** in the particular example). The container **300** is substantially similar to that illustrated in the previous examples, wherein the cover/lid **308** is configured with a plurality of female coupler members **310**, each configured with a depressed locking location and a pair of locking ribs extending above the depressed surface and along a sliding path. The opposing locking ribs **312A** and **312B** have an open edge facing in a first sense (the introducing direction).

In the examples hereinbefore, engagement with a corresponding male coupler took place within the vicinity of a single coupling element, i.e. over two engaging ribs **312A** and **312B** of a single depressed locking location facing each other. However, in the example of FIGS. **12A-12C** engagement of the work-piece supports **304** takes place over two engaging ribs **312A** and **312B** of two neighboring depressed locking locations **308A** and **308B**. Accordingly, the male coupler of the two work-piece supports **304** is configured for arresting with the two engaging ribs **312A** and **312B** by two individual (separate) male couplers **316A** and **316B**, each configured for arresting one of the respective engaging ribs **312A** and **312B**. Arresting of the male projections **316** takes place as discussed before, by arresting below the respective engaging ribs, within the space at the depressed locking location, in spite of the relative narrow body structure of the work-piece supports **304**, they are each configured with a locking mechanism **330**, similar to locking mechanism **230** discussed hereinbefore.

Turning now to FIGS. **13A-13D**, **14A-14C**, **15A-15B**, **16A-16B**, **17**, **18A-18C**, and **19-24**, there are illustrated various examples of utility modules, utility assemblies and various configurations according to the disclosure.

FIG. **13A** illustrates a utility module assembly generally designated **400**, comprising a wheeled base container **402** supporting an intermediate container **404**, bearing in turn a cooler box **406** and a power unit **408** disposed side by side over the intermediate container. At least the intermediate container **404** is configured at a bottom face thereof with a male-type coupling arrangement, for attachment over the cover of the base container, said cover configured with a respective female coupling arrangement. The intermediate container **404** is configured with a similar

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female coupling arrangement, and can thus engage with one the utility modules **406** and **408**, each configured at its bottom face with a respective male-type coupling arrangement.

It is seen in FIGS. **13B** through **13D** that the intermediate container **404** is fitted with a pivotal carrying handle **418** articulated at the top side walls thereof. The carrying handle has a thickness t and the arrangement is such that at the stowed/folded position (FIGS. **13B**, **13D**) the handle **418** is received within a peripheral groove **422** extending over a top edge of the intermediate container **404** and a peripheral groove **424** extending at a bottom edge of the utility modules **408** and **406** (cooler box **406** and a power unit **408**), such that the handle **418** does not constitute an obstacle in mounting and interlocking a utility module over another utility module. It is also seen that at least some of the utility modules are configured with side handles **428** serving both as carrying handles and as bumpers.

FIGS. **14A** to **14C** illustrate a first utility module in the form of a container **430** supporting two detachable workpiece-piece supports **432** (attached as discussed herein before with reference to FIGS. **12A-12C**). FIG. **14C** illustrates a utility module in the form of a work surface **436** configured with a vice race **438**, so that a vice **440**, or other workshop tools can be used. The workpiece-piece supports **432** are configured with a male type coupling having projecting locking locations **444** for engaging with respective female couplers.

In FIGS. **15A** and **15B** there is illustrated a back-rack **450** being a substantially rigid platform having a carrying handle **451** and configured at one side thereof with a pair of adjustable shoulder harnesses **452**, and an adjustable waist harness **454**. The other side of the back-rack is configured as a universal utility mounting platform **458**, configured with a plurality of attachment locations **460**. In the illustrated example all attachment locations **460** are so-called female attachments (as discussed hereinabove in detail), however it is appreciated that the attachment locations can just as well be male-type attachments, or a combination of male and female attachments. According to yet an example (not shown), one side of the carrying platform can be configured with male-type attachments, and an opposite side of the platform be configured with female-type attachments, wherein a used has the choice of attaching the platform to the harness system at an orientation of choice.

In FIG. **16A** there is illustrated a utility module in the form of a wheeled carrying unit **464** (shown from a bottom side), similar to that disclosed in connection with FIGS. **7A** to **11B**. The carrying unit **464** comprises a rigid platform **466** fitted at a top face thereof with a female/male attaching arrangement in accordance with the disclosure, such that any utility module according to the disclosure can be detachably attached thereto. Also provided is a telescopic manipulating handle **468** and a pair of wheels **466**. The carrying unit can be fitted with a collapsible support plate configuring it into a pushcart (not shown).

FIG. **16B** shows a utility assembly **276** comprising a wheeled base container **278** interlocked with a first intermediate container **280** mounted thereover (constituting a second stage of the assembly), and a second intermediate container **282** mounted thereover (constituting a third stage of the assembly **276**), there being yet a fourth stage utility module container **284** mounted over the second intermediate container **282**.

Whilst the second intermediate container **282** has a wider footprint than the first intermediate container **280**, this does not constitute any difficulty as far as attaching it over the second intermediate container **282**, and further, the top face of the second intermediate container **282** has a great surface suited for articulation thereof of several fourth stage utility modules (only one shown).

FIG. **17** shows a carrying bag **281** having soft side walls **283** (in the example illustrated made of fabric), however fitted with (integrally or detachable) an articulation platform base **284**, said articulation platform made of a firm rigid material and is configured with four male-type coupling locations **288** of the type disclosed hereinabove. The carrying bag **281** has a carrying strap **290** useful for hand held or shoulder carrying of the bag.

FIG. **18A** shows a rigid coupling platform **300**, configured with a plurality of female coupling locations (of the type disclosed herein) and further configured with bolt eyes **298** for securing to any desired surface, and carrying bars **313**.

The coupling platform **300** can be attached for example to a truck bed **306** (FIG. **20**), directly over the truck bed or over a cargo container attached to the truck. The coupling platform **300** can be attached to a wall, as in FIG. **18B**, wherein a plurality of various utility modules can be articulated thereto. For example, utility modules can be an electric charger **315** of a power tool, a wall mounted sorting container **314**, a hand tool rack **318** (FIG. **18C**), a tool coupling adaptor **320** (FIG. **18C**), etc.

In FIG. **19** there is illustrated a belt-mount **319** configured as a female coupler according to the disclosure, wherein a tool **321** or a bag/pouch configured with a male coupler can be detachably attached thereto.

In FIG. **21** there is illustrated a wall rack **326** comprising four utility modules in the form of articulation platforms **328** (mountable at different elevations about the wall supports **327**) each configured for bearing and attaching thereto any utility module in accordance with the disclosure.

In FIG. **22** there is illustrated a mobile work stand **340** comprising a wheeled base **342** supporting two racks **344** with four utility modules in the form of articulation platforms **346** (mountable at different elevations about the wall supports **327**) each configured for bearing and attaching thereto any utility module (e.g. containers **348**) in accordance with the disclosure.

In FIG. **23** the utility module is in the form of a dolly **352** configured with wheels **354** and having a top surface configured with an array of female type couplings, as discussed.

In FIG. **24** there is illustrated a utility coupling platform **358** suited for articulation to any desired article (e.g. a bag, a tool, etc.). The utility coupling platform is configured at least at one face thereof with a male coupling locations **360** mimicking the coupling arrangement of the disclosure, rendering it suitable for articulation with a coupling system according to the disclosure.

What is claimed is:

1. A container assembly comprising:

a first container comprising:

a first coupler extending from a first face of the first container, the first coupler comprises two sidewalls, a back wall, and a rib, the back wall extends between the two sidewalls, the two sidewalls and the back wall project from a depressed surface of the first face, and the rib extends from the back wall in a first direction above the depressed surface; and

a latch recess; and

a second container comprising:

a second coupler extending from a second face of the second container, the second coupler includes a tongue that is offset [illegible] and extends in a second direction opposite the first direction, the

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tongue of the second container is engageable with the rib of the first container; and

a latch coupled to the second container, the latch positionable in a locked position in which the latch prevents disengagement of the first container and the second container when the tongue and rib are engaged.

2. The container assembly of claim 1, wherein the first and second couplers on the first and second containers, respectively, engage when the first and second containers are slid along a sliding path defined by the rib and the tongue.

3. The container assembly of claim 1, wherein when the tongue and rib are engaged:

a first side wall of the first coupler and a second side wall of the second coupler interface to restrict displacement between the first container and the second container in a third direction perpendicular to the first direction and parallel to the first face of the first container.

4. The container assembly of claim 1,

the first container further comprising:

a third coupler extending from a second face of the first container, the third coupler including a tongue that is offset from the second face of the first container and extending in the second direction, the tongue of the first container configured to engage a rib of a third container, the first and third containers entering an engaged position by the third container sliding with respect to the first container; and

a latch coupled to the first container, the latch positionable in a locked position in which the latch prevents disengagement of the first container and the third container when the tongue of the first container and the rib of the third container are engaged.

5. The first container of claim 1, wherein the first coupler extends from a bottom face of the first container, and the second coupler extends from a top face of the second container.

6. The first container of claim 1, wherein the first face comprises a plurality of depressed surfaces, one of which the rib extends above, and wherein the plurality of depressed surfaces of the first face comprise at least 50% of the area of the first face.

7. A first container configured to be removably coupled to a second container, the first container comprising:

a top face;

a bottom face; and

a first coupler extending from a first face of the first container that is one of the top face and the bottom face, the first coupler comprises a tongue that is offset from the first face and extends in a first direction;

a second coupler extending from a second face of the first container that is the other of the top face and the bottom face, the second face comprising a plurality of depressed surfaces, the second coupler comprises a back wall, two sidewalls, and a rib, the back wall and the two sidewalls project from one of the plurality of depressed surfaces of the second face, the rib offset from the second face and extends above the one of the plurality of depressed surfaces in a second direction opposing the first direction, the rib engageable with a second tongue coupled to a second container, the first container enters an engaged position with the second container by the first and second containers sliding with respect to each other, wherein the plurality of depressed surfaces of the second face cover at least 50% of the second face;

a latch recess; and

a latch, the latch positionable in a locked position in which the latch interlocks with a second latch recess in the second container restricting displacement between the first container and the second container.

8. The first container of claim 7, wherein the rib is engaged between the second tongue of the second container and a first face of the second container when the first container is removably coupled to the second container.

9. The first container of claim 7, the first coupler of the first container engageable with a second rib of a third container.

10. The first container of claim 9, the latch recess of the first container engageable with a second latch of the third container.

11. The first container of claim 7, wherein the first face of the first container is the bottom face of the first container, and the second face of the first container is the top face of the first container.

12. A container assembly comprising:

a first container comprising:

a first coupler extending from a first face of the first container, the first coupler comprises two sidewalls, a back wall, and a rib, the back wall extends between the two sidewalls, the first face comprises a plurality of depressed surfaces, the back wall and the two sidewalls project from one of the plurality of depressed surfaces, the rib extends from the back wall in a first direction above the one of the plurality of depressed surfaces, the plurality of depressed surfaces of the first face cover at least 50% of the first face; and

a latch recess; and

a second container comprising:

a second coupler extending from a second face of the second container, the second coupler includes a tongue that is offset from the second face and extends in a second direction opposite the first direction, the tongue of the second container is engageable with the rib of the first container; and

a latch coupled to the second container, the latch positionable in a locked position in which the latch prevents disengagement of the first container and the second container when the tongue and rib are engaged.

* * * * *

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(54) **STORAGE ARRANGEMENT CONSISTING OF TWO PARTS SUCH AS TOW CASES OR ONE CASE AND ONE LID**

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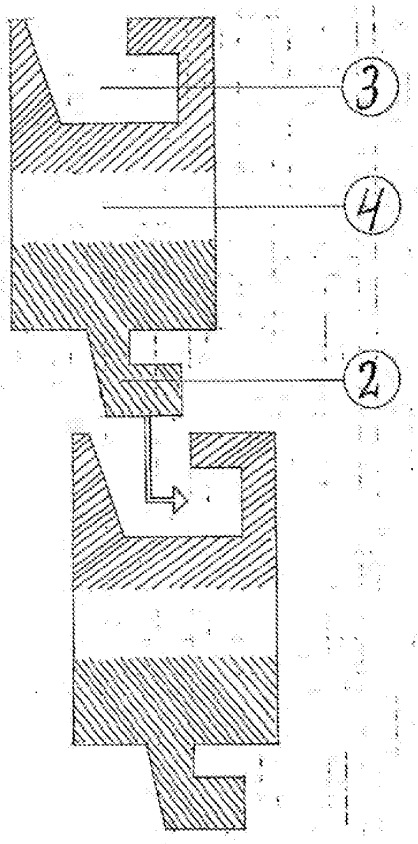
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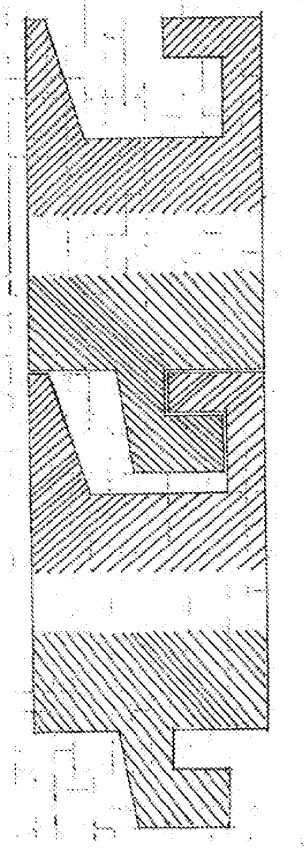
(51) **Int. Cl.**
B65D 21/036 (2006.01)

(52) **U.S. Cl.** **206/508**

(57) **ABSTRACT**

The storage facility for coupling of at least one box and at least one lid is comprised of coupling units as shown in FIG. 2, bottom bridge **2** on the top box and top bridge **3** on the lower box. These must be tightly engaged via the conic flanges **14** +**38** and subsequently locked in the gear via transport lock **7**. The primary objective of the invention is to provide a new and functional storage system for tools, equipment and minor parts, which makes it easy to locate what you are looking for and where the objects are easy and fast accessible. Furthermore, it is possible to produce the invention in an inexpensive way and still make it robust and easy to assemble as well as disassemble in only a few seconds.





