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Application Number: 18448417 Document Date: 08/11/2023

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ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/448,417	**08/11/2023 01:31:33 PM ET**	**34757-2775**

Title of Invention

REMOVABLE SEAT ATTACHMENT FOR A STROLLER

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	3414	FILED BY	Angela Staschke
PATENT CENTER #	62601803	FILING DATE	-
CUSTOMER #	134811	FIRST NAMED INVENTOR	Mark ZEHFUSS
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	Umar Bakhsh

Documents

TOTAL DOCUMENTS: 6

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
34757-2775 ADS.pdf	9	Application Data Sheet	2174 KB
34757-2775 POA.pdf	2	Power of Attorney	352 KB
34757-2775 Drawings.pdf	18	Drawings-only black and white line drawings	720 KB
34757-2775 Application-APP.TEXT.docx	24	Application body structured text document	41 KB
Warning: Bookmarks were found and have been removed.			
34757-2775 Signed Formals_.pdf	4	Oath or Declaration filed	383 KB

34757-2775 Application.pdf	24	Auxiliary PDF of Application	197 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
34757-2775 ADS.pdf	A90AD770047B8552F8BBF7AEC4056A069AC953F067FBE3605 0F23AA922414D761C804BBEFD8C873114FFFA47D2513B40D3 5DBEC9BCCFC213B515553C4C515794
34757-2775 POA.pdf	E3D36257915E6B4B76FF5A464E500345FE441C24DC75ACADC B44738D04B2BA378E234D2AE9C2221B2443A52AB30CDC3476 3DEBFCFA0B7E6F3169F517AF49397B
34757-2775 Drawings.pdf	13D9D9AA61B7BDEE240F7DC8D52211AC7341D984B5A0BEA0 F3AD15DE688C9CDD9BB3957414C22C05E91F5EC4FBDC9680 6F65CCE769A08E87B091E7E60940F712
34757-2775 Application-APP.TEXT.docx	D9090BF68F37FA3C73C97481A781D02BDC5F7D24AE39E42D CA64C9209069EE496D999A27D378E727256246301218DEEC14 B62D4E882647F0AB9303E1822569C7
34757-2775 Signed Formals_.pdf	7C8E9A16094BE8AA2EB3295BC846396DB312644A08A5716611 033486AFBD43BBC0475138B55EEA58B3411C238F5FA042538F D8E7CAE7DDF1E5473A36167F5DDB
34757-2775 Application.pdf	5F967661E4A8C84D5C64385AFDA38204C8D62BF69AD0C1F6B E93EA9D30961AB2050445440BA1EF0A45B30A8C5D828635F0 AD515332AF950F24AC3D6EDDADB715

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 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.

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ELECTRONIC PAYMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/448,417	**08/11/2023 01:31:33 PM ET**	**34757-2775**

Title of Invention

REMOVABLE SEAT ATTACHMENT FOR A STROLLER

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	3414	FILED BY	Angela Staschke
PATENT CENTER #	62601803	AUTHORIZED BY	Umar Bakhsh
CUSTOMER #	134811	FILING DATE	-
CORRESPONDENCE ADDRESS	-	FIRST NAMED INVENTOR	Mark ZEHFUSS

Payment Information

PAYMENT METHOD	PAYMENT TRANSACTION ID	PAYMENT AUTHORIZED BY
DA / 195029	E20238AD33237684	Angela Staschke

PRE-AUTHORIZED ACCOUNT	PRE-AUTHORIZED CATEGORY
195029	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)

FEE CODE	DESCRIPTION	ITEM PRICE($)	QUANTITY	ITEM TOTAL($)
1111	UTILITY PATENT APPL. SEARCH FEE	700.00	1	700.00
1011	BASIC FILING FEE - UTILITY (PAPER FILING ALSO REQUIRES NON-ELECTRONIC FILING FEE UNDER 1.16(T))	320.00	1	320.00
1311	PATENT APPL. EXAMINATION FEE	800.00	1	800.00
			TOTAL	**$1,820.00**

AMOUNT:

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 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: PA..
Document Description: Power of Attorney

PTO/AIA/82A (07-13)
Approved for use through 11/30/2014. OMB 0651-0051
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

TRANSMITTAL FOR POWER OF ATTORNEY TO ONE OR MORE REGISTERED PRACTITIONERS

NOTE: This form is to be submitted with the Power of Attorney by Applicant form (PTO/AIA/82B) to identify the application to which the Power of Attorney is directed, in accordance with 37 CFR 1.5, unless the application number and filing date are identified in the Power of Attorney by Applicant form. If neither form PTO/AIA/82A nor form PTO/AIA82B identifies the application to which the Power of Attorney is directed, the Power of Attorney will not be recognized in the application.

Application Number	Filed Herewith
Filing Date	Filed Herewith
First Named Inventor	
Title	REMOVABLE SEAT ATTACHMENT FOR A STROLLER
Art Unit	Not yet assigned
Examiner Name	Not yet assigned
Attorney Docket Number	34757-2775

SIGNATURE of Applicant or Patent Practitioner

Signature	/Umar R. Bakhsh/	Date (Optional)	
Name	Umar R. Bakhsh	Registration Number	
Title (if Applicant is a juristic entity)	Attorney for Applicant		
Applicant Name (if Applicant is a juristic entity)	Baby Jogger, LLC		

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

☑ *Total of 1 forms are submitted.

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

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

Doc Code: PA..
Document Description: Power of Attorney

PTO/AIA/82B (07-13)
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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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POWER OF ATTORNEY BY APPLICANT

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

Application Number	Filing Date

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

☑ I hereby appoint the Patent Practitioner(s) associated with the following Customer Number as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above: 134811

OR

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

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

☑ The address associated with the above-mentioned Customer Number

OR

☐ The address associated with Customer Number:

OR

	Firm or Individual Name				
Address					
City		State		Zip	
Country					
Telephone		Email			

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

BABY JOGGER, LLC

☐ Inventor or Joint Inventor (title not required below)

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

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

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

SIGNATURE of Applicant for Patent

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

Signature	/Karen Borrelli/	Date (Optional)	17 Sept 2015
Name	Karen Borrelli		
Title	Assistant Secretary, Chief Patent Counsel		

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

☐ Total of forms are submitted.

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

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

UPPABABY ET AL. EX. 1068

PTO/AIA/14 (01-22)
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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	34757-2775
	Application Number	
Title of Invention	REMOVABLE SEAT ATTACHMENT FOR A STROLLER	

The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76.
This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.

Secrecy Order 37 CFR 5.2:

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

Inventor Information:

Inventor 1 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Mark		ZEHFUSS	

Residence Information (Select One) ◉ US Residency ○ Non US Residency ○ Active US Military Service

City	Glen Allen	State/Province	VA	Country of Residence	US

Mailing Address of Inventor:

Address 1	10804 Cherry Hill Drive
Address 2	

City	Glen Allen	State/Province	VA
Postal Code	23059	**Country**	US

All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the **Add** button. Add

Correspondence Information:

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

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

Customer Number	134811		
Email Address	PatentDocket@eversheds-sutherland.us	Add Email	Remove Email

Application Information:

Title of the Invention	REMOVABLE SEAT ATTACHMENT FOR A STROLLER		
Attorney Docket Number	34757-2775	**Small Entity Status Claimed**	☐
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	18	**Suggested Figure for Publication (if any)**	

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	34757-2775
	Application Number	
Title of Invention	REMOVABLE SEAT ATTACHMENT FOR A STROLLER	

Filing By Reference:

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

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

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

Publication Information:

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

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

Representative Information:

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

Please Select One:	◉ Customer Number	○ US Patent Practitioner	○ Limited Recognition (37 CFR 11.9)
Customer Number	134811		

Domestic Benefit/National Stage Information:

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

Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
	Continuation of	16903292	2020-06-16

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	34757-2775
	Application Number	
Title of Invention	REMOVABLE SEAT ATTACHMENT FOR A STROLLER	

Prior Application Status	Patented				Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
16903292	Continuation of	15912901	2018-03-06	10730543	2020-08-04
Prior Application Status	Patented				Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
15912901	Continuation of	15225326	2016-08-01	9944305	2018-04-17
Prior Application Status	Expired				Remove
Application Number	Continuity Type	Prior Application Number			Filing or 371(c) Date (YYYY-MM-DD)
15225326	Claims benefit of provisional	62311224			2016-03-21
Prior Application Status	Patented				Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
15225326	Continuation in part of	14597420	2015-01-15	9403550	2016-08-02
Prior Application Status	Patented				Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
14597420	Continuation of	14261558	2014-04-25	8955869	2015-02-07
Prior Application Status	Abandoned				Remove
Application Number	Continuity Type	Prior Application Number			Filing or 371(c) Date (YYYY-MM-DD)
14261558	Continuation of	12631375			2019-12-04
Prior Application Status	Expired				Remove
Application Number	Continuity Type	Prior Application Number			Filing or 371(c) Date (YYYY-MM-DD)
12631375	Claims benefit of provisional	61119920			2008-12-04
Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the **Add** button.					Add

Foreign Priority Information:

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

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	34757-2775
	Application Number	
Title of Invention	REMOVABLE SEAT ATTACHMENT FOR A STROLLER	

Application Number	Country[i]	Filing Date (YYYY-MM-DD)	Access Code[i] (if applicable)

Remove

Additional Foreign Priority Data may be generated within this form by selecting the **Add** button. Add

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

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

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	34757-2775
	Application Number	
Title of Invention	REMOVABLE SEAT ATTACHMENT FOR A STROLLER	

Authorization or Opt-Out of Authorization to Permit Access:

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

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

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

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

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

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

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

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

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

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

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

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	34757-2775
	Application Number	
Title of Invention	REMOVABLE SEAT ATTACHMENT FOR A STROLLER	

Applicant Information:

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

Applicant 1 Remove

If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section.

Clear

◉ Assignee	○ Legal Representative under 35 U.S.C. 117	○ Joint Inventor
○ Person to whom the inventor is obligated to assign.	○ Person who shows sufficient proprietary interest	

If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:

Name of the Deceased or Legally Incapacitated Inventor:

If the Applicant is an Organization check here. ☒

Organization Name	Baby Jogger, LLC		
Mailing Address Information For Applicant:			
Address 1	6655 Peachtree Dunwoody Road		
Address 2			
City	Atlanta	**State/Province**	GA
Country	US	Postal Code	30328
Phone Number		Fax Number	
Email Address			

Additional Applicant Data may be generated within this form by selecting the Add button. Add

Assignee Information including Non-Applicant Assignee Information:

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

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	34757-2775
	Application Number	
Title of Invention	REMOVABLE SEAT ATTACHMENT FOR A STROLLER	

Assignee 1

Complete this section if assignee information, including non-applicant assignee information, is desired to be included on the patent application publication. An assignee-applicant identified in the "Applicant Information" section will appear on the patent application publication as an applicant. For an assignee-applicant, complete this section only if identification as an assignee is also desired on the patent application publication.

Remove

If the Assignee or Non-Applicant Assignee is an Organization check here. ☐

Prefix	**Given Name**	Middle Name	**Family Name**	Suffix

Mailing Address Information For Assignee including Non-Applicant Assignee:

Address 1			
Address 2			
City		**State/Province**	
Country i		Postal Code	
Phone Number		Fax Number	
Email Address			

Additional Assignee or Non-Applicant Assignee Data may be generated within this form by selecting the Add button. Add

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	34757-2775
	Application Number	
Title of Invention	REMOVABLE SEAT ATTACHMENT FOR A STROLLER	

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REMOVABLE SEAT ATTACHMENT FOR A STROLLER

RELATED APPLICATIONS

[0001] This application is a continuation of U.S. Patent Application No. 16/903,292, filed June 16, 2020, which is a continuation of U.S. Patent Application No. 15/912,901, filed March 6, 2018, issued as U.S. Patent No. 10,730,543, which is a continuation of 15/225,326, filed August 1, 2016, issued as U.S. Patent No. 9,944,305, which claims the benefit of U.S. Application No. 62/311,224 filed March 21, 2016, and is a continuation-in-part of U.S. Patent Application No. 14/597,420 , filed January 15, 2015, issued as U.S. Patent No. 9,403,550, which is a continuation of U.S. Patent Application No. 14/261,558, filed on April 25, 2014, issued as U.S. Patent No. 8,955,869, which is a continuation of U.S. Application No. 12/631,375 filed December 4, 2009, which claims the benefit of U.S. Application No. 61/119,920, filed December 4, 2008, the contents of which are all incorporated by reference.

TECHNICAL FIELD

[0002] Embodiments disclosed herein are generally related to children's stroller systems and more particularly to apparatuses and methods for a removable seat attachment for a stroller that is capable of supporting a seat including, but not limited to, a stroller seat, a baby seat, a bassinet, a pram, a car seat, or a baby carrier.

BACKGROUND

[0003] Parents or guardians with multiple young children may have difficulty transporting their children from place to place. Children are slow, easily distracted and, therefore, may lag behind. In response, many parents and/or guardians have purchased double seat strollers allowing the parent or guardian to push two children simultaneously and thus allow them to more efficiently run errands, take walks, or jog. As such, a double seat stroller allows the parent or guardian with multiple young children more freedom than they would have with only a single seat stroller.

[0004] However, permanently fixed double seat strollers also have certain disadvantages. Double seat strollers are substantially larger (wider and/or longer) than single seat strollers and are, therefore, more difficult to maneuver through doorways and down aisles in stores. While, the benefits of being able to accommodate two children at one time in a double seat stroller typically

offset these disadvantages, when the parent or guardian has only one child with them, the benefits of the double seat stroller are not realized but the disadvantages still exist.

[0005] Stroller manufacturers have attempted to solve this problem by providing an adjustable stroller that can be modified from having a single seat to having two seats by providing attachments that provide a second seat for the second child that hangs under and slightly behind the seat of the single seat stroller. In other embodiments, the second seat can be attached to a seat attachment placed further forward in the stroller. The current attachment mechanisms can suffer from several drawbacks. These drawbacks include being permanently affixed to the stroller frame and taking up unnecessary space or creating a safety hazard for children not in the stroller when the second seat is not attached to the stroller. In addition, the covers for the seat attachments, for covering a portion of the seat attachment mechanism when not in use, are detachable and can be easily lost when the seat attachment is in use.

BRIEF DESCRIPTION OF THE EXAMPLE DRAWINGS

[0006] For a more complete understanding of the present disclosure and certain features thereof, reference is now made to the following description, in conjunction with the accompanying figures briefly described as follows:

[0007] FIG. 1 presents a side elevation view of a single stroller apparatus according to one example embodiment of the disclosure.

[0008] FIG. 2 presents a partial side elevation view of a seat attachment to convert a single stroller into a double stroller according to one example embodiment of the disclosure.

[0009] FIG. 3 presents a side elevation view of a combination of the single stroller of Figure 1 attached to the seat attachment of Figure 2 according to one example embodiment of the disclosure.

[0010] FIG. 4 presents a perspective view of a seat attachment capable of supporting a car seat on an attachment of Figure 2 according to one example embodiment of the disclosure.

[0011] FIG. 5 presents a side elevation view of a combination of the single stroller of Figure 1 attached to an attachment in the form of a tricycle-like riding device according to one example embodiment of the disclosure.

[0012] FIG. 6A presents a view of an accessory attachment for supporting an accessory on a stroller.

[0013] FIG. 6B presents a view of a bag or purse for attaching to the accessory attachment of Figure 6A according to one example embodiment of the disclosure.

[0014] FIG. 7 presents a perspective view of an attachment for supporting a seat comprising one wheel according to one example embodiment of the disclosure.

[0015] FIGS. 8A-H present multiple views of a stroller apparatus capable of being converted from a single seat stroller to a double seat stroller through the use of removable seat attachment adapters according to one example embodiment of the disclosure.

[0016] FIG. 9 presents a perspective view of one version of a stroller with left and right attachment frame members for attaching a second seat according to one example embodiment of the disclosure.

[0017] FIG. 10 presents a front elevation view of an attachment frame member according to one example embodiment of the disclosure.

[0018] FIG. 11 is a partial perspective view of the stroller showing the seat attachment housing according to one example embodiment of the disclosure.

[0019] FIG. 12 is a partial perspective view of the seat attachment housing according to one example embodiment of the disclosure.

[0020] FIG. 13A-C are partial perspective views of the removable seat attachment adapter removably coupled to the seat attachment housing according to one example embodiment of the disclosure.

[0021] FIG. 14A-C are partial perspective views of an alternative embodiment of the seat attachment housing according to another example embodiment of the disclosure.

DETAILED DESCRIPTION OF THE EXAMPLE EMBODIMENTS

[0022] Example embodiments of the invention now will be described more fully hereinafter with reference to the accompanying drawings, in which example embodiments are shown. The concept disclosed herein may, however, be embodied in many different forms and should not be construed as limited to the exemplary embodiments set forth herein; rather, these embodiments are provided so that this disclosure will be thorough and complete, and will fully convey the scope of the invention to those skilled in the art. Like numbers refer to like, but not necessarily the same, elements throughout.

[0023] The example embodiments described herein and shown in the figures is described with reference to an infant or child's stroller that can be configured to adjust from a single seat stroller to a multi-seat stroller. While the example embodiments will generally be described with reference to adding or removing seats from the stroller, the reference to seats is for example purposes only, as the seat or portion that can be added or removed from the stroller can include, but is not limited to, a stroller seat, a baby seat, a bassinet, a pram, a car seat, or a baby carrier. Each of the stroller seat, baby seat, bassinet, pram, car seat, and/or baby carrier should individually be read as an alternative embodiment to the removable/added infant or child's stroller seat described below.

[0024] Certain dimensions and features of the example adjustable stroller are described herein using the term "approximately." As used herein, the term "approximately" indicates that each of the described dimensions is not a strict boundary or parameter and does not exclude functionally similar variations therefrom. Unless context or the description indicates otherwise, the use of the term "approximately" in connection with a numerical parameter indicates that the numerical parameter includes variations that, using mathematical and industrial principles accepted in the art (*e.g.*, rounding, measurement or other systematic errors, manufacturing tolerances, etc.), would not vary the least significant digit.

[0025] In addition, certain relationships between dimensions of the adjustable stroller and between features of the adjustable stroller are described herein using the term "substantially." As used herein, the terms "substantially" and "substantially equal" indicates that the equal relationship is not a strict relationship and does not exclude functionally similar variations therefrom. Unless context or the description indicates otherwise, the use of the term "substantially" or "substantially equal" in connection with two or more described dimensions indicates that the equal relationship between the dimensions includes variations that, using mathematical and industrial principles accepted in the art (*e.g.*, rounding, measurement or other systematic errors, manufacturing tolerances, etc.), would not vary the least significant digit of the dimensions. As used herein, the term "substantially constant" indicates that the constant relationship is not a strict relationship and does not exclude functionally similar variations therefrom. As used herein, the term "substantially parallel" indicates that the parallel relationship is not a strict relationship and does not exclude functionally similar variations therefrom.

[0026] As discussed above, parents or guardians may find themselves in a situation wherein it is more convenient to transport two children in a stroller, but at the same time find it inconvenient to

have both a single stroller and double stroller. Embodiments of the seat attachment solve this problem. In one aspect, an embodiment of the seat attachment for a stroller is capable of converting a single stroller into a double stroller. The seat attachment may support a seat such as, but not limited to, a stroller seat, a baby seat, a bassinet, a pram, a baby carrier, or a car seat, for example. Therefore, the parent or guardian does not require both a single stroller and a double stroller. A stroller configured to receive a seat attachment for converting a single stroller into a double stroller provides convenience to the user. The single stroller may be connected to a double stroller by attaching the seat attachment to the single stroller and then attaching the second seat. As such, an embodiment of the seat attachment for converting a single stroller into a double stroller can include at least one connector portion capable of connecting to a stroller frame and a seat support element capable of supporting a seat.

[0027] Figure 1 presents a side elevation view of a single stroller apparatus 10 according to one example embodiment of the disclosure. Referring to Figure 1, it shows only one side of the single stroller 10, however, most components include a complementary component on the other side of the single stroller but are not shown in Figure 1. The example single stroller 10 includes a frame 12 that supports a seat 13. The frame 12 may optionally include at least one, and in certain embodiments preferably two, folding mechanisms 16 that allow the stroller 10 to be folded to a more convenient size for storing or transporting the stroller 10.

[0028] In the example embodiment of Figure 1, the seat 13 is shown as a typical stroller seat. However, other types of seats may be used in a single stroller. The seat 13 may be permanently affixed to the frame 12 or releasably connected, such that it is capable of being removed and substituted with a different seat. As used herein, "releasably connected" or "releasably attached" means the connection is not a permanent connection and that the connection is capable of being connected and disconnected by the user of the stroller 10 without requiring special tools or special skills. Releasably connections include, but are not limited to, buttons, snaps, friction fittings, interference fits, threaded connections, locking tabs, keyed connections, other fasteners, or the like. The frame 12 is supported on a pair of back wheels 14 and a pair of front wheels 15. In this example embodiment, the back wheels 14 are fixed and do not swivel or pivot on the frame 12 while the pair of front wheels 15 pivot to make turning the single stroller 10 easier and more convenient. Though, pivoting wheels may be preferred in certain strollers, strollers with fixed non-pivoting wheels are also common and considered as an option as part of this disclosure. In certain

example embodiments, the single stroller 10 does not require pairs of front 15 or rear 14 wheels and either the front pair of wheels 15 or the back pair of wheels 14 may be substituted with a single wheel. In certain example embodiments, the single stroller 10, including umbrella strollers, jogging strollers, all-terrain strollers, as well as other strollers may only include one front wheel 15.

[0029] The example single stroller 10 may also include one or more seat attachments that are capable of converting any style of single stroller to a double stroller, including strollers with one or two front wheels. In one example embodiment, the stroller 10 can include two attachment portions 17. In one example, the attachment portions 17 can be positioned on or near the front of the stroller 10 to allow the seat attachment and the seat to be connected to the front portion of the stroller 10. The attachment portions 17 can allow a seat attachment such as the seat attachment for converting the single stroller 10 to a double stroller, as shown in Figure 3, to be connected to the stroller. While only one seat attachment is shown in Figure 3, the stroller 10 could typically include two seat attachments as shown in Figure 3 or one seat attachment that can include two seat support elements. In certain example embodiments, the stroller 10 can include a left side and a right side attachment portion 17. The seat attachment for the stroller 10 can further include corresponding connector portions capable of connecting to the stroller frame at the attachment portions 17. Though the seat attachment for the stroller is described in relation to a single stroller, the attachment may similarly be attached to a double stroller. As such, example embodiments of the seat attachment may therefore be used to convert a double stroller into a triple stroller, if desired.

[0030] Figure 2 presents a partial side elevation view of a seat attachment to convert a single stroller into a double stroller according to one example embodiment of the disclosure. Now referring to Figures 1 and 2, the example seat attachment 20 is shown in an unlocked and folded configuration. The seat attachment 20 includes a one or more connector portions 21 capable of connecting to the attachment frame members 24, two seat attachment elements 22 capable of supporting a seat; and a wheel 23. In this example embodiment, the connector portions 21 are connected to the rear of the seat attachment 20 allowing the seat attachment 20 to be connected to the front of a stroller, such as stroller 10 shown in Figure 1. In other example embodiments, the seat attachment 20 may include more than one wheel 23, one connector portion 21, one seat support element, or combinations of these elements. In example embodiments of the stroller with one wheel, the attachment frame member may be on the forks of the front wheel, for example.

[0031] The seat attachment 20 can include a wheel support frame 26 connecting the wheel 23 to the attachment frame member 24 of the attachment 20. Each attachment frame member 24 has a first and a second end. The first end is capable of connecting to a stroller frame and the second end can be connected to the seat support element 22. As shown in Figure 2, the seat attachment 20 can include a wheel support frame 26 that is pivotally connected to two attachment frame members 24. The wheel support frame 26 or the attachment frame 24 may span the width of the stroller between the two attachment portions 17. The pivotal connection 27 allows the seat attachment 20 to be folded and conveniently stored or transported but is not necessary for all example embodiments of the disclosure. The pivotal connection 27 can be optional and provide more convenience, however, other example embodiments of the seat attachment 20 can include a releasably connected wheel support frame or a rigid frame that may be incorporated to produce a seat attachment that has greater strength for use in situations where a stronger seat attachment may be desired, such as with all-terrain or jogging strollers, for example. The wheel support frame 26 may be connected at any point on the attachment frame 24. In certain example embodiments the wheel support frame 26 is connected to the attachment frame 24 near the connector portion 21 or near the middle of the attachment frame 24.

[0032] In certain example embodiments, the seat attachment without a wheel may include connector portion 21 or attachment frame member 24, and seat attachment member 22, for example. In this example embodiment, there may be no need for the pivotal connection 27, wheel support frame 26, sliding connector 25, or wheel 23.

[0033] The seat attachment 20 can also include a folding mechanism that includes a sliding connector 25 connected to a first end of a strut 28. A second end of the strut 28 can be pivotally connected to wheel support frame 26. In such an embodiment, the sliding connector 25 may be moved between a first position and a second position on the attachment frame member 24. As the sliding connector 25 is moved, the strut 28 pushes the wheel support frame 26 from an in-use position to a storage position. The storage position is more compact as shown in Figure 2. In addition, certain example embodiments of the seat attachment 20 can also include a locking mechanism 29 that is capable of securing the seat attachment 20 to a stroller, such as stroller 10 shown in Figure 1. The locking mechanism 29 can be engaged by moving the sliding connector 25 to the in-use position, in which the wheel support frame 26 and wheel 23 are extended. In certain example embodiments, the wheel 23 of the seat attachment 20 is pivotally connected to the

connector portion 21 and when the wheel 23 is in the in-use position the releasably connection is locked and when the wheel 23 is moved to the storage position, the releasably connection is unlocked allowing the seat attachment 20 to be removed from stroller 10. The seat attachment 20 may be stored and the stroller 10 may be conveniently used as a single stroller. As designed, the seat attachment 20 may be reconnected to the stroller 10 for use as a double stroller when needed. The seat attachment portion may be secured into position on the stroller frame and a locking mechanism may be used with an embodiment with or without the wheel. Either the seat attachment or the stroller frame can include a locking mechanism for securing the stroller and seat attachment together. The locking mechanism may be any mechanism capable of securing the components together during use and may be a friction locking device, threaded connection, peg in a hole, or an interference locking device such as a pin in a hole, for example. As shown in the example embodiment of Figure 2, the locking mechanism 29 pivots with wheel support frame 26 as the seat attachment 20 is moved from an unfolded position to a folded position. The locking mechanism 29 may slide into a hole or notch in the attachment frame member 24 of the stroller 10 shown in Figure 1. As such, the seat attachment 20 may be attached to the stroller 10 by positioning the attachment (connector) portion 21 of the seat attachment 20 in the slot 18 of the attachment portion 17 of the stroller 10. The sliding connector 25 may be moved to the in-use position, the wheel support frame is moved, and the locking mechanism 29 is positioned into the locking slot 19 of the stroller 10.

[0034] In certain example embodiments, the connector portion 21 of the seat attachment 20 has a cylindrical or substantially cylindrical shape. The connector portion 21 may be inserted into a cylindrical or substantially cylindrical slot 18 of the attachment portion 17 of the stroller 10 of Figure 1 to secure the seat attachment and convert the single stroller into a double stroller, as shown in Figure 3. In other example embodiments, the seat attachment 20 may include any type of connector portion having any geometric or non-geometric shape. The connector portion 21 may be of a solid or tubular construction and may be any cross-sectional shape including, but not limited to, circular, polygonal, square, rectangular, and triangular, for example. Other attachment mechanisms may be utilized to connect the seat attachment to the stroller 10 such as, but not limited to, a U-shaped bracket, a U-bolt, a pipe clamp, O-shaped bracket, screw, bolt, or other clamping or attachment means. The attachment frame member 24 of the stroller 10 can have a complimentary and/or cooperating shape that allows the connector portion 21 to be secured to the

attachment portion of the stroller.

[0035] Figure 3 presents a side elevation view of a combination of the single stroller 10 of Figure 1 attached to the seat attachment 20 of Figure 2 according to one example embodiment of the disclosure. Referring to Figure 3, the seat attachment 20 removably coupled to the single stroller 10 to form a double stroller. The double stroller configuration is shown with two stroller seats 13 in an inline configuration, though the other configurations, such as a stroller seat and a bassinet or a pram may also be supported on the double stroller. Further, the seat support element 22 of the seat attachment 20 may be capable of supporting the front stroller seat 13 in either a forward-facing or backward-facing position.

[0036] The example embodiment of the stroller 10 in Figure 3 is shown only as an example of one type of stroller, the frame of the stroller 10 may be any of many possible configurations. Example embodiments of the seat attachment accessory may be configured to be used on any such configuration of a stroller. For example, in another example embodiment, the baby stroller may not include two front wheels, may not include a folding mechanism or may include only one folding mechanism. In addition, the baby stroller may include additional features not included in baby stroller 10. For example, the stroller may optionally include fixed front wheels, an entirely different frame configuration, or a storage basket underneath the seat of the stroller.

[0037] The seat support member may be any configuration capable of supporting the seat on the seat attachment 20. Figure 4 presents another example embodiment of a seat support member 40 for use with a car seat or other baby seat according to one example embodiment of the disclosure. Now referring to Figure 4, the seat support member 40 can include a main support 41. The main support 41 can include a cradle for supporting a central portion of the seat. Another portion of the seat may rest against support bar 42. In this example, the support bar 42 may be adjusted to accommodate seats of different shapes and sizes. The support bar 42 may be slid within the aperture 43 and locked in place when the support bar 42 is in the desired position to support a certain seat. The seat is, therefore, supported on two main supports 41 and the support bar 42. The seat may be further secured in the seat attachment member 40 by wrapping belts 44 and 45 around the seat and locking the belts in this position with a buckle or other securing means.

[0038] Figure 5 presents a side elevation view of a combination 50 of the single stroller 10 of Figure 1 attached to an attachment in the form of a tricycle-like riding device according to one example embodiment of the disclosure. Referring to Figure 5, the combination 50 includes the

stroller 10 and the seat attachment 51. In one example, the seat attachment 51 is a tricycle-like attachment that includes a connector portion 52, a frame 53 with a seat support element 56, a seat 57, and a wheel 55. The tricycle-like attachment may be attached to stroller 10 to allow one child to be pushed in the stroller 10 and one child to ride the seat attachment 51. The seat attachment 51 may be other shapes also such as cars, trucks, or animal shapes, for example.

[0039] In certain example embodiments, the stroller 10 can include an additional accessory attachment portion 58. The accessory attachment portion 58 attaches to a frame member of the stroller 10. An embodiment of the accessory attachment portion 58 is shown on Figure 6A. This embodiment is particularly useful for attaching a bag or purse 64, as shown in Figure 6B, to the stroller 10.

[0040] When using a stroller, parents or guardians typically carry other items, such as purses, grocery bags, cell phones, diapers, cleaning wipes, or other personal or baby related items. Some strollers have bottom storage baskets for placing such items. However, these storage baskets can be inconvenient to access or some light weight strollers do not include such storage baskets. Therefore, users of the stroller may hang purses or shopping bags on the handle of the stroller. This is convenient in that the bag is easy to access, but the weight of the bag on the handle may cause the stroller to be unbalanced and increase the tendency of the stroller to topple backwards. A heavy bag hung from the handle of a stroller may cause the stroller to tip backwards even with a child in the seat. The problem is worse if the stroller is facing uphill, on uneven terrain, being pushed up a curb, or occupied by a small child. The accessory attachment 58 may be attached to the frame of the stroller 10 by any of the clamping or attachment methods described above, for example. Preferably, the accessory attachment 58 is attached near the center of gravity of the stroller 10 to avoid creating an unbalanced condition of the stroller 10. As shown in Figure 6A, the accessory attachment 58 is connected to stroller frame 12 of stroller 10 near the folding mechanism. Certain example embodiments of the accessory attachment 58 include a first end 61 for connecting to a stroller frame and a distal second end 62 for releasably connecting to the accessory 64. The first end 61 can include an aperture 64 that may be connected to frame 12 of the stroller 10. In certain example embodiments, the aperture 64 is on an angle, such that when the axis of the accessory attachment portion 58 is horizontal or substantially horizontal. The accessory attachment 58 may, optionally, include a rib 63 for securing the accessory 64 to the accessory attachment 58. The rib 63 may be replaced with any other locking element or securing means

including a friction fitting, a screwed fitting, or interference fitting, for example.

[0041] One example of an accessory 64 for attaching to an accessory attachment 58 is shown in Figure 6B. The accessory 64 in this example is a bag or purse. The accessory 64 can include an attachment portion 65 that is capable of being secured to the attachment portion 62 on the accessory attachment 58. The accessory 64 may be secured on stroller 10 by securing attachment portion 65 to attachment portion 62. The attachment portion 65 can slide over the cylindrical attachment portion 62 of accessory attachment 58. The attachment portion 65 may include an interior annular recess that receives the rib 63 securing the accessory 58 to the stroller 10. The accessory 64 is thus removably coupled to the stroller 10 in a center portion of the stroller as viewed from the side. Therefore, the bag or purse 64 is conveniently secured to stroller 10 while not contributing to an unbalanced condition of the stroller 10.

[0042] Figure 7 presents a perspective view of an attachment 70 for supporting a seat comprising one wheel 73 according to one example embodiment of the disclosure. Referring now to Figure 7, the example seat attachment 70 can include two seat attachment members 71, two connector portions 72, and a wheel 73. The two seat attachment members 71 and the wheel 73 can be disposed or otherwise positioned in a triangular relationship. In certain example embodiments, the wheel 73 provides additional stability to a stroller 10 connected to the seat attachment 70 if a heavier child is placed in a seat attached to the seat attachment members 71.

[0043] Figures 8A-H present multiple views of a stroller apparatus capable of being converted from a single seat stroller to a double seat stroller through the use of removable seat attachment adapters, according to another example embodiment of the disclosure. Referring now to Figures 8A-H, the example stroller apparatus 80 can include a stroller frame 81 capable of supporting one or more stroller seats 85, 86. In one example embodiment, the stroller frame 81 can be made of one or more pieces fixedly coupled and/or removably coupled to one another. The stroller frame 81 can include portions that are hollow tubing and other portions that are solid core tubing and can be made from metal, plastic, or other materials known in the art.

[0044] In one example embodiment, the stroller frame 81 can include a pair of front wheel support frames 81a (only the left front wheel support frame is shown), a pair of back wheel support frames 81b (only the left back wheel support frame is shown), a pair of upper tube support frames 81c (only the left upper tube support frame is shown), a handle portion 81d having a first end coupled to the left upper tube support frame 81c and a distal second end coupled to the right upper tube

support frame 81c, and foot rest support frame 81f having a first end coupled to the left front wheel support frame 81a (either directly or via the first seat attachment housing 1105 discussed below in Figure 11) and a distal second end coupled to the right front wheel support frame 81a (either directly of via the second seat attachment housing 1110 discussed below in Figure 11). In certain example embodiments, each front wheel support frame 81a can be fixedly coupled or rotatably coupled to its corresponding upper tube support frame 81c. Further, in certain example embodiments, the left upper tube support frame 81c, handle 81d, and right upper tube support frame 81c can be made from a single unitary piece of material, such as a single piece of bent, hollow-core metal or plastic tubing. Alternatively, each of the left upper tube support frame 81c, handle 81d, and right upper tube support frame 81c can be separate pieces of the same or different material that are coupled to one another.

[0045] The exemplary stroller frame 81 can also include a pair of folding mechanisms 81e (only the left folding mechanism is shown). In one example, each folding mechanism 81e can be coupled, either directly or indirectly to the corresponding front wheel support frame 81a, back wheel support frame 81b, and upper tube support frame 81c on the corresponding side (left and right) of the stroller 80. In certain example embodiments, one or more of the corresponding front wheel support frame 81a, back wheel support frame 81b, and upper tube support frame 81c are rotatably coupled and rotatably adjustable about one or more axes defined through the folding mechanism 81e. As such, in certain example embodiments, the folding mechanism 81e allows the stroller 80 to be folded into a more compact size for storing or transportation. Figure 8B shows the stroller 10 in a folded configuration.

[0046] The example stroller 80 can also include at least one front wheel 82 coupled directly or indirectly (*e.g.*, via one of the seat attachment housings 1105, 1110, as shown in Figure 11) to the stroller frame 81. Figure 8B presents an example embodiment wherein the stroller 80 can include two front wheels 82, one front wheel 82 being coupled to the stroller 80 adjacent the left front wheel support frame 81a and the second front wheel 82 being coupled to the stroller 80 adjacent the right front wheel support frame 81a. The example stroller 80 can also include at least one rear wheel 83 coupled directly or indirectly to the stroller frame 81 (*e.g.*, a corresponding back wheel support frame 81b). Figure 8B presents an example embodiment wherein the stroller 80 can include two back wheels 83, one back wheel 83 being coupled to the left back wheel support frame 81b and the second back wheel 83 coupled to the right back wheel support frame 81b.

[0047] The stroller 80 can also include a first stroller seat 86 either fixedly or removably coupled to the stroller frame 81. For example, the first stroller seat 86 can include a left connector on the left side of the first stroller seat 86 and a right connector on the right side of the first stroller seat 86 to removably couple and decouple the first stroller seat from the stroller frame 81. In one example, each of the left connector and right connector can be cavities in the first stroller seat 86 and can be configured to receive at least a portion of a corresponding seat attachment adapter (*e.g.*, a bayonet connector) therein. In another example embodiment, the left connector and the right connector can each be tabs or slots that are configured to be coupled to corresponding slots or tabs along the stroller frame 81.

[0048] The stroller 80 can also include a removable seat attachment adapter 84 that is removably coupled to the frame 81 such that the seat attachment adapter 84 can be decoupled from the frame 81 and stored when a second stroller seat is not being used with the stroller 80. In one example embodiment, each removable seat attachment adapters can be coupled to the frame by coupling the adapter 84 into a seat attachment housing disposed along the frame 81. In one example, the seat attachment housing (such as that described in Figures 11-14C below) can be integrally formed with all or a portion of the stroller frame (*e.g.*, integrally formed with front wheel support frame 81a). Alternatively, the seat attachment housing can be a separate apparatus that is coupled to the frame 81 or incorporated into the frame 81 by coupling multiple pieces of the frame 81 together. The frame 81 and each seat attachment housing can be made from the same or different materials, including, metals and plastics.

[0049] Though it cannot be seen in the side view of Figure 8A, a typical embodiment of the stroller 80 will include at least two removable seat attachment adapters 84 (at least one along each left and right side of the stroller 80 along the stroller frame 81). For example, at least one removable seat attachment adapter can support each lateral side of the second stroller seat 85. In certain example embodiments, each of the removable seat attachment adapters 84 may be made up of one piece or multiple parts. The removable seat attachment adapters 84 may be of any design capable of securely supporting a seat on the stroller. In one example, the removable seat attachment adapter 84 is configured to have a first end that is removably coupled to the frame 81 and/or seat attachment housing and a distal second end that is configured to be removably coupled to a second stroller seat 85. The removable seat attachment adapter 84 is designed to be capable of supporting the

second stroller seat 85 in front of the first stroller seat 86. The stroller 80 may also include a storage basket 87.

[0050] In certain examples, each of the removable seat attachment adapters 84 removably couples to the second stroller seat 85 at a vertical height that is substantially below the vertical height that the first stroller seat 86 attaches to the stroller frame 81, thereby positioning the second stroller seat 85 at a vertical position that is substantially below the vertical position of the first stroller seat 86 when both the first stroller seat 86 and the second stroller seat 85 are coupled to the stroller 80. The difference in vertical positioning of the second stroller seat 85 as compared to the first stroller seat 86 provides improved access to the first stroller seat 86 from the front of the stroller 10 when both stroller seats 85, 86 are coupled to the stroller 80. Further, in certain example embodiments, the first stroller seat 85 can be positioned substantially over the front wheels 82 so that the stroller 80 remains stable. For example, the second stroller seat 85 can be located substantially over the front wheels 82 and the first stroller seat 86 can be located substantially over the rear wheels 83. In addition, the seats 85, 86 can be positioned such that the center of gravity of the stroller 80 is between the front 82 and rear 83 wheels.

[0051] In certain example embodiments, the removable seat attachment adapter 84 is capable of supporting a second stroller seat 85 such that a child in the second stroller seat 85 is substantially above the frame 81 of the stroller 80 that is substantially adjacent to the connection point of the second stroller seat 85. This positioning of the second stroller seat 85 with respect to the frame 81 provides easier access to the second stroller seat 85, does not block access to the storage basket 87, allows more versatile configurations of the seats 85, 86, allows more variety of seats 85, 86 to be attached to the frame 81, and allows the parent or guardian to more easily monitor and see the child in each stroller seat 85, 86.

[0052] The example stroller of Figure 8A can also include the first stroller seat 86. In certain example embodiments, the first stroller seat 86 can be located generally closer to the handle portion 81d than to the front wheels 82. The first stroller seat 86 may be fixedly coupled or removably coupled to the frame 81. In certain example embodiments wherein the first stroller seat 86 is removably coupled to frame 81, the first stroller seat 86 may be adjustable from a forward-facing configuration to a rearward-facing configuration and vice-versa, as shown, for example, in Figures 8B-8C. In addition, the second stroller seat 85, when coupled to the corresponding removable seat

attachment adapters 84, can be adjustable from a forward-facing configuration to a rearward-facing configuration and vice-versa.

[0053] Figures 8C-8H present additional examples of combinations for a variety of types of stroller seats that can be removably coupled to the stroller 80. For example, in Figure 8D, the second stroller seat 85 can be replaced by an infant carrier 93 that can be removably coupled to each of the at least two removable seat attachment adapters 84 and the first stroller seat 86 can be coupled to the stroller in a forward-facing position. In another example, as shown in Figure 8E, the first stroller seat 86 can be replaced by a child carrier 91 that may be coupled to the frame 81 and positioned in the first seat position and the second stroller seat 85 can be coupled to the stroller 80 by way of the at least two removable seat attachment adapters 84 in a rearward-facing position. In yet another example, as shown in Figure 8F, the child carrier 91, of Figure 8E, can be replaced with a pram 92 that is removably coupled to the stroller 80 in the first seat position. In still another example configuration, as shown in Figure 8G, two child carriers 91 may be removably coupled to the stroller frame 81. For example, the front child carrier can be coupled to the stroller by way of each of the at least two removable seat attachment adapters 84. In another example configuration, one of the child carriers 91 may be replaced with a pram or bassinet 92, as shown in Figure 8H.

[0054] In certain example embodiments, the stroller 80 may also include a second set of removable seat attachment adapters 89 removably coupled to the frame 81 (or another pair of seat attachment housings substantially similar to those 1105, 1110 described below) along the upper tube support frame 81c. The second set of removable seat attachment adapters 89 may be substantially the same as or exactly the same as the removable seat attachment adapters 84 described herein and may be coupled to the frame 81 (or corresponding seat attachment housings) in substantially the same manner as the removable seat attachment adapters 84, as discussed in more detail below. The second set of removable seat attachment adapters 89 can include at least two adapters (at least one along each left and right side of the stroller 80) for removably coupling and decoupling the first stroller seat 86 or any other form of seat described herein to the stroller frame 81 or corresponding seat attachment housing.

[0055] In one example embodiment, as shown in Figures 9-10, the stroller 80 can include one or more, and preferably two, seat support elements 84. The seat support element 84 is connected to and can be removably coupled to the stroller 80 front wheel support frame 81a. In certain example

embodiments, the seat support element 84 is adjacent to the front wheel support portion 81a of frame 81. Alternatively, the seat support element 84 is simply forward of and positioned at a vertical level lower than the attachment point for the first stroller seat 86 (Figure 8A) on the stroller 80. The seat support element 84 is capable of supporting a second stroller seat 85 in front of the stroller seat 86 (see Figure 8A). This provides convenience and versatility to a user of the stroller 80. Seat support element 84 may be fixedly attached or removably attached to front wheel support portion 81a. In certain example embodiments, the front seat 85 may be positioned substantially over the front wheels 15 so the stroller 80 remains stable. Preferably, the seats 85, 86 should be positioned such that the center of gravity of the stroller 80 is between the front 15 and rear 14 wheels. If not an additional wheel may be placed on the attachment as previously described. The seat support element 84 can further include a seat connector 88. In one example, the seat connector 88 can be disposed along a top end of the seat support element 84. The example seat connector 88 may be a multipurpose general connector that allows different seats to be interchanged on the seat support element 84. Any style seat may be configured to connect to the seat connector 88, such as but not limited to, a stroller seat, a baby seat, a bassinet, a pram, a baby carrier, or a car seat, for example. As shown in Figure 9, the seat support element 84 can also include a connector portion 21. The connector portion 21 is capable of connecting the seat attachment to the frame 81 via the attachment portion 17 and the slot 18.

[0056] In certain example embodiments, the connector portion 21 of the seat attachment 20 has a cylindrical or substantially cylindrical shape. The connector portion 21 may be inserted into a cylindrical or substantially cylindrical slot 18 of the attachment portion 17 of the stroller 80 of Figure 9-10 to secure the seat attachment and convert the single stroller into a double stroller, as shown in Figure 8A. The connector portion 21 may be of a solid or tubular construction and may be any cross-sectional shape including, but not limited to, circular, polygonal, square, rectangular, and triangular, for example.

[0057] Figure 11 is a partial perspective view of the stroller 80 showing a seat attachment housing 1105 according to one example embodiment of the disclosure. Referring now to Figures 8A and 11, the example stroller 80 can include a first seat attachment housing 1105 and the second seat attachment housing 1110. The first seat attachment housing 1105 can include a first end 1105a having a cavity for slidably receiving and fixedly or slidably coupling the first end 1105a to a first end of the left front wheel support frame 81a. For example, the left front wheel support frame 81a

can have a substantially circular or oval cross-section and the cavity of the first end 1105a can have a corresponding circular or oval cross-section to slidably receive a portion of the left front wheel support frame 81a into the cavity. In one example, the left front wheel support frame 81a can be held in the cavity of the first end 1105a by a press fit hold. Alternatively, a spring-loaded button on the left front wheel support frame 81a can be positioned into a corresponding opening along one of the sides of the first seat attachment housing 1105.

[0058] The first seat attachment housing 1105 can also include a second end 1105b that includes a second cavity for coupling one of the front wheels 82 to the first seat attachment housing 1105. The wheel 82 may be removably coupled to the second end 1105b of the first seat attachment housing 1105 by a press fit hold. Alternatively, a spring-loaded button 82a on the front wheel apparatus 82 can be positioned into the cavity of the second end 1105b and positioned into a corresponding opening 1115 along one of the sides of the first seat attachment housing 1105. In one example embodiment, the first seat attachment housing 1105 can include an attachment arm 1120 extending off of one side of the first seat attachment housing 1105 in a generally orthogonal direction to the longitudinal axis of the housing 1105. The attachment arm 1120 can include a free end 1105c that includes a cavity for receiving therein and fixedly coupling or slidably coupling the first seat attachment housing 1105 to a first end of the foot rest support frame 81f. The foot rest support frame 81f may be removably coupled to the free end 1105c of the attachment arm 1120 by a press fit hold. Alternatively, a spring-loaded button on the foot rest support frame 81f can be positioned into the cavity of the free end 1105c and positioned into a corresponding opening along one of the sides of the attachment arm 1120.

[0059] The second seat attachment housing 1110 can include a first end 1110a having a cavity for slidably receiving and fixedly or slidably coupling the first end 1110a to a first end of the right front wheel support frame 81a. For example, the right front wheel support frame 81a can have a substantially circular or oval cross-section and the cavity of the first end 1110a can have a corresponding circular or oval cross-section to slidably receive a portion of the right front wheel support frame 81a into the cavity. In one example, the right front wheel support frame 81a can be held in the cavity of the first end 1110a by a press fit hold. Alternatively, a spring-loaded button on the right front wheel support frame 81a can be positioned into a corresponding opening along one of the sides of the second seat attachment housing 1110.

[0060] The second seat attachment housing 1110 can also include a second end 1110b that includes a second cavity for coupling one of the front wheels 82 to the second seat attachment housing 1110. The wheel 82 may be removably coupled to the second end 1110b of the second seat attachment housing 1110 by a press fit hold. Alternatively, a spring-loaded button on the front wheel apparatus 82 can be positioned into the cavity of the second end 1110b and positioned into a corresponding opening along one of the sides of the second seat attachment housing 1110. In one example embodiment, the second seat attachment housing 1110 can include an attachment arm 1125 extending off of one side of the second seat attachment housing 1110 in a generally orthogonal direction to the longitudinal axis of the housing 1110. The attachment arm 1125 can include a free end 1110c that includes a cavity for receiving therein and fixedly coupling or slidably coupling the second seat attachment housing 1110 to a second distal end of the foot rest support frame 81f. The second end of the foot rest support frame 81f may be removably coupled to the free end 1110c of the attachment arm 1125 by a press fit hold. Alternatively, a spring-loaded button on the foot rest support frame 81f can be positioned into the cavity of the free end 1110c and positioned into a corresponding opening along one of the sides of the attachment arm 1125.

[0061] In certain example embodiments, all or a portion of each of the seat attachment housings 1105, 1110 can be hollowed out with exterior sides. Each of the seat attachment housings 1105, 1110 can include an opening 1130 positioned along a top side of the respective seat attachment housings 1105, 1110. The opening 1130 can provide access to an adapter receiving cavity (see Figure 12) for receiving therein at least a portion of the removable seat attachment adapter 84 (see Figure 13A). Each seat attachment housing 1105, 1110 can also include a sliding door 1135. The sliding door 1135 is configured to be manually adjustable from a closed position to an open position by slidably opening the door 1135 along the top side of the seat attachment housing 1105, 1110 to provide access to the opening 1130 and adapter receiving cavity when the parent or guardian wants to insert and couple the removable seat attachment adapter 84 to the seat attachment housing 1105, 1110 and frame 81 in order to couple the second stroller seat 85 to the stroller 80. In one example, each seat attachment housing 1105, 1110 can include one or more rails either disposed above or below a top surface of the seat attachment housing 1105, 1110 that provide a guide way for slidably opening and closing the door 1135. In one example, the door 1135 can include a tab 1140 extending upward from a top surface of the door 1135 to provide a gripping area to grip the door 1135 and slide it open and closed. For example, a parent or guardian

can use a finger against the tab 1140 and apply pressure against the tab 1140 to open the door 1135 from a closed configuration to an open configuration.

[0062] The sliding door 1135 is also configured to be manually adjustable from an open configuration to a closed configuration by slidably closing the door 1135 along the top side of the seat attachment housing 1105, 1110 to prevent access to the opening 1130 and adapter receiving cavity when the second stroller seat 85 is not in use. In one example, the parent or guardian can press a finger against the tab 1140 and apply pressure against the tab 1140 to slide the door 1135 from the open configuration to the closed configuration.

[0063] Figure 12 is a partial perspective view of one of the seat attachment housings 1105, 1110 according to one example embodiment of the disclosure. Referring now to Figures 8A, 11, and 12, the door 1135 of the seat attachment housing 1105, 1110 is shown having been slid into the open configuration exposing the opening 1130 and the adapter receiving cavity 1205. The adapter receiving cavity 1205 can have any size and shape for removably coupling a portion of a removable seat attachment adapter 84 therein. In one example embodiment, all or a portion of the cross-sectional shape of the adapter receiving cavity 1205 can be keyed or have a keyed shape 1210 and all or a portion of the removable seat attachment adapter 84 can have a corresponding outer perimeter shape such that the removable seat attachment adapter 84 can only be inserted into the adapter receiving cavity 1205 in one, proper orientation.

[0064] Figures 13A-C are partial perspective views of the removable seat attachment adapter 84 coupled to the seat attachment housing 1105 according to one example embodiment of the disclosure. Now referring to Figures 8A, 11, 12, and 13A-C, once the door 1135 has been moved into the open configuration exposing the opening 1130 and the adapter receiving cavity 1205, a first end 84a of the removable seat attachment adapter 84 can be inserted into the adapter receiving cavity 1205. In certain example embodiments, the adapter receiving cavity 1205 can include one or more stop flanges 1315, 1320 that extend out from an inner surface of the cavity 1205 and into the cavity area to abut against a bottom side of the first end 84a of the removable seat attachment adapter 84 when the adapter 84 has penetrated a sufficient amount into the adapter receiving cavity 1205. Once the adapter 84 is inserted into the cavity 1205 and removably coupled to the seat attachment housing 1105, a stroller seat can be removable coupled to a seat connector disposed on or adjacent to the second end 84b of the removable seat attachment adapter 84. The seat connector on the second end 84b can be a multipurpose general connector that allows different seats to be

interchangeably connected to the removable seat attachment adapter 84. Any style seat may be configured to connect to the seat connector including, but not limited to, a stroller seat, a baby seat, a bassinet, a pram, a baby carrier, or a car seat, for example.

[0065] The removable seat attachment adapter 84 can also include a stop collar 1335 disposed a predetermined distance up from the first end 84a of the adapter 84. In one example embodiment, the stop collar 1335 is sized and shaped so that it will not fit into the opening 1130 and will not fit into the adapter receiving cavity 1205 as the first end 84a of the adapter 84 is being inserted into the adapter receiving cavity 1205. The size and shape of the outer surface of the stop collar 1335, being greater than that of the outer surface of the previous portion of the first end 84a inserted into the adapter receiving cavity 1205 will contact and abut an outer surface of the seat attachment housing 1105 when the adapter 84 has penetrated a sufficient amount into the adapter receiving cavity 1205.

[0066] The removable seat attachment adapter 84 can also include a spring-loaded latching tab 1305 disposed along one side of the adapter 84 between the first end 84a and the stop collar 1335. In certain example embodiments, the spring-loaded latching tab 1305 can be spring biased into an extended position (as shown in Figure 13B) via, for example, a spring (not shown). As the adapter 84 is first being inserted into the adapter receiving cavity 1205, the width of the adapter 84 at the point of the spring-loaded latching tab 1305, is greater than the width of the cavity 1205, which causes one or more side walls of the cavity 1205 to apply a force to the spring-loaded latching tab 1305 and push it inward from the extended position towards a retracted position, thereby allowing the first end 84a of the adapter 84 to continue moving into the adapter receiving cavity 1205. When the adapter 84 is inserted into the adapter receiving cavity 1205 a sufficient distance (which can be configurable based on the design specifics on the stroller), the spring-loaded latching tab 1305 can be positioned adjacent a tab receiver 1307. The tab receiver 1307 can be a cut-out or opening along one of the side walls of the cavity 1205 that allows the tab 1305 to move back to the extended position. The tab receiver 1307 can include a tab retainer surface 1310 that abuts a top side of the tab 1305 and prevents the removable seat attachment adapter 84 from being removed from the adapter receiving cavity 1205 while the spring-loaded latch tab 1305 is in the extended position.

[0067] The removable seat attachment adapter 84 can also include a tab release button 1330 that is operatively coupled to and configured to move the spring-loaded latching tab 1305 from the extended position to the retracted position via, for example, a guide wire 1325 or other attachment

mechanism. For example, when the removable seat attachment adapter 84 is latched into the seat attachment housing 1105, a parent or guardian can grab the removable seat attachment adapter 84 and depress the tab release button 1330, causing the guide wire to pull the spring-loaded latching tab 1305 inward from the extended position to the retracted position with a force greater than the spring biasing force on the tab 1305 and allowing the parent or guardian to remove the removable seat attachment adapter 84 from the adapter receiving cavity 1205 using only a single hand. Thereby, the ease of decoupling the removable seat attachment adapter 84 from the stroller frame 81 is improved.

[0068] In addition, as shown in Figure 13B, in certain example embodiments, the bottom end of the adapter receiving cavity 1205 and corresponding bottom end of the seat attachment housing 1105 can be open 1340 to the environment. Leaving the bottom side of the cavity 1205 open 1340 to the environment helps to prevent liquid and material build-up in the cavity 1205 when the removable seat attachment adapter 84 is not coupled into the cavity 1205 by allowing the liquid and materials to pass through the cavity 1205 and out of the bottom of the seat attachment housing 1105. This is especially beneficial when the parent or guardian removes the removable seat attachment adapter 84 from the cavity 1205 but does slide the door 1135 into the closed position to close up the opening 1130.

[0069] Figures 14A-C are partial perspective views of an alternative embodiment of the seat attachment housing 1405, 1410 according to another example embodiment of the disclosure. Referring now to Figures 8A, 11, and 14A-C, the seat attachment housings 1405, 1410 are substantially the same as the seat attachment housings 1105, 1110 described in Figures 11-13C except for as described below. Therefore, the description of the seat attachment housings 1105, 1110 in Figures 11-13C above is incorporated herein for the alternative seat attachment housings 1405, 1410, except with regard to the distinctions described below.

[0070] As shown in Figure 14C, each seat attachment housing 1405, 1410 includes an opening or open end 1130 positioned along a top side of the respective seat attachment housings 1405, 1410. The opening 1130 can provide access to an adapter receiving cavity 1205. Each seat attachment housing 1405, 1410 also includes one or more stop flanges 1315, 1320 that extend out from an interior wall 1411 of the cavity 1205 and into the cavity area. In addition, the bottom end of the adapter receiving cavity 1205 and corresponding bottom end of each seat attachment housing

1405, 1410 can have an opening or open end 1340 to the environment and with the cavity 1205 and opening 1130 provides a through-hole 1413 through the seat attachment housing 1405, 1410.

[0071] Each seat attachment housing 1405, 1410 can include a rotating door 1415 rotatably coupled to the seat attachment housing 1405, 1410. For example, the rotating door 1415 can have a fixed end that is rotatably coupled to the top side of the seat attachment housing 1405, 1410 or an interior wall 1411 of the opening 1130 or adapter receiving cavity 1205 by way of one or more hinges 1420. Alternatively, other devices may be used to allow the door 1415 to rotate from a closed configuration 1415a to an open configuration 1415b, as shown in Figure 14C. In certain example embodiments, the door 1415 and/or the rotating mechanism or hinge 1420 that the door 1415 is coupled to can be spring-biased into the closed configuration 1415a through the use of a spring or other biasing means. Spring-biasing the door 1415 into a closed configuration 1415a can help to prevent fluids and other material contaminants from entering the adapter receiving cavity 1205 when the removable seat attachment adapter 84 is not coupled into the adapter receiving cavity 1205.

[0072] When a parent or guardian wants to add a second stroller seat 85 to the stroller 80, they can insert the removable seat attachment adapter 84 into the adapter receiving cavity 1205 by pressing or applying a force with the first end 84a of the removable seat attachment adapter 84 against the top side of the rotating door 1415 with a force that is greater than the spring-biasing force. This will cause the door 1415 to rotate from the closed configuration 1415a towards the open configuration 1415b and allow the first end 84a of the removable seat attachment adapter to enter into the adapter receiving cavity 1205 and be coupled to the seat attachment housing 1405, 1410.

[0073] When the parent or guardian removes the removable seat attachment adapter 84, as described above with regard to Figures 13A-C, as the first end 84a of the removable seat attachment adapter 84 exits the adapter receiving cavity 1205 and opening 1130, the spring-bias of the hinge 1420 or door 1415 will cause the door 1415 to automatically rotate from the open configuration 1415b to the closed configuration 1415a, thereby limiting access to the opening 1130 and the adapter receiving cavity 1205 from the top side of the seat attachment housing 1405, 1410.

[0074] While the above description contains many specifics, these specifics should not be construed as limitations on the scope of the disclosure, but merely as exemplifications of the disclosed embodiments. Those skilled in the art will envision many other possible variations that are within the scope of the disclosure.

CLAIMS

What is claimed is:

1. A stroller, comprising:

a stroller frame comprising a handle portion and a front end portion;

a plurality of wheels comprising a plurality of back wheels;

a first seat coupled to the stroller frame at a first vertical position of the stroller frame, wherein the first seat is disposed closer to the handle portion than the front end portion of the stroller frame;

a first seat attachment housing coupled to the stroller frame at a second vertical position of the stroller frame that is below the first vertical position, wherein a first front wheel and a second front wheel extend from the front end of the stroller;

a second seat attachment housing coupled to the stroller frame at a third vertical position of the stroller frame that is below the first vertical position, wherein the third vertical position is closer to the front end portion than the handle portion;

a first seat attachment adapter spaced from and coupled to the first seat attachment housing by a first attachment frame member; and

a second seat attachment adapter spaced from and coupled to the second seat attachment housing by a second attachment frame member;

wherein the first seat and the second seat, when connected to the frame, are arranged in an inline descending configuration along the stroller frame.

ABSTRACT

A stroller is provided with the ability to removably couple and decouple a seat from the stroller as needed. The stroller can include a stroller frame. The stroller can also include one or more front wheels attached to the stroller frame and one or more rear wheels attached to the stroller frame. The stroller can also include a first seat coupled to the stroller frame. The stroller can include first and second seat attachment housings. Each of the seat attachment housings can include a cavity for receiving a corresponding one of the first and second seat attachment adapters. Each of the seat attachment housings can also include a door cover to prevent access to the respective cavity when not in use. The seat attachment adapters can be coupled to the respective seat attachment housings and a second seat can be coupled to the seat attachment adapters.