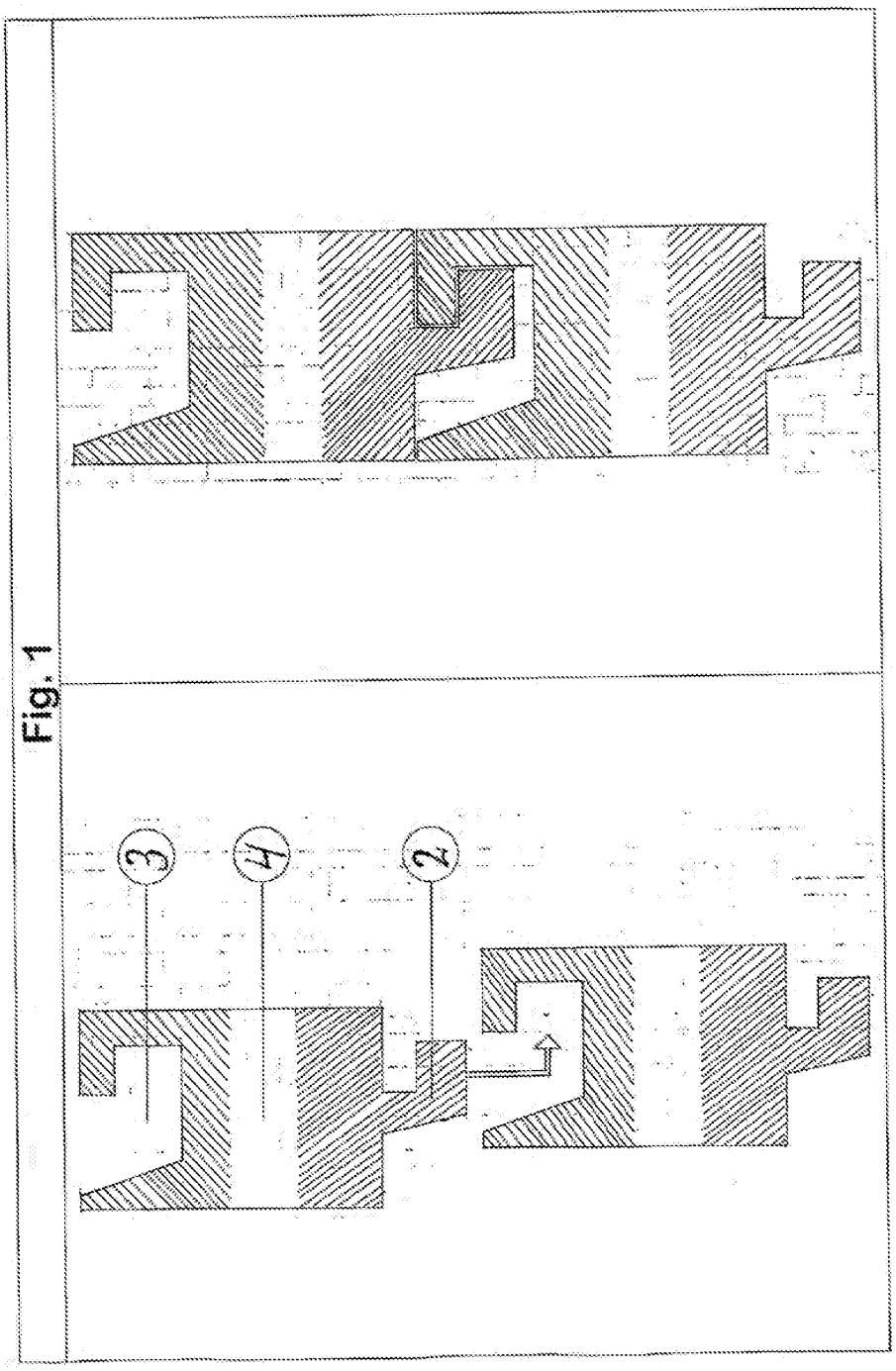


Fig. 1

Fig. 4

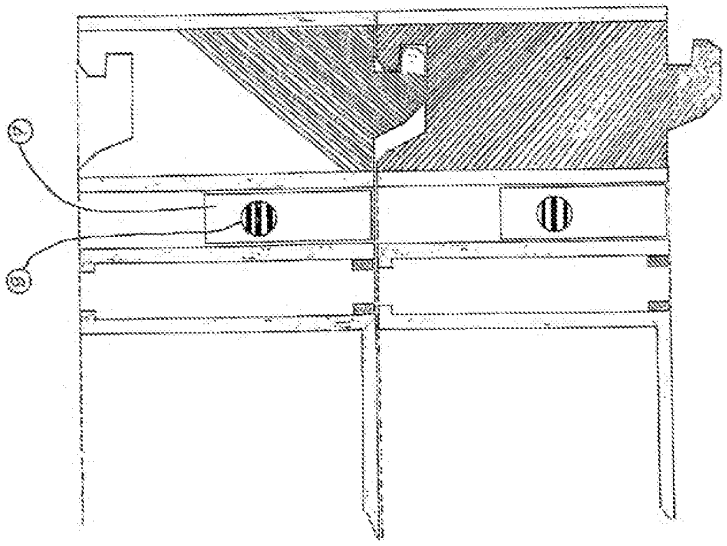


Fig. 3

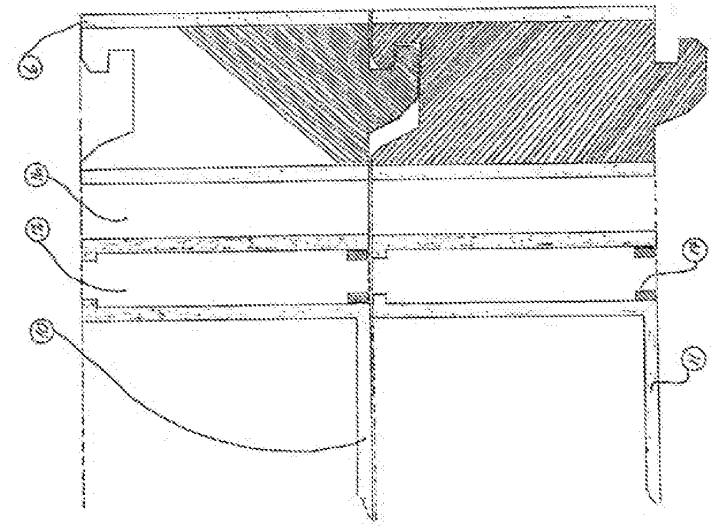


Fig. 2

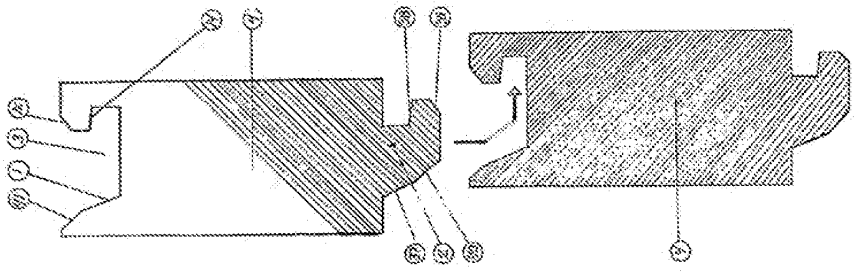


Fig. 7

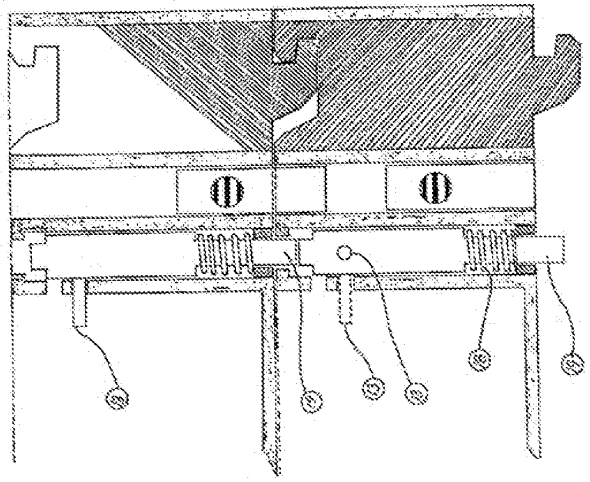


Fig. 6

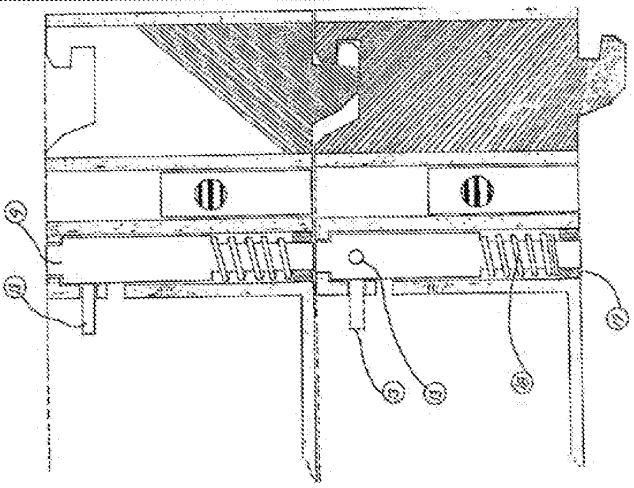
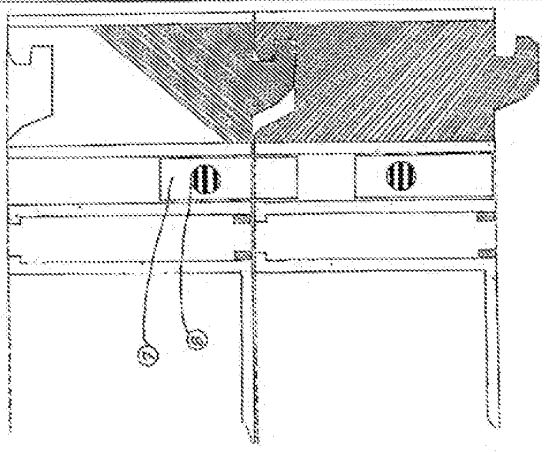


Fig. 5



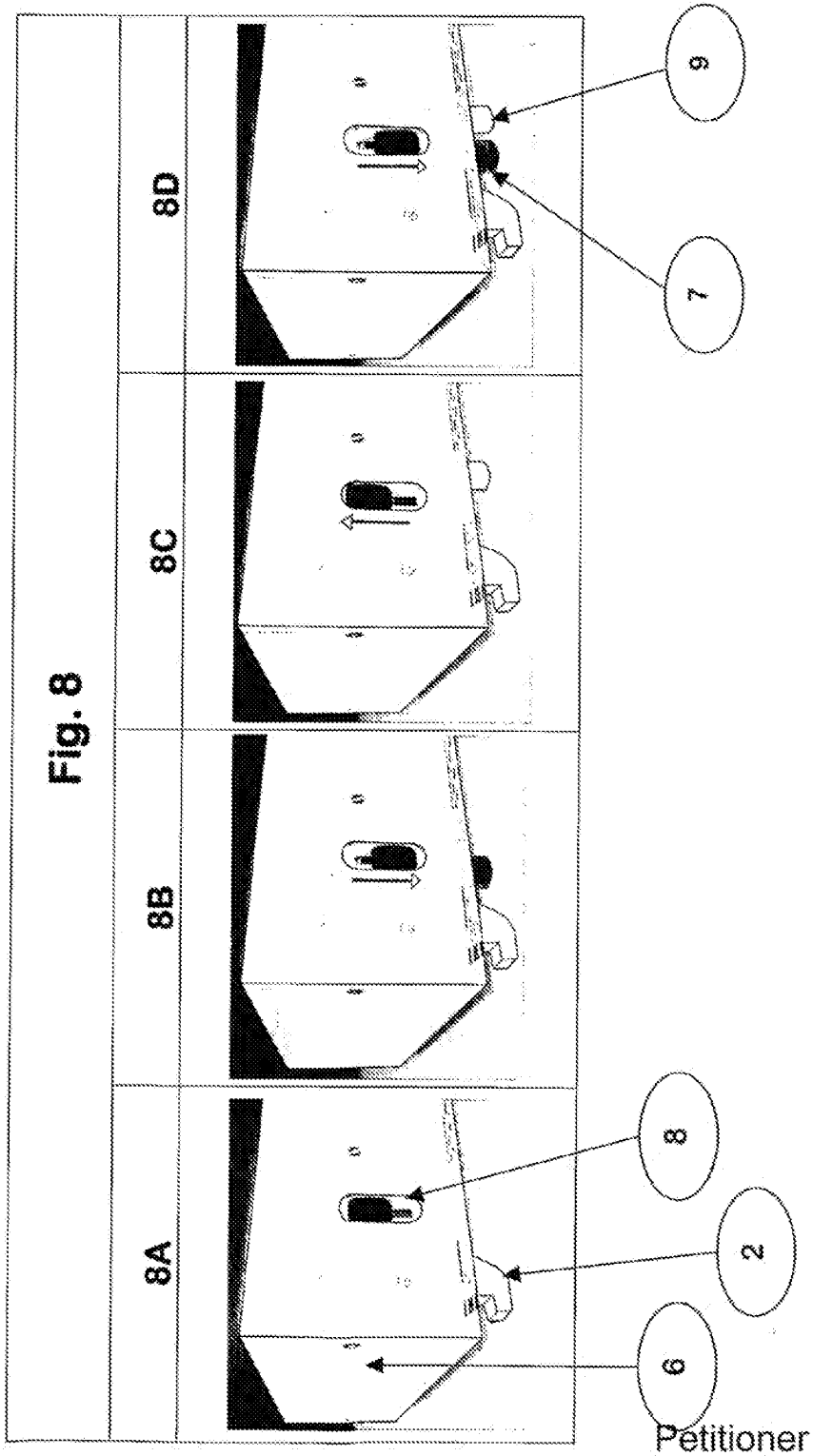
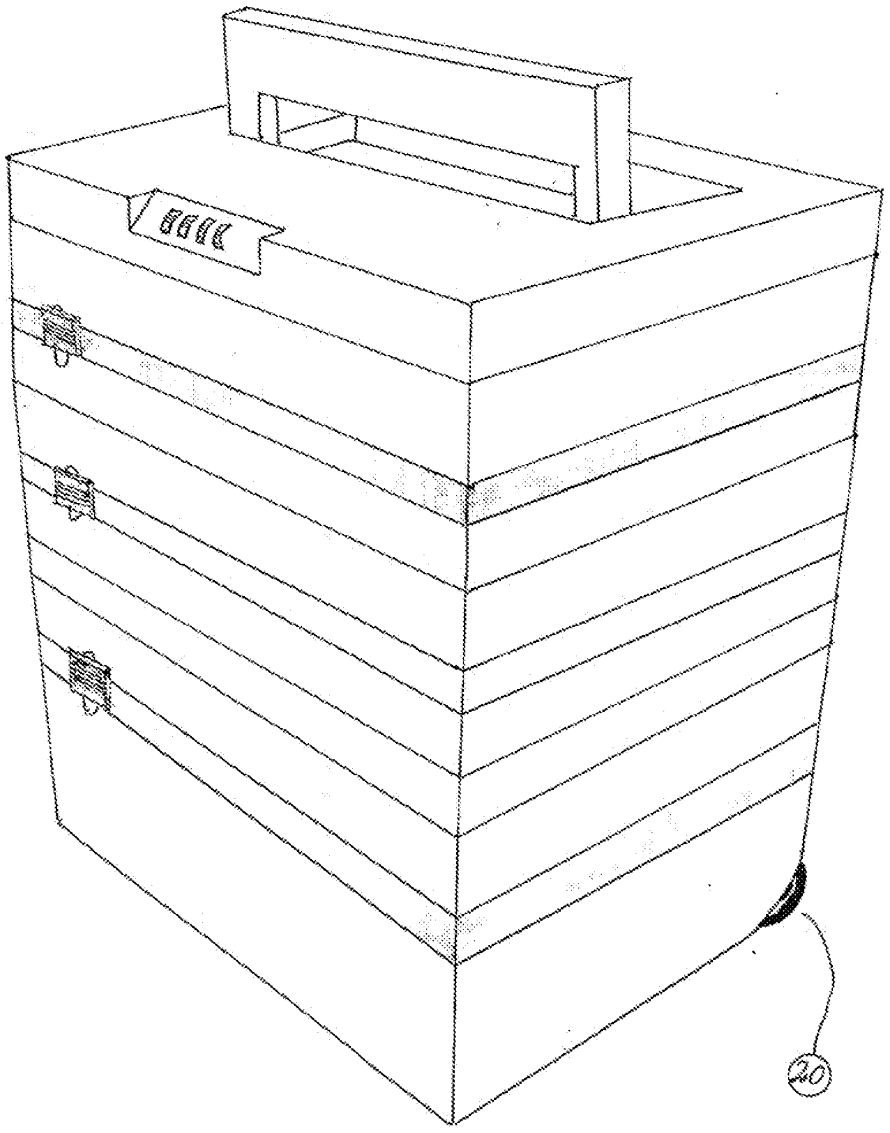


Fig. 8

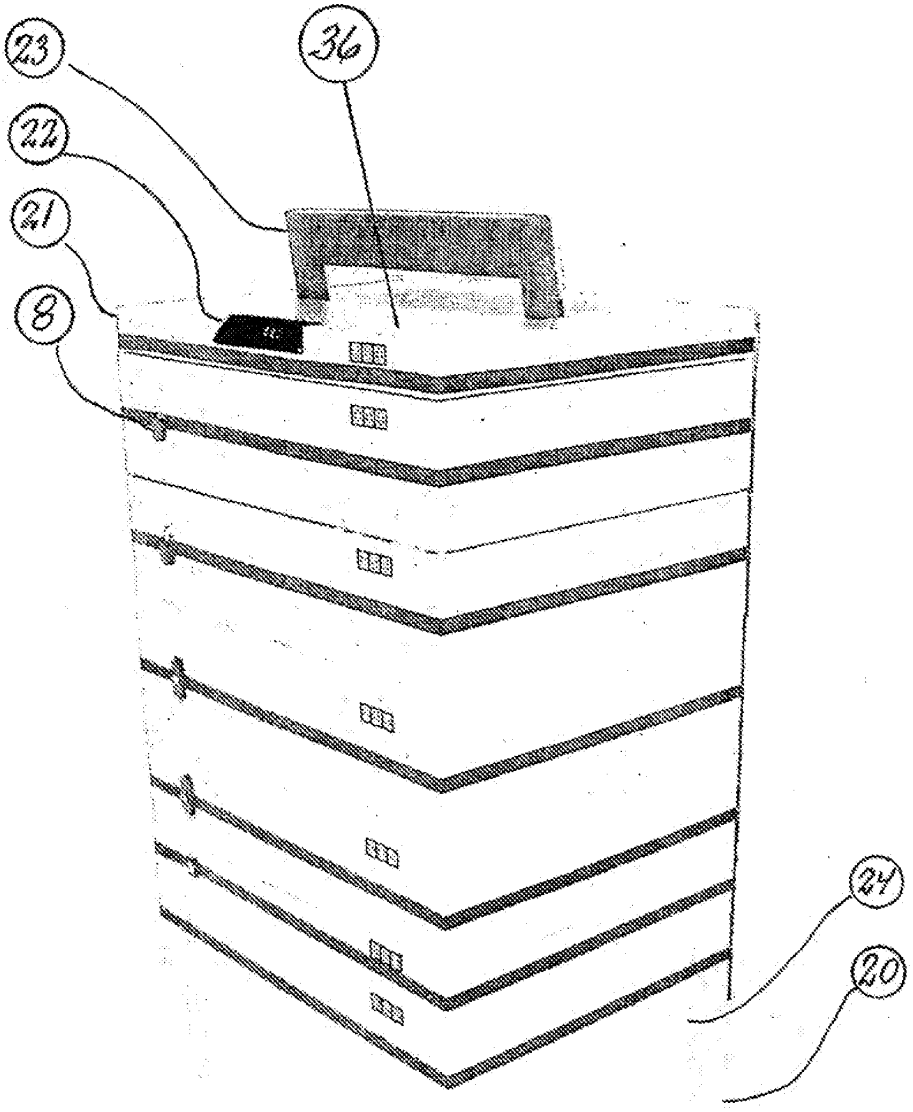
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Fig. 9



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Fig. 10



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Fig. 11

Fig. 12

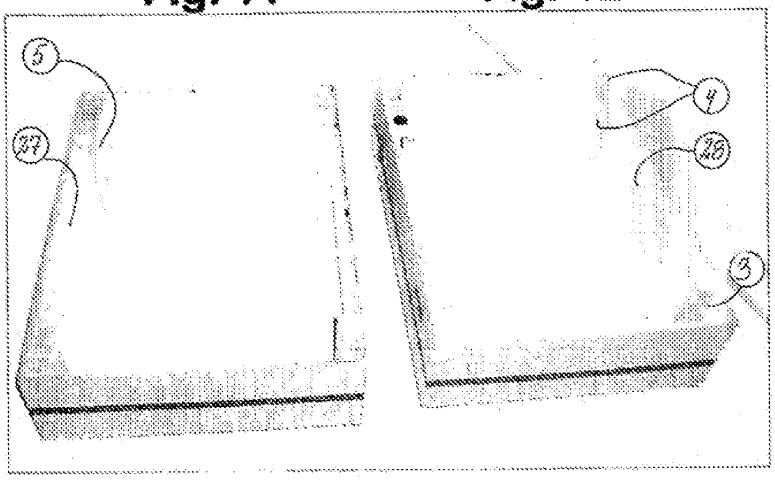


Fig. 13

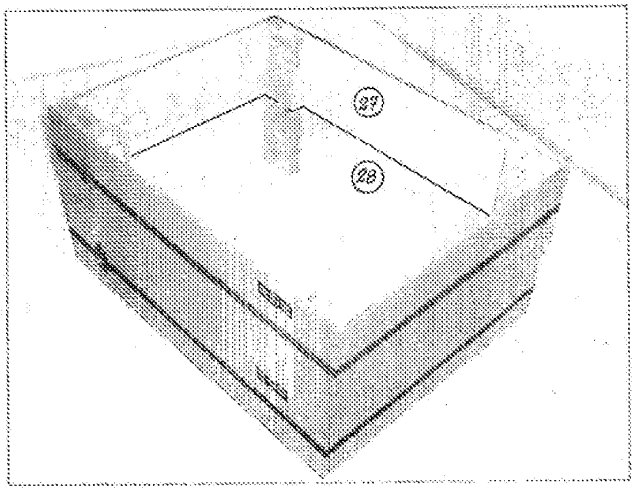
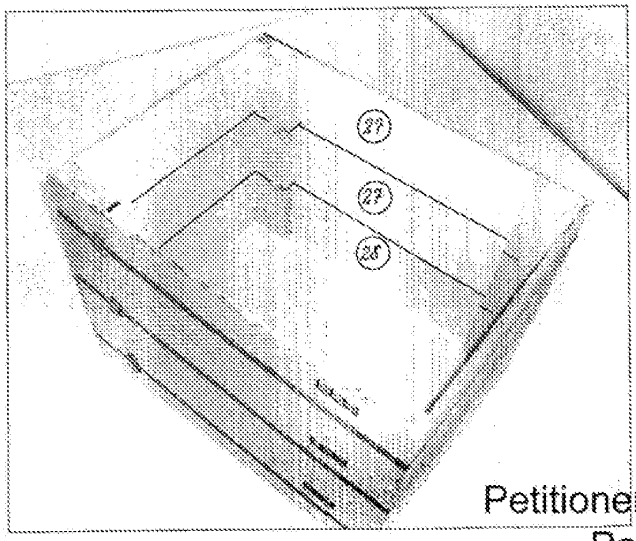


Fig. 14



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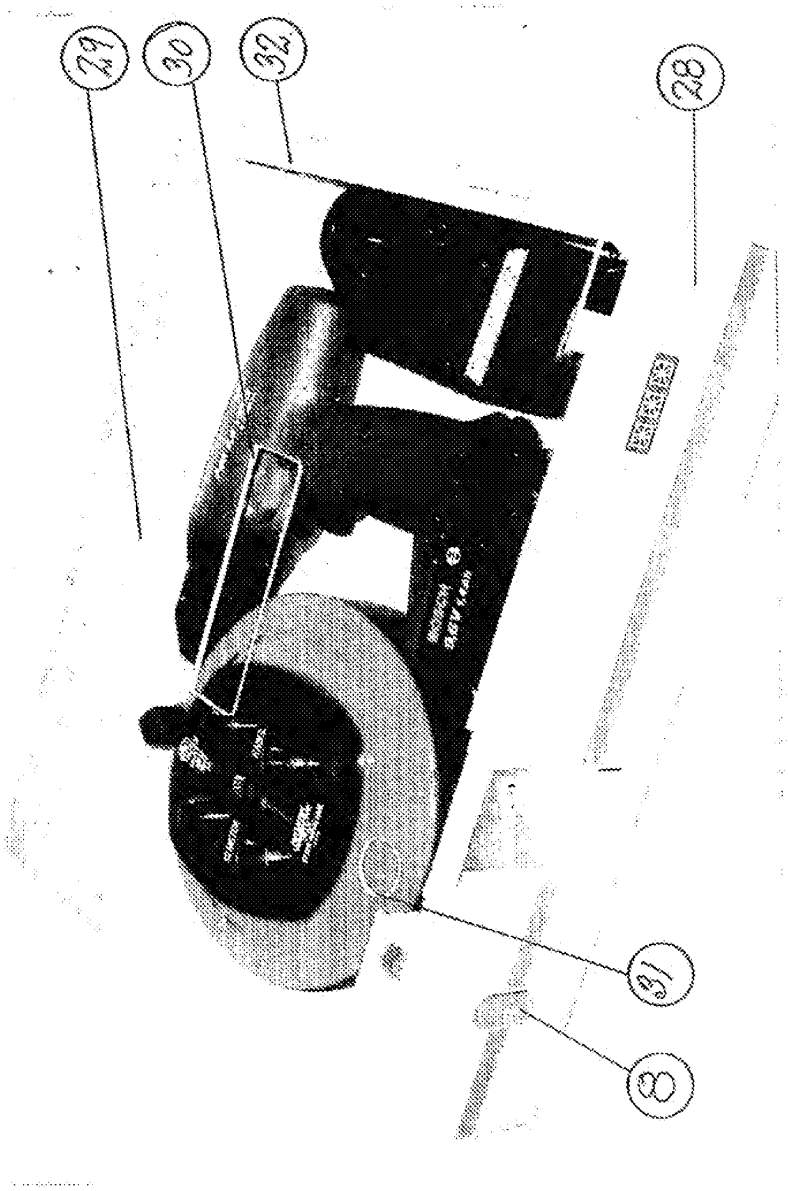