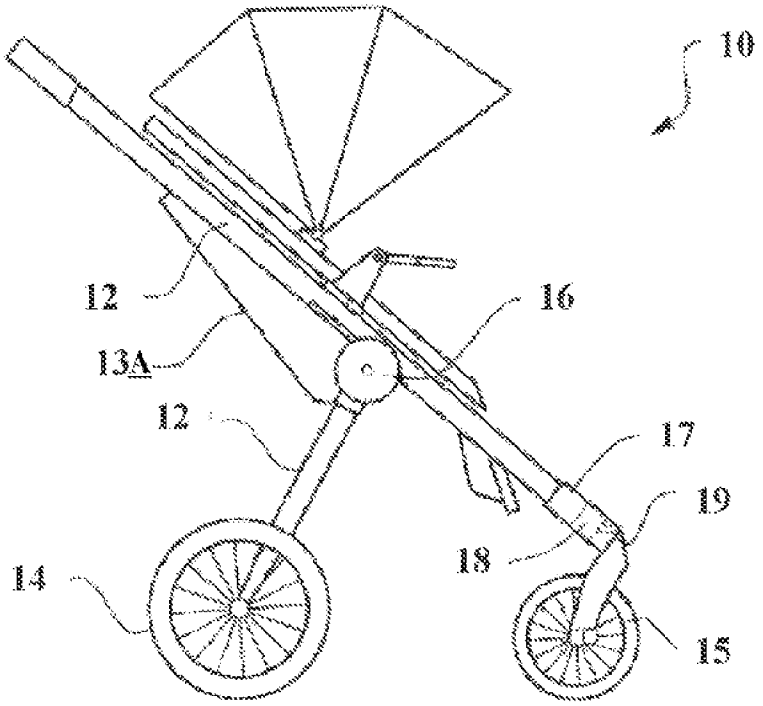


FIGURE 1

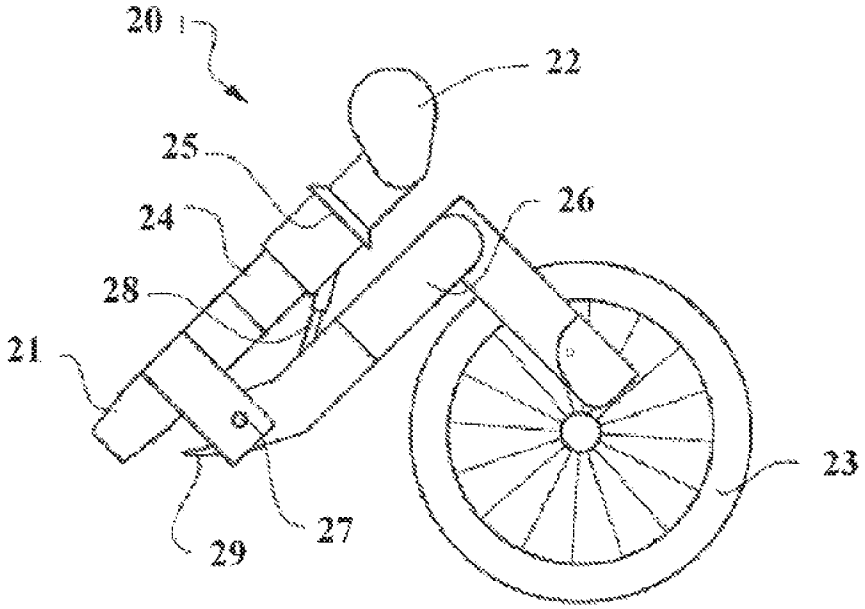


FIGURE 2

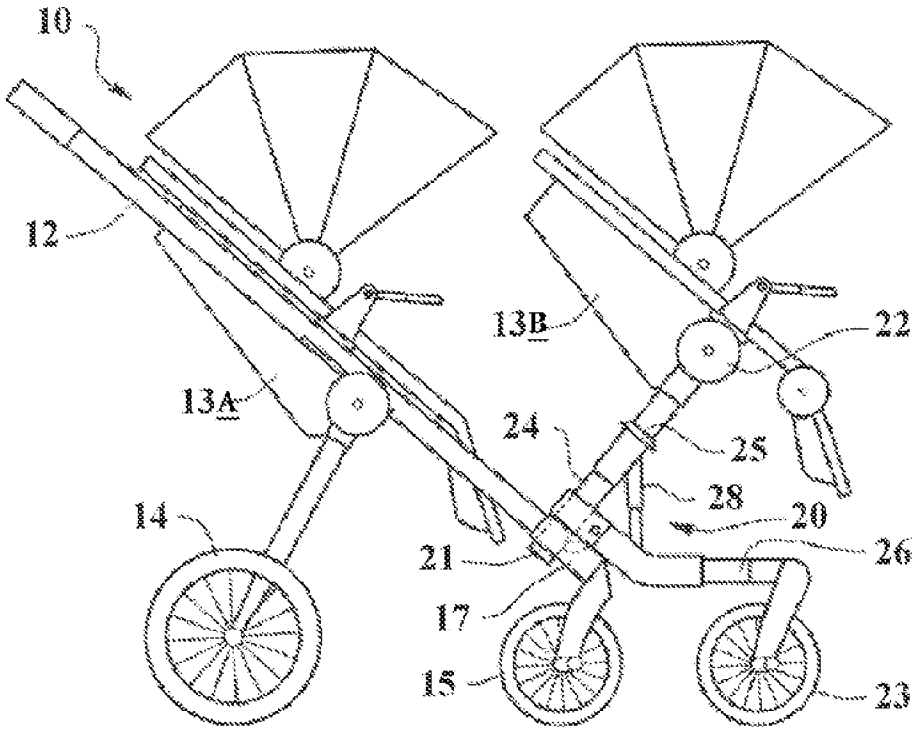


FIGURE 3

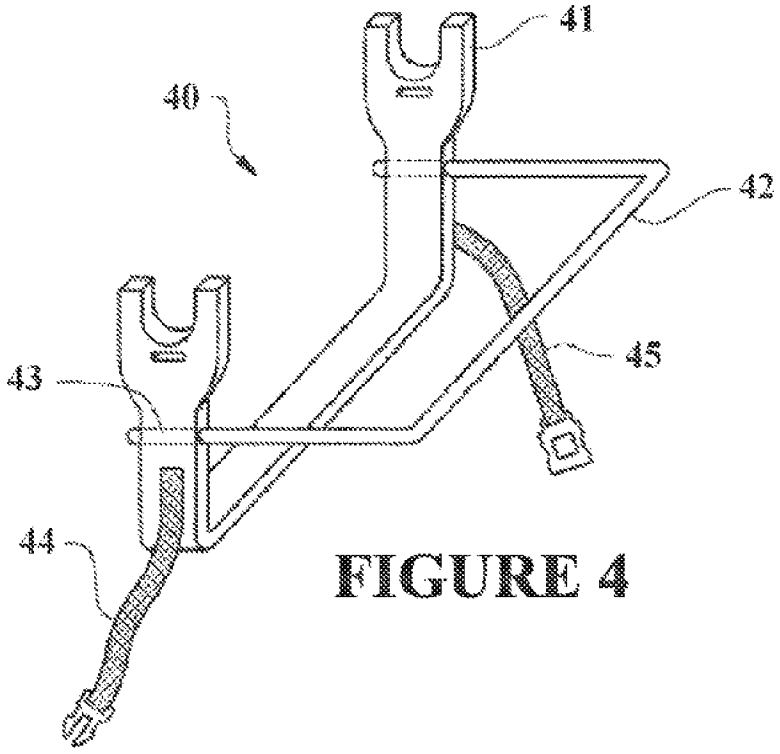


FIGURE 4

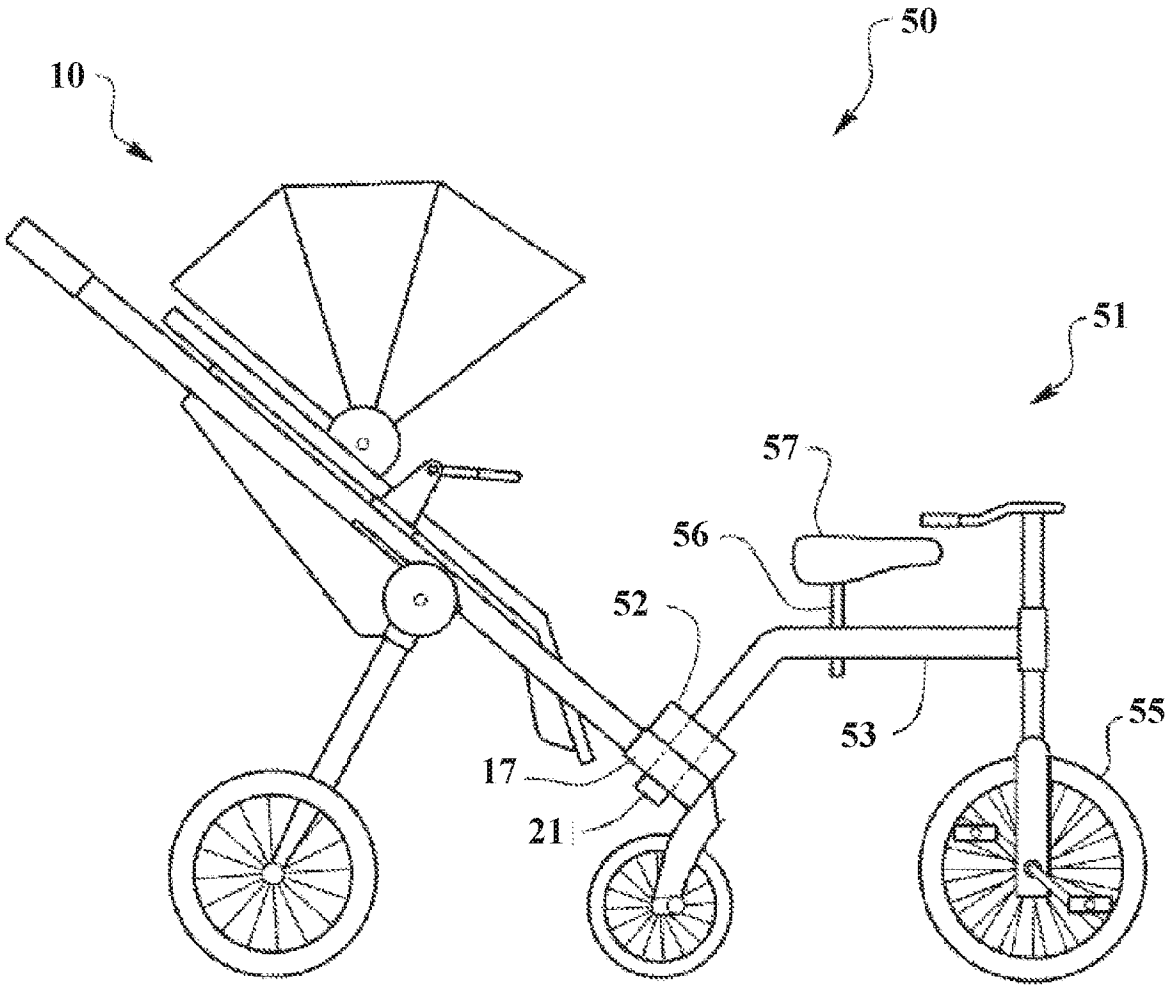


FIGURE 5

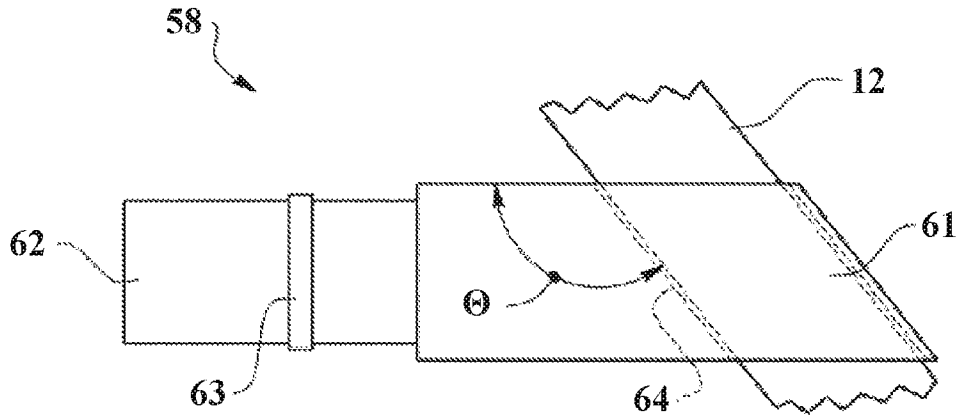


FIGURE 6A

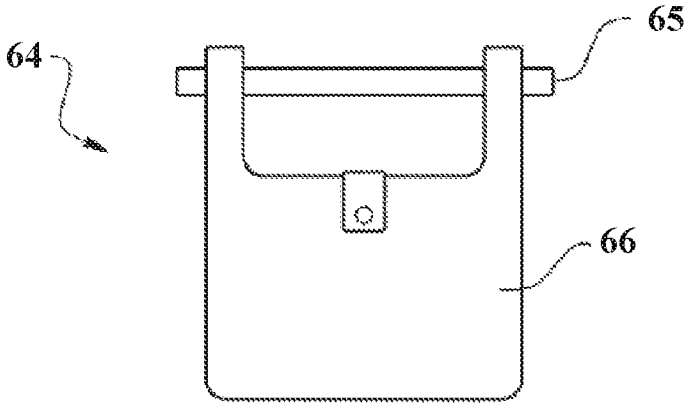


FIGURE 6B

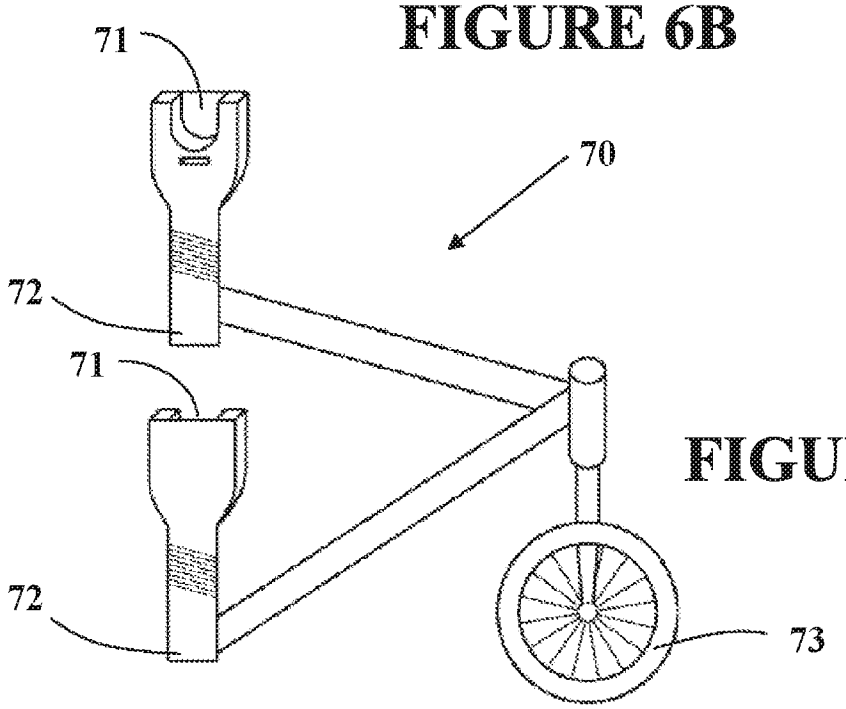


FIGURE 7

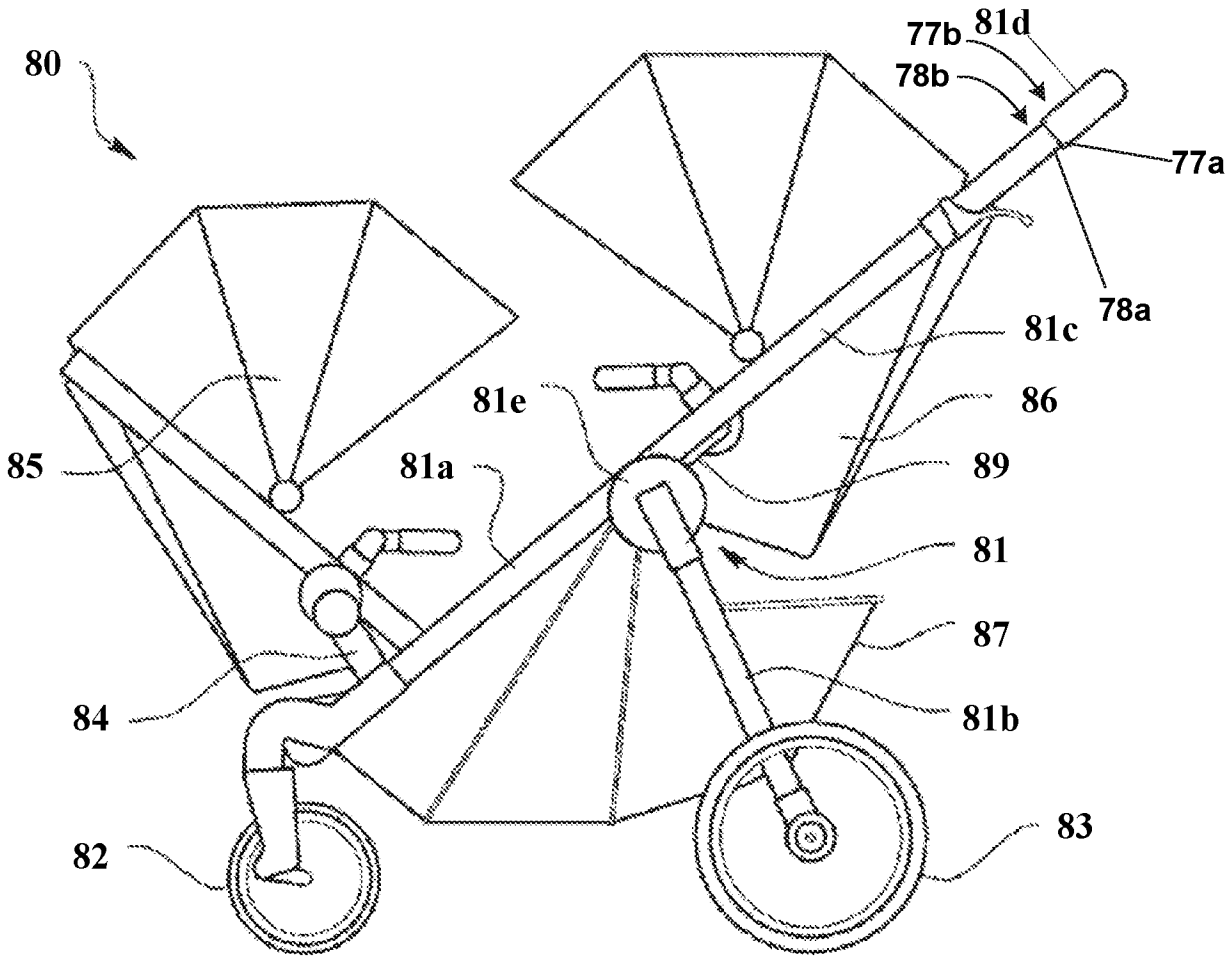


FIGURE 8A

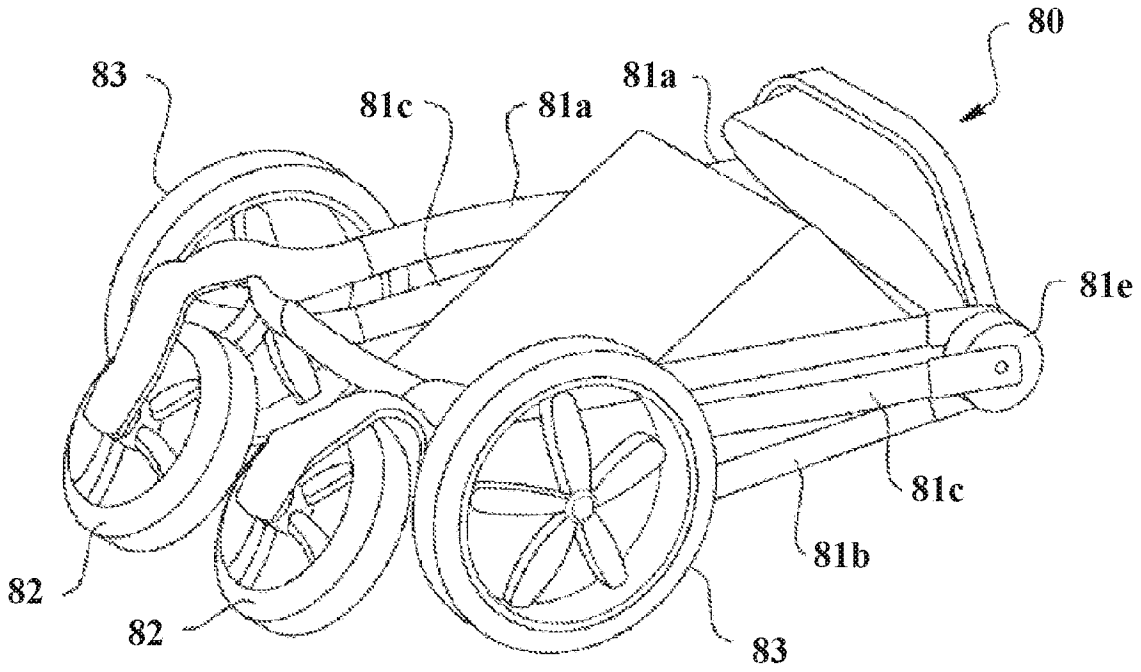


FIGURE 8B

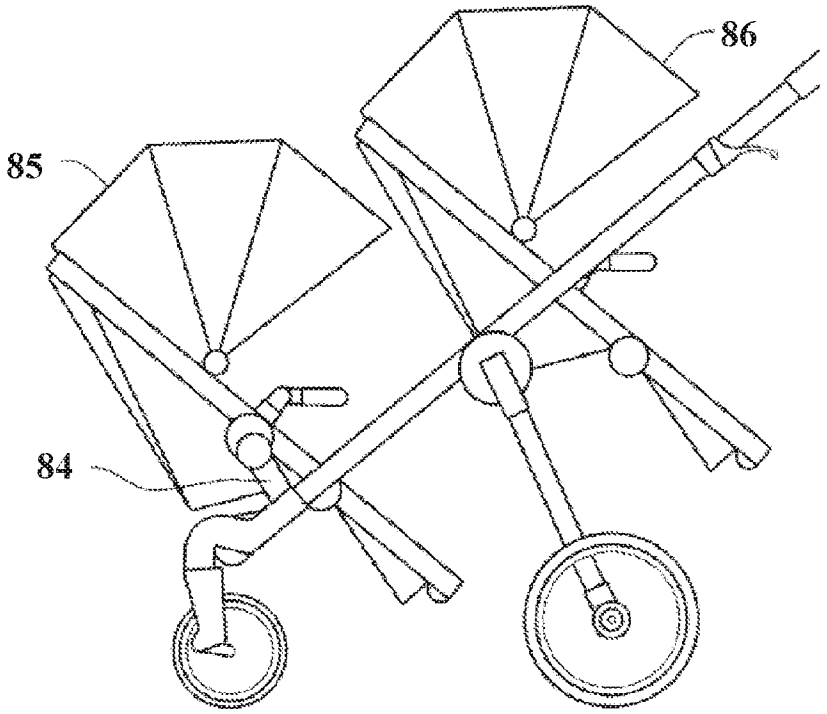


FIGURE 8C

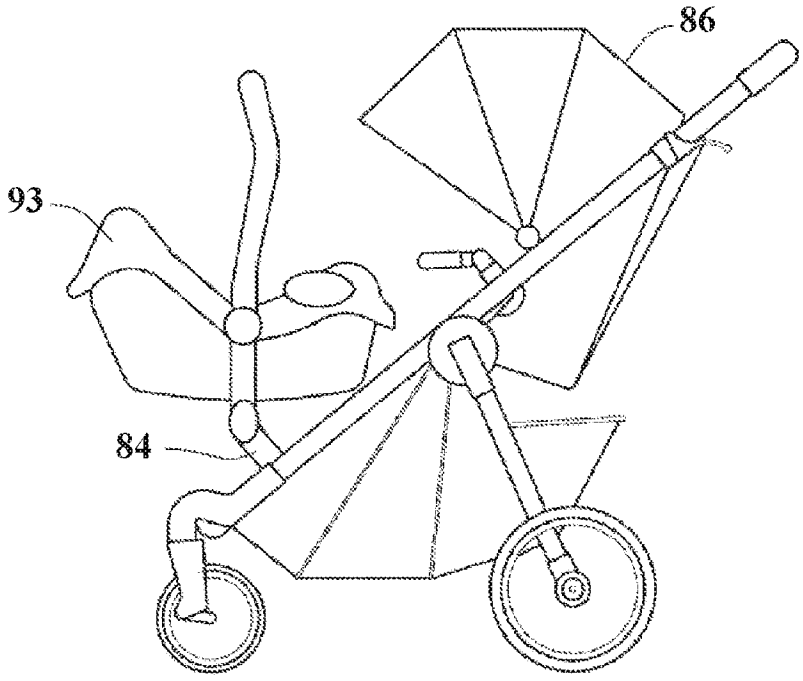


FIGURE 8D

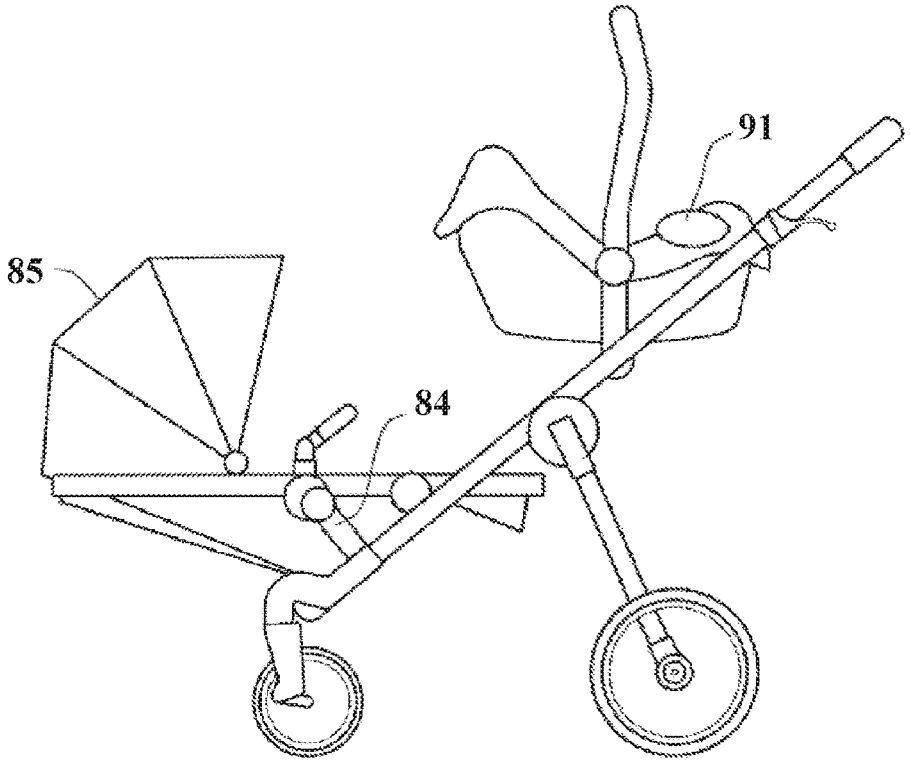


FIGURE 8E

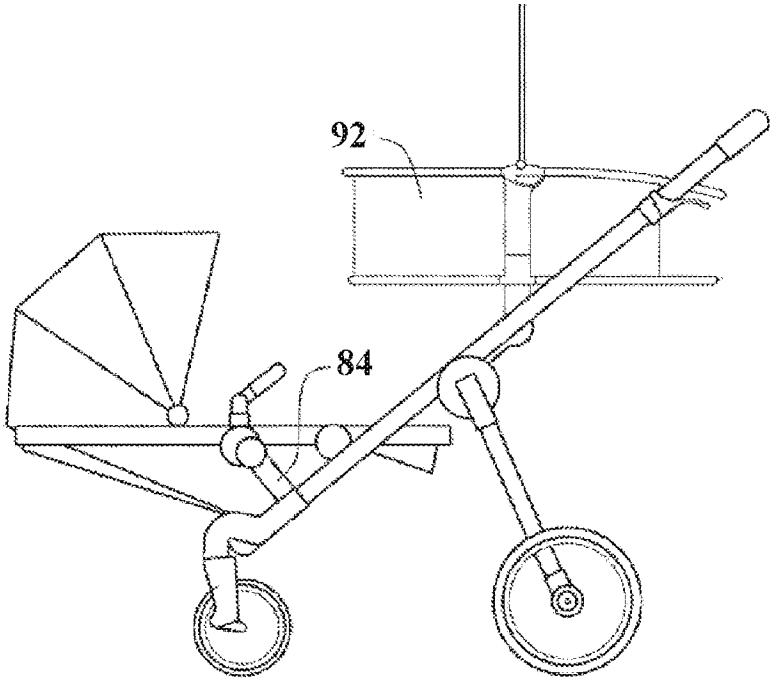


FIGURE 8F

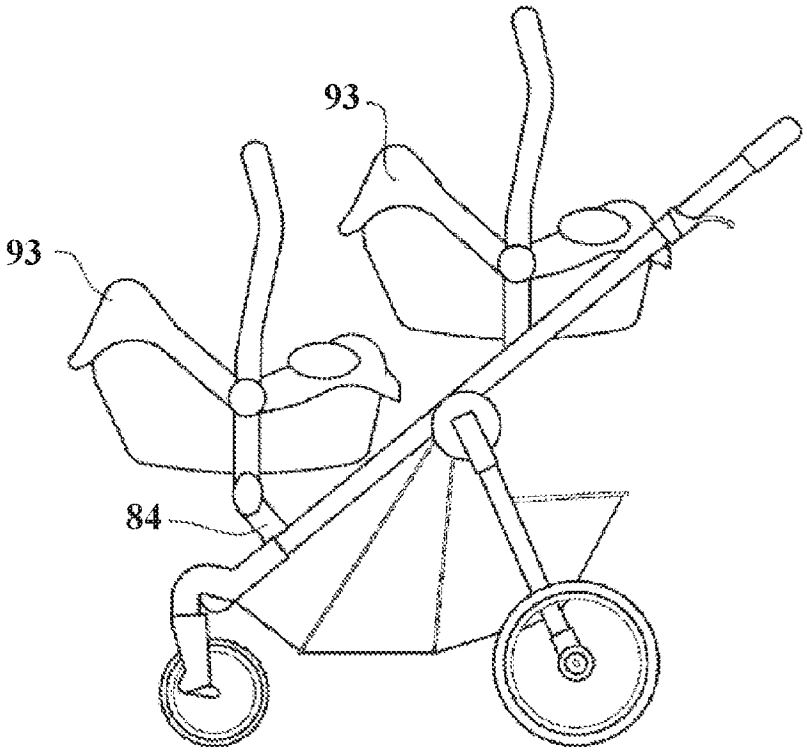


FIGURE 8G

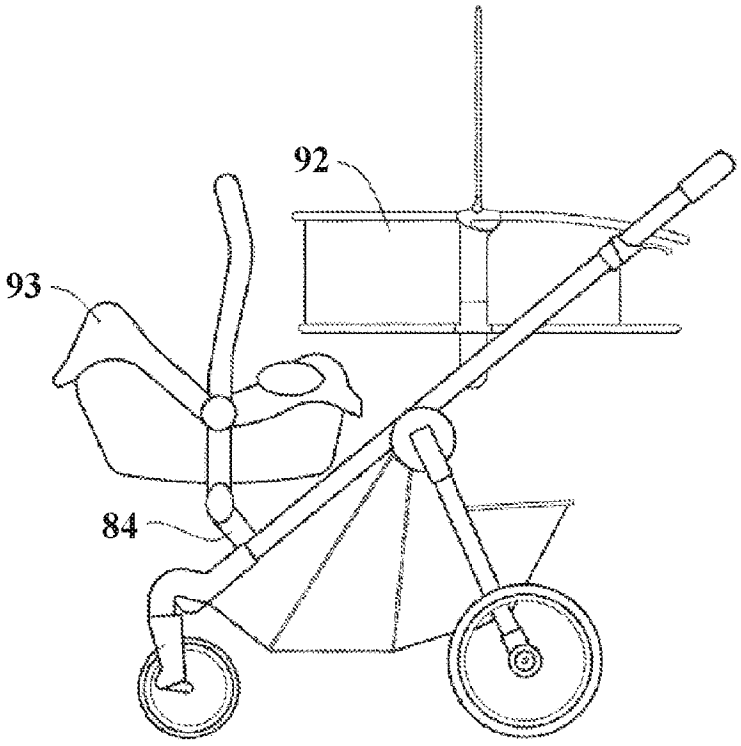


FIGURE 8H

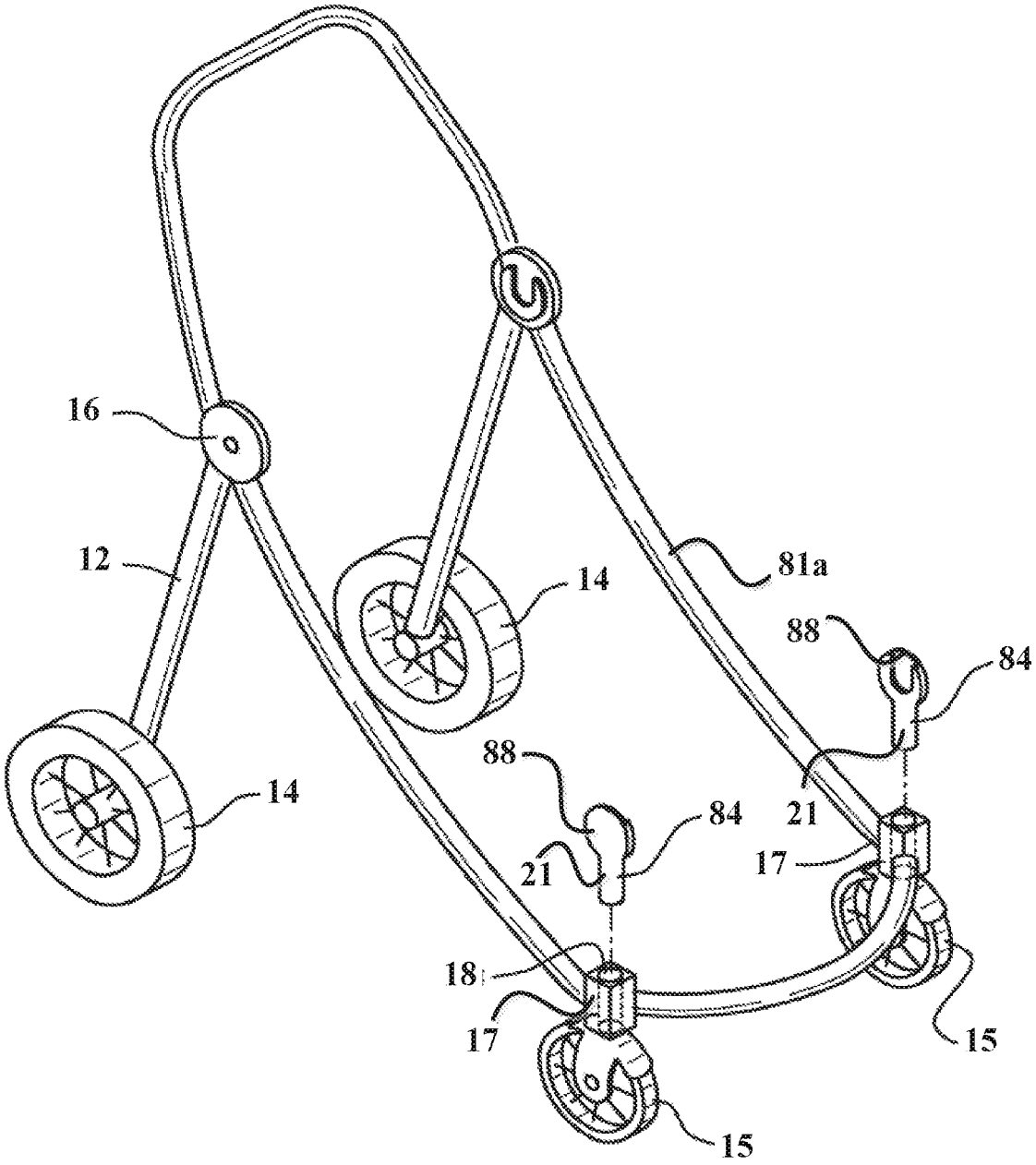


FIGURE 9

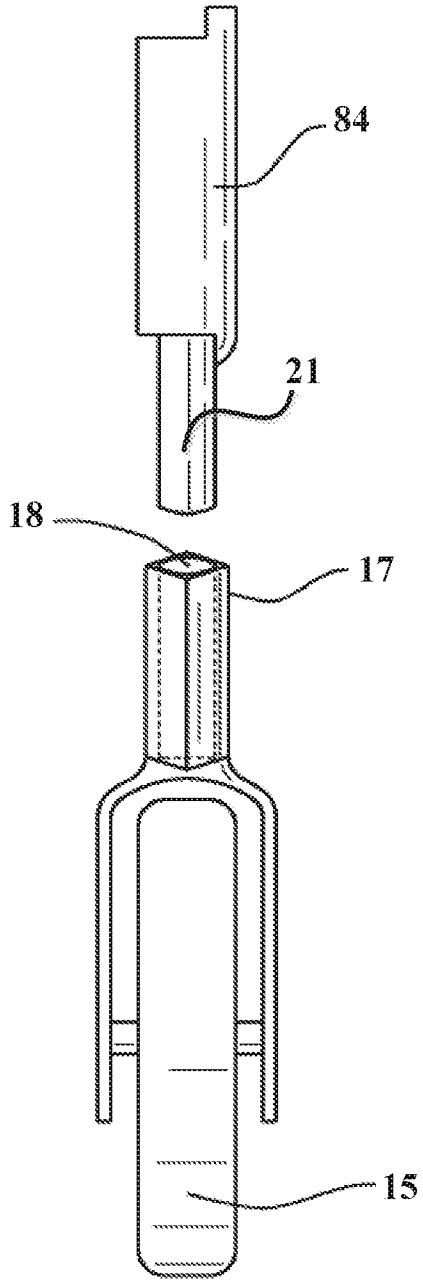
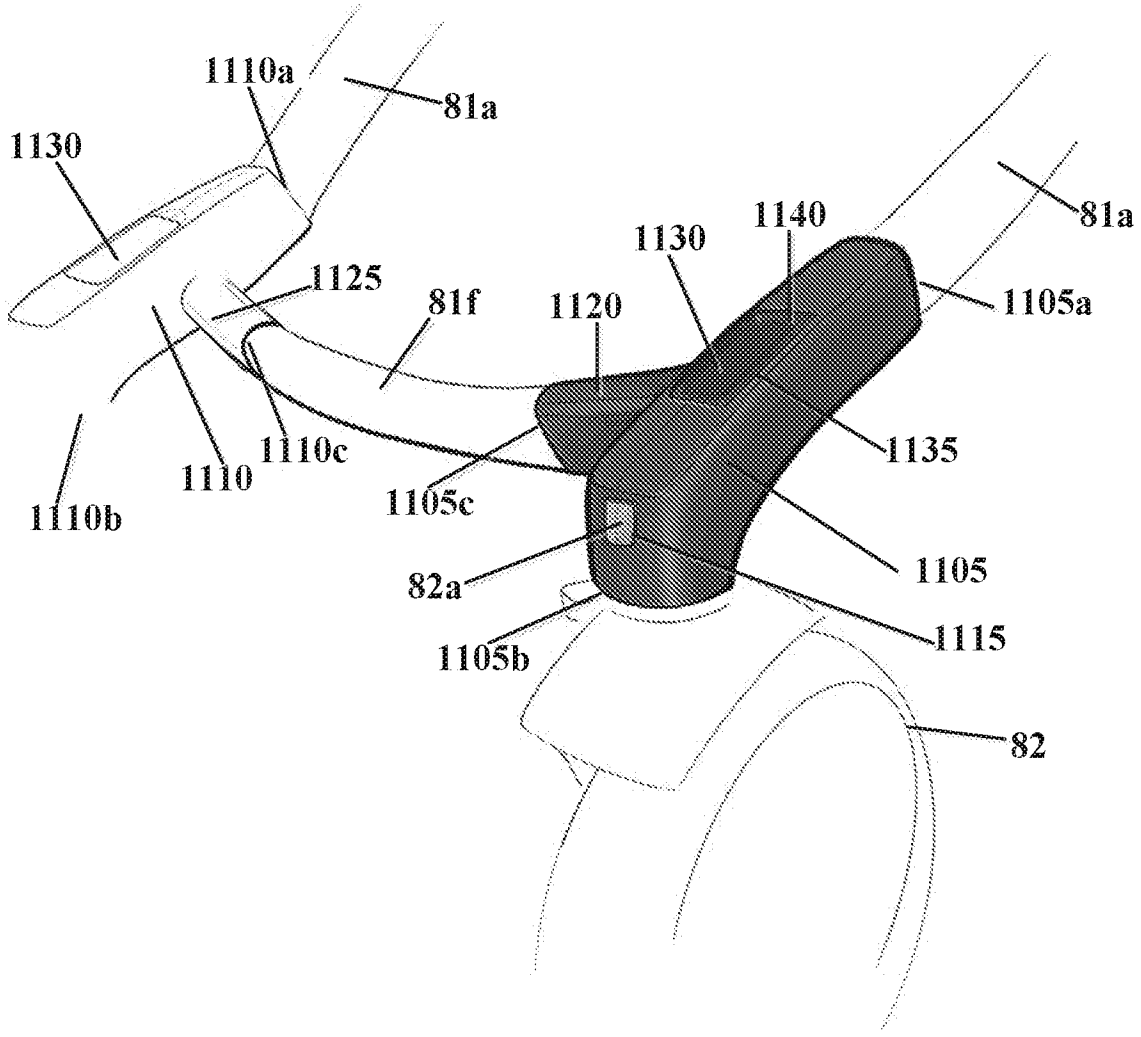


FIGURE 10


1110a
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81a
1130
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81f
1120
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1110c
1110
1110b
1105c
1105
82a
1115
1105b
82

FIGURE 11

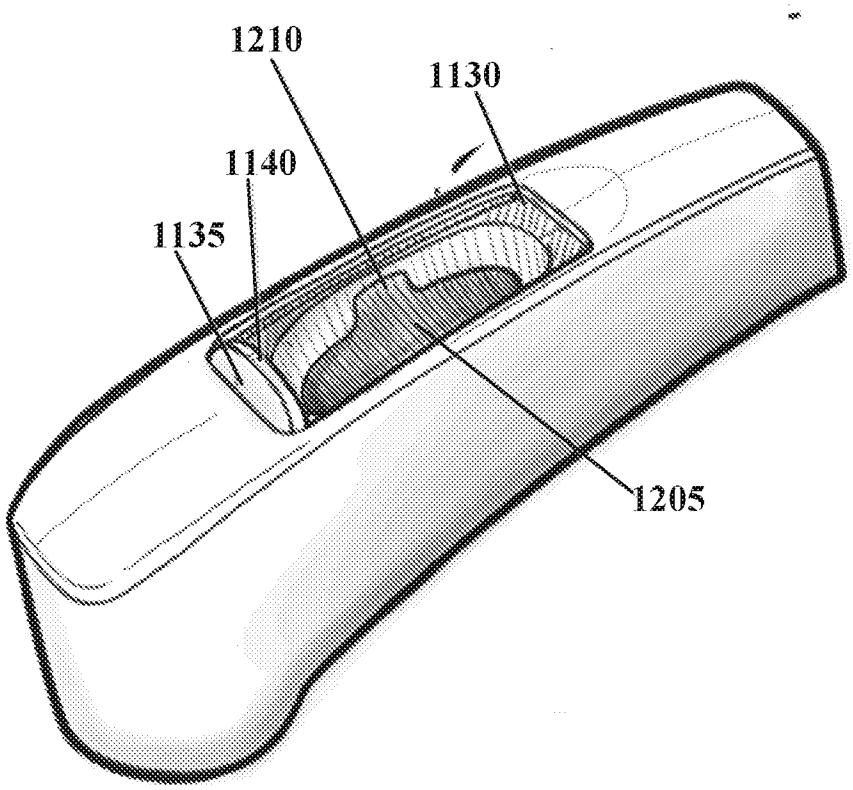

FIGURE 12

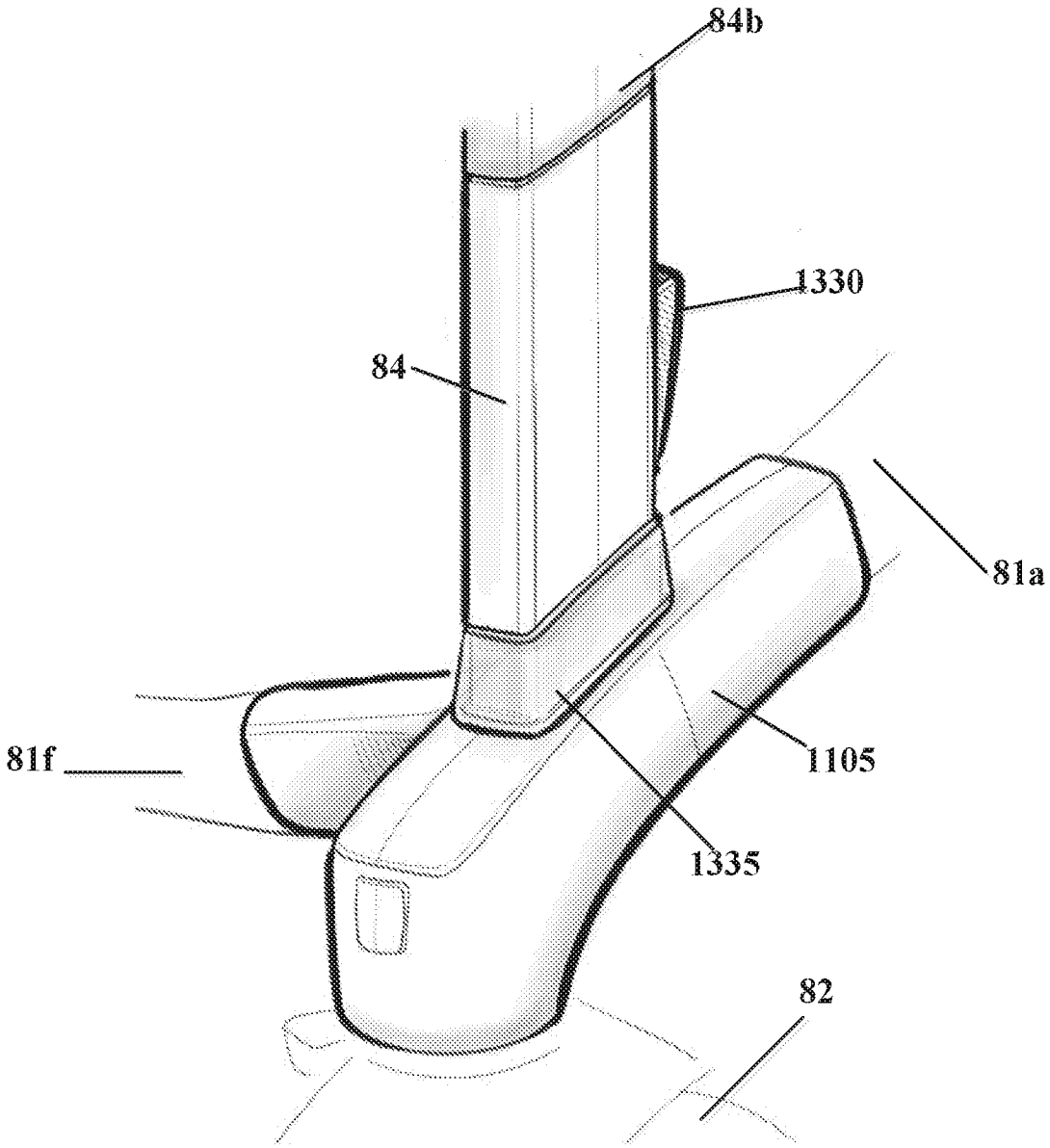

FIGURE 13A

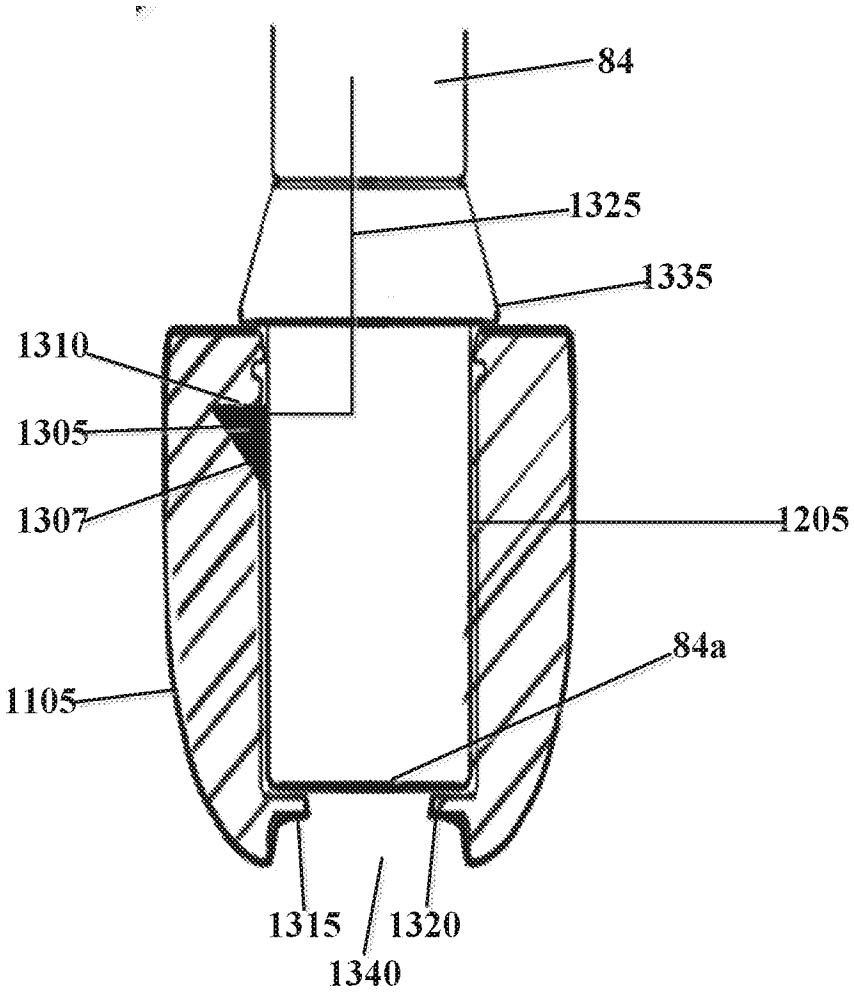

FIGURE 13B

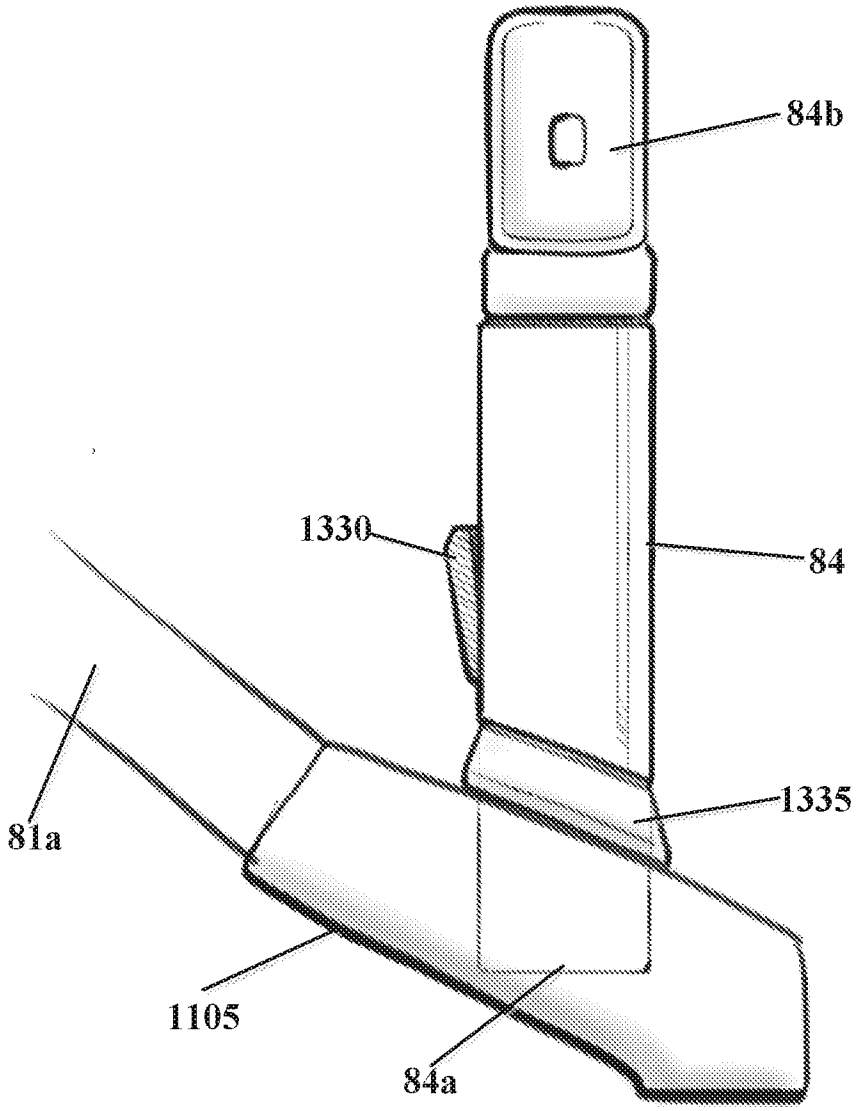

FIGURE 13C

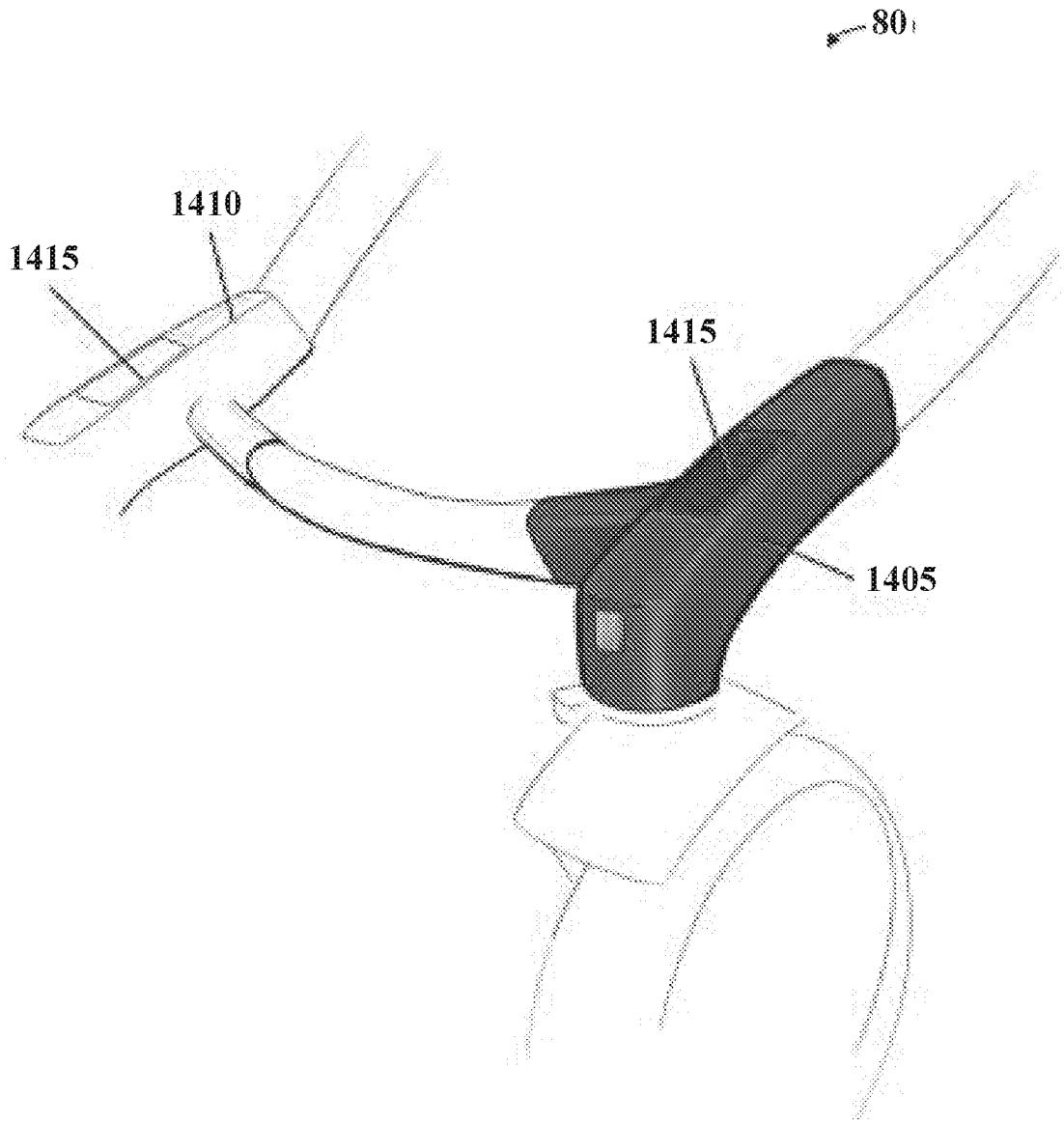

FIGURE 14A

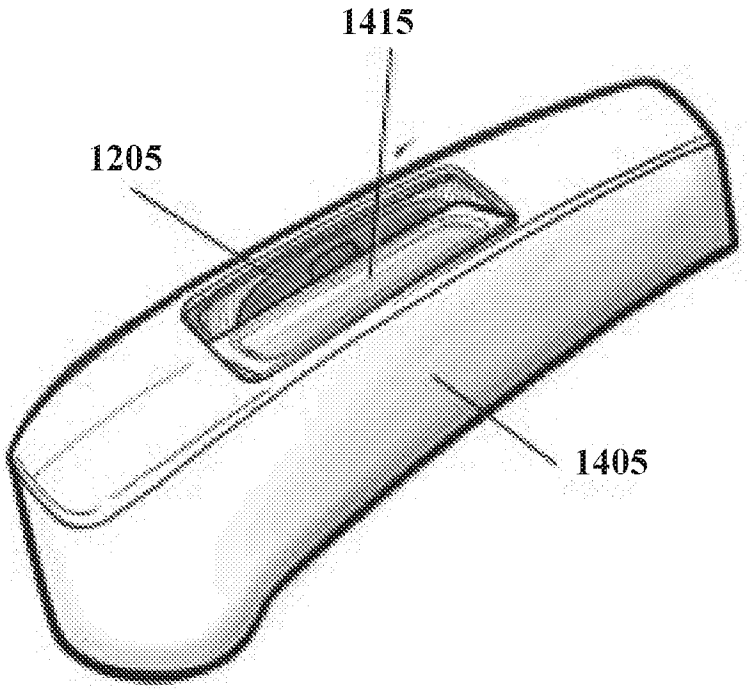

FIGURE 14B

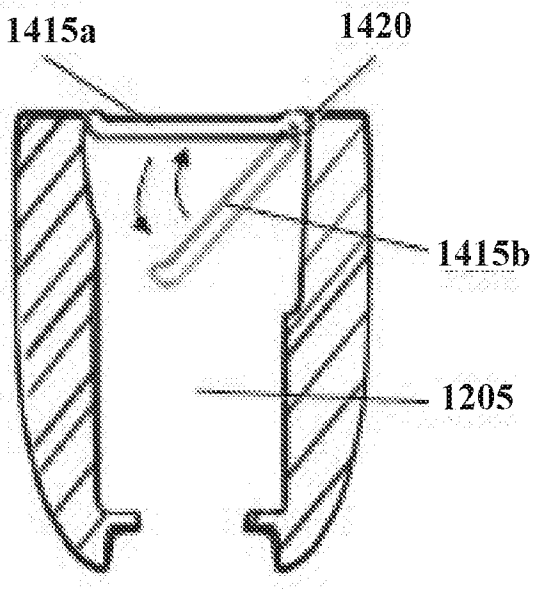

FIGURE 14C

PATENT ASSIGNMENT AND DECLARATION (37 CFR 1.63)

U.S. Patent Appln. No. 15/225,326 Attorney Docket No. 34757-1526
Filed: August 1, 2016

PARTIES TO THE ASSIGNMENT

Assignor(s):

MARK ZEHFUSS
10804 Cherry Hill Drive
Glen Allen, VA 23059

Assignee:
BABY JOGGER, LLC
8575 Magellan Parkway, Suite 1000
Richmond, VA 23227

AGREEMENT

WHEREAS, ASSIGNOR(S) (listed above) are inventor(s) of an invention entitled "**REMOVABLE SEAT ATTACHMENT FOR A STROLLER**" (Invention) for which a non-provisional application for United States Letters Patent

☒ was filed on August 1, 2016, and accorded U.S. Application No. 15/225,326 ; or

☐ will be filed concurrently with the submission of this executed PATENT ASSIGNMENT for recordation.

ASSIGNOR(S) hereby authorizes and requests ASSIGNEE'S legal representatives, of Sutherland Asbill and Brennan LLP, associated with Customer No. 134811, to insert in the header above and here in

parentheses (U.S. Application No. 15/225,326 , filed August 1, 2016), this application's U.S. application number and filing date, when known.

WHEREAS, ASSIGNEE, a corporation of the State of Virginia, is desirous of acquiring the entire right, title and interest in and to the Invention and in and to any letters patent that may be granted therefor in the United States and in any and all foreign countries;

NOW, THEREFORE, in exchange for good and valuable consideration, the receipt of which is hereby acknowledged, ASSIGNOR(S) hereby sell, assign and transfer unto ASSIGNEE its successors and assigns, the entire right, title and interest in and to said Invention and any improvements thereto, said Application and any and all letters patent which may be granted for said Invention in the United States of America and its territorial possessions and in any and all foreign countries, and in any and all provisional, divisions, reissues, re-examinations and continuations thereof, including the right to file foreign applications directly in the name of ASSIGNEE and to claim priority rights deriving from said application to which said foreign applications are entitled by virtue of international convention, treaty or otherwise, said Invention, application and all letters patent on said Invention to be held and enjoyed by ASSIGNEE and its successors and assigns for their use and benefit and of their successors and assigns as fully and entirely as the same would have been held and enjoyed by ASSIGNOR(S) had this assignment, transfer and sale not been made. ASSIGNOR(S) hereby authorize and request the Commissioner of Patents and Trademarks to issue all letters patent on said Invention to ASSIGNEE. ASSIGNOR(S) agree to execute all instruments and documents required for the making and prosecution of applications for United States and foreign letters patent on said Invention, for litigation regarding said letters patent, or for the purpose of protecting title to said Invention or letters patent therefor.