Fig. 15

Fig. 16

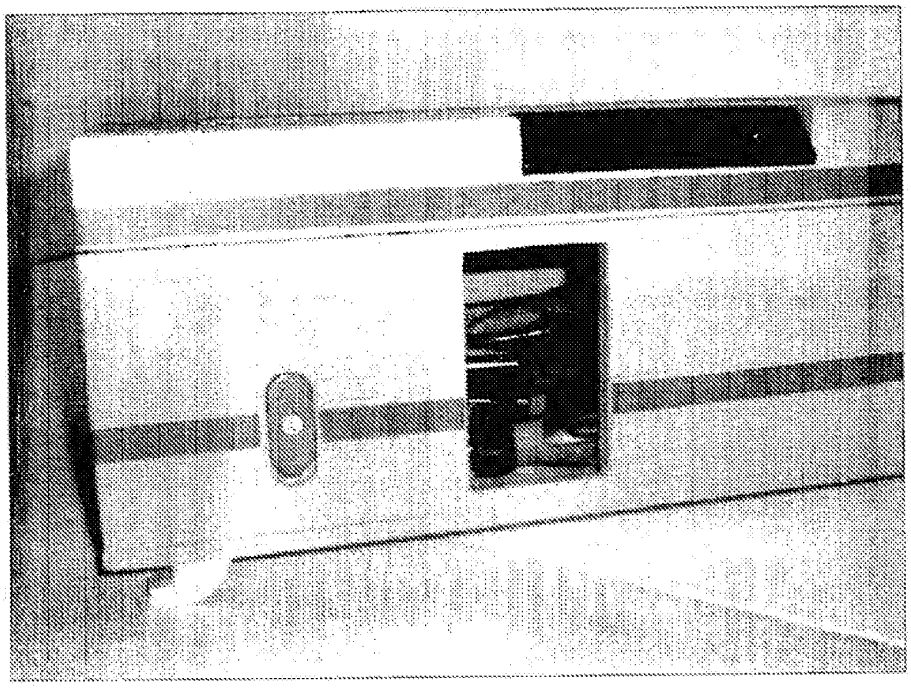
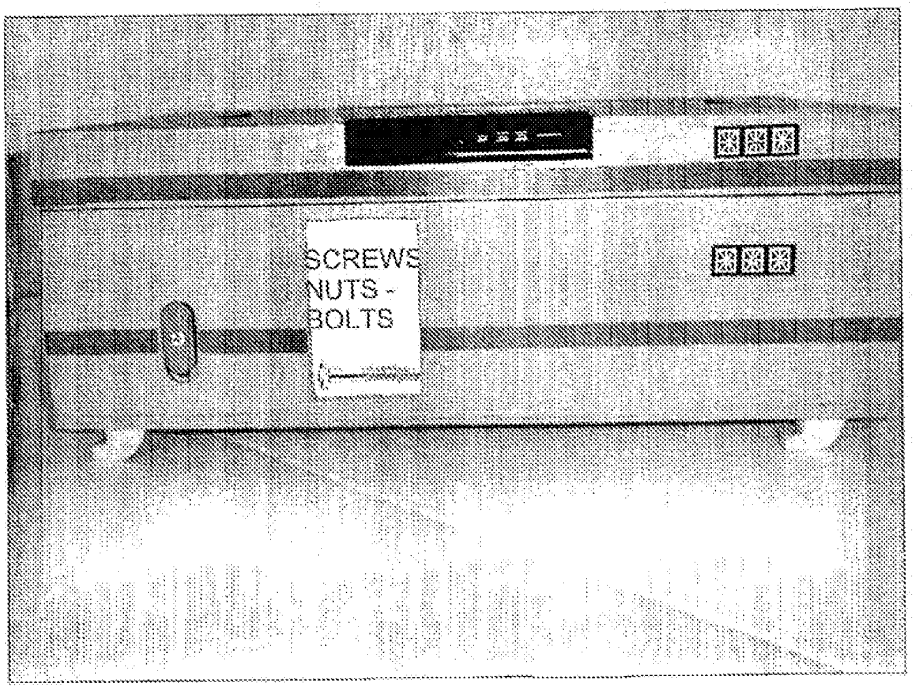


Fig. 17



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STORAGE ARRANGEMENT CONSISTING OF TWO PARTS SUCH AS TOW CASES OR ONE CASE AND ONE LID

[0001] The invention concerns a storage arrangement that includes two parts such as two cases or one case and one lid, which parts can be stacked and connected to each other and where each part has two opposite gables and by a coupling unit in each of the two gable corners for separable connection of the two parts in stacked condition, caused by the four coupling units having one in each corner, is arranged to cooperate with the coupling units of an underlying case or lid, which also are placed in the four corners.

[0002] The bottom part of each case is in each of the four corners provided with a bottom bridge and in the four corners of the top part with a top bridge. When the bottom bridges of the top case are placed above the opposite top bridges of the lower case they will easily get in gear and with a slight sidewards push be brought into a tight and compact condition. A transport lock placed in tight connection to one of the connecting bridges (bottom- and top bridges), can be activated outside the case with a little downwards push and provide a blocking for separation of the four sets of connecting bridges and as such also for separation of the two cases or case and lid. As such cases can be connected unlimited. A craftsman f. inst. can have a set of cases (tower) existing of six-eight cases on top of each other. The value of tools and technical equipment in f. inst. six-eight cases can be extremely high and it can be desirable to lock the whole system (tower). A lock against theft can be integrated in the system with a blocking lock only operational inside the cases. A spring loaded security lock in full height of all cases can be activated with a downwards push and then be locked with a little twist. If f. inst. six cases are stacked on top of each other it will be possible with a push on the security lock on the top case to activate all the security locks of all underlying cases. On the top case a lid with a handgrip can be placed and on the lid can be placed a lock, f. inst. a digital code lock. During this, the whole case system (tower) is locked.

[0003] Cases with lids that can be connected are available in various designs and sizes and are being used in many connections. Many tool cases are available with various features.

[0004] Normally tool cases and stackable cases are designed with a hinged lid. There are stackable cases with hinged lid that in principle can be stacked and connected unlimited.

[0005] The coupling for these case systems normally takes place with snaplocks and/or locking clips. Snaplocks can be springloaded and provide automatic locking. Locking clips normally have to be operated by hand for both locking and unlocking. The disadvantages by these locking clips are that they by low temperature can be tight and difficult to operate (broken nails). They can also be worn, break into pieces and because it is a separate component it can fall off and disappear, where after the system does not work anymore. With a well known case system the coupling is made via four locking clips per case. By coupling of f. inst. six cases it means five cases with each four locking clips=in total twenty locking clips to be pressed in locking position. By separating the case system the process has to be repeated with twenty times finger releases. Furthermore it is a well known disadvantage by existing coupling systems that the coupling is not tight and compact and leaves a space in between the cases from 1.5 to 3.0 mm when lifting in the top case or top lid (accordion effect).

[0006] Coupling with snaplocks can be automatic in the locking process and as such very quick. Very often these snaplocks are separate components that can be worn, come to pieces or fall off. In addition these locks will not establish a tight and compact coupling and therefore not provide the desired breaking strength and wearing quality.

[0007] The purpose with the invention is to provide a connecting bridge for stackable cases and lids that can raise the desired and needed demand for strength and to avoid breakage in connection with daily use, wear and tear and in addition a simple and quick operational system. Other points and functions are also a part of the invention and are described following.

[0008] The purpose with the invention is considered by a storage arrangement as described in the introduction to claim 1 that is characteristic by that in each of the four corners of the storage arrangement (case) a connecting bridge is moulded together from top to bottom of the case. The connecting bridge is constructed with a top bridge on top and in bottom a bottom bridge.

[0009] By coupling of two cases the bottom bridges of the top case will meet the top bridges of the lower case and they will easily fall in gear because of the conical catch flanges on both top- and bottom bridges. The final coupling is made by a slight sideward push on the top case. To secure this coupling, are by at least one of the four connecting bridges moulded together two vertical houses for locking (columns). In one of these is placed a vertical lock (transport lock) that can be operated from outside the case and with a slight downwards push bring the transport lock in a blocking position and secure that all four top bridges and bottom bridges are in gear.

[0010] The other vertical column for locking can be used as a security lock as described following.

[0011] Because of the special design of the conical top- and bottom bridges the coupling can happen very quick and a push on the locking knob placed outside the case will bring the transport lock in blocking position tight to the connecting bridge.

[0012] The four connecting bridges are placed in the outer corners of the cases and as such providing optimal strength and stability in the coupling. The connecting bridges including top- and bottom bridges are moulded together with the gable, sidewall and bottom of the cases and as such providing optimal strength and stability.

[0013] The connecting bridges are moulded together with the case and as such there are no loose components that can be worn, go apart, fall off and disappear.

[0014] Because of the construction where all the basic elements of the case are moulded together a very advantageous and inexpensive cost price can be obtained.

[0015] Alternatively to four connecting bridges per case it could be considered for lighter and private use only to use two connecting bridges, f. inst. one in each gable of the case. Because of the construction with the conical locking frames on top- and bottom bridges and combined with the accuracy available by plastic moulded subjects it will be possible to avoid accordion effect because the coupling will be tight and without wobble.

[0016] This also provides a robust impression in connection with the security lock and use of the system (tower) as a sack trolley.

[0017] The transport lock keeping the top- and bottom bridges in tight gear can be [illegible] outside the cases. The process of locking and unlocking will only take one second.

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[0018] The locking column for the security lock is moulded together with the case and the connecting bridge for optimal strength and stiffness. The security lock is in same height as the outer dimension of the case and is equipped with a push spring that at all time will try to position the security lock within the height of the case.

[0019] The security lock is being activated by a downward push from above and will after four to six mm's movement provide a total blocking and as such secure the coupling. The security lock has a locking arm that can be twisted, get in gear and fix the locking.

[0020] If f. inst. six cases are stacked on top of each other the six security locks will in principle be in contact with each other meaning that when the security lock of the top case is activated downwards the security locks of all underlying cases will be brought in blocking position and the final locking with the small locking arm is only needed inside the top case. The security lock can only be operated inside the cases. When the small locking arm in the vertical house for locking is turned back again the push spring will bring all six locks back to the starting point. Upon the top case will be placed a lid with an integrated lock f. inst. a digital padlock and the whole system is locked up.

[0021] As such the security lock is extremely quick to operate for unlocking the system (tower) f. inst. consisting of six cases. Some users could choose to use the security lock as transport lock because only one action (one second) is needed for locking or unlocking the whole tower.

[0022] Both transport- and security locks are very robust and strong caused by the construction in which they are placed in the vertical houses moulded together with the gables, sidewalls and bottom of the cases.

[0023] The four bottom bridges can be provided with small rubber shoes and then be used as feet, which will protect against dust and scratches on the cases as well and on tables, shelves and floors on which the cases might be placed.

[0024] By a selection of extension walls (cases without bottom) existing height of the cases can be enlarged and the volume of the cases will also be enlarged. The extension walls also have a connecting bridge in each of the four corners and can as such be coupled and locked random with the other cases. If f. inst a case is 100 mm high and two extension frames of each 100 mm are placed on top the height of the case will be 300 mm.

[0025] With a case system, as here mentioned, with extreme tight and compact connection it is obvious to provide a rolling transport of the set (tower). A bottom box has two wheels that only will obtain contact to the foundation by a 15° backwards inclination. Because the whole set (tower) is very compact and stiff it will in principle be possible to transport it as an ordinary sack trolley.

[0026] A transparent lid (possibly disposable) means that a supplier of machines, hand tools, accessories, screws, bolts, etc. can prepare and pack "a set", place the transparent lid on top of the case and seal it. With this the end user (final customer) is secured, that "the set" is complete in the buying situation and when sealing is broken.

[0027] A small opening locked with a transparent plate in the walls of the cases provides a visual view to the contents of the cases. The transparent plate is placed in an insert frame and can easily be replaced by a not transparent plate on which can be indicated contents etc. Without any indications this plate will simply just block for view into the case.

[0028] The invention also concerns the practical use.

[0029] With the previous mentioned basic ideas and features the modern craftsmen can look forward to a more organised and structured separation, handling and transport of tools, equipment, etc.

[0030] With the quick disassembly and assembly of the cases, combined with the visual overview of the contents the craftsmen can choose and couple together exact the cases needed for today's work. The transport of the set is wheeled (sack trolley concept).

[0031] Following the invention will be described with reference to the enclosed drawings and photos.

[0032] FIG. **1** showing two connecting bridges assembled and disassembled.

[0033] FIG. **2** showing two connecting bridges disassembled and with more details inclusive conical locks and catch flanges.

[0034] FIG. **3** showing two cases in which the connecting bridges in the corner unit are moulded together with the houses for transport- and security lock.

[0035] FIG. **4** showing the same as FIG. **3** but now with the transport lock in both cases.

[0036] FIG. **5** showing the same as FIG. **4** but with the transport lock of the top case in blocking position.

[0037] FIG. **6** showing the two cases with both transport- an security, lock in neutral position.

[0038] FIG. **7** showing the same as FIG. **6** but with the security lock in blocking position on both top- and bottom case.

[0039] FIG. **8** showing transport- and security lock in the four possible positions in respectively **8**A-**8**B-**8**C-**8**D. The gable of the case is marked on **8**A.

[0040] FIG. **9** showing a set of stacked cases (tower) where one of the two integrated transport wheels can be seen lowest at right.

[0041] FIG. **10** showing a set of cases (tower) with lid, code lock and carrying-grip.

[0042] FIG. **11** showing an extension frame without bottom but with the four connecting bridges.

[0043] FIG. **12** showing a 100 mm high standard case.

[0044] FIG. **13** showing a 100 mm high standard case with a 100 mm high extension frame placed and the transport lock is locked.

[0045] FIG. **14** showing a standard case with two extension frames on top.

[0046] FIG. **15** showing a case with a drill and a cable reel as a packed set. Closing of the case can be done with a transparent lid that can be sealed. It means that both the retailer and the end user can be sure that the set is complete.

[0047] FIG. **16** showing a case with an inside insert frame with a transparent window for view into the contents of the case.

[0048] FIG. **17** showing a case like in FIG. **16** on which the transparent window is replaced be a plate for indication of the contents.

[0049] Following the invention will be described with reference to the enclosed drawings/photos and the reference numbers used.

[0050] On FIG. **1** is shown the basic drawing of the connecting bridge (**4**) on which the bottom bridge (**2**) is framed like a downwards positive L-profile (male) which falls in gear with the top bridge (**3**) of the underlying case which is framed like a negative L-profile (female).

[0051] On FIG. **2** is shown the top bridge (**3**) with a direct frame (**1**) which will meet the catch flange (**40**) on the bottom bridge (**2**). To simplify and [illegible] placing of the top case on the lower case are both top bridge (**3**) and bottom bridge (**2**) provided with conical catch flanges (**40**).

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41) and (39+40). To secure a right and compact coupling both top bridge (3) and bottom bridge (2) are constructed with conical locking frames (14+38). When top case (10) is placed on top of the lower case (11) the direct frame (1) and the conical catch flange (40) will automatically bring the coupling parts in gear. A slight sideward push will bring the connecting bridges (4) in tight gear and as shown on FIG. 5 the transport lock (7) will block for disassembly and keep the connecting bridges in tight and compact coupling. The transport lock (7) can be activated outside the case by locking knob (8). As it appears on FIG. 5 the transport lock (7) is placed very close to the connecting bridges (4) and thus the coupling is free from wobbles and slack and at the same time robust and almost impossible to break open.

[0052] On FIG. 6 is shown the security lock (9) placed in mutual connection with connecting bridge (4) and transport lock (7). Security lock (9) is assembled with a push spring (18) and the set is placed in house for security lock (12) and fixed with a press bushing (17) which at the same time controls and supports the locking tap (19).

[0053] As it appears on FIG. 6 and FIG. 7 the two security locks (9) are in contact with each other. When the security lock (9) of the top case is pushed downwards it will automatically move the security lock (9) in the lower case downwards. At the same time the locking tap (19) of the top case is positioned in blocking position with the house for security lock (12) on the lower case.

[0054] It means that the security lock (9) of all upon each other placed cases can be activated by just activating the security lock (9) of the top case. Following the final locking can be made by a little twist with locking arm (13). A fine point could be to use the security lock as transport lock. All stacked cases locked via one activation of the security lock (9) of the top case. Spend of time: 1 second.

[0055] All shown examples only show open cases stacked and with a lid on top. If one want a case cases with lids stacked, meaning a case+a lid+a case+a lid etc., it is possible because both the transport lock (7) and security lock (9) can be integrated in the separate lid which then can be stacked and locked with the same system as in the cases, although with a hole in the lid for activating the security lock (9).

[0056] On FIG. 9 and FIG. 10 is shown a stacked set (tower 36) with the special bottom case (24) in which the two transport wheels (20) are integrated. The tower (36) is finally on top closed with a lid (21) with carrying grip (23) and a code lock (22).

[0057] FIG. 11 shows an extension frame (27) without bottom. The corner unit (5) can also be seen here.

[0058] FIG. 12 shows a standard case (28) with bottom and connecting bridge (4) and top bridge (3).

[0059] FIG. 13 shows a standard case (28) and an extension frame (27) coupled together.

[0060] FIG. 14 shows the same example but with two extension walls (27). As it can be seen it gives a great flexibility to adjust cases in different heights.

[0061] FIG. 15 shows a standard case (28) in which a drill and a cable reel is placed. This kind of "combination-pack" is often used by manufacturers as promotional idea for machines, accessories, screws, bolts, nails, plugs etc. It is highly essential for as well manufacturer, retailer and the final end user to be sure that "the set" is complete.

[0062] The innovation is here that a transparent lid (29) is placed in a countersinked frame (32). A sealing can be made by a warm-up/melting into the frame or alternatively via one or two hot melted straps. A carrying grip (30) as well as a hole (31) for the security lock (9) is a possibility, when the transparent lid is wanted for future and continuous use. The transport lock (7) can be operated from outside with the locking knob (8).

[0063] FIG. 16 shows the case with a transparent window (33) that inside the case is pushed down in an insert frame (34). The same insert frame (34) is used on FIG. 17 but with the transparent window replaced by a plate (35) for indication of contents.

1. Storage facility comprising two or more boxes or a box and a lid, all parts that can be stacked and interconnected and where the boxes or lids have opposite facing gables and where the connecting bridge (4) is placed in the four corners or with one connecting bridge (4) on each of the opposite facing gables, whereby the bottom bridge (2) of the upper box or lid interconnects with the top bridge (3) of the below box or lid characterized by the bottom bridge (2) of the top box or lid being shaped as a downward pointing L profile (male part), which interconnects with the top bridge (3) of the below box, which is shaped as an L profile (female part).

2. Storage facility according to requirement 1 characterized by having the four connecting parts in the four outer corners of the boxes or lids.

3. Storage facility according to requirements 1-2 characterized by the connecting parts being cast together with the bottom and side walls of the boxes and the top and side walls of the lids.

4. Storage facility according to requirements 1-3 characterized by the connecting parts being cast together with boxes or lids and connecting via the four cast-in connecting parts.

5. Storage facility according to requirements 1-4 characterized by a construction that allows injection moulding of box and connecting parts or lid and connecting parts in one process.

6. Storage facility according to requirements 1-5 characterized by one or more of the connecting parts being cast together with a locking column.

7. Storage facility according to requirements 1-6 characterized by a construction that creates very close contact between connected boxes and lids.

8. Storage facility according to requirements 1-7 characterized by one or more of the connecting bridge being cast together with a cavity in which a security lock is placed.

9. Storage facility according to requirements 1-8 characterized by having a plexiglass in front of the catch on the locking device.

10. Storage facility according to requirements 1-9 characterized by the security locks' proximity to the connecting bridges and the fact that the security locks will interact with the below security locks, when the boxes or lids are placed on top of each other.

11. Storage facility according to requirements 1-10 characterized by having small soft rubber buttons underneath the four bottom bridges.

12. Storage facility according to requirements 1-11 characterized by wall systems, which are boxes without bottoms and with the same connecting system as boxes and lids.

13. Storage facility according to requirements 1-12 characterized by having transparent glass or plexiglass in the box gables or sides.

14. Storage facility according to requirements 1-13 characterized by having one bottom box with two transport wheels.

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US008875888B2

(12) **United States Patent**
Koenig et al.

(10) **Patent No.: US 8,875,888 B2**
(45) **Date of Patent: Nov. 4, 2014**

(54) **STACKABLE CONTAINER ASSEMBLY WITH RECIPROCAL LOCKING OF THE STACKED CONTAINERS**

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(73) Assignee: **TTS Tooltechnic Systems AG & Co. KG**, Wendlingen (DE)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 260 days.