AND ASSIGNOR(S) DOES HEREBY sell, assign, transfer, and convey to ASSIGNEE, its successors, legal representatives, and assigns all claims for damages and all remedies arising out of any

violation of the rights assigned hereby that may have accrued prior to the date of assignment to ASSIGNEE, or may accrue hereafter, including, but not limited to, the right to sue for, collect, and retain damages for past infringements of said letters patent before or after issuance.

AND ASSIGNOR(S) DOES HEREBY covenant and agree that ASSIGNOR(S) will communicate to said ASSIGNEE, its successors, legal representatives and assigns, any facts known to ASSIGNOR respecting the Invention or said application, and testify in any legal proceeding, assist in the preparation of any other patent property relating to the application and the Invention or any improvements made thereto, sign/execute all lawful papers, provide all requested documents, execute and make all rightful oaths and/or declarations in connection with the application and the Invention including any improvements made thereto, any patent applications filed therefrom, and any continuing application filed from any of the aforementioned applications, and generally do everything possible to aid the ASSIGNEE, its successors, legal representatives and assigns, to obtain and enforce proper patent protection for the Invention in all countries. These provisions are binding upon our heirs, legal representatives, administrators, and assigns.

CORRESPONDENCE ADDRESS

I hereby direct all correspondence and telephone calls in connection with this application be addressed to the number associated with the customer number listed below, which is:

134811

PATENT ASSIGNMENT AND DECLARATION (37 CFR 1.63)

U.S. Patent Appln. No. 15/225,326
Filed: August 1, 2016

Attorney Docket No 34757-1526

DECLARATION

As a below named inventor, I hereby declare that this declaration is directed to:

☐ the attached application; or

☒ United States application number 15/225,326 filed on August 1, 2016; or

☐ PCT international application number _____ filed on _____.
(We hereby authorize and request the Company or its delegated attorneys or agents to insert above the application number and filing date of the application when known)

The above-identified application was made or authorized to be made by me. I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I have reviewed and understand the contents of the above-identified application, and acknowledge the duty to disclose to the US Patent & Trademark Office all information known to me to be material to the patentability as defined in 37 CFR 1.56.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 USC 1001 by fine or imprisonment of not more than five (5) years, or both.

Legal name of inventor: MARK ZEHFUSS

Mark Zehfuss

8/2/16
Date

STATE OF Virginia
ss.
COUNTY OF Henrico

This 2nd day of August, 2016 before me personally came the above-named Mark Zehfuss, to me personally known as the individual who executed the foregoing assignment, who acknowledged to me that he/she executed the same of his/her own free will for the purposes therein set forth.

Seal

DARNELL TREVON TAYLOR
NOTARY PUBLIC
COMMONWEALTH OF VIRGINIA

Darnell Trevon Taylor
(Notary Public)

37061234.1

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APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
18/448,417	08/11/2023		1820	34757-2775	1	1

CONFIRMATION NO. 3414

FILING RECEIPT

134811
Eversheds Sutherland (US) LLP/NWL
999 Peachtree Street
Suite 2300
Atlanta, GA 30309

OC00000060912504

Date Mailed: 08/24/2023

Receipt is acknowledged of this non-provisional utility patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF FIRST INVENTOR, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection.

Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please submit a written request for a corrected Filing Receipt, including a properly marked-up ADS showing the changes with strike-through for deletions and underlining for additions. If you received a "Notice to File Missing Parts" or other Notice requiring a response for this application, please submit any request for correction to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections provided that the request is grantable.

Inventor(s)

Mark ZEHFUSS, Glen Allen, VA;

Applicant(s)

Baby Jogger, LLC, Atlanta, GA;

Power of Attorney: The patent practitioners associated with Customer Number 134811

Domestic Priority data as claimed by applicant

This application is a CON of 16/903,292 06/16/2020 PAT 11,731,682
which is a CON of 15/912,901 03/06/2018 PAT 10,730,543
which is a CON of 15/225,326 08/01/2016 PAT 9,944,305
which claims benefit of 62/311,224 03/21/2016
and is a CIP of 14/597,420 01/15/2015 PAT 9,403,550
which is a CON of 14/261,558 04/25/2014 PAT 8,955,869
which is a CON of 12/631,375 12/04/2009 ABN
which claims benefit of 61/119,920 12/04/2008

Foreign Applications for which priority is claimed (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see http://www.uspto.gov for more information.) - None.
Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

Permission to Access Application via Priority Document Exchange: Yes

Permission to Access Search Results: Yes

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

If Required, Foreign Filing License Granted: 08/22/2023

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 18/448,417**

Projected Publication Date: 11/30/2023

Non-Publication Request: No

Early Publication Request: No

Title

REMOVABLE SEAT ATTACHMENT FOR A STROLLER

Preliminary Class

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

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

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

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

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

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

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, http://www.stopfakes.gov. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific

countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

LICENSE FOR FOREIGN FILING UNDER

Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

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

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

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

NOT GRANTED

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

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technology, manufacture products, deliver services, and grow your business, visit http://www.SelectUSA.gov or call +1-202-482-6800.

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number: 18/448,417

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY FEE($)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	320
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	700
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	800
TOTAL CLAIMS (37 CFR 1.16(i))	1 minus 20 =	* 0			OR	x =	0
INDEPENDENT CLAIMS (37 CFR 1.16(h))	1 minus 3 =	*				x =	0
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						0
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							0
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	1820

APPLICATION AS AMENDED - PART II

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY ADDITIONAL FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE($)
AMENDMENT A	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE($)	ADDITIONAL FEE($)		RATE($)	ADDITIONAL FEE($)
AMENDMENT B	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	18448417
Filing Date	2023-08-11
First Named Inventor	Mark ZEHFUSS
Art Unit	OPAP
Examiner Name	TBD
Attorney Docket Number	34757-2775

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Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
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	2	5417449	A	1995-05-23	SHAMIE	
	3	5653460	A	1997-08-05	FOGARTY	
	4	5794951	A	1998-08-18	CORLEY ET AL.	
	5	D360392		1995-07-18	LEWANDOWSKI	

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	1					

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Examiner Name	TBD
Attorney Docket Number	34757-2775

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1							☐

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Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**		
	Application Number	18448417
	Filing Date	2023-08-11
	First Named Inventor	Mark ZEHFUSS
	Art Unit	OPAP
	Examiner Name	TBD
	Attorney Docket Number	34757-2775

CERTIFICATION STATEMENT

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

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

OR

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

☐ See attached certification statement.

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

☒ A certification statement is not submitted herewith.

SIGNATURE

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

Signature	/Umar Bakhsh/	Date (YYYY-MM-DD)	2023-10-27
Name/Print	Umar Bakhsh	Registration Number	67307

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

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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.

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ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/448,417	**10/27/2023 01:27:05 PM ET**	**34757-2775**

Title of Invention

REMOVABLE SEAT ATTACHMENT FOR A STROLLER

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	3414	FILED BY	Umar Bakhsh
PATENT CENTER #	63099012	FILING DATE	08/11/2023
CUSTOMER #	134811	FIRST NAMED INVENTOR	Mark ZEHFUSS
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	-

Documents

TOTAL DOCUMENTS: 1

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
updated_IDS.pdf	4	Information Disclosure Statement (IDS) Form (SB08)	598 KB

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Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
updated_IDS.pdf	91AC9816456F77A12341413BE04912B365F97C14F555D6B1581

D462BBF89D944E272D2C9F4083F064C7ED58A26327E4894955
83A20AAE38B167ACCDBE4E68453

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If a new application is being filed and the application includes the necessary components for 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

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ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/448,417	**11/07/2023 06:34:00 PM Z ET**	**34757-2775**

Title of Invention

REMOVABLE SEAT ATTACHMENT FOR A STROLLER

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	3414	FILED BY	Loretta Garcia
PATENT CENTER #	63182222	FILING DATE	08/11/2023
CUSTOMER #	134811	FIRST NAMED INVENTOR	Mark ZEHFUSS
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	Umar Bakhsh

Documents

TOTAL DOCUMENTS: 1

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
34757-2775 - Suppl. IDS.pdf	4	Information Disclosure Statement (IDS) Form (SB08)	598 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
34757-2775 - Suppl. IDS.pdf	B977FE578B95286D4E9B13D777C3014BEFAB428EDA3536B4659125A35178AABD4DC55ACFEE1739E74B07E945BF0B7427D68F3550E3F9F4CF6D8EB68741A90EF7

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PTO/SB/08a (01-10)
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	18448417
Filing Date	2023-08-11
First Named Inventor	Mark ZEHFUSS
Art Unit	OPAP
Examiner Name	TBD
Attorney Docket Number	34757-2775

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	8371606	B2	2013-02-12	Gower et al.	
	2	9004524	B1	2015-04-14	Gower et al.	
	3	9643640	B2	2017-05-09	Gower et al.	

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	Attorney Docket Number	34757-2775

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Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
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Signature	/Umar Bakhsh/	Date (YYYY-MM-DD)	2023-11-07
Name/Print	Umar Bakhsh	Registration Number	67307

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
18/448,417	08/11/2023	Mark ZEHFUSS	34757-2775

CONFIRMATION NO. 3414

134811
Eversheds Sutherland (US) LLP/NWL
999 Peachtree Street
Suite 2300
Atlanta, GA 30309

PUBLICATION NOTICE

OC00000065163961

Date Mailed: 11/30/2023

Title:REMOVABLE SEAT ATTACHMENT FOR A STROLLER

Publication No.US-2023-0382447-A1
Publication Date:11/30/2023

NOTICE OF PUBLICATION OF APPLICATION

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

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

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

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

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

Notice of References Cited	Application/Control No. 18/448,417	Applicant(s)/Patent Under Reexamination ZEHFUSS, Mark	
	Examiner JAMES M DOLAK	Art Unit 3618	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date YYYY-MM-DD	Name	CPC Classification	US Classification
*	A	US-7475900-B2	01-2009	Cheng; Huang-Yi	B62B7/08	280/47.38
*	B	US-D593459-S	06-2009	Liao; Gordon		D12/129
*	C	US-6286844-B1	09-2001	Cone, II; Richard E.	B62B9/28	280/47.41
*	D	US-10556610-B2	02-2020	Rolicki; Peter	B62B9/02	1/1
*	E	US-10449987-B2	10-2019	Gibson; Bryce	B62B7/06	1/1
*	F	US-6513827-B1	02-2003	Barenbrug; Machiel Gerardus Theodorus Marie	B62B7/145	280/648
*	G	US-7377537-B2	05-2008	Li; Wei-Yeh	B62B7/123	280/47.38
*	H	US-10899377-B2	01-2021	Eggert-Crowe; Colin F.	B62B7/14	1/1
*	I	US-8602441-B2	12-2013	Li; Jian-Qun	B62B9/28	280/642
*	J	US-6267406-B1	07-2001	Huang; Mien Chen	B62B7/08	280/47.38
*	K	US-11091186-B2	08-2021	Zhang; Xiaojian	B62B7/062	1/1
*	L	US-8313115-B2	11-2012	Cheng; Kenny	B62B7/142	280/47.38
*	M	US-7971897-B2	07-2011	Pike; Robert T.	B62B7/123	280/650

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date YYYY-MM-DD	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 YYYY-MM-DD format are publication dates. Classifications may be US or foreign.

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	18/448,417	ZEHFUSS, Mark
	Examiner	Art Unit
	JAMES M DOLAK	3618

✓	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	02/24/2024								
	1	✓								

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	18/448,417	ZEHFUSS, Mark
	Examiner	Art Unit
	JAMES M DOLAK	3618

CPC - Searched*		
Symbol	Date	Examiner
B62B7/008,00,006,14,142,145	02/24/2024	JMD
B62B9/12,28,102	02/24/2024	JMD

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
Inventor & Assignee Search	02/24/2024	JMD
Text search	02/24/2024	JMD

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner

/JAMES M DOLAK/ Primary Examiner.Art Unit 3618	/JAMES M DOLAK/ Primary Examiner, Art Unit 3618

Bibliographic Data

Application No: 18/448,417

Foreign Priority claimed: ○ Yes ◉ No

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

Verified and Acknowledged: /JAMES M DOLAK/ Examiner's Signature | Initials

Title: REMOVABLE SEAT ATTACHMENT FOR A STROLLER

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
08/11/2023	280	3618	34757-2775
RULE			

APPLICANTS

Baby Jogger, LLC, Atlanta, GA, UNITED STATES

INVENTORS

Mark ZEHFUSS, Glen Allen, VA, UNITED STATES

CONTINUING DATA

This application is a CON of 16903292 06/16/2020 PAT 11731682

16903292 is a CON of 15912901 03/06/2018 PAT 10730543

15912901 is a CON of 15225326 08/01/2016 PAT 9944305

15225326 has PRO of 62311224 03/21/2016

15225326 is a CIP of 14597420 01/15/2015 PAT 9403550

14597420 is a CON of 14261558 04/25/2014 PAT 8955869

14261558 is a CON of 12631375 12/04/2009ABN

12631375 has PRO of 61119920 12/04/2008

FOREIGN APPLICATIONS

IF REQUIRED, FOREIGN LICENSE GRANTED**

08/22/2023

STATE OR COUNTRY

UNITED STATES

ADDRESS

Eversheds Sutherland (US) LLP/NWL
999 Peachtree Street
Suite 2300
Atlanta, GA 30309
UNITED STATES

FILING FEE RECEIVED

$1,820

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-10)
Approved for use through 07/31/2012. OMB 0651-0031
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	18448417
Filing Date	2023-08-11
First Named Inventor	Mark ZEHFUSS
Art Unit	OPAP
Examiner Name	TBD
Attorney Docket Number	34757-2775

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	8371606	B2	2013-02-12	Gower et al.	
	2	9004524	B1	2015-04-14	Gower et al.	
	3	9643640	B2	2017-05-09	Gower et al.	

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	1							☐

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NON-PATENT LITERATURE DOCUMENTS Remove

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1		☐

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EXAMINER SIGNATURE

Examiner Signature	/JAMES M DOLAK/	Date Considered	02/24/2024

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

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

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CERTIFICATION STATEMENT

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

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

OR

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

☐ See attached certification statement.

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

☒ A certification statement is not submitted herewith.

SIGNATURE

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

Signature	/Umar Bakhsh/	Date (YYYY-MM-DD)	2023-11-07
Name/Print	Umar Bakhsh	Registration Number	67307

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

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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 record s.

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.

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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.

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Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-10)
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Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	6585284	B2	2003-07-01	SWEENEY ET AL	
	2	5417449	A	1995-05-23	SHAMIE	
	3	5653460	A	1997-08-05	FOGARTY	
	4	5794951	A	1998-08-18	CORLEY ET AL.	
	5	D360392		1995-07-18	LEWANDOWSKI	

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	1							☐

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Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1		☐

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EXAMINER SIGNATURE

Examiner Signature	/JAMES M DOLAK/	Date Considered	02/24/2024

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Signature	/Umar Bakhsh/	Date (YYYY-MM-DD)	2023-10-27
Name/Print	Umar Bakhsh	Registration Number	67307

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
18/448,417	08/11/2023	Mark ZEHFUSS	34757-2775	3414

134811 7590 02/29/2024

Eversheds Sutherland (US) LLP/NWL
999 Peachtree Street
Suite 2300
Atlanta, GA 30309

EXAMINER	
DOLAK, JAMES M	

ART UNIT	PAPER NUMBER
3618	

NOTIFICATION DATE	DELIVERY MODE
02/29/2024	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):

NewellPatents@eversheds-sutherland.us
patentdocket@eversheds-sutherland.com
umarbakhsh@eversheds-sutherland.us

Office Action Summary	Application No. 18/448,417	Applicant(s) ZEHFUSS, Mark	
	Examiner JAMES M DOLAK	Art Unit 3618	AIA (FITF) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☑ Responsive to communication(s) filed on 8/11/2023.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☐ This action is **FINAL.** 2b) ☑ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5) ☑ Claim(s) 1 is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6) ☐ Claim(s) _____ is/are allowed.

7) ☑ Claim(s) 1 is/are rejected.

8) ☐ Claim(s) _____ is/are objected to.

9) ☐ Claim(s) _____ are subject to restriction and/or election requirement

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to **PPHfeedback@uspto.gov.**

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☑ The drawing(s) filed on 8/11/2023 is/are: a)☐ accepted or b)☑ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a)☐ All b)☐ Some** c)☐ None of the:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☑ Notice of References Cited (PTO-892)

2) ☑ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.

4) ☐ Other: _____.

DETAILED ACTION

Notice of Pre-AIA or AIA Status

1. The present application is being examined under the pre-AIA first to invent provisions.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on 10/27/2023 and 11/07/2023 were filed in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Drawings

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "a first seat attachment adapter spaced from and coupled to the first seat attachment housing by a first attachment frame member; and a second seat attachment adapter spaced from and coupled to the second seat attachment housing by a second attachment frame member" (Claim 1 – only one attachment frame member 24 is portrayed in the Figures) and similarly all of the elements listed below must be shown and labeled or the feature(s) canceled from the claim(s) (No new matter should be entered).

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet,

and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. **Claims 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Cheng (US 7,475,900 B2).**

[Claim 1] Regarding Claim 1, Cheng discloses: A stroller (See, e.g., Fig. 4-8), comprising:

a stroller frame (See, e.g., Fig. 4-8, 3+4+5+10+etc.);

comprising a handle portion (See, e.g., Fig. 4-8, 10) and a front end portion (See, e.g., Fig. 4-8, 31) ; a plurality of wheels (See, e.g., Fig. 4-8, 33+34) comprising a plurality of back wheels (See, e.g., Fig. 4-8, 34); a first seat (See, e.g., Fig. 4-8, 72) coupled to the stroller frame at a first vertical position of the stroller frame (See, e.g., Fig. 4-8), wherein the first seat is disposed closer to the handle portion than the front

end portion of the stroller frame (See, e.g., Fig. 4-8); a first seat attachment housing (See, e.g., Fig. 4-8, 410) coupled to the stroller frame at a second vertical position of the stroller frame that is below the first vertical position (See, e.g., Fig. 4-8), wherein a first front wheel and a second front wheel extend from the front end of the stroller (See, e.g., Fig. 4-8, 33); a second seat attachment housing (See, e.g., Fig. 4-8, 410) coupled to the stroller frame at a third vertical position of the stroller frame that is below the first vertical position (See, e.g., Fig. 4-8), wherein the third vertical position is closer to the front end portion than the handle portion (See, e.g., Fig. 4-8); a first seat attachment adapter (See, e.g., Fig. 4-8, 71) spaced from and coupled to the first seat attachment housing by a first attachment frame member (See, e.g., Fig. 4-8, 71); and a second seat attachment adapter (See, e.g., Fig. 4-8, 71) spaced from and coupled to the second seat attachment housing by a second attachment frame member (See, e.g., Fig. 4-8, 71); wherein the first seat and the second seat, when connected to the frame, are arranged in an inline descending configuration along the stroller frame (See, e.g., Fig. 4-8).

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure, and can be found on the attached Notice of References Cited.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAMES M DOLAK whose telephone number is (571)270-7757. The examiner can normally be reached on 9-530 EST Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, J ALLEN SHRIVER can be reached on 303-297-4337. 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 http://pair-direct.uspto.gov. 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.

/JAMES M DOLAK/
Primary Examiner, Art Unit 3618.

Espacenet

Bibliographic data: ES2253093 (A1) — 2006-05-16

Small double infantile car has two small car units each of which may be utilized separate from other since car units are removably attached by connectors

Inventor(s): JANE STOPP JOAQUIM [ES] ± (JANE STOPP JOAQUIM)

Applicant(s): PLAY SA [ES] ± (PLAY, S.A)

Classification: - international: ***B62B9/12***
- cooperative: **B62B7/008**; **B62B7/142**; **B62B7/145**; **B62B9/102**; **B62B9/12**; B62B2207/02 more

Application number: ES20040001973 20040806

Priority number(s): ES20040001973 20040806

Also published as: ES2253093 (B1)

Abstract of ES2253093 (A1)

The car is comprised of two small car units joined together by removable connectors. The removable connectors include a pair of sockets in the front part of one car unit and a pair of steel rods in the rear part of the other car unit. The steel rods are removably insertable into the sockets such that each car unit may be utilized separate from the other.

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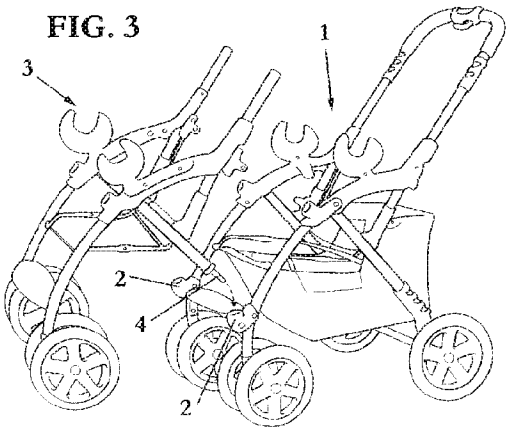
(74) Agente: **Ponti Sales, Adelaida**

(54) Título: **Cochecito infantil doble.**

(57) Resumen:
Cochecito infantil doble.
El cochecito comprende un primer cochecito infantil (1) y un segundo cochecito infantil (3) unidos entre sí, y se caracteriza por el hecho de que los dos cochecitos están unidos mediante medios de acoplamiento amovibles (2, 4). Dichos medios de acoplamiento amovibles comprenden un par de casquillos (2) previstos en la parte delantera de dicho primer cochecito infantil (1), donde se alojan un par de varillas (4) previstas en la parte posterior del segundo cochecito infantil (3). Se consigue un cochecito infantil doble que también se puede utilizar de manera individual.

FIG. 3



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DESCRIPCIÓN

Cochecito infantil doble.

La presente invención se refiere a un cochecito infantil doble, que puede utilizarse para llevar dos niños a la vez, o de manera independiente.

Antecedentes de la invención

En la actualidad existen cochecitos infantiles dobles, que habitualmente se utilizan para llevar gemelos, aunque también se pueden usar para llevar niños de diferentes edades.

Estos cochecitos dobles comprenden dos cochecitos infantiles unidos a través de una única estructura, de manera que no se pueden separar.

Esta imposibilidad de separar los cochecitos presenta varios inconvenientes. En primer lugar, no se pueden utilizar los cochecitos por separado, lo que implica que si se han de llevar los dos niños por separado es necesario un cochecito independiente. En segundo lugar, si los niños son de diferente edad, cuando el mayor ya no necesita un cochecito infantil, únicamente se dispone de un cochecito infantil doble, no pudiéndose utilizar de manera individual.

Por lo tanto, es evidente la necesidad de un cochecito infantil que se pueda utilizar como cochecito infantil doble para dos niños a la vez y, al mismo tiempo, si se desea, utilizarlo como dos cochecitos infantiles independientes.

Descripción de la invención

Con el cochecito infantil de la invención se consiguen resolver los inconvenientes citados, presentando otras ventajas que se describirán.

El cochecito infantil doble de la presente invención comprende un primer cochecito infantil y un segundo cochecito infantil unidos entre sí, y se caracteriza por el hecho de que los dos cochecitos infantiles están unidos mediante medios de acoplamiento amovibles.

Gracias a esta característica, el cochecito infantil de la presente invención se puede utilizar con ambos cochecitos unidos o separados, según se desee.

Según una realización preferida, dichos medios de acoplamiento amovibles comprenden un par de casquillos previstos en la parte delantera de dicho primer cochecito infantil, donde se alojan un par de varillas previstas en la parte posterior del segundo cochecito infantil.

De esta manera, el acoplamiento y desacoplamiento de los dos cochecitos puede realizarse cómoda y rápidamente en el momento que se desee utilizar dichos cochecitos unidos o por separado.

Preferentemente, el segundo cochecito infantil comprende un par de ruedas montadas de manera amovible, estando dichas ruedas amovibles de dicho segundo cochecito montadas en dichas varillas.

Ventajosamente, dicho segundo cochecito comprende un manillar montado de manera amovible.

Breve descripción de los dibujos

Para mejor comprensión de cuanto se ha expuesto se acompañan unos dibujos en los que, esquemáticamente y tan sólo a título de ejemplo no limitativo, se representa un caso práctico de realización.

La figura 1 es una vista en perspectiva del primer cochecito de la presente invención;

La figura 2 es una vista en perspectiva del segundo cochecito de la presente invención;

La figura 3 es una vista en perspectiva de los dos cochecitos justo antes de su unión;

La figura 4 es una vista en perspectiva de cochecito doble de la presente invención; y

Las figuras 5 y 6 son vistas en perspectiva de dos cochecitos dobles según dos realizaciones alternativas.

Descripción de una realización preferida

En la figura 1 se ha representado un primer cochecito infantil 1, cuya única diferencia respecto a un cochecito infantil convencional es la presencia de medios de acoplamiento en su parte delantera. En concreto dichos medios de acoplamiento son un par de casquillos 2, cuya función se describirá posteriormente.

El resto del cochecito infantil no se describe, ya que es convencional y no forma parte de la presente invención.

En la figura 2 se ha representado un segundo cochecito infantil 3 que puede acoplarse al primer cochecito infantil 1 citado anteriormente. En este caso, la diferencia entre este segundo cochecito 3 y uno convencional es que comprende medios de acoplamiento en su parte trasera, en concreto un par de varillas 4, que se alojan en los casquillos 2 citados anteriormente cuando se utilizan ambos cochecitos 1, 3 acoplados entre sí, o en las que se colocan las ruedas traseras 5 del segundo cochecito 3, las cuales están montadas de manera amovible.

Además, el manillar 6 también está montado de manera amovible, pudiéndose retirar cuando se utilice el cochecito doble 1, 3.

Como es evidente, los dos cochecitos 1, 3 representados en las figuras 1 y 2 pueden utilizarse de manera independiente. Si se desea utilizarlos conjuntamente, simplemente se han de retirar las ruedas traseras 5 y el manillar 6 del segundo cochecito 3, introduciéndose las varillas 4 en los correspondientes casquillos 2, tal como se muestra en la figura 3. Aunque no se ha representado en las figuras, es evidente que los casquillos 2 comprenden algún sistema de retención para evitar que las varillas 4 se salgan accidentalmente.

Una vez realizada esta operación, el cochecito infantil doble de la presente invención queda tal como se ha representado en la figura 4, listo para utilizarse con dos niños.

Para volver a utilizar los dos cochecitos 1, 3 de manera independiente simplemente hay que realizar la operación inversa a la descrita anteriormente.

En las figuras 5 y 6 se han representado dos ejemplos de utilización del cochecito doble de la presente invención.

En la figura 5, se ha representado el cochecito doble con un asiento trasero 8 y un capazo delantero 7, mientras que en la figura 6 se ha representado con dos asientos 8. Como es sobradamente conocido, el capazo 7 es adecuado para bebés que han de ir echados, mientras que el asiento 8 es adecuado para niños que pueden permanecer sentados.

Es evidente que las combinaciones representadas en las figuras 5 y 6 son solamente a modo de ejemplo, pudiéndose utilizar cualquier combinación adecuada además de las representadas.

A pesar de que se ha hecho referencia a una realización concreta de la invención, es evidente para un experto en la materia que el coche infantil descrito es susceptible de numerosas variaciones y modifica-

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ciones, y que todos los detalles mencionados pueden ser substituidos por otros técnicamente equivalentes, sin apartarse del ámbito de protección definido por las reivindicaciones adjuntas.

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REIVINDICACIONES

1. Cochecito infantil doble, que comprende un primer cochecito infantil (1) y un segundo cochecito infantil (3) unidos entre sí, **caracterizado** por el hecho de que los dos cochecitos están unidos mediante medios de acoplamiento amovibles (2, 4).

2. Cochecito infantil doble según la reivindicación 1, **caracterizado** por el hecho de que dichos medios de acoplamiento amovibles comprenden un par de casquillos (2) previstos en la parte delantera de dicho primer cochecito infantil (1), donde se alojan un par de varillas (4) previstas en la parte posterior del segundo cochecito infantil (3).

3. Cochecito infantil doble según la reivindicación 1 ó 2, **caracterizado** por el hecho de que el segundo cochecito infantil (3) comprende un par de ruedas (5) montadas de manera amovible.

4. Cochecito infantil doble según las reivindicaciones 2 y 3, **caracterizado** por el hecho de que dichas ruedas amovibles (5) de dicho segundo cochecito están montadas en dichas varillas (4).

5. Coche infantil doble según la reivindicación 1, **caracterizado** por el hecho de que dicho segundo cochecito (3) comprende un manillar (6) montado de manera amovible.

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FIG. 1

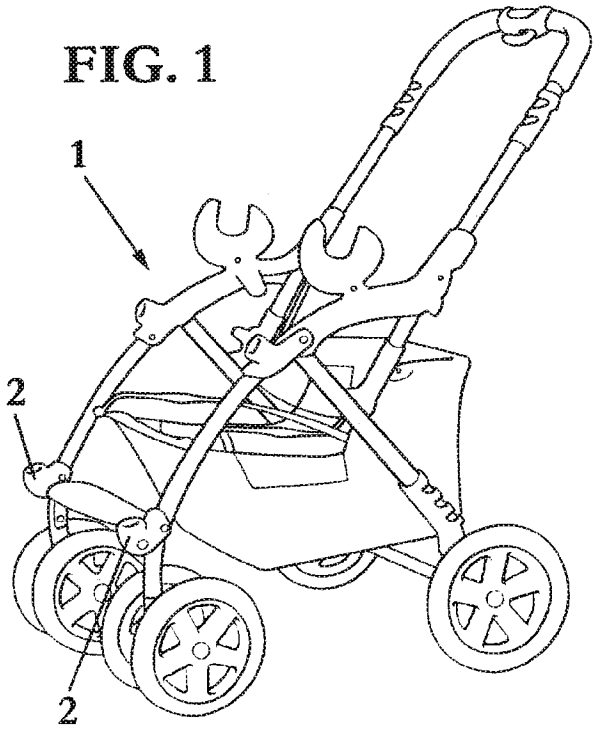


FIG. 2

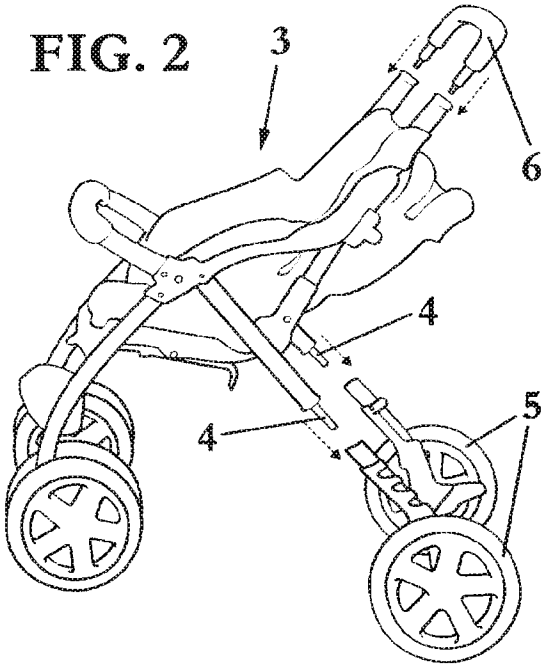


FIG. 3

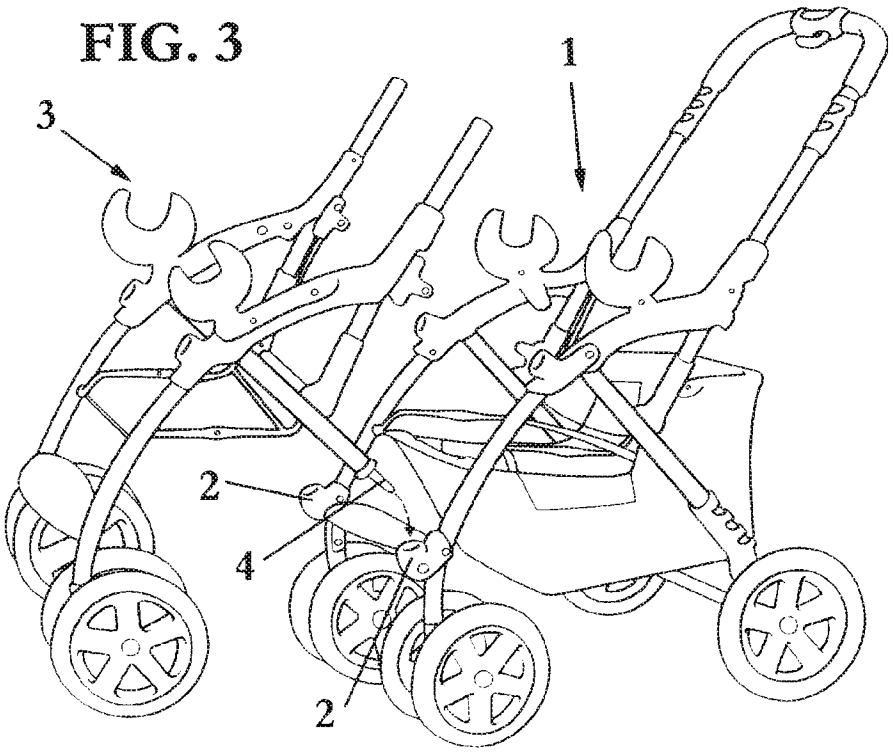


FIG. 4

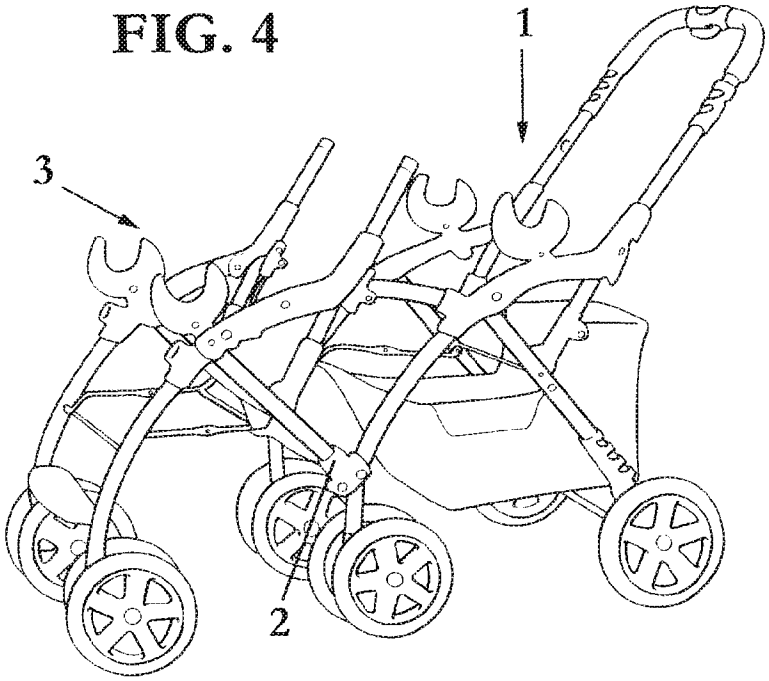


FIG. 5

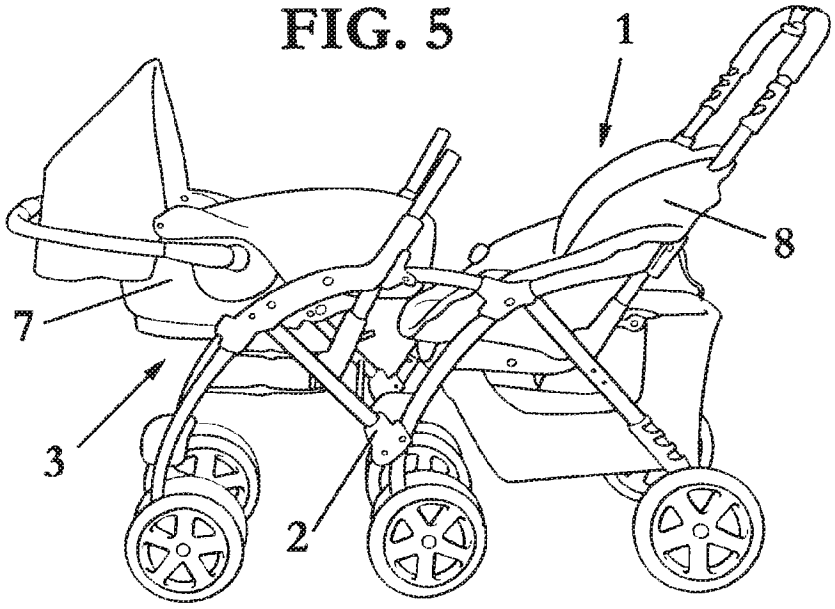
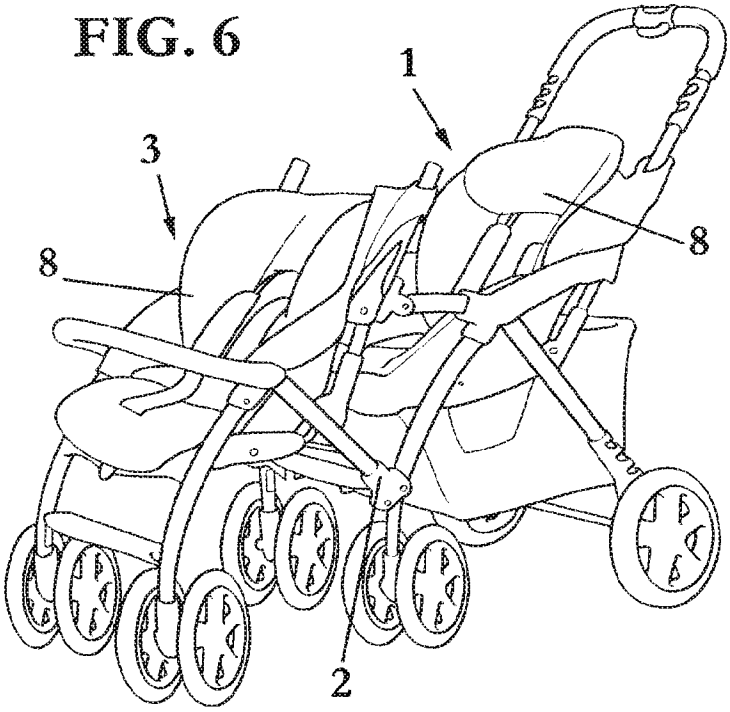