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§ 371 (c)(1),
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PCT Pub. Date: **Jan. 6, 2011**

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B65D 21/02 (2006.01)

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CPC ***B65D 21/0223*** (2013.01); *B65D 2525/288* (2013.01)
USPC **206/508**; 206/503; 206/511

(58) **Field of Classification Search**
CPC .. B65D 21/02; B65D 21/032; B65D 21/0223; B65D 2525/288
USPC 206/308, 425, 503, 511; 220/380, 761, 220/781
See application file for complete search history.

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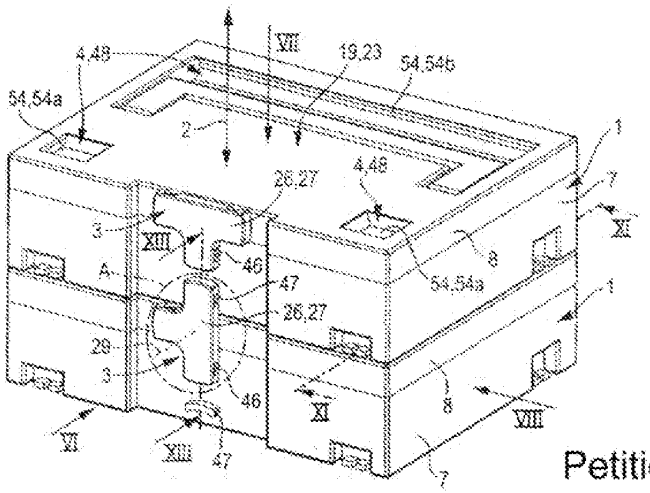
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Primary Examiner — Anthony Stashick
Assistant Examiner — Ernesto Grano
(74) *Attorney, Agent, or Firm* — Hoffmann & Baron, LLP

(57) **ABSTRACT**

It is a matter of a container assembly with at least one stackable container (**1**) which has a bottom part (**7**) and a lid (**8**) mounted on top thereof Several containers (**1**) may be so stacked that the lid (**8**) of the lower container (**1**) is located between two bottom parts (**7**). The container (**1**) is equipped with at least one connecting device (**3**) which has coupling means (**26**) mounted movably on the lid (**8**) of the container (**1**). The coupling means (**26**) are movable, for the connection of two containers (**1**) mounted one above the other, into a connected position relative to the lid (**8**), in which they are simultaneously in connecting engagement with the bottom parts (**7**) of both stacked containers (**1**).

41 Claims, 8 Drawing Sheets



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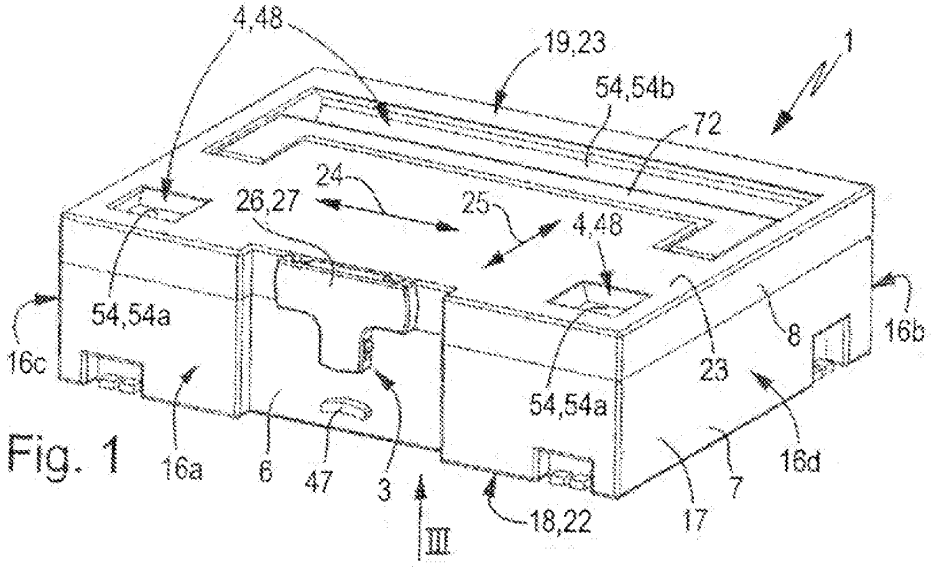


Fig. 1

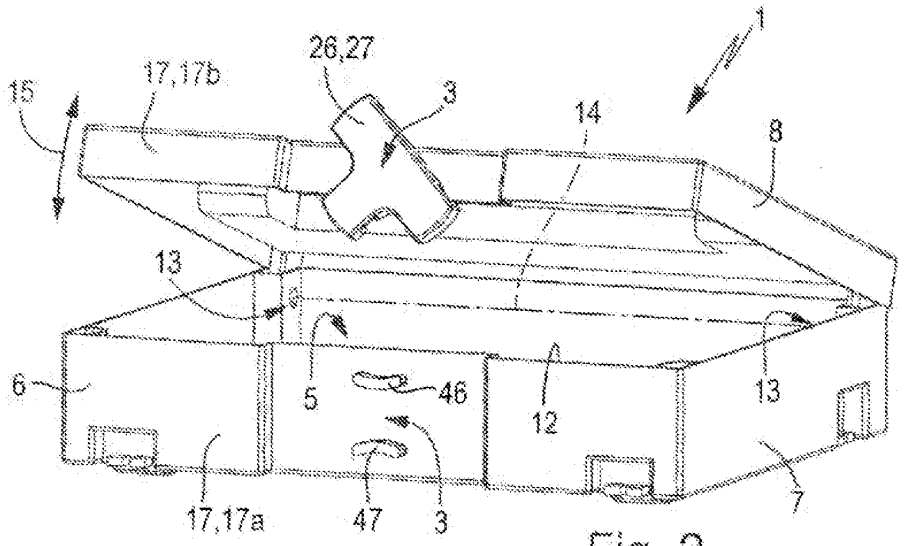


Fig. 2

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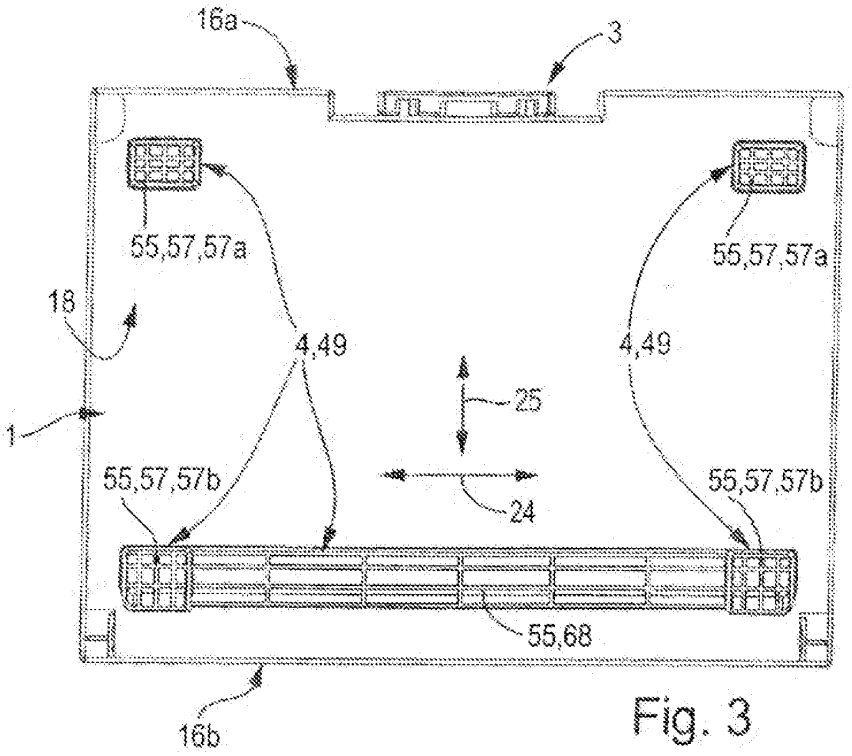

16a
3
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18
4,49
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25
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24
55,68
16b

Fig. 3

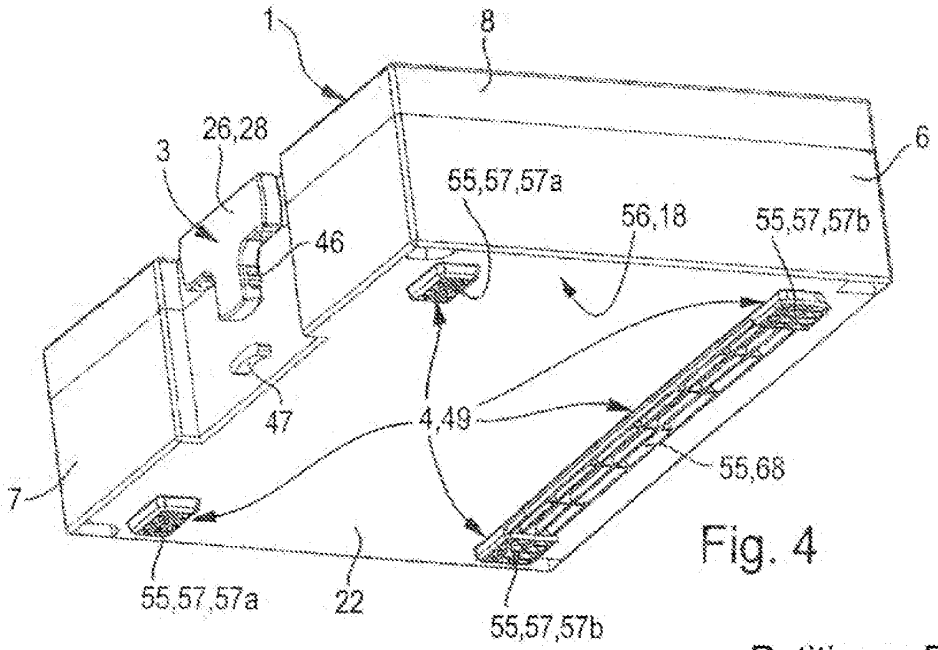

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7
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22
55,57,57b

Fig. 4

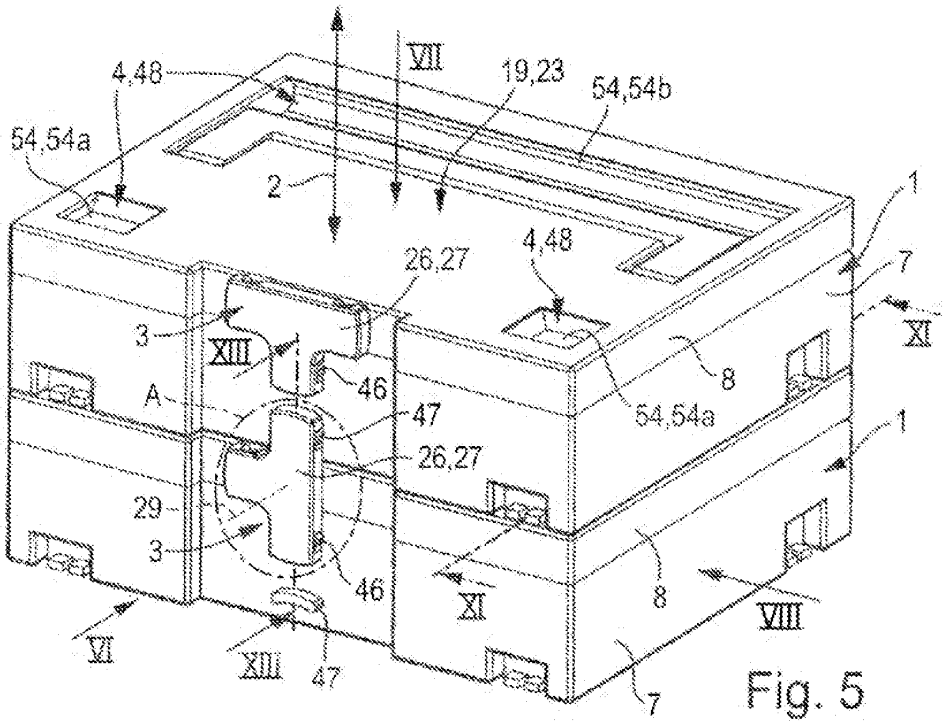

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2
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XI
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XIII
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XI
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VIII
VI
XIII
47
7

Fig. 5

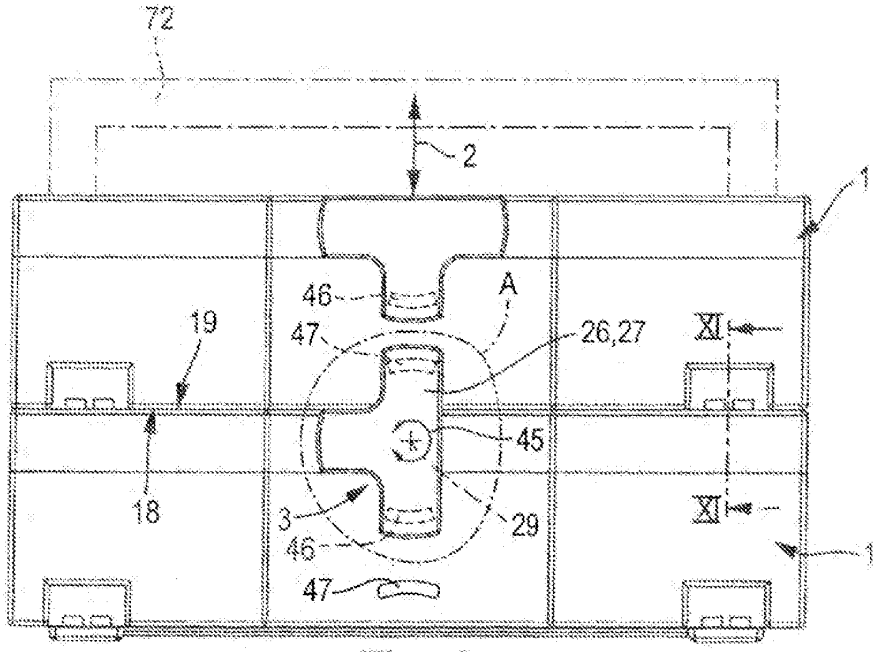

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A
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XI
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29
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Fig. 6

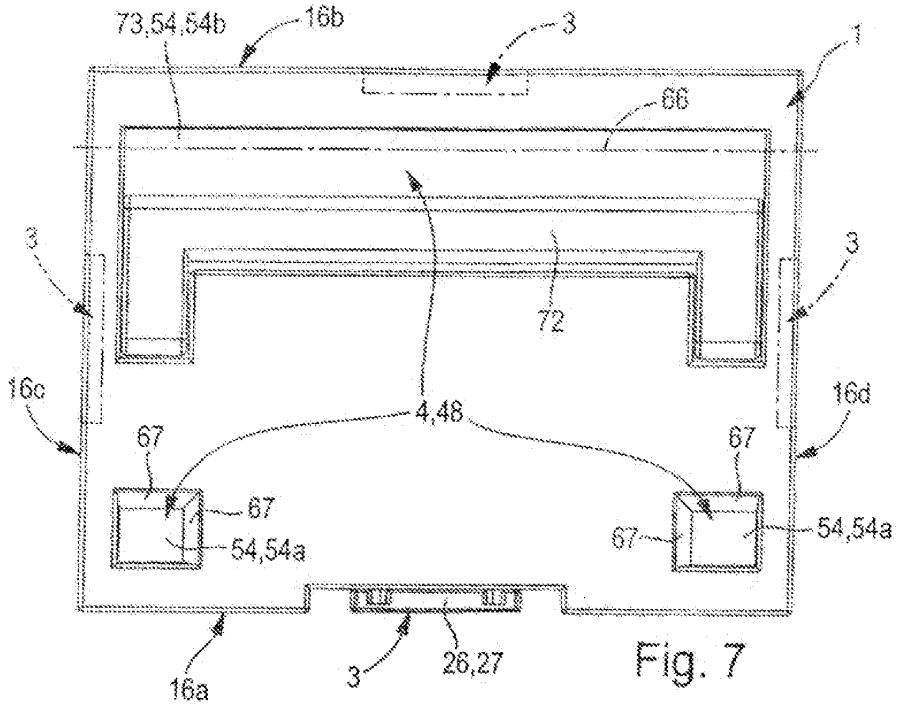


Fig. 7

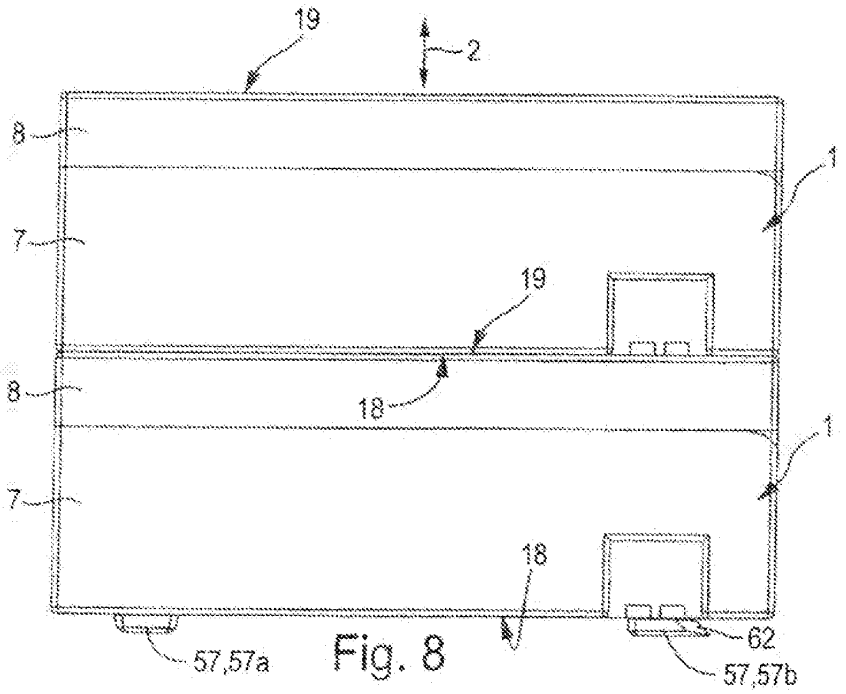


Fig. 8

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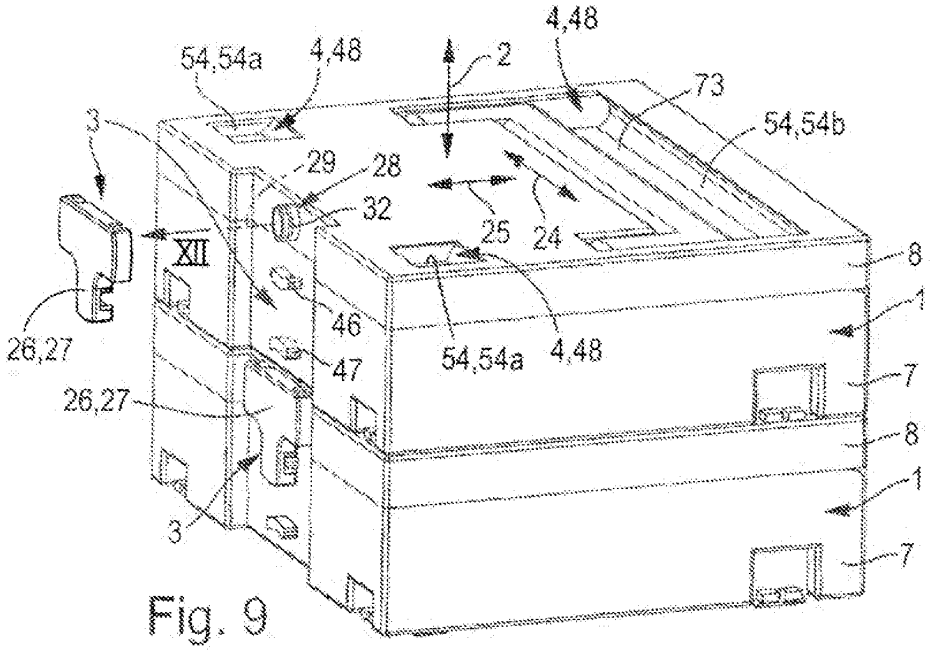


Fig. 9

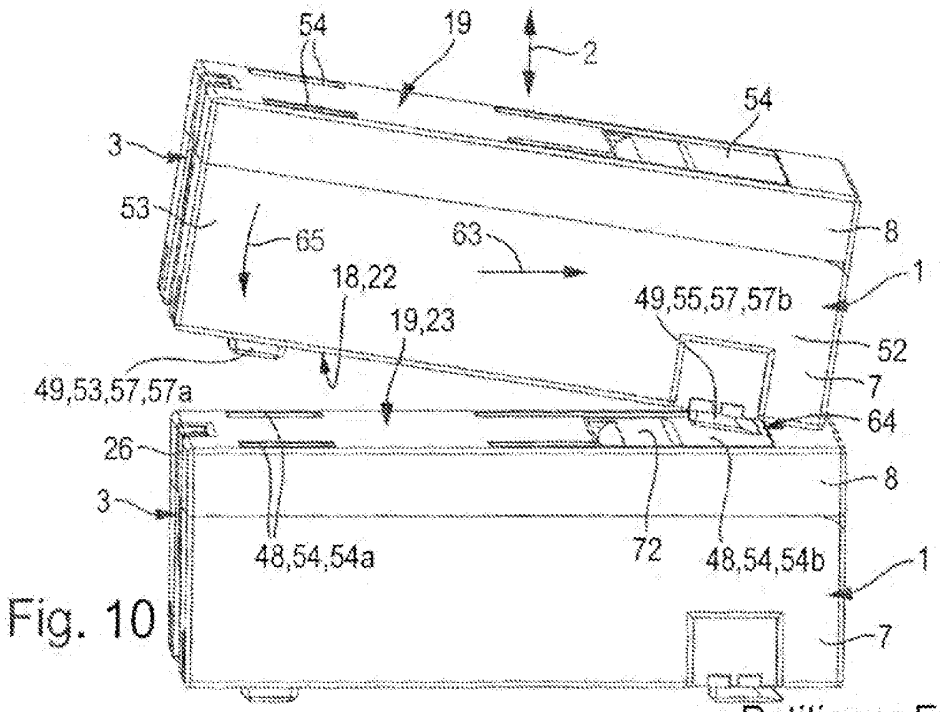


Fig. 10

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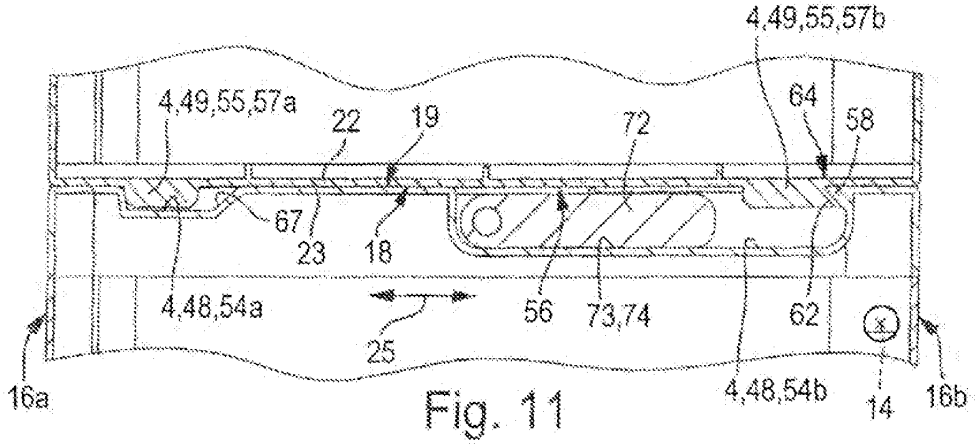


Fig. 11

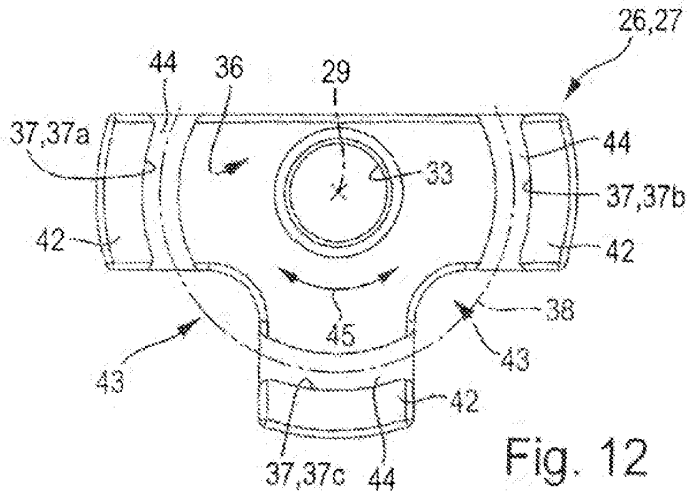


Fig. 12

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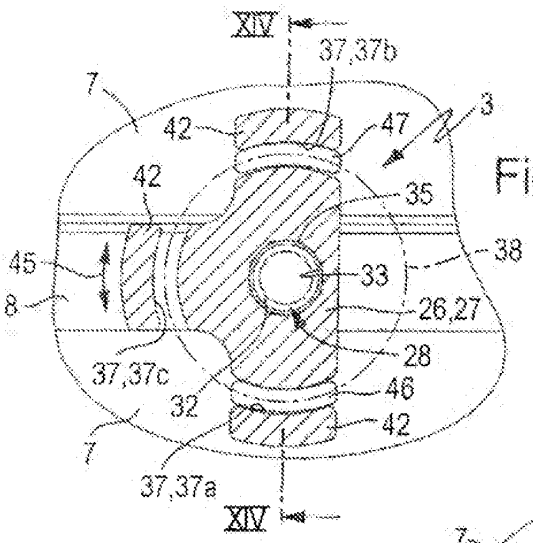


Fig. 13

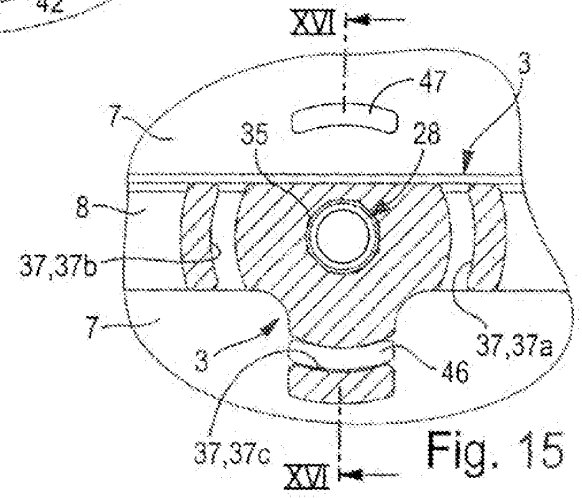


Fig. 15

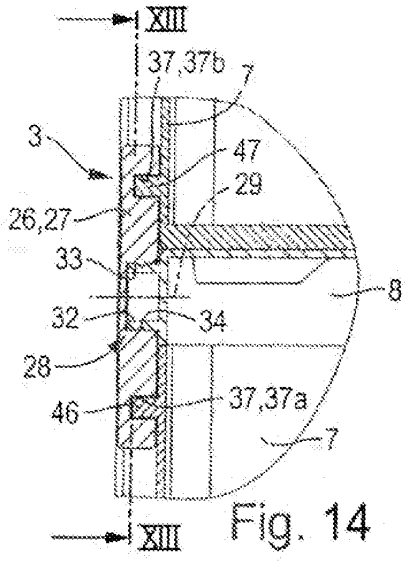


Fig. 14

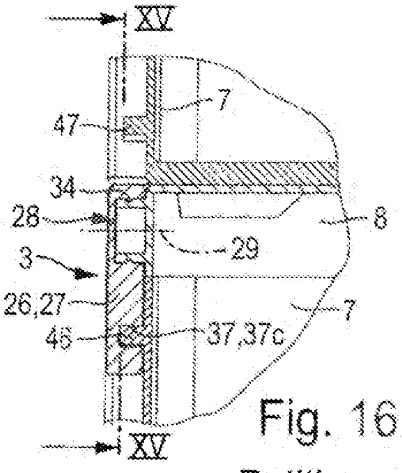


Fig. 16

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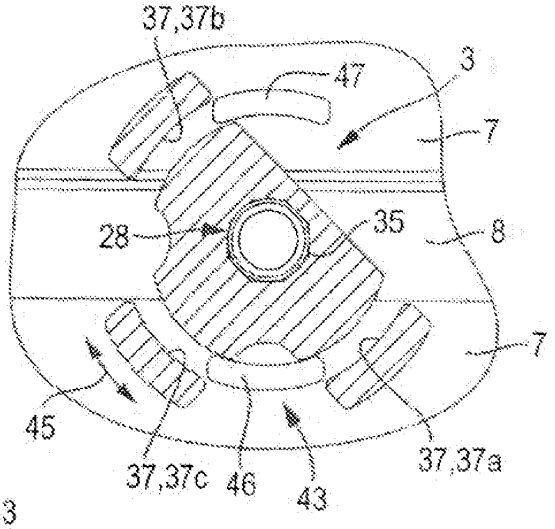


Fig. 17

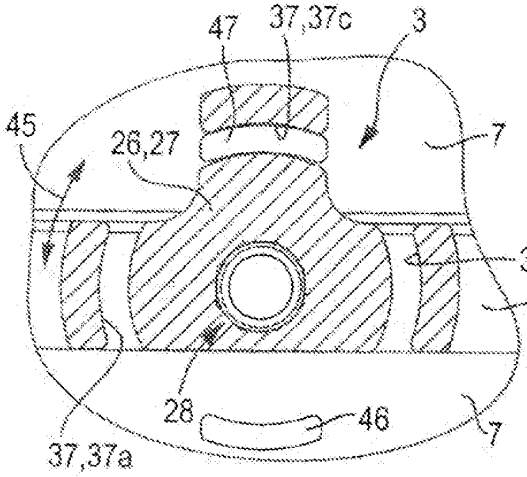


Fig. 18

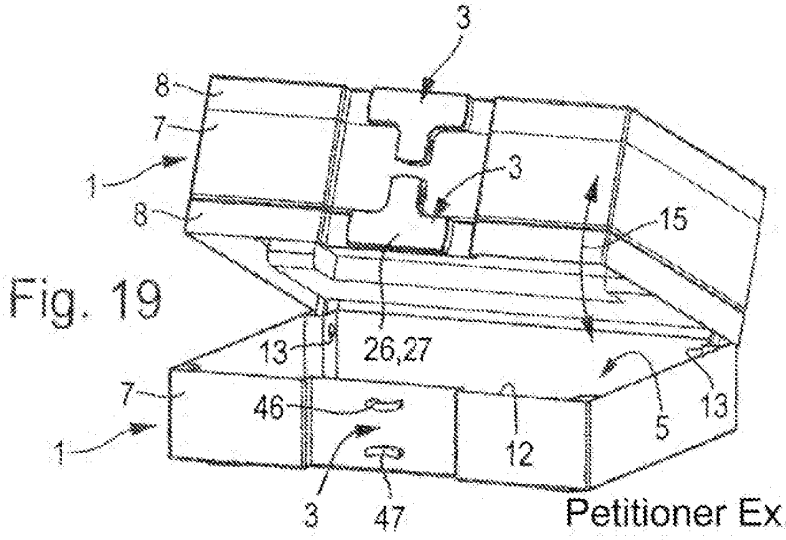


Fig. 19

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STACKABLE CONTAINER ASSEMBLY WITH RECIPROCAL LOCKING OF THE STACKED CONTAINERS

This application claims priority based on an International Application filed under the Patent Cooperation Treaty, PCT/EP2009/004668, filed Jun. 29, 2009.

BACKGROUND OF THE INVENTION

The invention relates to a container assembly, with at least one stackable container which has a box- or bowl-shaped bottom part with an opening, and a lid assigned to the opening of the bottom part and movable relative to the bottom part for either opening or closing the opening, and designed for the vertical stacking of several containers in such a way that the lid of a lower container comes to lie between the bottom parts of the lower container and an upper container positioned immediately above, wherein the container is provided with at least one connecting device which has a movable connecting means, by which the bottom parts of containers resting directly on top of one another may be connected releasably together to obtain a container unit comprised of several containers.

An existing container assembly of this kind known from EP 1 059 240 B1 includes a container with a bottom part and a lid mounted pivotably on the former. This container may be stacked together with several similar containers in such a way that its lid comes to lie beneath the bottom part of a lid resting on top of it. On opposite side end faces of the container there is provided in each case a connecting device comprised of two connecting means in the form of rotating locking bolts, one of which is mounted on a pivotable carrying handle. Depending on the pivoted position of the carrying handle, the lid is locked to or released from the lid by the connecting means of the carrying handle. To connect two stacked containers to one another to obtain a uniformly transportable container unit, the second connecting means may be similarly rotated so that it makes connecting engagement with the bottom part of the upper container. The cohesion between two connected containers is thus effected through the connection of the two bottom parts. If such a container unit is transported by taking hold of the upper container, the pivotable mounting of the connecting means is subjected to a heavy load which can lead to premature wear, but at least requires a very stable and robust and therefore costly design.

A comparable situation exists with the container assembly described in EP 0 555 533 B1, which discloses a stackable container equipped with connecting devices distributed over its periphery, each having connecting means in the form of a pivotable locking tab. Here, differing from EP 1 059 240 B1, a single connecting means is able either to lock just the lid to the bottom part, or to join several containers to an upper container by means of locking engagement to form a container unit. In the case of such a container unit, once again the movable support of the connecting means is subject to a heavy load, so that additional anchoring means are provided on the bottom part and relieve its pivotable mounting means through interaction with the connecting means. Associated with this is an increased cost of manufacture.

Known from DE 44 09 411 A1 is a packing container which may be stacked with others of its kind and made into a container unit through complementary engaging structures on its top and bottom sides, which engage with one another when an upper container is placed on a lower container in a combined insert and turn movement. The engaging structure prevents the upper container from being lifted off in certain areas, in the vicinity of the rear of the container. Fixing of the front section of the container is effected by means of an additional connecting device, which has several connecting means in the form of rotating locking bolts which may be rotated in such a way that they create a connecting engagement between the front sections of the stacked containers. In this packing container, the container opening is arranged at the side and may be closed by means of two cover panels which can be placed over one another and are mounted pivotably on the body of the container. The rotatable connecting means allow simultaneous locking of the cover panels to one another and to the cover panels of the next container above.

The problem of the present invention is to create a container assembly in which the stackable container is equipped with means which may be produced at low cost and which, with simple operation, allow a stable connection of containers stacked on top of one another.

SUMMARY OF THE INVENTION

To solve this problem it is provided that the movable connecting means of the one or more connecting devices is mounted on the lid of the container and, to connect the container to a container placed on top of it, may be moved relative to the lid into a connected position in which it is simultaneously in connecting engagement with the bottom parts of both stacked containers.

Since the connecting means mounted movably on the lid is in the connected position simultaneously in connecting engagement with both bottom parts flanking the lid, the bearing force occurring due to the connecting means when a container unit is transported is transferred at least mainly directly between the bottom parts, so that the bearing means provided on the lid for movement support of the connecting means are relieved of stress.

These bearing means are therefore not subject to any increased wear and have no special requirements in terms of stability, which favours cost-effective manufacture. Operation of the connecting device is moreover very simple, since connection and release of two containers lying on top of one another may be effected more or less with just one movement of the hand. Preferably a single handling operation involving the connecting means is sufficient to bring both the bottom part of the assignal lid and also the bottom part of the upper lid lying on top into connecting engagement ensuring firm cohesion in the stacking direction.

Advantageous developments of the invention are set out in the dependent claims.

Expediently the movable connecting means of the connecting device is in the form of a rotating locking bolt, in particular one-piece, mounted rotatably on the lid. The desired connecting engagement may therefore be made or released by simple turning of the rotating locking bolt. In the connected position, the rotating locking bolt acts simultaneously on anchoring means of both containers arranged on top of one another, thereby ensuring stable cohesion.

The anchoring means provided on the bottom part of the container are expediently divided into first and second anchoring means spaced apart in the stacking direction. The first anchoring means lie closer to the lid than the second anchoring means. In this way, the rotating locking bolt of a lower container in the connected position may cooperate on the one hand with the first anchoring means of the bottom part of the lower container, and simultaneously with the second anchoring means of the bottom part of the upper container.

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advantage of this design is that the rotating locking bolt may be made with compact dimensions irrespective of the overall height of the container.

For interaction with the anchoring means provided on the bottom part, the rotating locking bolt expediently has suitable locking structures. These are, like the anchoring means, expediently curved, with the curve centre points lying in particular on the rotation axis of the rotating locking bolt. By this means, the locking and unlocking process can take place very easily and it is possible at the same time to ensure in the connected position a curved contact over a large area between the locking structures and the anchoring means, so that even with a high loading force to be transferred, only minimal surface pressure occurs.

The anchoring means are preferably in the form of projections, in particular one-piece elements of the bottom part. The locking structures are expediently integral parts of groove-like recesses formed in the rotating locking bolt.

The connecting device may advantageously have a multiple function. Thus, the movable connecting means is designed in particular so as to be movable not only into the connected position but also at least into a closed position in which the connecting engagement with any upper container mounted on the container is released, while however maintaining connecting engagement with the bottom part located beneath the lid. The closed position is therefore that position in which the rotating locking bolt may be shifted if it is intended to place an upper container on the lower container, or to remove an upper container from the lower container. The closed position is moreover that position which ensures cohesion between lid and bottom part, when the container is to be transported on its own.

In the case of an embodiment as rotating locking bolt, the closed position is a rotary position relative to the lid which differs from the connected position. Expediently provided on the rotating locking bolt are locking structures, offset in its direction of rotation, which in the connected position and in the closed position are alternately in connecting engagement with one and the same anchoring means located on the bottom part. If the anchoring means have first and second anchoring means of the type described above, then the rotating locking bolt expediently cooperates in the connected position and in the closed position with the first anchoring means in each case.

The locking structures cooperating alternately in the connected position and in the closed position with the anchoring means of the bottom part are expediently offset on the rotating locking bolt in the direction of rotation in such a way that the rotating locking bolt may be rotated into an open position in which the aforementioned anchoring means lie between the locking structures and the latter are as it were able to move past the anchoring means, to permit raising or lowering of the lid from or on to the bottom part, when the opening of the bottom part is to be either opened or covered.

Another function which may be integrated in the connecting device or devices is the creation of connecting engagement with only the bottom part of an upper container mounted on the lid, with simultaneous removal of the connecting engagement to the bottom part arranged beneath the lid. In this position which may be described as the semi-connected position it is possible to swing the lid of the container upwards even when another container is mounted on this lid, with this further container remaining fixed to the raised lid so that the container unit does not need to be broken up.

If the connecting means are in the form of a rotating locking bolt then the semi-connected position corresponds expediently to a rotary position which is rotated through 90° relative to the connected position.

Although it would be possible in principle to make the lid so that it is removable from the bottom part in its entirety, a design with swivel mounting relative to the bottom part is recommended, so that the lid may be swivelled to open and close the container.

It is possible to equip the container with several connecting devices of the type described, which are then expediently placed at several points distributed along the periphery of the container. In particular if only such connecting devices are used to create the container unit, it is expedient to provide in each case at least one connecting device on at least two opposite end faces of the container.

In an advantageous manner, at least one connecting device of the type described may be combined with other measures for creating a cohesive container unit of stacked containers.

Such additional measures may involve in particular the provision of a first engaging structure on the top of the lid and a second engaging structure on the underside of the bottom part. These two engaging structures are matched to one another in such a way that, when two containers are resting on top of one another, the first engaging structure of the lower container lying on top, and the second engaging structure of the upper container lying below, engage in one another in such a way that the two containers are on the one hand secured against shifting relative to one another at right-angles to the stacking direction, and on the other hand through localised locking, lifting of the upper container from the lower container at certain points is prevented. The latter feature is obtained by the locking engagement of special rear-engaging or behind engaging elements of the engaging structures, with this locking engagement being produced through a relative movement of the two containers when an upper container is placed on the lower container. The connecting device or devices according to the invention is or are arranged with clearance from the locking area defined by the rear-engaging elements cooperating with one another, and hold the two containers together in the connected position in such a way that the upper container is also connected in that area, vertically immobile, to the lower container, which is not prevented by the engaging structure from being lifted. Consequently there is a combined effect between the engaging structures on the one hand and the connecting device or devices on the other hand.

Preferably the first engaging structure provided on the lid consists of engaging recesses and the second engaging structure on the bottom part is made up of engaging projections. In an advantageous manner, the engaging projections are at the same time designed as feet, on which the container may be stored stably when not stacked on another container. These feet also form expediently at least partly the rear-engaging elements of the second engaging structure which, for stacked containers, prevent localised lifting from the lower container by engaging in a first engaging structure. Feet equipped with this rear-engaging function may be described as locking feet. Other feet which, interacting with the first engaging structure, provide only protection against shifting at right-angles to the stacking direction, may be described as supporting feet.