FIG. 6



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(22) Fecha de presentación de la solicitud: **06.08.2004**

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INFORME SOBRE EL ESTADO DE LA TÉCNICA

(51) **Int. Cl.:** ***B62B 9/12*** (2006.01)

DOCUMENTOS RELEVANTES

Categoría	Documentos citados	Reivindicaciones afectadas
X	GB 2368824 A (LACKEY) 15.05.2002, página 8, línea 29 - página 12, línea 20; figuras 4,5,7.	1,5
A		2
X	US 5522121 A (FRAYND) 04.06.1996, columna 1, líneas 30-37; figura 1.	1
A	US 6449801 B1 (DURRIN) 17.09.2002, columna 1, línea 50 - columna 2, línea 62; figuras 3,4.	3,4

Categoría de los documentos citados

X: de particular relevancia
Y: de particular relevancia combinado con otro/s de la misma categoría
A: refleja el estado de la técnica
O: referido a divulgación no escrita
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E: documento anterior, pero publicado después de la fecha de presentación de la solicitud

El presente informe ha sido realizado

☒ para todas las reivindicaciones ☐ para las reivindicaciones nº:

Fecha de realización del informe	Examinador	Página
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(22) Date of Filing 23.12.1996

(30) Priority Data
(31) U9600110 (32) 16.01.1996 (33) ES

(51) INT CL[6]
B62B 7/04 // B62B 9/12

(52) UK CL (Edition O)
B7B BTX1 B406 B407

(56) Documents Cited
FR 002615155 A1 US 5033761 A US 4753453 A
US 4728112 A US 4542915 A

(58) Field of Search
UK CL (Edition O) B7B BTF1 BTX1
INT CL[6] B62B 7/00 7/04 9/00 9/10 9/12 9/28
Online: WPI

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(54) Compact two seater pushchair

(57) A two-seater pushchair comprises a foldable frame 1 upon which can be mounted two seats (figures 3 and 4) or a seat and a carry cot (figure 5), which frame has two side bars 2, 3 each having an upper portion 4 for mounting one seat/carry cot and a lower portion 5 at a different level for mounting the other seat/carry cot. The seats can be mounted variously to face one another or otherwise (figures 3 to 5). The portions may include devices 18 for locking the seats and/or carry cot in place. The upper portions and lower portions of the side bars may be linked by respective U-shaped supports 7 and 12. A backrest (R figure 3) and legrest (P figure 3) of the seat(s) may recline and a hood (T figures 3A and 5) may be provided on the seat(s)/carry cot.

Fig. 2

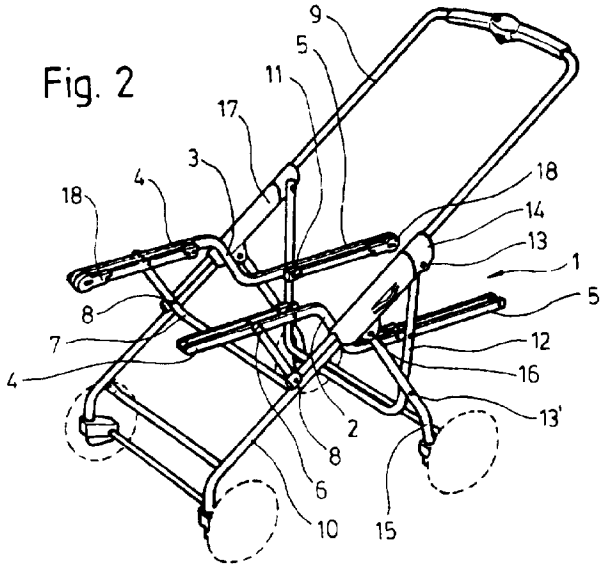

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Fig. 1

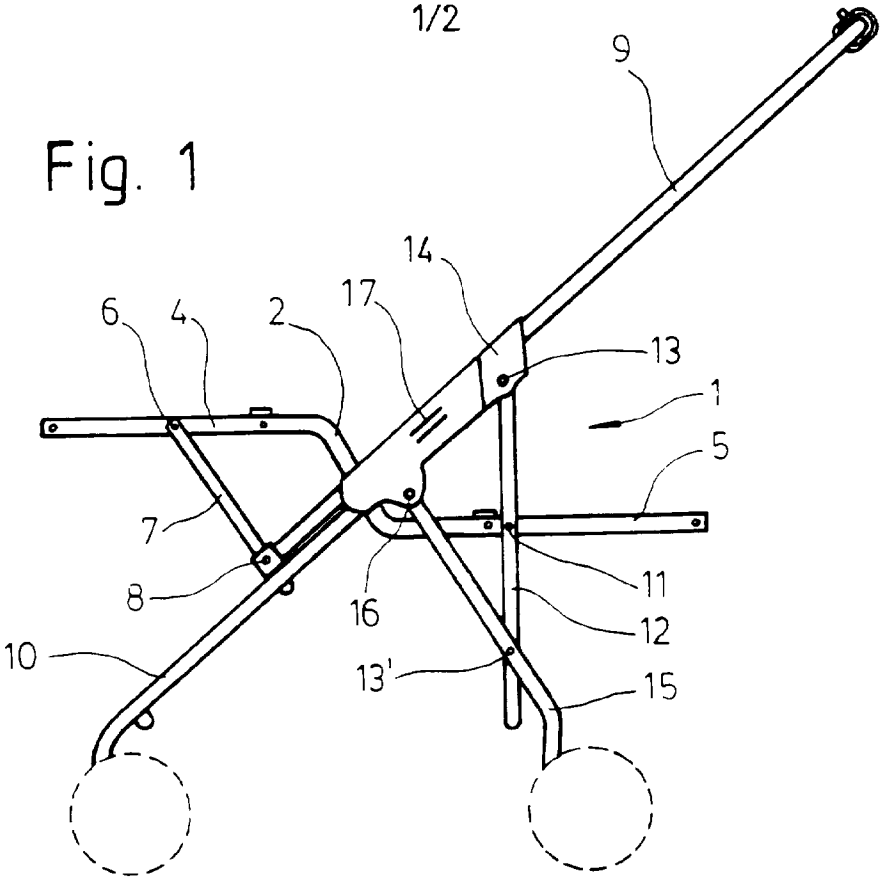
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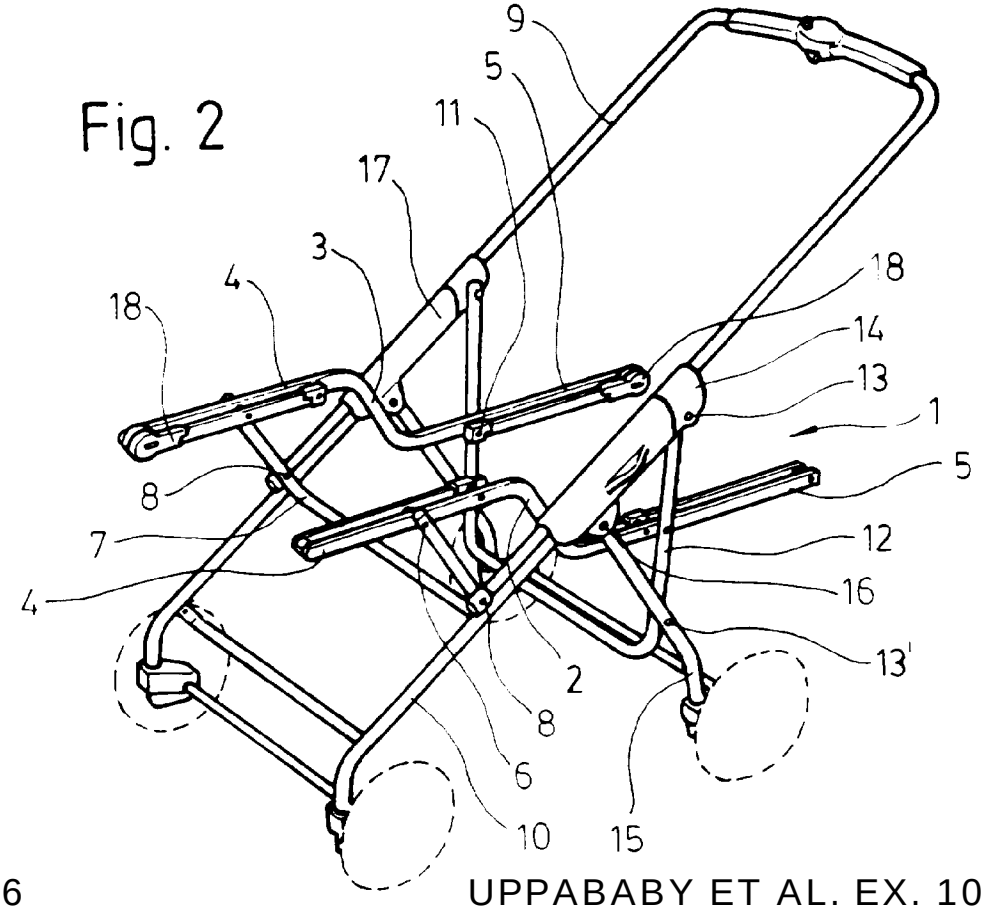
Fig. 2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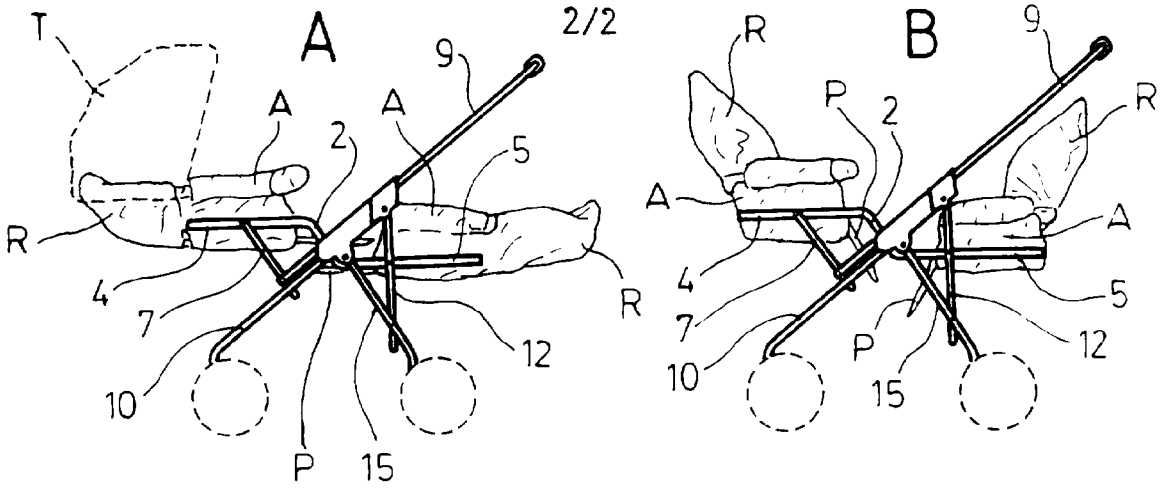

Fig. 3

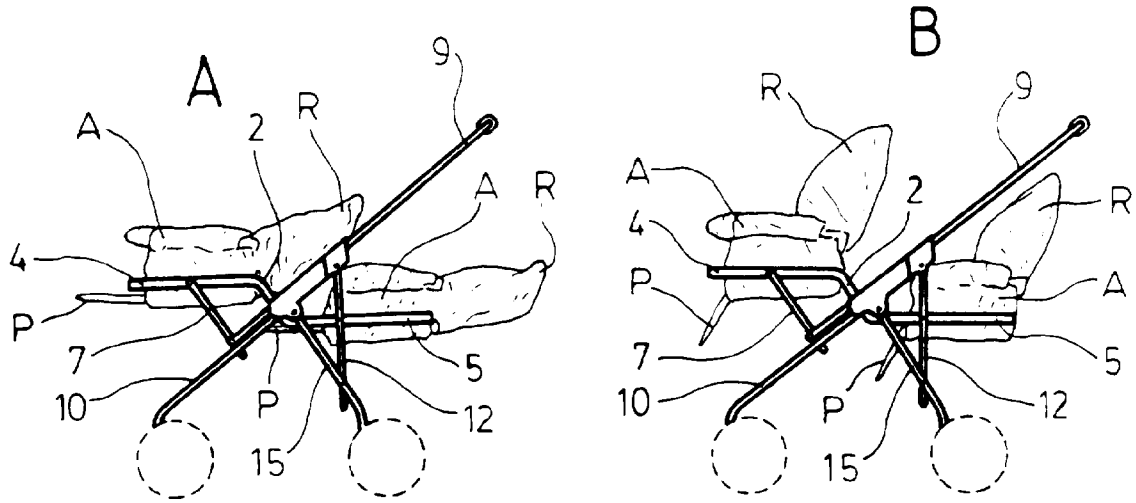

Fig. 4

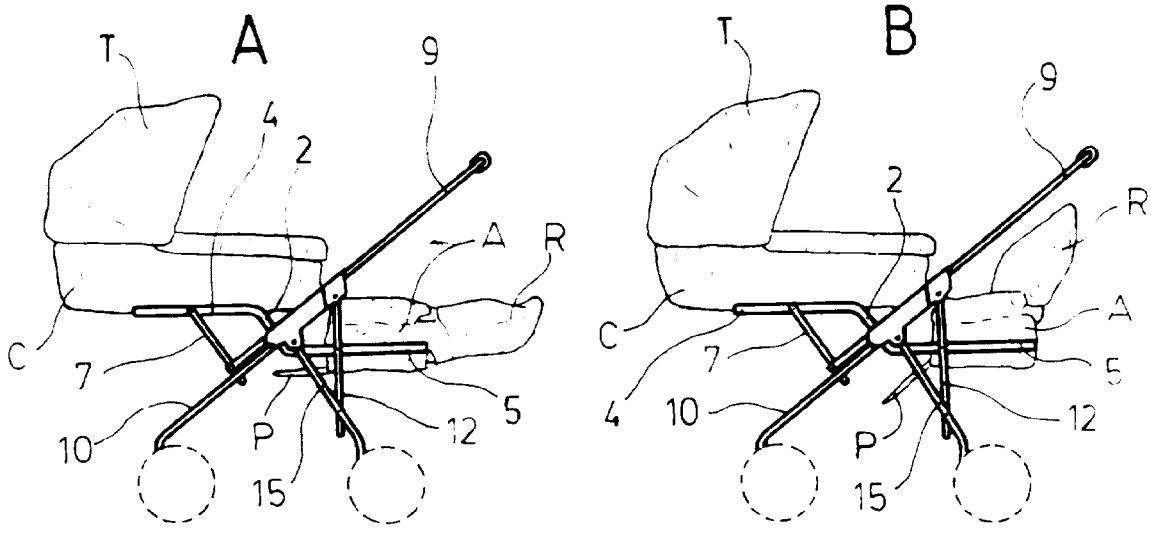

Fig. 5

UPPABABY ET AL. EX. 1068

Two-seater children's pram-pushchair

This invention refers to a two-seater children's pram-pushchair.

Different models of two-seater children's pram-pushchairs are already known, created for twins, usually comprising a frame with four or six sets of wheels upon which one double-width seat or two single seats or two carry-cots are assembled side by side. These seats or carry-cots are usually placed looking forwards or backwards.

The problem with these pram-pushchairs is their width which hinders their passing through normal-width doors. To solve this problem, there are also two-seater pushchairs whose width is similar to that of conventional pram-pushchairs, where the seats are arranged one behind the other. In this case the pushchair is particularly long, making it difficult to fold up and with its not fitting into a car boot. In order to reduce this length in as far as possible, in some cases the matter of the child's comfort has been simplified using seats in which the child cannot lie flat.

The object of this invention is to achieve a two-seater children's pram-pushchair in which the children can lie down without the device being excessively long and of a normal width, with the additional advantage that the children can sit one in front of the other or looking at each other, and with its even being possible to use one seat and one carry-cot for transporting two children of different ages.

For this purpose, the common feature is that the chassis of the pram-pushchair has two side bars, each one of them formed by two stretches on different levels, with the two seats or one seat and one carry-cot being coupled freely on the higher stretches of the two bars and on the lower of them respectively.

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The two stretches of the two side bars on the different levels include a device to lock and unlock the fixture of the seats and carry-cot assembled on them.

These and other features are better understood from the detailed description that follows, to facilitate which two sheets of drawings are attached where a practical case of the embodiment mentioned is shown; this is provided merely as a non-restrictive example of the scope of this present invention.

In the drawings :

Figure 1 shows the side elevation of the frame of the pushchair in question.

Figure 2 shows a perspective view of that frame, and

Figures 3, 4 and 5 represent, schematically, some of the different positions of the seats and carry-cot.

According to the drawings, the pram-pushchair includes a foldable frame -1- presenting, characteristically, two side bars -2- and -3- each one of which formed by facing stretches -4- and -5- on different levels. Of these, stretches -4-, which are higher, are the front ones whereas stretches -5-, which are lower, are the rear ones.

In this case, the side bars are coupled by means of joints to the frame of the pram-pushchair. Thus, the higher front stretches -4- are jointed at an intermediate point -6- at the ends of the branches of a first U-shaped support -7- which is jointed underneath by points -8- to the ends of the branches of the handle in an inverted U-shape -9-, sliding along those branches along the front feet -10- of the frame when the pram-pushchair is folded up.

Meanwhile, the lower rear stretches -5- of the side bars -2- and -3- are jointed at an intermediate point -11- to an intermediate point of the branches of a second support in a U-shape -12- ; at the higher end -13- these

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are jointed to different brackets -14- coupled to the front feet -10- and underneath -13- they are jointed to the rear feet -15- ; these, at their higher end -16- are jointed to different brackets -17- linked to the brackets of the handle -9-.

The stretches -4- and -5- of the side bars are equipped with devices -18- to lock and unlock the fixtures of the corresponding seats -A- comprising a jointed back-rest -R- and leg-rest -P- and a carry-cot -C-; the seats and the carry-cot can be equipped with a hood -T-.

This structure and design of the side bars -2- and -3- make it possible to arrange the seats in front of each other and lying down (figure 3-A) or in front of each other and with the back-rest raised and the leg-rest lowered (figure 3-B), or to have one seat behind the other lying down (Figure 4-A) or with the back-rest raised and the leg-rest lowered (figure 4-B). It is also possible to arrange a carry-cot and a lying seat (Figure 5-A) or with the seat with the back-rest raised and the leg-rest lowered (Figure 5-B). Logically, other combinations can also be made such as for example one seat looking forwards and other looking backwards.

It is to be understood that the frame -1- may present a different structure to the one that is shown here as the essential factor of this pram-pushchair is the coupling of the side bars with its facing stretches on different levels of the frame.

BAD ORIGINAL

CLAIMS

1.Two-seater children's pram-pushchair comprising a foldable frame upon which the seats are assembled, characterized in that the frame has two side bars, each one of them formed by facing stretches on different levels, coupling fixedly on the higher stretches of the two bars and on the lower stretches thereof the corresponding seats or one seat and one carry-cot, where the seats can be arranged facing one another or otherwise.

2. Two-seater children's pram-pushchair, according to Claim 1, characterized in that the two stretches on different levels of the two side bars include devices for locking and unlocking the coupling of the seats and carry-cot assembled on them.

3. Two-seater children's pram-pushchair, according to Claim 1, characterized in that the front stretches of the side bars are linked by a joint at an intermediate point of the higher ends of the branches of the first support in a U-shape, articulated underneath the frame of the pram-pushchair.

4. Two-seater children's pram-pushchair, according to claim 1, characterized in that the rear stretches of the side bars are linked in a jointed way on an intermediate point of the branches of a second U-shapep support above and below the frame of the pram-pushchair.

5. Two-seater children's pram-pushchair, substantially as described herein with reference to the drawings.

BAD ORIGINAL

Amendments to the claims have been filed as follows

CLAIMS

1. A two-seater children's pram-pushchair comprising a foldable frame adapted to receive two seats, wherein the frame has two side bars, each one of which has two parts located at different heights, the two seats or one seat and one carry-cot being detachably mountable on the upper and lower parts of the side bars in such a manner as to face one another or be located one behind the other.

2. A two-seater children's pram-pushchair according to claim 1, wherein the said two parts of each of the side bars include devices for locking and unlocking the seats or carry-cot detachably mounted on said parts.

3. A two-seater children's pram-pushchair according to claim 1 or claim 2, wherein the upper parts of the side bars are located towards the front and are articulatedly linked at an intermediate point by a U-shaped joint which is articulated at a lower point to the frame of the pram-pushchair.

4. A two-seater children's pram-pushchair according to any one of the preceding claims, wherein the lower parts of the side bars are located towards the rear and are linked at an intermediate point by a second U-shaped joint which is articulatedly located at its upper point and at its lower point to the frame of the pram-pushchair.

5. A two-seater children's pram pushchair substantially as described herein with reference to the drawings.

The Patent Office

-6-

Application No: GB 9626714.1
Claims searched: 1 to 5

Examiner: Karl Whitfield
Date of search: 12 March 1997

Patents Act 1977
Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.O): B7B (BTF1, BTX1)

Int Cl (Ed.6): B62B 7/00, 7/04, 9/00, 9/10, 9/12, 9/28

Other: Online database: Derwent World Patents Index accessed via Questel

Documents considered to be relevant:

Category	Identity of document and relevant passage		Relevant to claims
X	US 4728112	(WYNENS) see especially figures 1 & 3	1 at least
X	US 4753453	(SCHILBACH) see especially figures 5-8	1 at least
X	US 4542915	(WHEELER et al) see especially 2	1 at least
X	FR 2615155 A1	(BOIDIN) see especially figures 1 & 2	1 at least
A	US 5033761	(KELLY) see especially figures 2-4	

X Document indicating lack of novelty or inventive step
Y Document indicating lack of inventive step if combined with one or more other documents of same category.
& Member of the same patent family
A Document indicating technological background and/or state of the art.
P Document published on or after the declared priority date but before the filing date of this invention.
E Patent document published on or after, but with priority date earlier than, the filing date of this application.

Espacenet

Bibliographic data: CN2918181 (Y) — 2007-07-04

Carriage for children with front and rear seats

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Classification: **- international:** ***B62B7/06***
- cooperative:

Application number: CN2006253300U 20060105

Priority number(s): CN2006253300U 20060105

Abstract of CN2918181 (Y)

The utility model discloses a double-child perambulator with a front seat and a rear seat, which comprises a frame of the perambulator, a front wheel assembly, a rear wheel assembly and a seat assembly. The frame comprises two side brackets, which are arranged at the two sides and connected with each other by a plurality of connecting rods; the side bracket comprises a supporting rod of the front wheel, a supporting rod of the rear wheel, a front arm lever and a rear arm lever respectively; the supporting rod of the front wheel is connected with a front wheel axle, while the supporting rod of the rear wheel is connected with a rear wheel axle; the rear end of the supporting rod of the front wheel is hinged with the front end of the supporting rod of the rear wheel mutually, and an arc with an upward opening is formed; the front end of the front arm lever is hinged in the middle of the supporting rod of the front wheel; the rear end of the front arm lever is hinged with the front end of the rear arm lever mutually, and an arc with an downward opening is formed; the middle part of the supporting rod of the rear wheel is hinged with the middle part of the rear arm lever; a kink four-bar linkage mechanism is formed by the side brackets by the supporting rod of the front wheel, the supporting rod of the rear wheel, the front arm lever and the rear arm lever hinged with each other; a transverse supporting rod is arranged between the two supporting rods of the rear wheel of the two side brackets, and a buckle mechanism is provided in the middle of the transverse supporting rod.

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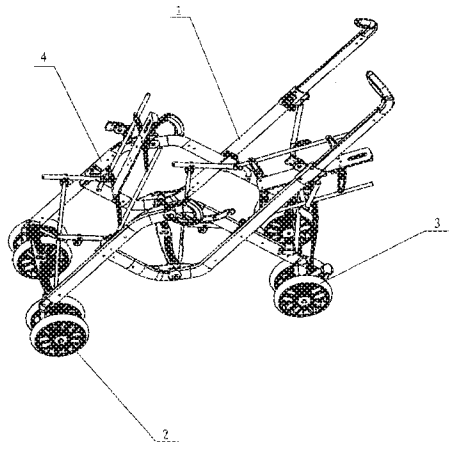
权利要求书 3 页 说明书 8 页 附图 7 页

[54] 实用新型名称

一种前后座双人儿童推车

[57] 摘要

本实用新型公开了一种前后座双人儿童推车，包括一推车车架、前轮组件、后轮组件及座椅组件；车架包括对称设置在两侧、并通过若干连接杆相连接的两侧支架；该侧支架，分别包括一前轮支杆、一后轮支杆、一前臂杆、一后臂杆；前轮支杆与前轮轴相连接，后轮支杆与后轮轴相连接；前轮支杆的后端部与后轮支杆的前端部相互铰接，形成一开口向上的拱起；前臂杆的前端部，铰接在前轮支杆的中部；前臂杆后端部与后臂杆的前端部相互铰接，形成一开口向下的拱起；后轮支杆的中部与后臂杆的中部相铰接；相互铰接的前轮支杆、后轮支杆、前臂杆、后臂杆，使侧支架形成铰链四连杆机构；侧支架的两后轮支杆之间，还设有一横向支撑杆，该支撑杆中部设有一卡扣机构。



1、一种前后座双人儿童推车，包括一推车车架、设置在所述推车车架底前部的前轮组件，设置在所述的推车车架的底后部的后轮组件，及设置在所述车架上的两座椅组件，其特征在于：所述的推车车架包括对称设置在两侧、并通过若干连接杆相连接的两侧支架；所述的侧支架，分别包括一前轮支杆、一后轮支杆、一前臂杆、一后臂杆；所述的前轮支杆的前端部与前轮轴相连接，所述后轮支杆的后端部与后轮轴相连接；所述的前轮支杆的后端部与后轮支杆的前端部相互铰接，铰接后形成一开口向上的拱起；所述前臂杆的前端部，铰接在前轮支杆的中部；所述前臂杆后端部与后臂杆的前端部相互铰接，铰接后形成一开口向下的拱起；所述后轮支杆的中部与所述后臂杆的中部相铰接；所述相互铰接的前轮支杆、后轮支杆、前臂杆、后臂杆，共同使侧支架形成一铰链四连杆机构；所述侧支架的两后轮支杆之间，还设有一横向支撑杆，该支撑杆的两端分别铰接在两后轮支杆上，其中部设有一用来使该支撑杆保持平直或弯折状态的卡扣机构。

2、根据权利要求 1 所述的儿童推车，其特征在于：所述的侧支架的后臂杆后段，还连接有一手把杆；所述的手把杆的下段可以从所述的后臂杆后段中插进或拉出；所述后臂杆的上端部，还设有一控制手把杆进出的伸缩卡位机构；所述手把杆的上端，还设有一把手；所述的手把杆，还铰接有一对呈弯折形、中部相互交叉的连接杆；所述弯折形连接杆的一端，铰接在所述的手把杆上，其另一端铰接在另一侧支架的后轮支架上；所述的两个弯折形连接杆的中段交叉部相互铰接。

3、根据权利要求 1 或 2 所述的儿童推车，其特征在于：所述的前轮支杆、后轮支杆、前臂杆、后臂杆、手把杆，均是管状构件，其各自的两端部，均设有一连接件，并通过该连接件与其他构件相互连接。

4、根据权利要求 1 或 2 或 3 所述的儿童推车，其特征在于：所述的两侧支架的前轮支杆之间，还设有一中部可折叠的前脚踏板；所述的两侧支架的前臂杆之间，也设有一中部可折叠的后脚踏板。

5、根据权利要求 1 或 2 或 3 所述的儿童推车，其特征在于：所述侧支架前轮支杆的中段，还铰接有一前座水平连杆，该连杆的后端通过一连接板铰接在所述的前臂杆上；所述后臂杆与后轮支杆的铰接轴上，还铰接有一后座水平连杆，该连杆的后段相下弯折，其端部铰接在后轮支杆上；所述两侧支架之间，其前部及后部还分别设有一对呈 X 形交叉、且其交叉部相铰接的斜向交叉连杆；所述设在前部的两斜向交叉连杆，其上端部分别与所述前座水平连杆相铰接，其下端部分别与所述前轮支杆相铰接；所述设在后部的两斜向交叉连杆，其上端部分别与所述后座水平连杆相铰接，其下端部分别铰接在所述前臂杆与后臂杆的铰接轴上。

6、根据权利要求 5 所述的儿童推车，其特征在于：所述前座水平连杆的后段，分别铰接有一向上的前座背靠立杆；所述后座水平连杆的后段，分别铰接有一向上的后座背靠立杆；所述两前座背靠立杆之间，以及两后座背靠立杆之间，还分别设有一座位无级调节装置，该装置通过水平对称设置的若干背靠连接板，对称地铰接在所述的背靠立杆上。

7、根据权利要求 6 所述的儿童推车，其特征在于：所述座位无级调节装置，包括一长形本体、设在所述本体上并可上下滑动的卡位机构及若干条钢丝；所述的钢丝一端固定在所述本体的上端，中部穿过卡位机