Preferably provided on the underside of the bottom part, in particular towards the rear, are two locking feet spaced apart from one another. In order to ensure reliable locking engagement even with wear, a locking strip extending between the two locking feet may also be provided, which, when containers are stacked, this strip is also interlocked with a rear-engaging element of the first engaging structure of the lid.

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For interaction with the locking feet, the first engaging structure expediently has at least one locking engaging recess with a relief-cut cross-section and a rear-engaging projection on its edge, which is able to make locking engagement with the assigned locking feet and also, if provided, with a locking strip. A single locking engaging recess may be so designed as to facilitate the simultaneous engagement of all locking feet provided. In particular a locking engaging recess designed in this way may also undertake the additional function of a handgrip recess in which it is possible to reach with one hand in order to carry the container. In particular with relative flat containers, i.e. comparable in size to a briefcase, the container may also be transported very easily in this way in an upright position similar to a briefcase.

Apart from that, the container is expediently equipped with a carrying handle in the area of its upper side, which may expediently be swivelled into an out-of-use position in which it is swivelled into a locating recess formed on the top of the lid. This locating recess is formed expediently by a suitably large engaging recess of the first engaging structure, which makes it easier to produce and which, amongst other things, also favours its use if required as a handgrip recess.

The container assembly may have several containers of the type described, differing from one another in particular in their height but identical in respect of their connecting device and expediently also the engaging structures, so that they may be stacked in any desired combination and order, and linked to form a container unit.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention is explained in detail below with the aid of the appended drawing, which shows in:

FIG. **1** a perspective view of a container according to the invention in the closed state

FIG. **2** the container of FIG. **1** with the lid swung into an open position

FIG. **3** a view of the container from below, looking in the direction of arrow III of FIG. **1**

FIG. **4** an oblique view of the underside of the container

FIG. **5** a container assembly consisting of two stacked containers, connected to form a container unit

FIG. **6** a front view of the assembly of FIG. **5** looking in the direction of arrow VI

FIG. **7** a top view of the container assembly of FIG. **5** looking in the direction of arrow VII

FIG. **8** a side view of the assembly of FIG. **5** looking in the direction of arrow VIII

FIG. **9** the container assembly of FIG. **5** from a different angle of view and with the connecting means of a connecting device removed

FIG. **10** the container assembly of FIG. **5** in a perspective side view, with an upper container being placed on a lower container

FIG. **11** a cross-section through the container assembly along section line XI-XI of FIGS. **5** and **6** in the area of the engaging structures in engagement with one another

FIG. **12** a detail view of connecting means in a rear view looking in the direction of arrow XII of FIG. **9**

FIG. **13** the detail A bordered in FIGS. **5** and **6** of a container unit in the connected position of the connecting means, in a sectional view along section line XIII-XIII of FIGS. **5** and **14**

FIG. **14** the assembly of FIG. **13** in a section along section line XIV-XIV

FIG. **15** the detail A of FIGS. **5** and **6** in the same sectional view as FIG. **13**, with connecting means moved into the closed position and in a sectional view along section line XV-XV of FIG. **16**

FIG. **16** the assembly of FIG. **15** in a section along section line XVI- XVI

FIG. **17** the detail A of FIGS. **5** and **6** in a view comparable to FIGS. **13** and **15**, with the connecting means shown in the open position

FIG. **18** the detail A of FIGS. **5** and **6** in a view corresponding to FIGS. **13** and **15**, with the connecting means shown in the semi-connected position

FIG. **19** the container assembly of FIG. **5** in an open position of the lower container, with an upper container simultaneously connected to the lid of the lower container.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

The container assembly depicted in FIGS. **1** to **4** comprises a container **1** which is designed to produce, by stacking on top of one another in a stacking direction **2**, in particular vertical, several containers **1** of its kind, a container assembly comprising several containers **1** resting one on top of the other, as evident by way of example from FIGS. **5** to **10**.

The container **1** is preferably also equipped with at least one connecting device **3** and with an engaging device **4** which allow the releasable connection to one another of cases resting on one another in such a way that the container assembly forms a container unit consisting of several connected containers **1**, which may be handled and in particular transported as a unit.

The container **1** is expediently substantially rectangular in shape. inside it has a storage space **5** to hold articles of any kind. Its body **6** is expediently divided into a box- or shell-shaped bottom part **7** and a lid **8** assigned to the opening **12** of the bottom part **7** and which may in turn also be box- or shell-shaped.

In the normal position of use of the container **1**, the bottom part **7** is at the bottom and the lid **8** is on top. The present description relates to this normal position of use.

The lid **8** may adopt a covering position relative to the bottom part **7**, as seen for example in FIGS. **1** and **5**. Here it sits completely on the edge of the bottom part **7** and seals the opening **12**, so that the storage space **5** is covered and inaccessible.

On the other hand, the lid **8** may also be moved away from the bottom part **7**, into an open position seen for example in FIGS. **2** and **9**, in order to free the opening **12** and anke the storage space **5** accessible.

In principle, no permanently connected link is required between the bottom part **7** and the lid **8**, which would allow complete removal of the lid **8** from the bottom part **7** to obtain an open position. It is however expedient to fix the two components to one another in such a way that they also represent a cohesive assembly in the open position of the lid **8**. Exemplarily, this is obtained through a pivotable mounting of the lid **8** on the bottom part **7** using hinge means **13**, which define a lid swivel axis **14** around which the lid **8** may be pivoted according to double arrow **15** in the vertical direction of the container **1**, in order to open and close the container **1**.

Based on the normal position of use, the container **1** has on its outside a front end face **16***a*, an opposite rear end face **16***b*, together with two similarly opposite side end faces **16***c*, **16***d* running between the front and rear end faces **16***a*, **16***b*. The end faces **16***a*-**16***d* are part of a frame-like peripheral wall **17**, which in the embodiment is divided by a central horizontal [illegible]

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section **17***a* belonging to the bottom part **7** and a peripheral wall section **17***b* belonging to the lid **8**. With the container **1** closed, the two peripheral wall sections **17***a*, **17***b* are expediently flush with one another.

The exterior of the container **1** also has a lower outer surface described as the underside **18** and an upper outer surface described as the top side **19**. The underside **18** is part of a bottom surface **22** belonging to the bottom part **7**, while the top side **19** is part of a top panel **23** belonging to the lid **8**. The bottom surface **22** and the top panel **23** both extend in the normal position of use in a horizontal plane, while the stacking direction **2** which coincides with the vertical direction of the container **1** is oriented at right-angles to the former.

If, as may be seen in FIGS. **5** to **19**, two containers **1** are stacked one on top of the other, the lid **8** of the currently lower container **1** in the stacking direction **2** lies between the bottom part **7** of the lower container **1** and the bottom part **7** of the upper container **1** lying on top. In particular the arrangement is such that the bottom surface **22** of the upper container **1** is in direct contact with the top panel **23** of the lid **8** lying below.

The hinge means **13** are expediently so fitted that the lid swivel axis **14** is assigned to the rear end face **16***b*. To open the container **1**, the lid **8** may therefore be swivelled upwards in the area of its front side.

Where the terms "front side" and "rear side" are used below, they refer to those sides of the container **1** on which the front end face **16***a* and the rear end face **16***b* are located. In what follows, "transverse direction **24**" describes a direction which is at right-angles to the stacking direction **2** and at the same time parallel to the front and rear end faces **16***a*, **16***b*. A direction at right-angles to the transverse direction **24** is described as the vertical direction **25**.

The connecting device **3** allows a releasable connection of a lower container **1** to an upper container **1** currently resting on top of it. As indicated in FIG. **7** by dot-dash lines, in each case at least one connecting device **3** could in principle be provided on several or even on all end faces **16***a*-**16***d* of the container **1**. Due to the additional provision of the engaging device **4**, provision of the connecting device **3** in the embodiment is restricted to the front end face **16***a*, with preferably only a single connecting device **3** being provided, and placed centrally relative to the transverse direction **24**, i.e. on the front end face **16***a* in the centre of its width. Handling is thereby greatly simplified.

A multiple arrangement of connecting devices **3**, in particular operable independently of one another, is recommended especially if the load to be transferred through the connecting process is very high and is to be distributed over several points.

The connecting device **3** has a connecting means **26**, mounted on and movable relative to the lid **8**, and movable into a connected position shown in the lower half of FIGS. **5** and **6**, also in FIGS. **13** and **14**. In this connected position it is simultaneously in such connecting engagement with the bottom parts **7** of both stacked containers **1** that the two bottom parts **7** may no longer be moved relative to one another in the stacking direction **2**. The connecting means **26** prevents the lifting of the upper container, while in the opposite direction the fixing is effected by the reciprocal direct vertical support of the containers **1** between themselves.

In principle one could imagine the connecting means **26** as an element with any desired and suitable degree of freedom of movement. Regarded as especially expedient, however is a design in the form of a rotating locking bolt **27**, as is the case in the embodiment. FIG. **12** shows a detail view of a preferred version of the rotating locking bolt **27** seen from the rear.

The rotating locking bolt **27** is expediently mounted rotatably on the front end face **16***a* of the lid **8**, with the rotation axis **29** defined by the assigned pivotable mounting means **28** running in particular at right-angles to the front end face **16***a*. In the embodiment the pivotable mounting means **28** consist of a pivot pin **32**, for example shaped like a pipe socket and extending forwards from the front end face **16***a* of the lid **8**, and a bearing recess **33** formed in the rotating locking bolt **27**, which is preferably in one piece and in particular made of plastic, and by which the rotating locking bolt **27** is rotatably attached to the pivot pin **32**. The axial fixing may be effected by any desired securing means, for example by latching means **34** (FIGS. **14** and **16**).

As indicated in FIGS. **13**, **15**, **17** and **18**, the pivotable mounting means **28** may be provided with indexing means **35**, which may be used to locate the rotating locking bolt **27** in various preferred positions non-rotatable relative to the lid **8**, in such a way that it may be rotated further by applying only slightly increased force. This may for example involve latching means. Also conceivable are indexing means **35** of the kind based on a locking principle and requiring active unlocking with the finger of one hand.

The rotating locking bolt **27** has on its rear side **36** facing the body **6** several locking structures **37** evident from FIG. **12** and arranged with radial clearance from the rotation axis **29**, wherein this radial clearance is expediently identical for all locking structures **37**. These locking structures **37** are distributed in the peripheral direction of the rotation axis **29** and are spaced apart from one another, but lie preferably on a common circular arc **38**, the centre of which lies on the rotation axis **29**.

Preferably the locking structures **37** comprise at least three locking structures, designated below as first, second and third locking structures **37***a*, **37***b*, **37***c*. Of these, the first and second locking structures **37***a*, **37***b* preferably lie diametrically opposite relative to the rotation axis **29**, i.e. they are located on opposite sides of the rotation axis **29**. The circumferential offset of the first and second locking structures **37***a*, **37***b* with respect to the rotation axis **29** therefore amounts substantially to at least 180°. The third locking structure **37***c* is offset by 90° relative to the two aforementioned locking structures **37***a*, **37***b*.

The rotating locking bolt **27** is especially convenient to grip if it is roughly T-shaped, as depicted, in particular with three locking bolt arms **42**, substantially of equal length, and extending radially outwards from the locking bolt centre with the bearing recess **33**. Expediently, each locking bolt arm **42** is provided with one of the locking structures **37***a*, **37***b*, **37***c*. Between the locking bolt arm **42** with the third locking structure **37***c* and each of the other two locking bolt arms **42** there is expediently a gap **43**, the purpose of which will be explained below.

Preferably the locking structures **37** are comprised in each case of the radially-outwards lying outer recess flanks, facing the rotation axis **29**, of a slot-like recess **44** formed in the rear of the body of the rotating locking bolt **27**. Each recess **44** expediently curves along the arc **38**.

The outer locking flanks acting as locking structures **37** also have a correspondingly curved shape with the curve centres lying on the rotation axis **29**.

If the rotating locking bolt **27** is rotated according to double arrow **45** around the rotation axis **29**, the locking bolt arms **42** pivot around the rotation axis **29**, whereat a locking bolt arm **42** momentarily extending [illegible] stacking direction **2** extends outwards in the corresponding direction over the lid **8**. The distance between the locking

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structures **37** and the rotation axis **29** is therefore greater than the distance between the rotation axis **29** and the top and bottom of the lid **8**.

As further components, the connecting device **3** has first and second anchoring means **46**, **47**, which are located on the front end face **16***a* of that bottom part **7** to which the lid **8** carrying the rotating locking bolt **27** also belongs. The two anchoring means **46**, **47** are mounted in the stacking direction **2** beneath the lid **8**, preferably with clearance, while in the stacking direction **2** they are expediently flush and in particular spaced apart from one another in such a way that the first anchoring means **46** are positioned closer to the lid **8** than the second anchoring means **47**.

As complementary elements to the slot-like recesses **44**, the anchoring means **46**, **47** are each formed in the embodiment by a projection, in particular arc-shaped. The first anchoring means **46**, which are therefore curved, are so arranged on the bottom part **7** that their curvature corresponds to that of the arc **38** and they are arranged exactly on this arc **38**.

The curvature of the second anchoring means **47** is opposite to that of the first anchoring means **46**. Consequently, the convex surfaces of the two anchoring means **46**, **47** face one another. The curvature of the second anchoring means **47** is identical to that of the first anchoring means **46**, while the second anchoring means **47** are so positioned with such clearance from the rotation axis **29** that the distance between the second anchoring means **47** of an upper container **1** from the rotation axis of the container **1** lying below is the same as the distance between the rotation axis **29** and the first anchoring means **46**.

So, when two containers **1** rest one on top of the other, the first anchoring means **46** of the lower container **1** and the second anchoring means **47** of the upper container **1** lie together on the arc **38** (see FIG. **13**).

A reverse arrangement would also be possible, to the effect that the anchoring means **46**, **47** are in the form of slot-like recesses into which the anchoring structures **37** of the rotating locking bolt **27**, formed by projections, are able to engage.

In principle it would also be possible to design the first and second anchoring means **46**, **47** as a unit.

When two containers **1** rest one on top of the other, the rotating locking bolt **27** of the lower container **1** may be rotated into the connected position evident from FIGS. **5**, **6**, **13** and **14**, in which the first locking structure **37***a* is in connecting engagement with the first locking means **46** of the lower bottom part **7**, and there is at the same time connecting engagement between the second locking structure **37***b* located on the upwards extending locking bolt arm **42** and the second anchoring means **47** of the upper bottom part **7**. A position in which the rotating locking bolt **27** is rotated through 180° brings the same result, only here the first and second locking structures **37***a*, **37***b* are transposed in respect of their interaction with the two anchoring means **46**, **47**.

In the connected position, the anchoring means **46**, **47** are overlapped, on the sides facing in opposite directions relative to the stacking direction **2**, by the first and second locking structures **37***a*, **37***b*, so that the bottom parts **7** may no longer be disconnected from one another in the stacking direction **2**. Here the lid **8** of the lower container **1** may be clamped between the bottom parts **7** flanking it above and below.

Besides the connected position, the rotating locking bolt **27** may also be put into other rotary positions which meet a specific function. In this connection, the positioning is aided by the indexing means **35**. A further such position is the closed position evident for example from FIGS. **1**, **15** and **16**, which is also present for the rotating locking bolt of the upper container **1** in FIGS. **5** to **10**. The closed position differs from the connected position by a position rotated through 90°, so that the first and second locking structures **37***a*, **37***b* come to lie without effect in the area of the front end face **16***a* of the lid **8**, and only the third locking structure **37***c*, located on a locking bolt arm **42** extending downwards into the closed position, is effective. This third locking structure **37***c* is in connecting engagement with the first anchoring means **46**, so that the lid **8** is locked relative to the bottom part **7** and cannot be lifted. The locking force effective between the lid **8** and the bottom part **7** is here transferred on the part of the lid **8** via the pivotable mounting means **28**, which however represents no further problem since only a closing force is involved, which is relatively small and places only a small load on the pivotable mounting means **28**.

The design of the rotating locking bolt **27** is such that, in the closed position, it does not extend into that area in which the second anchoring means **47** of a further upper container **1** which may possibly be placed on this container are to be found. Especially advantageous is a a structure with the effect that the rotating locking bolt **27** in the closed position does not extend at all or else only slightly over the top side **19** of the lid **8**.

On adoption of the closed position of the rotating locking bolt **27**, a further container **1** may be placed at any time on the assigned container **1**, and also removed again unimpeded.

The closed position of the rotating locking bolt **27** may therefore be used to disconnect the container unit. It may also be used for releasable locking of the lid **8**, relative to the bottom part **7**, of a container **1** to be used separately, so that the lid **8** is secured in the covering position. Such a situation is shown in FIG. **1**.

As is clear, the locking structures **37** of the rotating locking bolt **27** always cooperate in both the connected position and also the closed position with the same first anchoring means **46** of the lower bottom part **7**. The design cost is therefore relatively low.

Another functional position of the rotating locking bolt **27** is shown in FIGS. **2** and **17**. This involves an open position in which the locking between lid **8** and bottom part **7** is released so that the lid **8** may be swivelled up to open the container **1** as shown by arrow **15**. Expediently this open position, as also the closed position explained above, simultaneously forms a release position with respect to the upper container resting on the container **1** and in which the locking engagement of the rotating locking bolt **27** is released in both the open position and also the closed position.

In the open position, the gaps **43** located between adjacent locking structures **37** acquire their importance. The width of these gaps **43** is at least as great as the width of the first anchoring means **46**, while the rotating locking bolt **27** is so positioned in the open position that the gap **43** comes to lie in the area of the first anchoring means **46**. In other words the first anchoring means **46** are therefore located in the gap **43**, which is large enough to allow upwards swivelling of the lid **8**, without this being prevented by the first anchoring means **46**. In the open position, therefore, the first anchoring means **46** are entirely out of connecting engagement with any locking structures **37**.

On account of the preferred symmetrical design of the rotating locking bolt **27**, the latter may be put into two alternative open positions which, starting from the closed position, may be reached by rotating the rotating locking bolt **27** in one or the other direction, preferably by an angle of rotation of preferably 45° in each case. If only one open position is provided, then one of the gaps **43** may be omitted.

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Finally, the rotating locking bolt **27** may also be brought into a functional position shown in FIG. **18** and described as the semi-connected position because, while the connecting engagement with the bottom part **7** belonging to the lid **8** is released, the connecting engagement with the bottom part **7** of the upper container **1** resting on the lower container **1** is not released. The semi-connected position is also evident once more in FIG. **19** in connection with the rotating locking bolt **27** belonging to the lower container **1**.

In the embodiment, the semi-connected position is a position rotated through 90° relative to the connected position. Here the locking bolt arm **42** equipped with the third locking structures **37***c* extends upwards, in front of the front end face **16***a* of the bottom part **7** of the upper container **1**. There the third locking structure **37***c* is in locking engagement with the second anchoring means **47**. Relative to the first anchoring means **46**, the locking engagement is cancelled, while the first and second locking structures **37***a*, **37***b* are in the same position as in the closed position according to FIG. **15**, only interchanged in their orientation.

In the semi-connected position, the lid **8** which is no longer locked to the bottom part of the lower container **1** may be swivelled up as shown in FIG. **19**, and specifically together with the one or more further containers **1** mounted on this lid **8**, which continue(s) to be locked to the lid **8** which may be swivelled upwards in the same manner as in the case of a connected position. The container unit is therefore not disassembled, while the lower container **1** may still be opened to give access to the storage space **5**.

It goes without saying that the design of the rotating locking bolt **27** may deviate from that depicted; in particular it would be possible to provide additional wall structures covering the gaps **41** at the front, so that the rotating locking bolt **27** has a more uniform external contour, for example comparable to the shape of a circle segment.

The engaging device **4** which is also present contains a first engaging structure **48** located on the top side **19** of the container **1**, and a second engaging structure **49** provided on the underside **18** of the container **1**. In the embodiment, the first engaging structure **48** is located externally on the top panel **23** of the lid **8**, and the second engaging structure **49** externally on the bottom surface **22** of the bottom part **7**. The two engaging structures **48**, **49** are so matched that, in the stacked state of two containers **1**, the upwards facing first engaging structure **48** of the lower container **1** and the downwards facing second engaging structure **49** of the upper container **1** engage with one another. This reciprocal engagement has the effect that the stacked containers **1** are on the one hand supported mutually at right-angles to the stacking direction **2** and may not be displaced relative to one another. On the other hand, it is brought about that the engaging structures **48**, **49** engage at least partly from behind at right-angles to the stacking direction in such a way that effective locking is provided in the stacking direction and prevents at least a vertically upwards directed lifting of at least a certain area of the upper container **1** from the lower contained.

In practice, the engaging structures **48**, **49** are preferably so designed that they prevent lifting of the rear section **52** of the upper container **1**, but on the other hand allow lifting of the front section **53** of the upper container **1**. This circumstance is clear from FIG. **10**. So that the front section **53** is also locked, unable to be lifted, to the lower container **1**, and therefore the entire upper container **1** enters into a stable connection with the lower container **1**, the connecting device or devices **3**, already explained in detail, is or are provided. This connecting device **3**, which rests expediently in the area of the front end face **16***a*, on assuming the connected position securely holds together the upper bottom part **7** and the lower bottom part **7**, with the lower lid **8** interposed, in the manner described above.

If no connecting device **3** were provided, it could also be ensured through a suitable design of the first and second engaging structures **48**, **49** that, in the stacked condition of two containers, the upper container **1** may not be lifted upwards in its entirety in the stacking direction **2**. However, there are benefits in terms of handling as a result of the combination of the engaging device **4** and the connecting device **3**.

The first engaging structure **48** consists of a multiplicity of engaging recesses **54** formed in the top side **19** of the lid **8** and distributed over the lid surface. The second engaging structure **49** consists of several engaging projections **55**, expediently arranged with the same distribution as the engaging recesses **54** and projecting downwards over the expediently at least smooth outer base area **56** of the bottom surface **22**.

Several of these engaging projections **55** form feet **57**, expediently distributed at points over the underside **18**, wherein the embodiment has altogether four such feet **57**, placed in the corner zones of the outer base area **56** of the bottom surface **22**, but here with a certain clearance in each case from the end faces **16***a*-**16***d*.

When used individually, each container **1** may be stored stably on a floor with the help of the feet **57**. The same applies to the use of a container **1** as lower container of a stacked container assembly. The feet **57** are expediently integral with the body **6**, but may also if required be attached so as to be at least partly releasable, to facilitate replacement in case of wear.

Beneath the engaging recesses **54** are two elements **54***a* which are located in the two front corner areas of the preferred rectangular top side **19**. A similar arrangement would also be possible for the engaging recesses assigned to the rear feet **57**, but in the embodiment an advantageous variant has been chosen in which there is a single rear engaging recess **54***b* with dimensions such that both rear feet **57** can engage in it simultaneously.

As is evident in particular from FIGS. **1**, **7** and **9**, the rear engaging recess **54***b* may have an elongated shape with its long side running in the transverse direction **24** and extending parallel to the rear end face **16***b*. The front engaging recesses **54***a* on the other hand are, like the assigned front feet **57**, punctiform in shape and therefore have a square outline.

In the embodiment, the two front feet are pure support feet **57***a*, with an outline complementary to that of the front engaging recesses **54***a* so that, when inserted in the front engaging recesses **54***a*, they rest on the inner side walls of the front engaging recesses **54***a*. By this means, the upper container **1** may no longer be shifted on the lower container **1** at right-angles angles to the stacking direction **2**. The structuring of the support feet **57***a* and the front engaging recesses **54***a* is however such that there is no locking in the stacking direction **2**, so that the front section **53** of the upper container **1** may be lifted at any time when the connecting means **26** are in the release position.

The rear feet **57** which cooperate with the preferred single rear engaging recess **54***b* are in contrast designed as locking feet **57***b*. Their special feature is that they function as rear-engaging elements of the second engaging structure **49** and are able to engage from the rear inside the rear engaging recess **54***b* designed for locking engagement at right-angles to the stacking direction **2**, so that a locking engagement preventing relative movement [illegible] direction **2** is formed. The rear engaging recess **54***b* is therefore also described below as the locking engaging recess.

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If each locking foot **57***b* is assigned a separate engaging recess **54**, this is also in each case in the form of a locking engaging recess.

The rear engaging recess obtains its function as locking engaging recess **54***b* in particular through its design with a relief-cut cross-section, of which FIG. **11** shows an embodiment. The locking engaging recess **54***b* which is otherwise open at the top has, at least on its edge area adjacent to the rear end face **16***b*, a rear-engaging projection **58** which is preferably rib-like and extends forwards in the vertical direction **25**. This leads to the locking engaging recess **54***b* having an opening cross-section which is smaller than the base area of the floor of the recess.

On its rear side facing the rear end face **16***b*, each locking foot **57***b* has a rear-engaging section **62**, expediently with a wedge-shaped profile, so that in the transition zone to the outer base area **56** of the bottom surface **22** there is a gap with a cross-section complementary to the rear-engaging projection **58** (FIG. **11**).

The dimensions of the opening of the rear engaging recess **54***b* are greater in the vertical direction **25** than those of each locking foot **57***b*. The latter may therefore be inserted easily from above into the locking engaging recess **54***b*.

To fit an upper container **1** on a lower container **1**, the upper container **1** is set down as shown in FIG. **10** in an inclined position, and with the downwards tilted rear section **52** leading, on to the top side **19** of the lower container **1**, whereby the locking feet **57***b* dip into the locking engaging recess **54***b*. At the same time or afterwards, the upper container **1** is pressed or pushed downwards as indicated by arrow **63**, so that the rear-engaging sections **62** come into locking engagement with the rear-engaging projection or projections **58**. The area in which this locking engagement occurs may be described as the locking area **64**.

In a further step, the front section **53** of the upper container **1** is swivelled downwards as shown by arrow **65**, whereby the rear-engaging structures in the locking area **64** define a pivot axis **66**, outlined in FIG. **7**, for the aforementioned swivelling process.

On further swivelling of the front section **53** on to the top side **19** of the lower container **1**,the support feet **57***a* dip into the assigned front engaging recesses **54***a* and finally complete the mutual engagement of the engaging structures **48**, **49**.

The rear section **52** of the upper container **1** is secured against vertical lifting by the locking engagement between the locking feet **57***b* and the locking engaging recess **54***b*. The corresponding vertical securing of the front section **53** is obtained by rotating the connecting means **26** into the connected position.

Insertion of the support feet **57***a* into the front engaging recesses **54***a* may be aided by making the side wall of the front engaging recesses **54***a* at least partly an inclined sliding surface **67**. The front engaging recesses **54***a* therefore have in the area of their opening a larger cross-section than at their bottom surface, with the difference in cross-section being bridged by the inclined sliding surfaces **67**. Consequently, automatic centring take place when the upper container is put on.

From FIG. **4** it is clear that, between the two locking feet **57***b* arranged with clearance from one another in the transverse direction **24**, there may extend an additional locking strip **68** which also has a rear-engaging section **62** similar to that of the locking feet **57***b* and which expediently bridges the entire gap between the two locking feet **57***b*. This locking strip **68** also forms a rear-engaging element of the second engaging structure **49** which additionally acts on the locking feet **57***b* and increases the length of the locking contact, so that greater load-bearing capacity is obtained.

The height of the locking strip **68** measured in the stacking direction **2** is expediently less than that of the locking feet **57***b*, so that the latter extend down beyond the locking strip **68**. Here, it is advantageous for the locking strip **68** and the locking feet **57***b* to be made as one-piece. It may be joined in particular integrally to the body of the bottom part **7**, in a similar manner to the feet **57**.

It is also quite easily possible to have a different number of feet **57** from the embodiment. For example a single strip-like locking foot **57***b* could be provided at the rear, i.e. comparable to an arrangement in which the locking strip **68** has the same height as the locking feet **57***b*.

So that the container **1** or the container unit may be transported easily, the container **1** expediently has a carrying handle **72** on its top. Expediently this carrying handle **72** is mounted on the lid. Moreover it is advantageously so designed that it may adopt either an out-of-use position, evident from the drawing, in which it is swivelled on to the top side **19**, or a position of use indicated in FIG. **6**, in which it is swivelled upwards and therefore extends up over the top side **19**. It is preferably a bow- or U-shaped carrying handle **72**.

So that the carrying handle **72** does not impede the stacking of the containers **1** a locating recess **73**, open at the top, is formed in the top side **19** of the lid **8**. The carrying handle **72** comes to lie in this recess when not in use. Here it is of advantage if this locating recess **73** is formed directly by the locking engaging recess **54***b* which is of matching size.

In the embodiment, the aforementioned locking engaging recess **54***b* simultaneously forms a handgrip recess **74** open on the top side **19**. This gives the option of transporting a single container in an upright position rotated through 90° relative to the normal position of use, like a briefcase, and in so doing engaging from above with one hand in the handgrip recess **74**, whereby the rear-engaging projection **58** may be encompassed by the fingers, so that more secure transport is possible.

Varying from the embodiment, the locking engaging feet **54***b* could also be so designed that their rear-engaging section **62** is oriented towards the front. In this case, the rear-engaging projection **58** would also be located on the edge section lying closer to the front end face **16** of at least one locking engaging recess **54***b*, and would face rearwards.

In the embodiment, the entire load-bearing force between two vertically-connected containers **1** is transferred via a three-point connection. The three connection points are comprised of locking measures in the area of the two locking feet **57***b* and the rotating locking bolt **27** fitted with clearance from the locking area **64**. A certain surface force may also be transferred by the locking strip **68**.

There is no problem at all in providing containers **1** of varying overall height, and which have the same connecting devices **3** and engaging devices **4** as the described container **1**. By this means it is also possible to stack containers **1** of varying size without difficulty in any desired order, and combine them to form a container unit.

The combined existence of the connecting device or devices **3** and the engaging device **4** is especially advantageous, however the container **1** may in principle also have no engaging device **4** and/or an engaging device differing from the type described.

The invention claimed is:

1. A container assembly, with at least one stackable container which has a bottom part for carrying and a lid assigned to the opening of the bottom part and movable relative to the bottom part for either closing or opening

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opening, and designed for the vertical stacking of several containers in such a way that the lid of a lower container comes to lie between the bottom part of the lower container and an upper container positioned immediately above, wherein the at least one stackable container is provided with at least one connecting device which has a movable connecting means, by which the bottom parts of containers resting directly on top of one another may be connected releasably together to obtain a container unit comprised of several containers, and wherein the movable connecting means comprises:

a rotating locking bolt mounted on the lid, the locking bolt being rotatable with respect to the lid between a connected position and an open position;

first and second anchoring means provided on the bottom part to interact with the rotating locking bolt, the first and second anchoring means being spaced apart in the stacking direction of the container, whereby the first anchoring means are disposed closer to the lid than the second anchoring means in such a way that, when the rotating locking bolt is in the connected position, the rotating locking bolt of the lower of two stacked containers is simultaneously in connecting engagement with the first anchoring means provided on the bottom part of the lower container and with the second anchoring means provided on the bottom part of the upper container, and, when the rotating locking bolt is in the open position, the rotating locking bolt is entirely out of connecting engagement with the first anchoring means provided on the bottom part of the lower container for releasing the locking between the lid and the bottom part, while the rotating locking bolt is still in engagement with the lid; and

a pivot pin extending outwardly from a front face of the lid, the pivot pin defining a rotation axis for the rotating locking bolt and the rotating locking bolt being rotatably mounted on the pivot pin, wherein the rotating locking bolt comprises a plurality of locking slots adapted for engagement with the anchoring means of the bottom part, the locking slots being spaced apart from one another on a common circular arc, the center of the circular arc being the rotation axis defined by the pivot pin.

2. The container assembly according to claim **1**, wherein the movable connecting means of at least one connecting device is movable into a closed position deviating from the connected position, in which it is disconnected from an upper container mounted over the assigned lid and is simultaneously in connecting engagement with the bottom part located below the lid in such a way that the lid is locked in a covering position relative to this bottom part which closes the opening of the bottom part.

3. The container assembly according to claim **1**, wherein the movable connecting means of at least one connecting device is movable into a semi-connected position deviating from the connected position, in which it is in connecting engagement with the bottom part of an upper container mounted above the assigned lid, and is simultaneously disconnected from the bottom part located below the lid, so that it is possible to lift the lid together with the container mounted above the lid from the bottom part located below the lid.

4. The container assembly according to claim **3**, wherein the movable connecting means of at least one connecting device is in the form of a rotating locking bolt mounted rotatably on the lid, and anchoring means provided on the bottom part to interact with the rotating locking bolt are arranged in such a way that the rotating locking bolt of the lower of two stacked containers, on assuming the connected position, is in simultaneous connecting engagement with the anchoring means of the bottom parts of both containers, and wherein the rotating locking bolt in the semi-connected position altogether assumes a rotated position deviating from the connected position relative to the lid.

5. The container assembly according to claim **4**, wherein the rotated positions in the connected position and in the semi-connected position are rotated through 90° relative to each other.

6. The container assembly according to claim **1**, wherein several connecting devices are provided, distributed at several points along the periphery of the container, and operable independently of one another.

7. The container assembly according to claim **1**, wherein the rotating locking bolt, on assuming the connected position, has locking structures, which are in connecting engagement with the anchoring means of two stacked containers.

8. The container assembly according to claim **7**, wherein the anchoring means are in the form of projections.

9. The container assembly according to claim **8**, wherein the locking structures are portions of slot-like recesses, or vice-versa.

10. The container assembly according to claim **7**, wherein both the anchoring means and also the locking structures are curved, with bow centers lying on the rotation axis of the rotating locking bolt.

11. The container assembly according to claim **1**, wherein the connecting device or devices is or are located on an end face of the container oriented at right-angles to the stacking direction of the container, whereby the rotating locking bolt is rotatable relative to a rotation axis at right-angles to this end face.

12. The container assembly according to claim **1**, wherein the movable connecting means of at least one connecting device is movable into a closed position deviating from the connected position, in which it is disconnected from an upper container mounted over the assigned lid and is simultaneously in connecting engagement with the bottom part located below the lid in such a way that the lid is locked in a covering position relative to this bottom part which closes the opening of the bottom part, and wherein, in the closed position, the rotating locking bolt assumes a rotated position relative to the lid, which deviates from the connected position.

13. The container assembly according to claim **12**, wherein the rotating locking bolt has, offset in its direction of rotation, locking structures which in the connected position and in the closed position are alternately in connecting engagement with the same anchoring means located on the bottom part.

14. The container assembly according to claim **13**, wherein the locking structures are so offset relative to one another in the direction of rotation of the rotating locking bolt that the rotating locking bolt may be rotated into an open position in which the anchoring means fitted to the bottom part and cooperating with the rotating locking bolt in the connected position and in the closed position lie between the locking structures, thereby cancelling out the connecting engagement, to allow raising of the lid from the bottom part to open the opening of the bottom part.

15. The container assembly according to claim **1**, wherein the movable connecting means is in the form of a rotating locking bolt mounted rotatably on the lid, which may be rotated into several different rotated positions, including at least a connected position, a closed position connecting the lid only with the bottom part below it, and an open position disconnecting the lid from the bottom part lying below it.

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16. The container assembly according to claim 15, wherein the rotating locking bolt is also rotatable to a semi-connected position disconnecting the lid from the bottom part lying below it and simultaneously connecting it to the bottom part lying above it.

17. The container assembly according to claim 1, wherein the lid is mounted pivotably on the bottom part with clearance from the front end face of the container in such a way that, with the movable connecting means of at least one connecting device moved into an open position, it may be swiveled upwards in the front section relative to the bottom part.

18. The container assembly according to claim 17, wherein it has only a single connecting device, which is located in the center of the width of a front end face of the container.

19. The container assembly according to claim 1, wherein a first engaging structure is provided on the top side of the lid, and a second engaging structure on the underside of the bottom part, whereby the two engaging structures are so matched to one another that, when two containers are resting on top of one another, the first engaging structure lying on top of the lower container, and the second engaging structure lying below of the upper container, engage in one another in such a way that the two containers are on the one hand secured against shifting relative to one another at right-angles to the stacking direction and on the other hand, due to rear-engaging elements of the engaging structures engaging from behind at right-angles to the stacking direction, there exists between the containers a locking which prevents lifting of the upper container from the lower container only in certain areas, so that the upper container may be swiveled up around the locking area defined by the rear-engaging elements, whereby the connecting device or devices is or are arranged with clearance from the locking area and, in the connected position of its coupling means, prevent the upper container from being swiveled up from the lid of the lower container.

20. The container assembly according to claim 19, wherein the engaging structures are so designed that the fitting of an upper container on to a lower container to obtain the locking effected in the stacking direction by the engaging structures may be carried out by placing the upper container in an inclined position relative to the lower container until there is mutual engagement of the engaging structures, and then swiveling the upper container on to the lower container around a swivel axis defined by the engaging structures which engage themselves behind.

21. The container assembly according to claim 19, wherein the first engaging structure consists of engaging recesses located on the top side of the container, and the second engaging structure of engaging projections located on the underside of the container, while the container has distributed on its underside several downwards projecting feet which belong to the second engaging structure and form at least partly its elements.

22. The container assembly according to claim 21, wherein at least one foot is designed as a locking foot forming a rear-engaging element of the second engaging structure, and at least one other foot is located with clearance from the locking foot in the area of the container capable of swiveling upwards, and forms a pure support foot not used for vertical locking.

23. The container assembly according to claim 22, wherein the second engaging structure has two locking feet spaced apart and each forming a rear-engaging element.

24. The container assembly according to claim 22, wherein the locking foot or feet has or have a wedge-shaped profiled rear-engaging section for engaging behind the first engaging structure.

25. The container assembly according to claim 24, wherein the wedge-shaped profiled rear-engaging section engages behind the first engaging structure and faces away from the support foot or feet.

26. The container assembly according to claim 22, wherein the first engaging structure has for interaction with the locking feet at least one locking engaging recess with a relief-cut cross-section, on the edge of which is provided a rear-engaging projection which may be engaged from the rear by a locking foot dipping into the locking engaging recess.

27. The container assembly according to claim 22, wherein the side wall of at least one engaging recess serving to accommodate a support foot is designed at least partly as an inclined sliding surface to assist the dipping-in of the support foot.

28. The container assembly according to claim 19, wherein at least one engaging recess of the first engaging structure is designed to accommodate simultaneously two of the spaced apart locking feet acting as rear-engaging elements.

29. The container assembly according to claim 19, wherein there is provided on the top side of the container a carrying handle which may be swiveled relative to the body of the container and which, in an out-of-use position, may be swiveled into a locating recess on the top side of the container, whereby this locating recess is formed directly by an engaging recess of the first engaging structure.

30. The container assembly according to claim 29, wherein the locating recess is formed by a locking engaging recess forming the rear-engaging elements of the first engaging structure.

31. The container assembly according to claim 19, wherein at least one engaging recess simultaneously forms a handgrip recess which may be used for carrying the container.

32. The container assembly according to claim 1, wherein it has at least two containers which may be stacked one on top of the other and connected releasably together to form a container unit.

33. A container assembly, with at least one stackable container which has a bottom part with an opening, and a lid assigned to the opening of the bottom part and movable relative to the bottom part for either opening or closing the opening, and designed for the vertical stacking of several containers in such a way that the lid of a lower container comes to lie between the bottom part of the lower container and an upper container positioned immediately above, wherein the at least one stackable container is provided with at least one connecting device which has a movable connecting means, by which the bottom parts of containers resting directly on top of one another may be connected releasably together to obtain a container unit comprised of several containers, and wherein the movable connecting means is mounted on the lid of the container and, to connect the container to a container placed on top of it, may be moved relative to the lid into a connected position in which it is simultaneously in connecting engagement with the bottom parts of both stacked containers, and

wherein a first engaging structure is provided on the top side of the lid, and a second engaging structure is provided on the underside of the bottom part, whereby the two engaging structures are so matched to one another that, when two containers are resting on top of one another, the first engaging structure lying on top of the lower container, and the second engaging structure lying below of the upper container, engage in one another in such a way that the two containers are on the one hand secured against shifting relative to one another at right-angles to the stacking direction and on the other hand, due to rear-engaging elements of the engaging structures

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engaging from behind at right-angles to the stacking direction, there exists between the containers a locking which prevents lifting of the upper container from the lower container only in certain areas, so that the upper container may be swiveled up around the locking area defined by the rear-engaging elements, whereby the connecting device or devices is or are arranged with clearance from the locking area and, in the connected position of its coupling means, prevent the upper container from being swiveled up from the lid of the lower container, and

wherein the first engaging structure comprises engaging recesses located on the top side of the container, and the second engaging structure comprises engaging projections located on the underside of the container, while the container has distributed on its underside several downwards projecting feet which belong to the second engaging structure and form at least partly its elements, and

wherein at least one foot is designed as a locking foot forming a rear-engaging element of the second engaging structure, and at least one other foot is located with clearance from the locking foot in the area of the container capable of swiveling upwards, and forms a pure support foot not used for vertical locking, and

wherein the second engaging structure has two locking feet spaced apart and each forming a rear-engaging element, and

wherein, between the two locking feet, there extends a locking strip which, in the stacked condition of two containers is also in locking engagement with the rear-engaging elements of the first engaging structure.