构，下端固定在所述的车架上；所述的卡位机构，通过拉紧或松弛所述的钢丝，可以不间断地无级调节或改变本体相对于所述车架的位置。

8、根据权利要求 1 或 2 或 3 所述的儿童推车，其特征在于：所述的前轮支架，其上端部连接件的内侧边，与所述后轮支架的外侧边相互铰接，两前轮支架之间距离，大于两后轮支架之间的距离，使前后轮组件的位置错开。

9、根据权利要求 1 或 2 或 3 所述的儿童推车，其特征在于：所述前轮支杆、后轮支杆的铰接轴上，还设有一环形拉手，该拉手的一侧还开有一弧形槽，所述槽开口的一端铰接有一卡钩；所述后轮支架与后臂杆的铰接轴上，设有一与所述卡钩配合使用、设有一卡钩连接开口的定位构件；当车架处于使用状态时，该卡钩与该定位构件脱开；当车架处于折叠收拢状态时，该卡钩与该定位构件结合。

10、根据权利要求 1 或 2 或 3 所述的儿童推车，其特征在于：所述的前座水平连杆、前座背靠立杆，及铰接在所述前座背靠立杆上的无级调节装置上，还设有一前座椅；所述的后座水平连杆、后座背靠立杆，及铰接在所述后座背靠立杆上的无级调节装置上，设有一后座椅；所述的座椅可以是普通座椅或汽车座椅之一。

一种前后座双人儿童推车

技术领域

本实用新型涉及儿童推车，特别涉及一种可实现三维伸缩折叠、且折叠后仍然可以推行的前后座双人儿童推车。

背景技术

现有技术中的儿童推车，一般包括推车车架、设置在所述的推车车架的底前部的前轮、设置在所述的推车车架的底后部的后轮，所述的推车车架包括位于两侧的侧支架，所述的侧支架包括前轮支架、下端部与所述的前轮支架的上端部相转动连接的推把、上端部与所述的推把相转动连接的后轮支架，通常推车车架包括座连杆等，所述的座连杆的前端部与所述的前轮支架相转动连接，所述的座连杆的后端部与所述的后轮支架相转动连接，当所述的儿童推车折叠时，前轮支架相对后轮支架折叠，而座连杆限制了前轮支架相对后轮支架折叠的位置从而不能使前轮支架相对后轮支架在折叠后收缩的较小，且车架结构复杂，组装繁琐；现有的儿童推车，在车宽及车高方向也无法进行收缩折叠，且折叠后推车无法直立推行。因而现有技术的儿童推车结构复杂，折叠后的体积依然较大，制造及运输成本较高，使用亦部方便。

实用新型内容

本实用新型目的是提供一种可以实现三维折叠、结构简单、使用方便、折叠后体积更小、且折叠后推车仍可以直立推行的前后座双人儿童推车。

本实用新型实现上述目的所采用的技术方案是：一种前后座双人儿童推车，包括一推车车架、设置在所述推车车架底前部的前轮组件，设置在所述的推车车架的底后部的后轮组件，及设置在所述车架上的两座椅组件，其特征在于：所述的推车车架包括对称设置在两侧、并通过若干连接杆相连接的两侧支架；所述的侧支架，分别包括一前轮支杆、一后轮支杆、一前臂杆、一后臂杆；所述的前轮支杆的前端部与前轮轴相连接，所述后轮支杆的后端部与后轮轴相连接；所述的前轮支杆的后端部与后轮支杆的前端部相互铰接，铰接后形成一开口向上的拱起；所述前臂杆的前端部，铰接在前轮支杆的中部；所述前臂杆后端部与后臂杆的前端部相互铰接，铰接后形成一开口向下的拱起；所述后轮支杆的中部与所述后臂杆的中部相铰接；所述相互铰接的前轮支杆、后轮支杆、前臂杆、后臂杆，共同使侧支架形成一铰链四连杆机构；所述侧支架的两后轮支杆之间，还设有一横向支撑杆，该支撑杆的两端分别铰接在两后轮支杆上，其中部设有一用来使该支撑杆保持平直或弯折状态的卡扣机构；所述的支撑杆是由中部相互铰接的两段杆体组成，所述的卡扣机构是设置在该支撑杆中部的铰接处，包括一舌杆及复位弹簧。

所述的侧支架的后臂杆后段，还连接有一手把杆；所述的手把杆的下段可以从所述的后臂杆后段中插进或拉出；所述后臂杆的上端部，还设有一控制手把杆进出的伸缩卡位机构；所述手把杆的上端，还设有一把手；所述的手把杆，还铰接有一对呈弯折形、中部相互交叉的连接杆；所述弯折形连接杆的一端，铰接在所述的手把杆上，其另一端铰接在另一侧支架的后轮支架上；所述的两个形连接杆的中段交叉部相互铰接。

所述的前轮支杆、后轮支杆、前臂杆、后臂杆、手把杆，均是管状构件，其各自的两端部，均设有一连接件，并通过该连接件与其他构件相互连接。具体地，设置在前轮支杆与后轮支杆之间的连接件是一轴节；设置在前臂杆与后臂杆之间的连接件是一轴节；设置在后臂杆与手把杆之间的连接件是一伸缩卡扣机构。根据具体需求，上述构件可以采用铝合金材料制成，也可以选用其他材料，如不锈钢材料等。

所述的两侧支架的前轮支杆之间，还设有一中部可折叠的前脚踏板；所述的两侧支架的前臂杆之间，也设有一中部可折叠的后脚踏板。

所述侧支架前轮支杆的中段，还铰接有一前座水平连杆，该连杆的后端通过一连接板铰接在所述的前臂杆上；所述后臂杆与后轮支杆的铰接轴上，还铰接有一后座水平连杆，该连杆的后段相下弯折，其端部铰接在后轮支杆上；所述两侧支架之间，其前部及后部还分别设有一对呈X形交叉、且其交叉部相铰接的斜向交叉连杆；所述设在前部的两斜向交叉连杆，其上端部分别与所述前座水平连杆相铰接，其下端部分别与所述前轮支杆相铰接；所述设在后部的两斜向交叉连杆，其上端部分别与所述后座水平连杆相铰接，其下端部分别铰接在所述前臂杆与后臂杆的铰接轴上。

所述前座水平连杆的后段，分别铰接有一向上的前座背靠立杆；所述后座水平连杆的后段，分别铰接有一向上的后座背靠立杆；所述两前座背靠立杆之间，以及两后座背靠立杆之间，还分别设有一座位无级调节装置，该装置通过水平对称设置的若干背靠连接板，对称地铰接在所述的背靠立杆上。

所述的座位无级调节装置，包括一长形本体、设在所述本体上并可

上下滑动的卡位机构及若干条钢丝；所述的钢丝一端固定在所述本体的上端，中部穿过卡位机构，下端固定在所述的车架上；所述的卡位机构，通过拉紧或松弛所述的钢丝，可以不间断地无级调节或改变本体相对于所述车架的位置。

所述的前轮支架，其上端部连接件的内侧边，与所述后轮支架的外侧边相互铰接，两前轮支架之间距离，大于两后轮支架之间的距离，使前后轮组件的位置错开。

所述前轮支杆、后轮支杆的铰接轴上，还设有一环形拉手，该拉手的一侧还开有一弧形槽，所述槽开口的一端铰接有一卡钩；所述后轮支架与后臂杆的铰接轴上，设有一与所述卡钩配合使用、设有一卡钩连接开口的定位构件；当车架处于使用状态时，该卡钩与该定位构件脱开；当车架处于折叠收拢状态时，该卡钩与该定位构件结合。

所述的前座水平连杆、前座背靠立杆，及铰接在所述前座背靠立杆上的无级调节装置上，还设有一前座椅；所述的后座水平连杆、后座背靠立杆，及铰接在所述后座背靠立杆上的无级调节装置上，设有一后座椅；所述的座椅可以是普通座椅或汽车座椅之一。

本实用新型还可以根据实际需要，在各连接杆等适当的部件上，或相关部件之间，设置若干帘布，及其他辅助或装饰性部件、物品。

本实用新型与现有技术相比，具有下列优点：由于在所述的前轮支杆、后轮支杆、前臂杆、后臂杆使侧支架形成一铰链四连杆结构，可以使车架实现车长方向的折叠伸缩；由于把手杆可以伸缩进出后臂杆内，车架折叠后可将其缩进后臂杆内，降低折叠后的车架高度；由于两侧支架之间的各构件均可以其中心铰接轴或中点进行横向折叠，故车架可

以实现车身的车宽方向的伸缩折叠；由于前后轮组件的位置相互错开，车架折叠后前后轮组仍然可以继续工作，因而使车身可以继续直立推动行走。如上所述，本实用新型实现了对推车的三维伸缩折叠，不仅减小了儿童推车折叠后的体积，降低了运输成本，而且结构简单，折叠、伸展等较为便捷，折叠后仍然可以推行，使用非常方便。

附图说明

图 1 为本实用新型实施例车架的展开使用状态立体结构示意图；

图 2 为图 1 的主视图；

图 3 为图 1 的左视图；

图 4 为图 1 的右视图；

图 5 为图 1 的俯视图；

图 6 为图 1 中背靠的立体结构示意图；

图 7 为本实用新型实施例车架的折叠状态立体结构示意图；

下面结合附图及实施例对本实用新型进一步说明。

具体实施方式

实施例： 采用本实用新型技术方案，构造一款铝合金管状构件为车架主体的一种前后座双人儿童推车。

参见图 1～图 7，一种前后座双人儿童推车，包括一推车车架 1、设置在所述推车车架 1 底前部的前轮组件 2，该组件包括前车轮 2a 及前车轮轴 2b；设置在所述的推车车架 1 的底后部的后轮组件 3，该组件包括后车轮 3a 及后车轮轴 3b，及设置在所述车架 1 上的两座椅组件，包括

前座椅组件及后座椅组件；所述的推车车架 1 包括对称设置在两侧、并通过若干连接杆相连接的两侧支架 4，分别是左侧支架与右侧支架；所述的侧支架 4，分别包括一前轮支杆 5、一后轮支杆 6、一前臂杆 7、一后臂杆 8；所述的前轮支杆 5 的前端部与前轮轴 2b 相连接，所述后轮支杆 6 的后端部与后轮轴 3b 相连接；所述的前轮支杆 5 的后端部与后轮支杆 6 的前端部相互铰接，铰接后形成一开口向上的拱起；所述前臂杆 7 的前端部，铰接在前轮支杆 5 的中部；所述前臂杆 7 后端部与后臂杆 7 的前端部相互铰接，铰接后形成一开口向下的拱起；所述后轮支杆 6 的中部与所述后臂杆 8 的中部相铰接；所述相互铰接的前轮支杆 5、后轮支杆 6、前臂杆 7、后臂杆 8，共同使侧支架 4 形成一铰链四连杆机构；所述侧支架 4 的两后轮支杆 6 之间，还设有一横向支撑杆 9，该支撑杆的两端分别铰接在两后轮支杆 6 上，其中部设有一用来使该支撑杆 9 保持平直或弯折状态的卡扣机构 9a；所述的支撑杆 9a 是由中部相互铰接的两段杆体组成，所述的卡扣机构是设置在该支撑杆中部的铰接处，包括一舌杆及复位弹簧。

所述的侧支架 4 的后臂杆 8 后段，还连接有一手把杆 10；所述的手把杆 10 的下段可以从所述的后臂杆 8 后段中插进或拉出；所述后臂杆 8 的上端部，还设有一控制手把杆 10 进出的伸缩卡位机构 11；所述手把杆 10 的上端，还设有一把手 12；所述的手把杆 10，还铰接有一对呈弯折形、中部相互交叉的连接杆 13；所述弯折形连接杆 13 的一端，铰接在所述的手把杆 10 上，其另一端铰接在另一侧支架 4 的后轮支杆 6 上；所述的两个弯折形连接杆 13 的中段交叉部相互铰接。

所述的前轮支杆 5、后轮支杆 6、前臂杆 7、后臂杆 8、手把杆 10，

均是铝合金管状构件，其各自的两端部，均设有一连接件，并通过该连接件与其他构件相互连接；具体地，设置在前轮支杆 5 与后轮支杆 6 之间的连接件是轴节 14；设置在前臂杆 7 与后臂杆 8 之间的连接件是轴节 15；设置在后臂杆 8 与手把杆 10 之间的连接件是伸缩卡扣机构 11。根据具体需求，也可以选用其他材料，如不锈钢材料来制造前轮支杆 5、后轮支杆 6、前臂杆 7、后臂杆 8、手把杆 10 等构件及其连接件。

所述的两侧支架 4 的前轮支杆 5 之间，还设有一中部可折叠的前脚踏板 16；所述的两侧支架 4 的前臂杆 7 之间，也设有一中部可折叠的后脚踏板 17。

所述侧支架前轮支杆 5 的中段，还铰接有一前座水平连杆 18，该连杆 18 的后端通过一连接板 19 铰接在所述的前臂杆 7 上；所述后臂杆 8 与后轮支杆 6 的铰接轴上，还铰接有一后座水平连杆 20，该连杆 20 的后段相下弯折，其端部铰接在后轮支杆 6 上；所述两侧支架 4 之间，其前部设有一对呈 X 形交叉、且其交叉部相铰接的斜向交叉连杆 21，其后部设有一对呈 X 形交叉、且其交叉部相铰接的斜向交叉连杆 22；所述设在前部的两斜向交叉连杆 21，其上端部分别与所述前座水平连杆 18 相铰接，其下端部分别与所述前轮支杆 5 相铰接；所述设在后部的两斜向交叉连杆 22，其上端部分别与所述后座水平连杆 20 相铰接，其下端部分别铰接在所述前臂杆 7 与后臂杆 8 的铰接轴上。

所述前座水平连杆 18 的后段，分别铰接有一向上的前座背靠立杆 23；所述后座水平连杆 20 的后段，分别铰接有一向上的后座背靠立杆 24；所述两前座背靠立杆 23 之间，以及两后座背靠立杆 24 之间，还分别设有一座位无级调节装置 25，该装置通过水平对称设置的两对背靠连

接板 26，对称地铰接在所述的背靠立杆 23 及 24 上。

所述的座位无级调节装置 25，包括一长形本体 27、设在所述本体上 26 并可上下滑动的卡位机构 28 及若干条钢丝；所述的钢丝一端固定在所述本体 27 的上端，中部穿过卡位机构 28，下端固定在所述的车架 1 上；所述的卡位机构 28，通过拉紧或松弛所述的钢丝，可以不间断地无级调节或改变本体 27 相对于所述车架 1 的位置。

所述的前轮支架 5，其上端部连接件轴节 14 的内侧边，与所述后轮支架 6 的外侧边相互铰接，两前轮支架 5 之间距离，大于两后轮支架 6 之间的距离，使前轮组件 2 与后轮组件 3 的位置错开。

所述前轮支杆 5、后轮支杆 6 的铰接轴 14 上，还设有一环形拉手 29，该拉手的一侧还开有一弧形槽 30，所述槽开口的一端铰接有一卡钩 31；所述后轮支架 6 与后臂杆 8 的铰接轴上，设有一与所述卡钩 31 配合使用、设有一卡钩连接开口的定位构件 32；当车架 1 处于使用状态时，该卡钩 31 与该定位构件 32 脱开；当车架 1 处于折叠收拢状态时，该卡钩 31 与该定位构件 32 结合。

所述的前座水平连杆 18、前座背靠立杆 23，及铰接在所述前座背靠立杆 23 上的无级调节装置 25 上，还设有一前座椅；所述的后座水平连杆 20、后座背靠立杆 24，及铰接在所述后座背靠立杆 24 上的无级调节装置 25 上，设有一后座椅；所述的座椅可以是普通座椅或汽车座椅之一。本实用新型还可以根据实际需要，在各连接杆等适当的部件上，或相关部件之间，设置若干帘布，及其他辅助或装饰性部件、物品。

采用本实用新型上述实施例所述相同或相似的结构，所得到的其他前后座双人儿童推车，均在本实用新型保护范围之内。

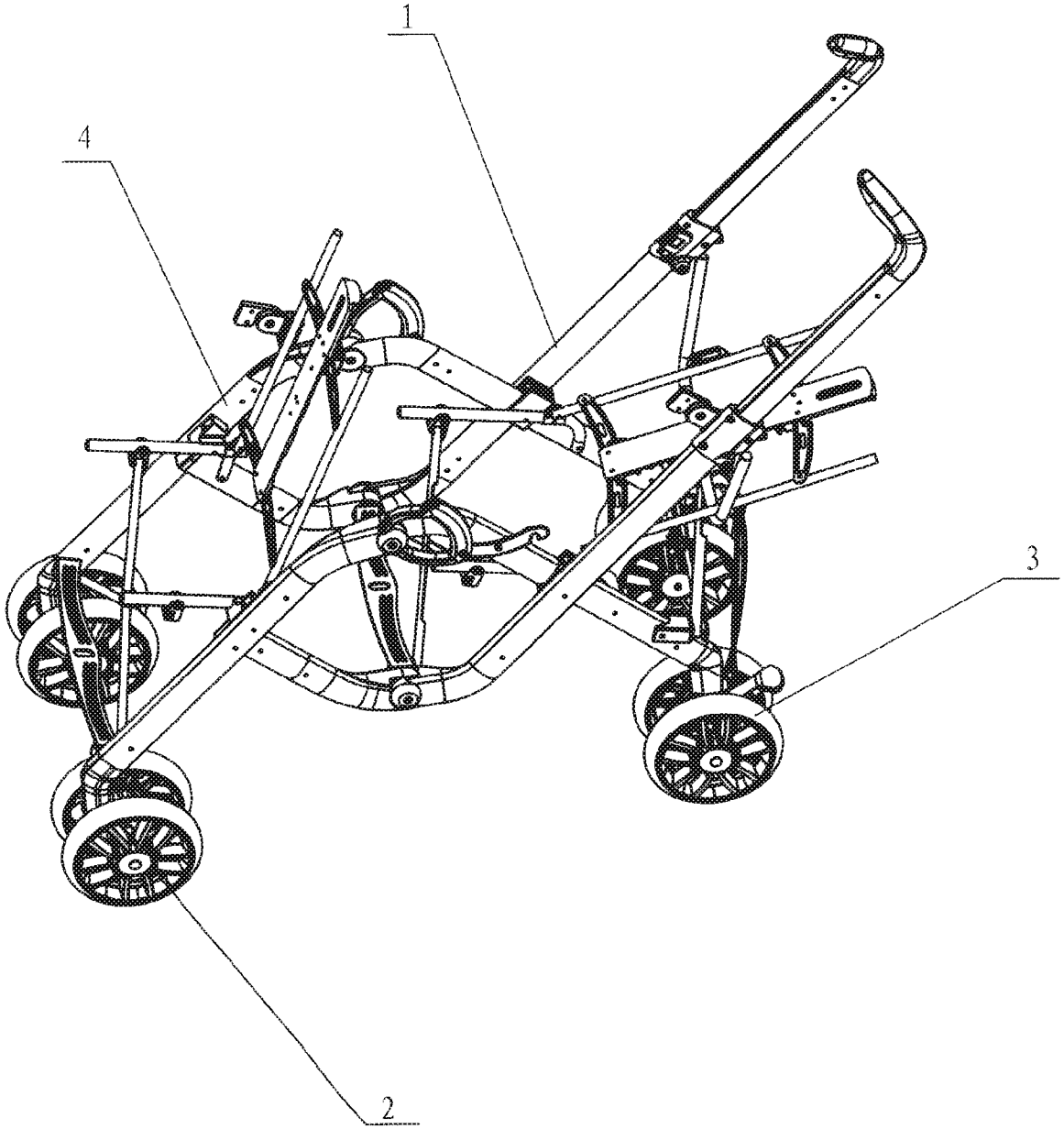


图 1

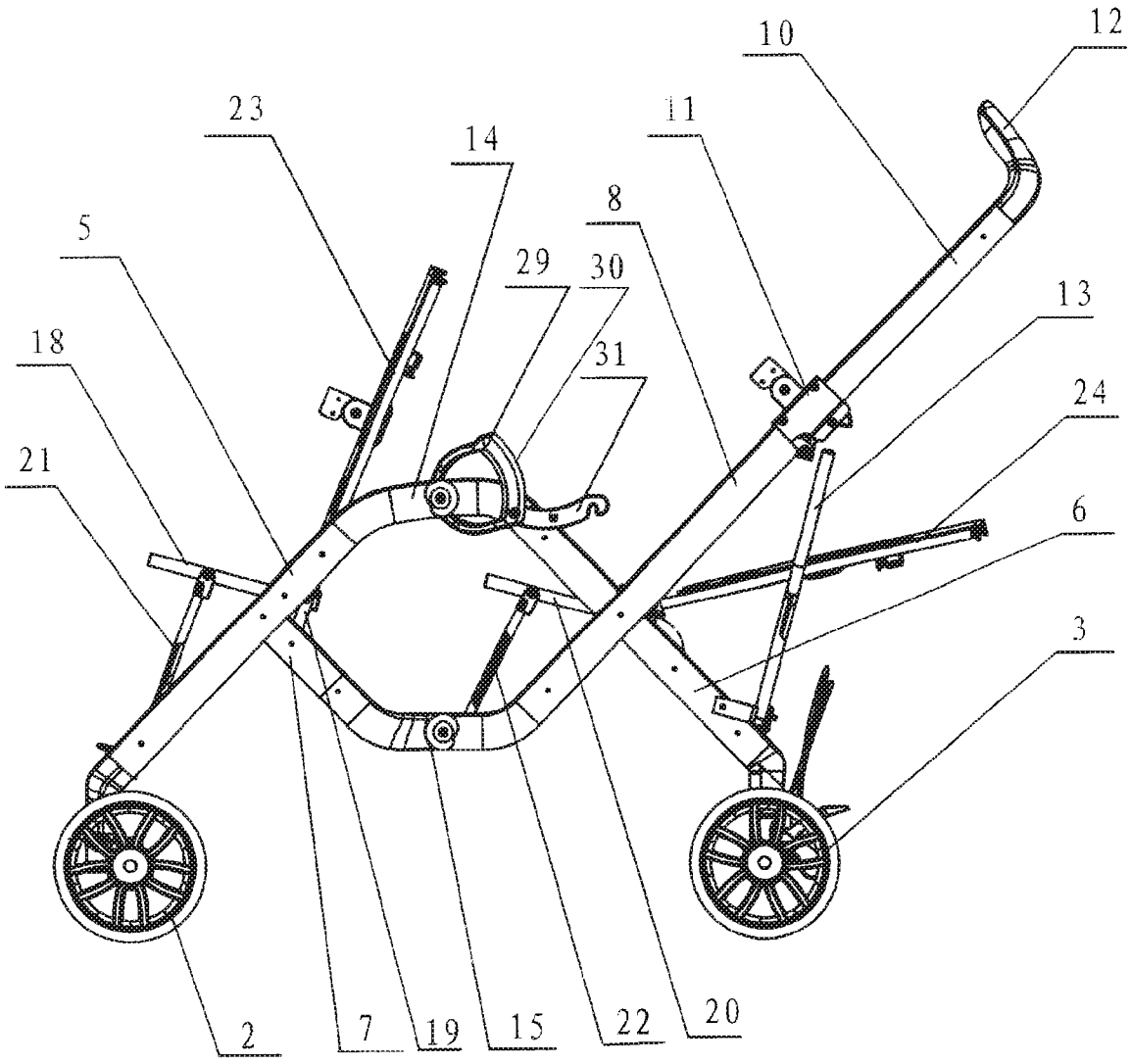


图 2

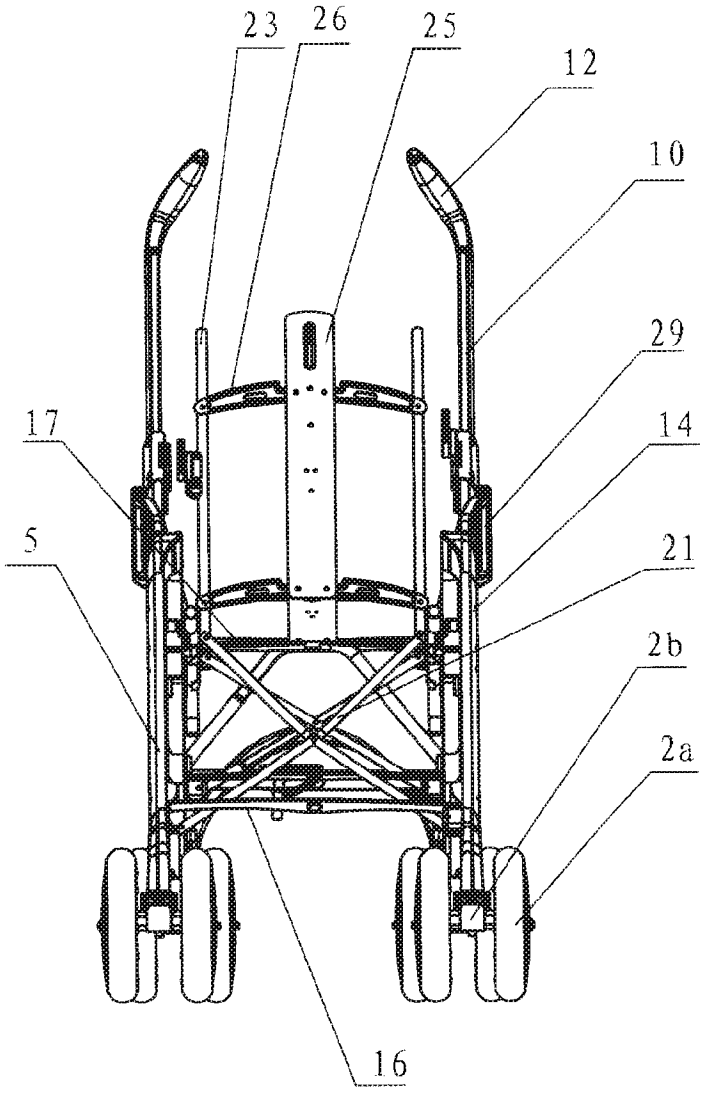


图 3

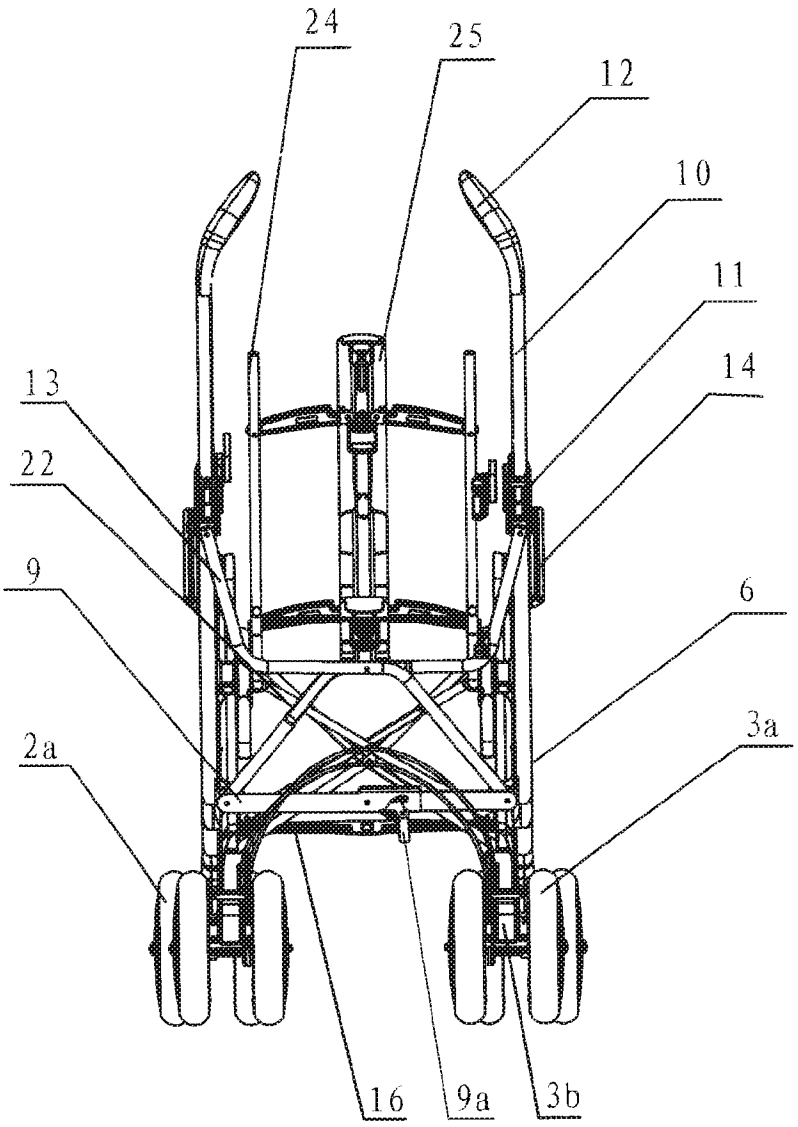


图 4

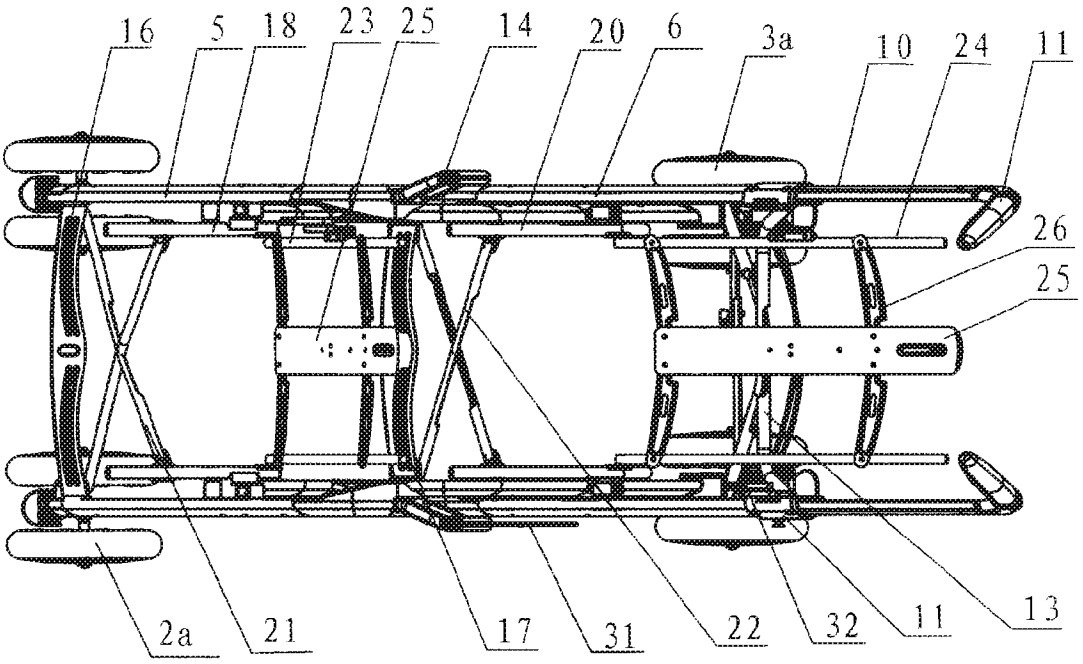


图 5

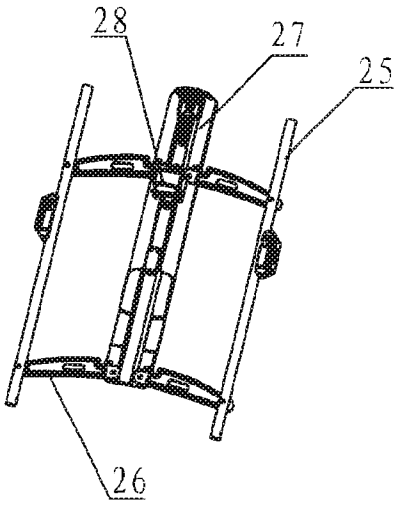


图 6

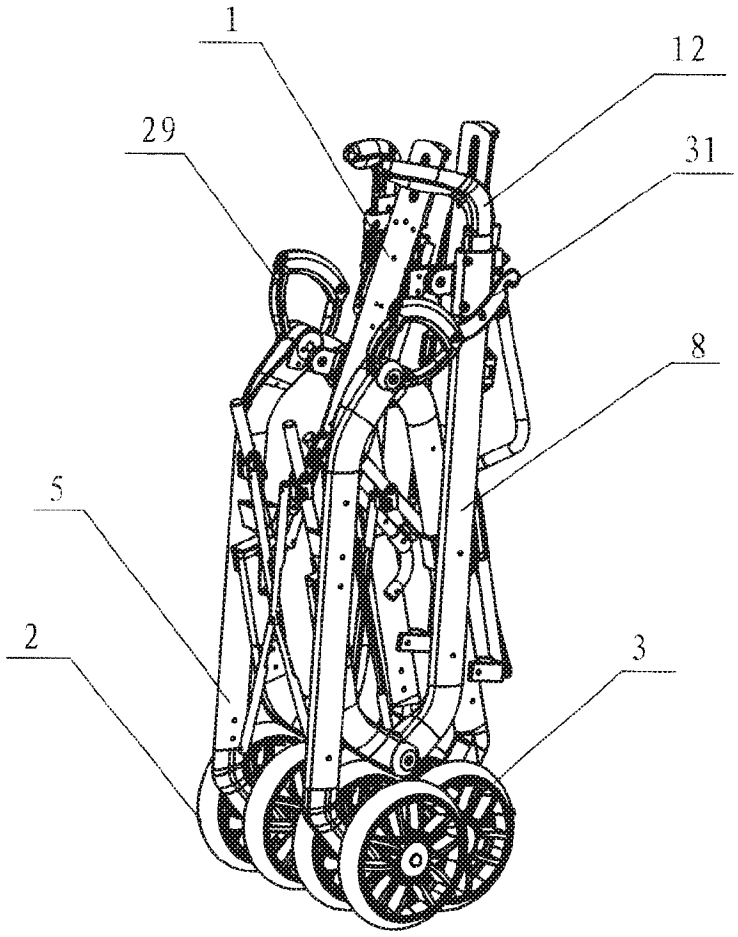


图 7

Espacenet

Bibliographic data: CN2784272 (Y) — 2006-05-31

Go-cart for children

Inventor(s): SHEN HAIDONG [CN] ± (HAIDONG SHEN)

Applicant(s): GOODBABY CHILD PRODUCTS CO LTD [CN] ± (GOODBABY CHILD PRODUCTS CO., LTD)

Classification: **- international:** ***B62B7/00; B62B9/00***
- cooperative:

Application number: CN2005269647U 20050104

Priority number(s): CN2005269647U 20050104

Abstract of CN2784272 (Y)

The utility model relates to a go-cart for children, which comprises a frame of the go-cart, front wheels arranged at the bottom-front part of the frame of the go-cart, rear wheels arranged at the bottom-rear part of the frame of the go-cart, and a first seat arranged on the frame of the go-cart, wherein the first seat is rotationally connected with the frame of the go-cart; in addition, rotary axis is almost vertical to the horizontal surface; a locking device for position is arranged between the first seat and the frame of the go-cart. When the direction of the first seat is needed to change, the locking device for position is unlocked and the first seat is rotated so that the direction of the first seat corresponding the frame of the go-cart is changed; then the first seat and the frame of the go-cart are locked again, and the direction of the first seat can be changed.