34. The container assembly according to claim **33**, wherein the movable connecting means of at least one connecting device is in the form of a rotating locking bolt mounted rotatably on the lid, and anchoring means provided on the bottom part to interact with the rotating locking bolt are arranged in such a way that the rotating locking bolt of the lower of two stacked containers, on assuming the connected position, is in simultaneous connecting engagement with the anchoring means of the bottom parts of both containers.

35. The container assembly according to claim **34**, wherein at least one connecting device has, located on the bottom part and spaced apart in the stacking direction of the container, first and second anchoring means, of which the first anchoring means are placed closer to the lid than the second anchoring means in such a way that the rotating locking bolt of the lower of two stacked containers, on assuming the connected position, is in connecting engagement on the one hand with the first anchoring means provided on the bottom part of the lower container, and on the other hand with the second anchoring means provided on the bottom part of the upper container.

36. A container assembly, with at least one stackable container which has a bottom part with an opening, and a lid assigned to the opening of the bottom part and movable relative to the bottom part for either opening or closing the opening, and designed for the vertical stacking of several containers in such a way that the lid of a lower container comes to lie between the bottom part of the lower container and an upper container positioned immediately above, wherein the at least one stackable container is provided with at least one connecting device which has a movable connecting means, by which the bottom parts of containers resting directly on top of one another may be connected releasably together to obtain a container unit comprised of several containers, and wherein the movable connecting means comprises:

a rotating locking bolt mounted on the lid, the locking bolt being rotatable with respect to the lid between a connected position and an open position;

first and second anchoring means provided on the bottom part to interact with the rotating locking bolt, the first and second anchoring means being spaced apart in the stacking direction of the container, whereby the first anchoring means are disposed closer to the lid than the second anchoring means in such a way that, when the rotating locking bolt is in the connected position, the rotating locking bolt of the lower of two stacked containers is simultaneously in connecting engagement with the first anchoring means provided on the bottom part of the lower container and with the second anchoring means provided on the bottom part of the upper container, and, when the rotating locking bolt is in the open position, the rotating locking bolt is entirely out of connecting engagement with the first anchoring means provided on the bottom part of the lower container for releasing the locking between the lid and the bottom part, while the rotating locking bolt is still in engagement with the lid; and

a pivot pin extending outwardly from a front face of the lid, the pivot pin defining a rotation axis for the rotating locking bolt and the rotating locking bolt being rotatably mounted on the pivot pin,

wherein the rotating locking bolt comprises a plurality of locking slots adapted for engagement with the anchoring means of the bottom part, the locking slots being spaced apart from one another on a common circular arc, the center of the circular arc being the rotation axis defined by the pivot pin, and

wherein the rotating locking bolt has three locking bolt arms defining a T-shape, each arm having one of the plurality of locking slots.

37. A container assembly with at least one stackable container designed for the vertical stacking of several containers, the at least one stackable container comprising:

a bottom part defining an opening;

a lid attached to the bottom part adjacent the opening, the lid being movable relative to the bottom part for either opening or closing the opening in such a way that the lid of a lower container comes to lie between the bottom part of the lower container and an upper container positioned immediately above upon vertical stacking of several containers;

a rotating locking bolt mounted on the lid, the locking bolt being rotatable with respect to the lid between a connected position, a semi-connected position and a closed position; and

anchoring means provided on the bottom part to interact with the rotating locking bolt,

wherein, when the rotating locking bolt is in the connected position, the rotating locking bolt of the lower container of two stacked containers is in simultaneous connecting engagement with the anchoring means of the bottom parts of both containers, whereby the upper container and the lower container are connected releasably together to obtain a container unit, and

wherein, when the rotating locking bolt is in the semi-connected position, the rotating locking bolt of the lower container of two stacked containers is in connecting engagement with the anchoring means of the bottom part of an upper container mounted over the assigned lid, and is simultaneously [illegible] anchoring means of the bottom part of the lower container, so that it is possible to lift the lid of the [illegible]

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with the upper container mounted above the lid from the bottom part of the lower container, and

wherein, when the rotating locking bolt is in the closed position, the rotating locking bolt of the lower container of two stacked containers is disconnected from the anchoring means of the bottom part of an upper container mounted over the assigned lid, and is simultaneously in connecting engagement with the anchoring means of the bottom part of the lower container in such a way that the lid of the lower container is locked in a covering position relative to the bottom part which closes the opening of the bottom part, and

wherein the rotating locking bolt is further rotatable to an open position, wherein, when the rotating locking bolt is in the open position, the rotating locking bolt is entirely out of connecting engagement with the anchoring means provided on the bottom part of the lower container for releasing the locking between the lid and the bottom part, while the rotating locking bolt is still in engagement with the lid.

38. The container assembly according to claim **37**, further comprising a pivot pin extending outwardly from a front face of the lid, the pivot pin defining a rotation axis for the rotating locking bolt and the rotating locking bolt being rotatably mounted on the pivot pin.

39. The container assembly according to claim **38**, wherein the rotating locking bolt comprises a plurality of locking slots adapted for engagement with the anchoring means of the bottom part, the locking slots being spaced apart from one another on a common circular arc, the center of the circular arc being the rotation axis defined by the pivot pin.

40. A container assembly with at least one stackable container designed for the vertical stacking of several containers, the at least one stackable container comprising:

a bottom part defining an opening and having a front face;

a lid attached to the bottom part adjacent the opening, the lid having a front face and being pivotably movable relative to the bottom part about a pivot axis for either opening or closing the opening in such a way that the lid of a lower container comes to lie between the bottom part of the lower container and an upper container positioned immediately above upon vertical stacking of several containers, the pivot axis of the lid being spaced from and parallel with the front face of the bottom part and the front face of the lid;

a rotating locking bolt mounted on the front face of the lid, the locking bolt being rotatable with respect to the lid about a rotation axis between a connected position and an open position, the rotation axis of the rotating locking bolt being perpendicular to the pivot axis of the lid; and

first and second anchoring means provided on the front face of the bottom part to interact with the rotating locking bolt, the first and second anchoring means being spaced apart in the stacking direction of the container, whereby the first anchoring means is disposed closer to the lid than the second anchoring means in such a way that, when the rotating locking bolt is in the connected position, the rotating locking bolt of the lower of two stacked containers is simultaneously in connecting engagement with the first anchoring means provided on the bottom part of the lower container and with the second anchoring means provided on the bottom part of the upper container, and, when the rotating locking bolt is in the open position, the rotating locking bolt is entirely out of connecting engagement with the first anchoring means provided on the bottom part of the lower container for releasing the locking between the lid and the bottom part, while the rotating locking bolt is still in engagement with the lid.

41. The container assembly according to claim **40**, comprising only a single rotating locking bolt, the single rotating locking bolt being disposed in the center of the width of the front face of the lid and the first and second anchoring means being disposed in the center of the width of the front face of the bottom.

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IPR2024-01400

UNITED STATES PATENT AND TRADEMARK OFFICE

CERTIFICATE OF CORRECTION

PATENT NO. : 8,875,888 B2
APPLICATION NO. : 13/061161
DATED : November 4, 2014
INVENTOR(S) : Koenig et al.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

ON THE TITLE PAGE:

IN THE ABSTRACT:

(57), Line 3: now reads "on top thereof Several containers"
should read -- on top thereof. Several containers --

IN THE SPECIFICATION:

Column 11, line 24: now reads "or more farther containers"
should read -- or more further containers --

Column 11, line 56: now reads "the lower contained."
should read -- the lower container 1. --

Column 12, lines 51-52: now reads "right-angles angles to the"
should read -- right-angles to the --

Signed and Sealed this
Fifteenth Day of September, 2015

Michelle K. Lee

Michelle K. Lee
Director of the United States Patent and Trademark Office

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US00D627967S

(12) United States Design Patent

Kuhls

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(45) Date of Patent: ** Nov. 30, 2010

(54) **STORAGE BOX**

(75) Inventor: **Timo Kuhls**, Stuttgart (DE)

(73) Assignee: **TTS Tooltechnic Systems AG & Co. KG**, Wendlingen (DE)

(**) Term: **14 Years**

(21) Appl. No.: **29/349,068**

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(58) **Field of Classification Search** D3/201, D3/273, 274, 276, 283, 284, 294, 295, 303, D3/318, 321, 323, 905; 190/19, 102, 109, 190/110, 111, 121, 124; 206/349
See application file for complete search history.

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Assistant Examiner—Karen E Eldridge Powers
(74) *Attorney, Agent, or Firm*—Hoffmann & Baron, LLP

(57) **CLAIM**

The ornamental design for a storage box, as shown and described.

DESCRIPTION

FIG. **1** is a top perspective view of a storage box showing my new design;

FIG. **2** is a top plan view thereof;

FIG. **3** is a bottom plan view thereof;

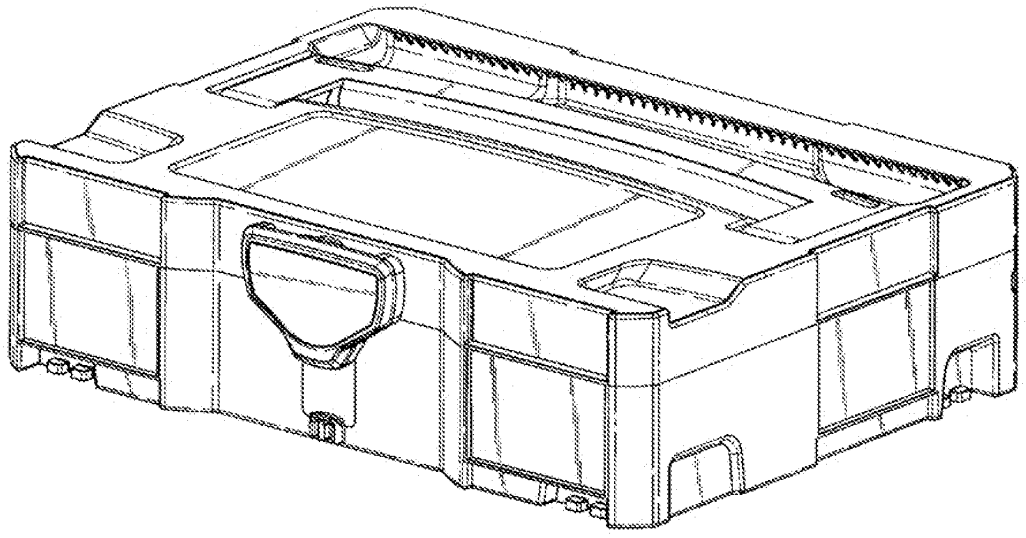
FIG. **4** is a front view thereof;

FIG. **5** is a rear view thereof;

FIG. **6** is a right view thereof; and,

FIG. **7** is a left view thereof.

1 Claim, 5 Drawing Sheets



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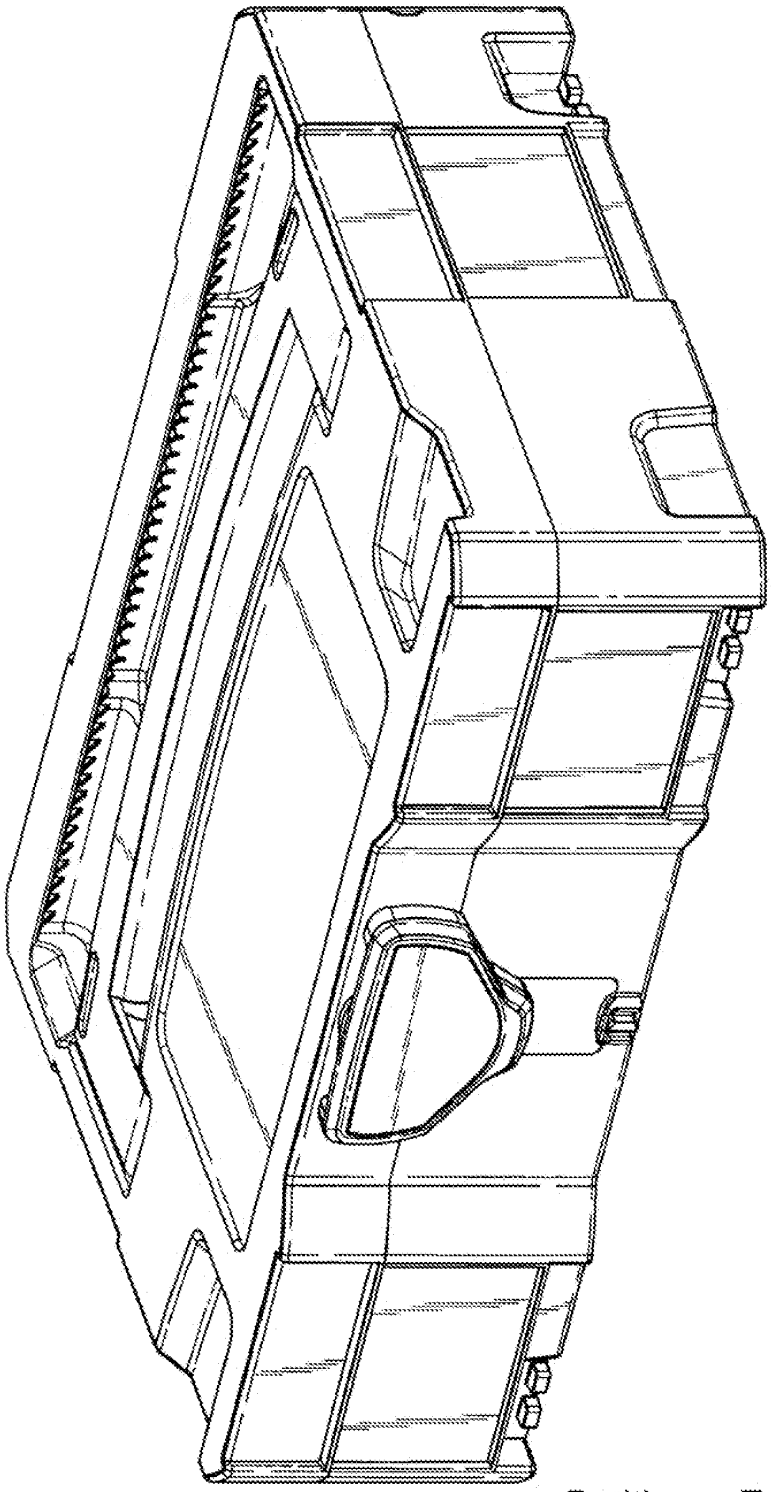


FIG. 1

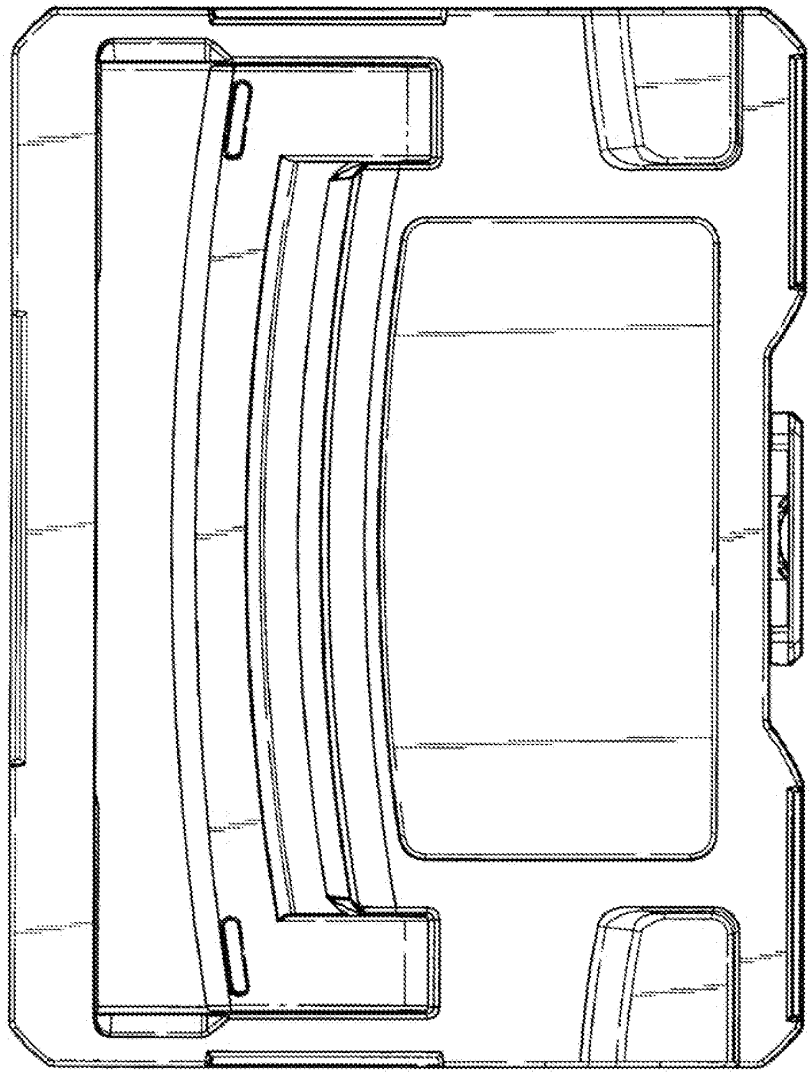


FIG. 2

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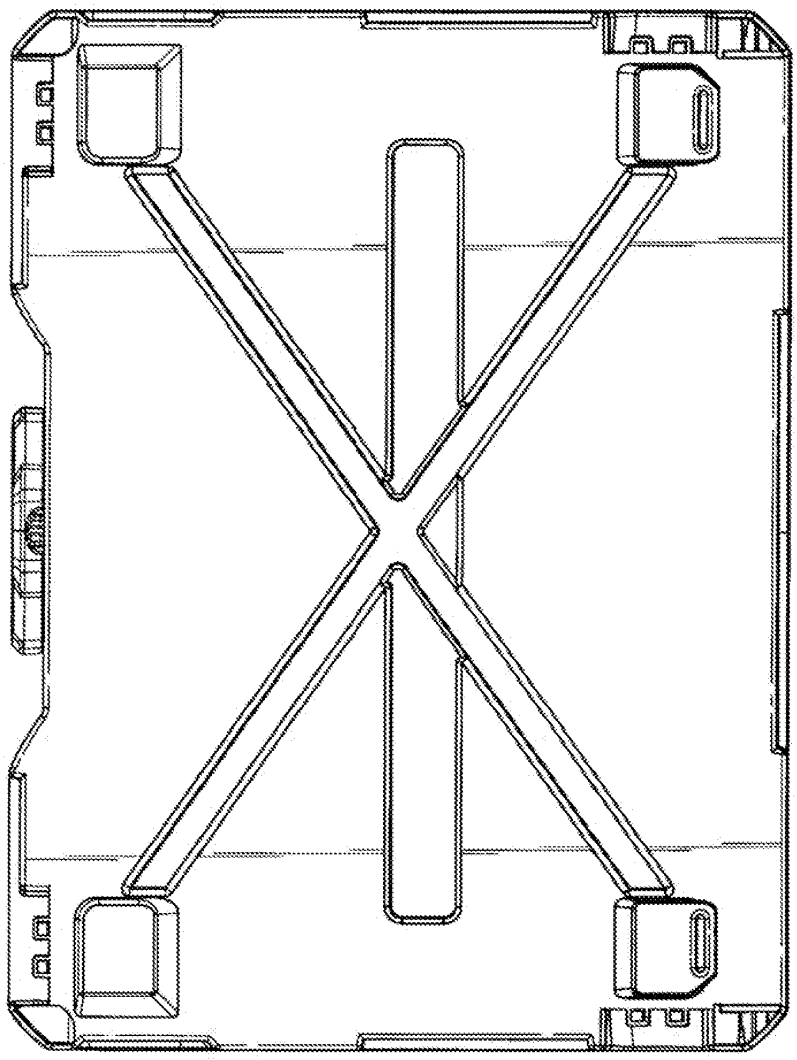


FIG. 3

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