[19] 中华人民共和国国家知识产权局

[51] Int. Cl.
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B62B 9/00 (2006.01)

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[22] 申请日 2005.1.4

[21] 申请号 200520069647.6

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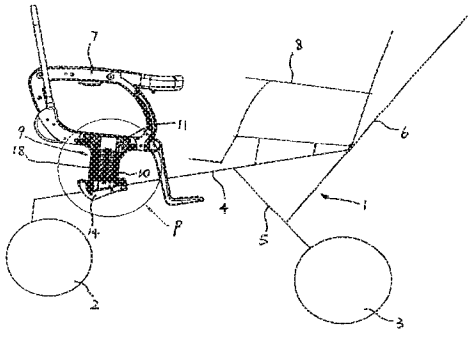
权利要求书 1 页 说明书 3 页 附图 5 页

[54] 实用新型名称

儿童推车

[57] 摘要

一种儿童推车，包括推车车架、设置在推车车架的底前部的前轮、设置在推车车架的底后部的后轮、设置在推车车架上的第一座位，第一座位与推车车架相转动连接，并且转动的轴心线与水平面大致上相垂直，第一座位与推车车架之间具有位置锁定装置。当第一座位需要换向时，只需将位置锁定装置解锁，转动第一座位，使得第一座位相对推车车架换向，再重新将第一座位与推车车架锁定，便实现第一座位的换向。



1、一种儿童推车，包括推车车架[1]、设置在所述的推车车架[1]的底前部的前轮[2]、设置在所述的推车车架[1]的底后部的后轮[3]、设置在所述的推车车架[1]上的第一座位[7]，其特征在于：所述的第一座位[7]与所述的推车车架[1]相转动连接，并且转动的轴心线与水平面大致上相垂直，所述的第一座位[7]与所述的推车车架[1]之间具有位置锁定装置[9]。

2、根据权利要求 1 所述的儿童推车，其特征在于：所述的推车车架[1]上固定设置有固定座[10]，所述的第一座位[7]上设有底盘[11]，所述的固定座[10]与所述的底盘[11]之间相转动连接。

3、根据权利要求 2 所述的儿童推车，其特征在于：所述的位置锁定装置[9]包括滑动地设置在所述的底盘[11]或所述的固定座[10]的一个上的插销[13]、开设在所述的底盘[11]或所述的固定座[10]的另一个上的至少两个插孔[12]，所述的插销[13]具有两个工作位置，第一工作位置是锁定工作位置，所述的插销[13]插在所述的插孔[12]中，第二工作位置是解锁工作位置，所述的插销[13]脱离所述的插孔[12]。

4、根据权利要求 3 所述的儿童推车，其特征在于：所述的位置锁定装置[9]还包括操作件[14]，所述的操作件[14]与所述的插销[13]相连接。

5、根据权利要求 3 所述的儿童推车，其特征在于：所述的固定座[10]上开有导向槽[15]，所述的插销[13]滑动地插在所述的导向槽[15]内。

6、根据权利要求 5 所述的儿童推车，其特征在于：所述的插销[13]与所述的固定座[10]之间设置有弹簧[15]。

7、根据权利要求 2 所述的儿童推车，其特征在于：所述的第一座位[7]的座基架与所述的底盘[11]可拆卸地连接。

8、根据权利要求 2 所述的儿童推车，其特征在于：所述的推车车架[1]包括前轮支架[4]、与所述的前轮支架[4]的后端部相转动连接的推把[6]、与所述的推把[6]的下端部相转动连接的后轮支架[5]，所述的后轮支架[5]的前端部与所述的前轮支架[4]相转动连接。

9、根据权利要求 8 所述的儿童推车，其特征在于：所述的固定座[10]固定设置在所述的前轮支架[4]上。

儿童推车

技术领域

本实用新型涉及一种儿童推车。

背景技术

现有技术中，为了实现儿童推车上的座位相对推车车架换向（换向是指座位上的儿童相对于推车的大人呈面对面的位置或背对面的位置），儿童推车上的座位可拆卸的设置在所述的推车车架上，需要换向时，须先将座位从推车车架上拆卸下来，将所述的座位换个方向后再安装到所述的推车车架上，假如所述的座位上坐着小孩，还有必要将小孩抱下，再将座位换向，使得操作很不方便。

发明内容

本实用新型目的是提供一种儿童推车，其座位的换向可以较方便的实现。

为达到上述目的，本实用新型采用的技术方案是：一种儿童推车，包括推车车架、设置在所述的推车车架的底前部的前轮、设置在所述的推车车架的底后部的后轮、设置在所述的推车车架上的第一座位，所述的第一座位与所述的推车车架相转动连接，并且转动的轴心线与水平面大致上相垂直，所述的第一座位与所述的推车车架之间具有位置锁定装置，在位置锁定装置处于解锁状态下，所述的第一座位可以相对于推车车架转动，可以调整座位，使得座位上的儿童相对于推车的大人呈面对面的状态，或呈背对面的状态。在位置锁定装置处于锁定状态下，所述的第一座位相对于推车车架呈位置相对固定的状态，第一座位不能相对于推车车架转动。

由于上述技术方案运用，本实用新型与现有技术相比具有下列优点：由于所述的第一座位与所述的推车车架之间相转动连接，并且所述的第一座位与所述的推车车架之间具有位置锁定装置，因此当第一座位需要换向时，只需将所述的位置锁定装置解锁，转动所述的第一座位，使得第一座位相对所述的推车车架换向，再重新将所述的第一座位与所述的推车车架锁定，便实现所述的第一座位的换向。

附图说明

附图 1 为本实用新型的座位正常使用时的主视图；

附图 2 为本实用新型的座位换向过程中的主视图；

附图 3 为本实用新型的座位换向后的主视图；

附图 4 为附图 1 的 I 处放大图；

附图 5 为附图 2 的 K 处放大图；

附图 6 为附图 3 的 P 处放大图；

其中：1、推车车架；2、前轮；3、后轮；4、前轮支架；5、后轮支架；6、推把；7、第一座位；8、第二座位；9、位置锁定装置；10、固定座；11、底盘；12、插孔；13、插销；14、操作件；15、弹簧；16、导向槽；17、第二转动轴；18、第一转动轴；

具体实施方式

参见附图 1-附图 3，一种可以双人坐的儿童推车，包括推车车架 1、设置在所述的推车车架 1 的底前部的前轮 2、设置在所述的推车车架 1 的底后部的后轮 3、设置在所述的推车车架 1 上的第一座位 7、设置在所述的推车车架 1 上的第二座位 8。所述的推车车架 1 包括前轮支架 4、与所述的前轮支架 4 的后端部相转动连接的推把 6、与所述的推把 6 的下端部相转动连接的后轮支架 5，所述的后轮支架 5 的前端部与所述的前轮支架 4 相转动连接，所述的第一座位 7 与所述的推车车架 1 相转动连接，并且转动的轴心线与水平面大致上相垂直。所述的推车车架 1 上固定设置有固定座 10，所述的固定座 10 固定设置在所述的前轮支架 4 上，所述的第一座位 7 上设有底盘 11，所述的第一座位 7 的座基架与所述的底盘 11 可拆卸地连接，所述的固定座 10 与所述的底盘 11 之间通过第一转动轴 18 相转动连接，所述的第一座位 7 与所述的推车车架 1 之间具有位置锁定装置 9。

所述的位置锁定装置 9 包括滑动地设置在所述的底盘 11 或所述的固定座 10 的一个上的插销 13、开设在所述的底盘 11 或所述的固定座 10 的另一个上的至少两个插孔 12。

如附图 4-附图 6 所示，所述的固定座 10 上开有导向槽 15，所述的插销 13 滑动地插在所述的导向槽 15 内，在所述的底盘 11 上开有两个插孔 12，该两个插孔 12 分别用于把第一座位 7 锁定于座位朝前或座位朝后的位置。所述的插销 13 具有两个工作位置，第一工作位置是锁定工作位置，所述的插销 13 插在所述的插孔 12 中，第二工作位置是解锁工作位置，所述的插销 13 脱离所述的插孔 12。所述的位置锁定装置 9 还包括操作件 14，所述的操作件 14 的一端部与所述的固定座 10 通过第二转动轴 17 相转动连接，所述的操作件 14 与

所述的插销 13 相连接，按动所述的操作件 14，使得所述的插销 13 处于第二工作位置，所述的插销 13 脱离所述的插孔 12。

所述的插销 13 与所述的固定座 10 之间设置有弹簧 15，当所述的插销 13 处于第一工作位置时，弹簧 15 的作用力使得所述的插销 13 稳定地插在所述的插孔 12 中。

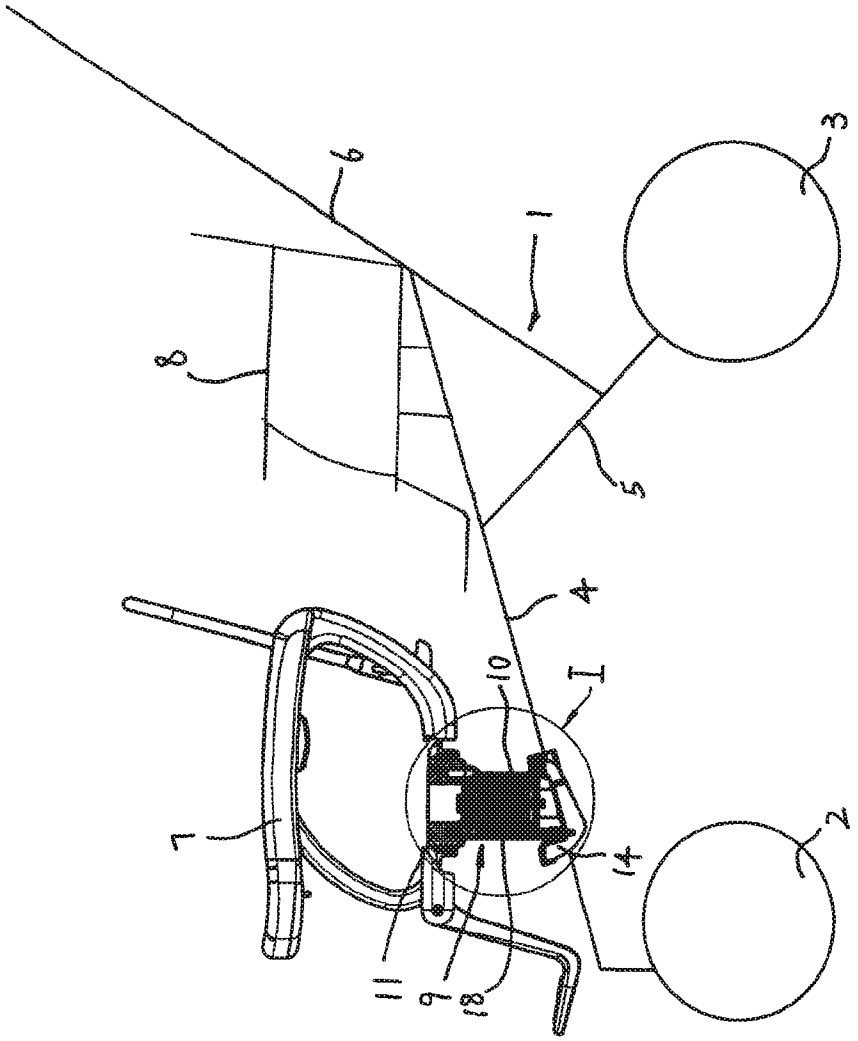


图 1

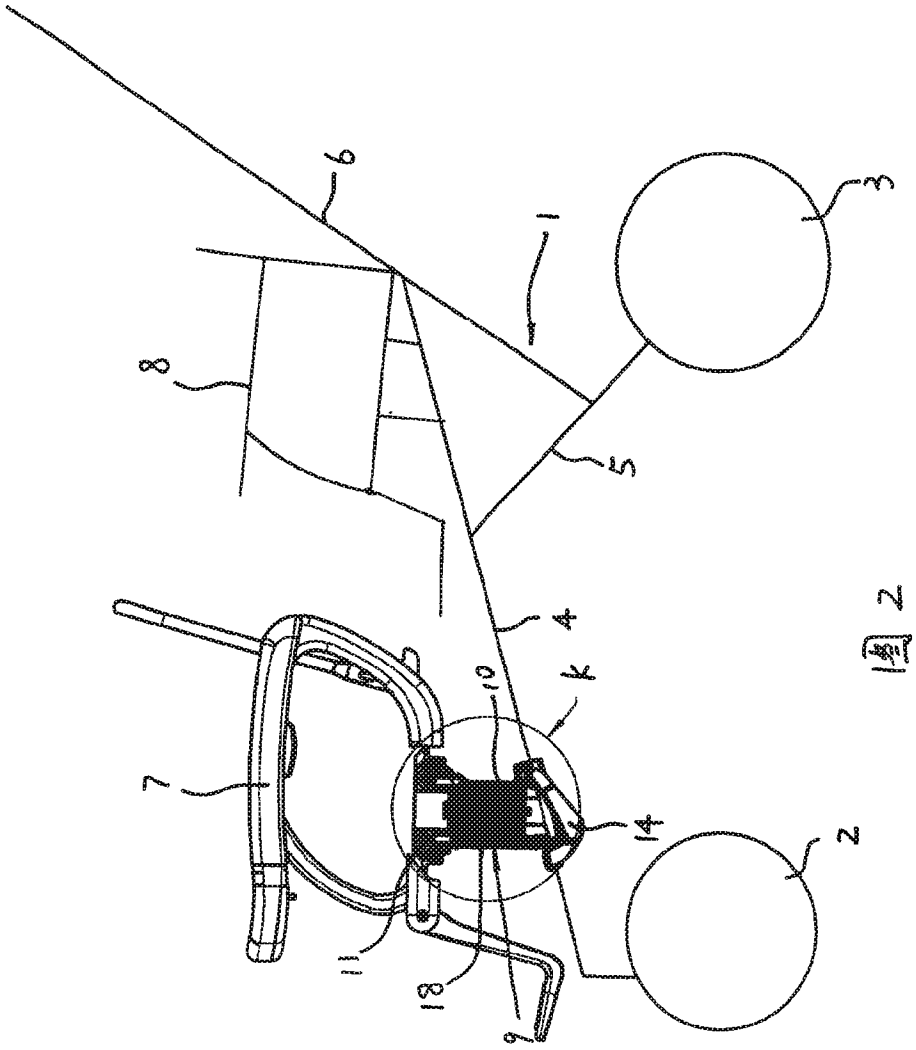


图 2

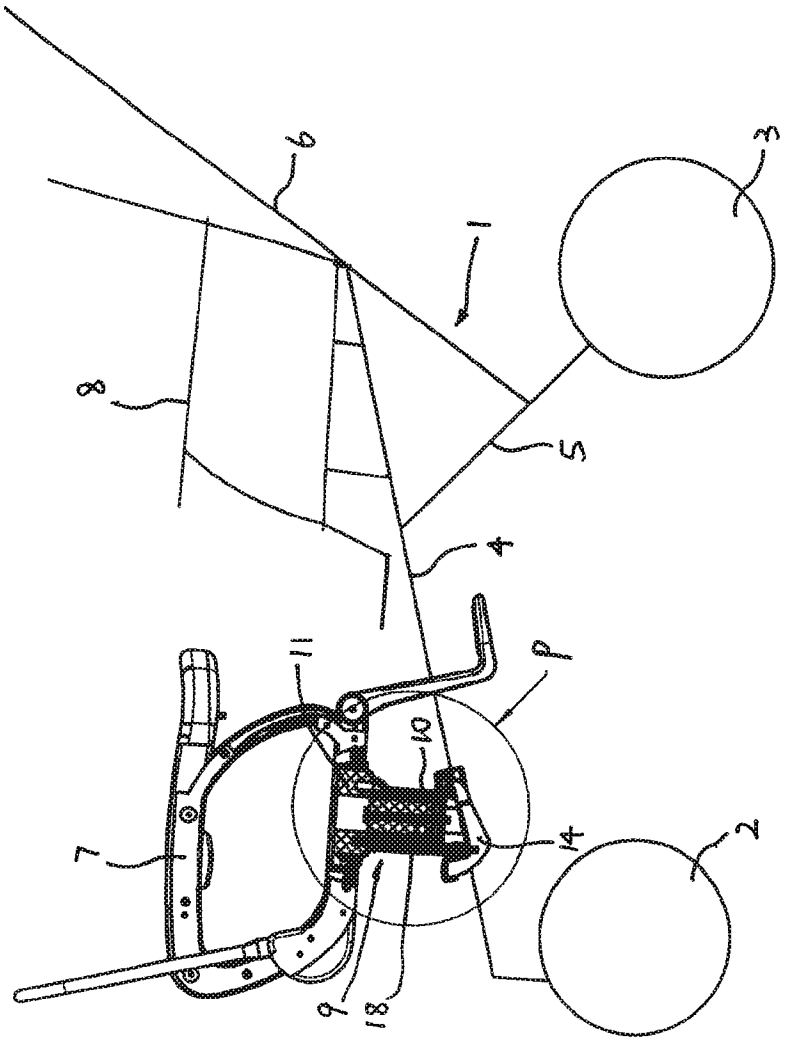


图 3

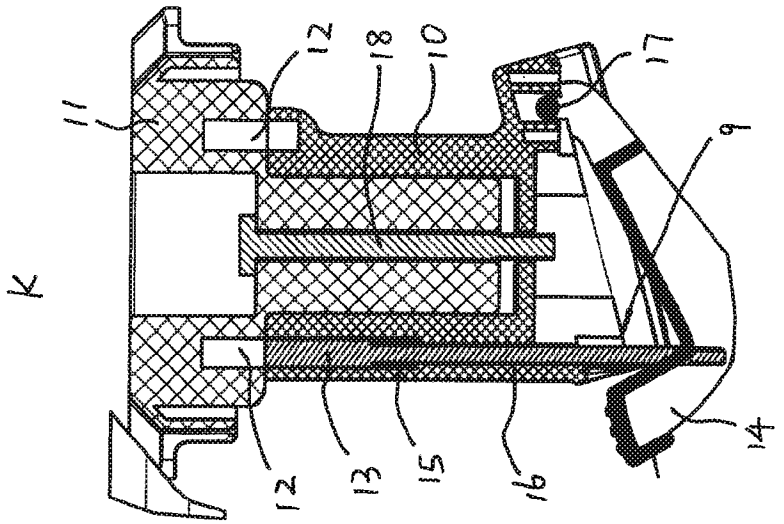


图 5

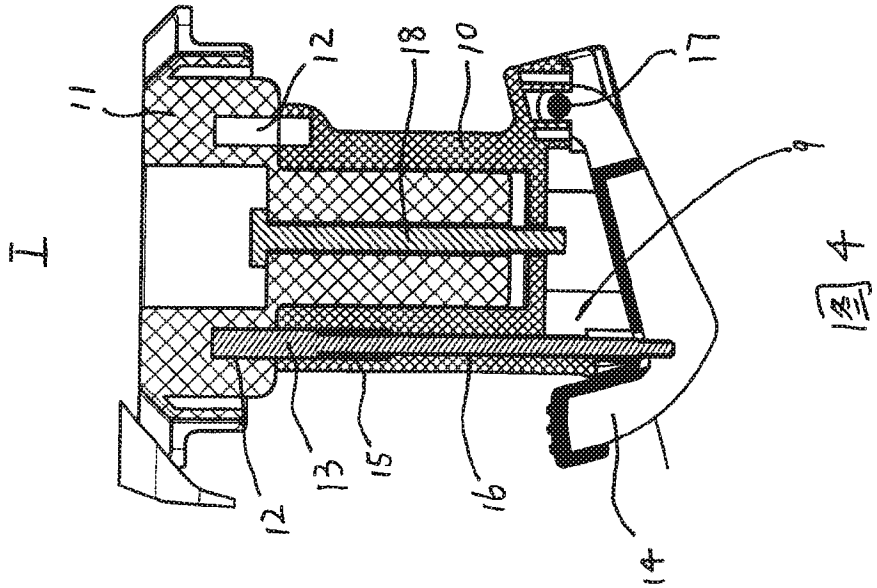


图 4

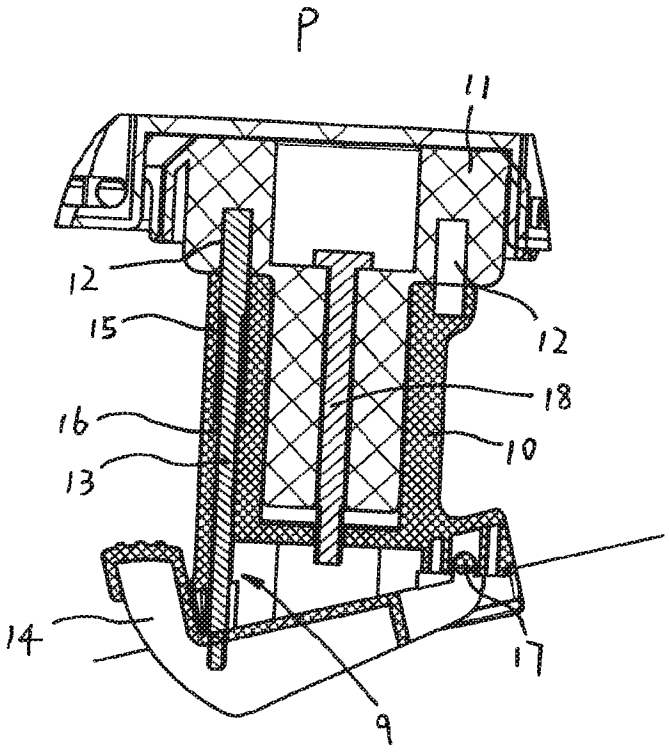


图 6

Espacenet

Bibliographic data: CN201626448 (U) — 2010-11-10

Multifunctional baby carrier

Inventor(s): GE LUO ± (LUO GE)

Applicant(s): GE LUO ± (LUO GE)

Classification: **- international:** ***B62B7/04; B62B9/12***
- cooperative:

Application number: CN20102115279U 20100211

Priority number(s): CN20102115279U 20100211

Abstract of CN201626448 (U)

The utility model relates to a multifunctional baby carrier, which comprises a baby carrier body, a baby carrier frame and wheels. Lateral handrails are arranged on two sides of the baby carrier body; a detachable device is arranged on the lateral handrails, and comprises a receiving device arranged on the lateral handrails and a connecting seat capable of being mounted and demounted on the receiving device; the receiving device comprises grooves formed on the lateral handrails; a cross rod is fixed in the grooves in the transverse direction; the connecting seat comprises a connecting seat casing, in which a fixed hook capable of being buckled in the cross rod is arranged; a spring is arranged between the fixed hook and the connecting seat casing, and is connected with a button; and the connecting seat is fixed on an automobile seat or a cradle. The utility model has the advantages that the detachable device is arranged on the lateral handrails of the baby carrier, so that the automobile seat or the cradle can be conveniently mounted or demounted to greatly facilitate users; and moreover, the structure is simple, and both the mounting and the demounting are very simple.

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(12)实用新型专利

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(51)Int.Cl.
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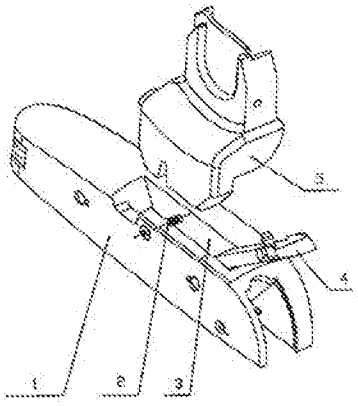
权利要求书 1 页 说明书 2 页 附图 3 页

(54)实用新型名称

一种多功能童车

(57)摘要

本实用新型涉及一种多功能童车，包括车身、车架与车轮，车身两侧设有侧扶手，所述的侧扶手上设置可拆卸装置，可拆卸装置包括设置在侧扶手上的接收装置和可装卸在接收装置上的连接座，所述的接收装置包括设置在侧扶手上的凹槽，所述的凹槽内横向方向上固定有横杆，所述的连接座包括连接座壳体，壳体内设置有能扣入横杆的固定钩，固定钩与连接座壳体之间设置弹簧，弹簧连接按钮，且连接座固定在汽车座椅或摇篮上。本实用新型在童车的侧扶手上设置可拆卸装置，使得汽车座椅或者摇篮可以方便地安装或拿下，大大方便了用户，且本实用新型结构简单，安装和拆卸都很简单。



CN 201626448 U

1. 一种多功能童车，包括车身、车架与车轮，车身两侧设有侧扶手，其特征在于：所述的侧扶手上设置可拆卸装置，所述的可拆卸装置包括设置在侧扶手上的接收装置和可装卸在接收装置上的连接座，所述的接收装置包括设置在侧扶手上的凹槽，所述的凹槽内横向方向上固定有横杆，所述的连接座包括连接座壳体，壳体内设置有能扣入横杆的固定钩，固定钩与连接座壳体之间设置弹簧，弹簧连接按钮，且所述的连接座固定在汽车座椅或摇篮上。

一种多功能童车

（一）技术领域

[0001] 本实用新型涉及一种童车，尤其是涉及一种能放置多种部件的多功能童车。

（二）背景技术

[0002] 目前市场上的童车一般不具备儿童汽车安全座椅功能，如专利号为 03225254.4 的中国实用新型专利一种两用童车，其结构包括可折叠主体，连接在主体下端的四个可折叠车轮，主体装设有汽车安全带卡扣机构，在儿童乘坐位置有用于缚紧乘员的安全带。完全打开时，与普通童车无异，四个车轮收折后，可放在汽车座椅上，扣上汽车安全带作为汽车安全座椅使用。虽然，该款童车实现双重功能，但是毕竟童车与汽车座椅在要求上差别较大，折叠后的童车作为汽车座椅在安全性和舒适性上大打折扣。

（三）发明内容

[0003] 为了克服现有技术中的不足，本实用新型提供一种汽车座椅或提篮可拆卸地安装在童车上的多功能童车，结构简单，使用方便。

[0004] 本实用新型解决其技术问题的技术方案是：

[0005] 一种多功能童车，包括车身、车架与车轮，车身两侧设有侧扶手，所述的侧扶手上设置可拆卸装置，所述的可拆卸装置包括设置在侧扶手上的接收装置和可装卸在接收装置上的连接座，所述的接收装置包括设置在侧扶手上的凹槽，所述的凹槽内横向方向上固定有横杆，所述的连接座包括连接座壳体，壳体内设置有能扣入横杆的固定钩，固定钩与连接座壳体之间设置弹簧，弹簧连接按钮，且连接座固定在汽车座椅或提篮上。

[0006] 在童车的侧扶手上设置凹槽，凹槽内设置横杆，按下按钮，连接座通过固定钩锁定横杆，由于连接座固定在汽车座椅或提篮上，则汽车座椅或提篮就安装在童车上了。在拆卸时，只要按下按钮，固定钩从横杆中脱离就可以了，这时候，将汽车座椅安装在车上，或者可以手提提篮。在童车的侧扶手上设置可拆卸装置，使得汽车座椅或者提篮可以方便地安装或拿下，大大方便了用户。

[0007] 本实用新型的有益效果在于：本实用新型在童车的侧扶手上设置可拆卸装置，使得汽车座椅或者提篮可以方便地安装或拿下，大大方便了用户，且本实用新型结构简单，安装和拆卸都很简单。

（四）附图说明

[0008] 图 1 是本实用新型可拆卸装置的结构示意图；

[0009] 图 2 是本实用新型连接座的爆炸结构示意图；

[0010] 图 3 是本实用新型的结构示意图。

（五）具体实施方式

[0011] 下面结合附图和具体实施方式对本实用新型作进一步详细说明。

[0012] 如图 3 所示，一种多功能童车，包括车身、车架以及车轮，车架的两侧设有侧扶手 1，如图 1 所示，侧扶手上表面上设有凹槽 3，凹槽横向宽度方向悬空固定有一横杆 2，凹槽与横杆组成接收装置，侧扶手上还连接有能翻转的扶手盖 4，能盖住在凹槽上。如图 1、图 2 所示，另设有连接座 5，连接座 5 固定在汽车座椅或提篮 9 上，连接座可方便安装在接收装置上，连接座与接收装置组成侧扶手的可拆卸装置，连接座包括壳体 6，壳体背面设有连接座盖 7，壳体 6 内设置固定钩 8，且固定钩钩体能够伸出连接座，固定钩 8 与座壳体之间设置弹簧，弹簧连接按钮。按下按钮，将固定钩锁定横杆上，然后释放按钮，则汽车座椅和提篮 9 就连接在童车上了，如图 3 所示，而需要拆卸时，只需要将固定钩脱离就好了，这样，汽车座椅就可以方便地安装在汽车上，或者轻松地提提篮了。

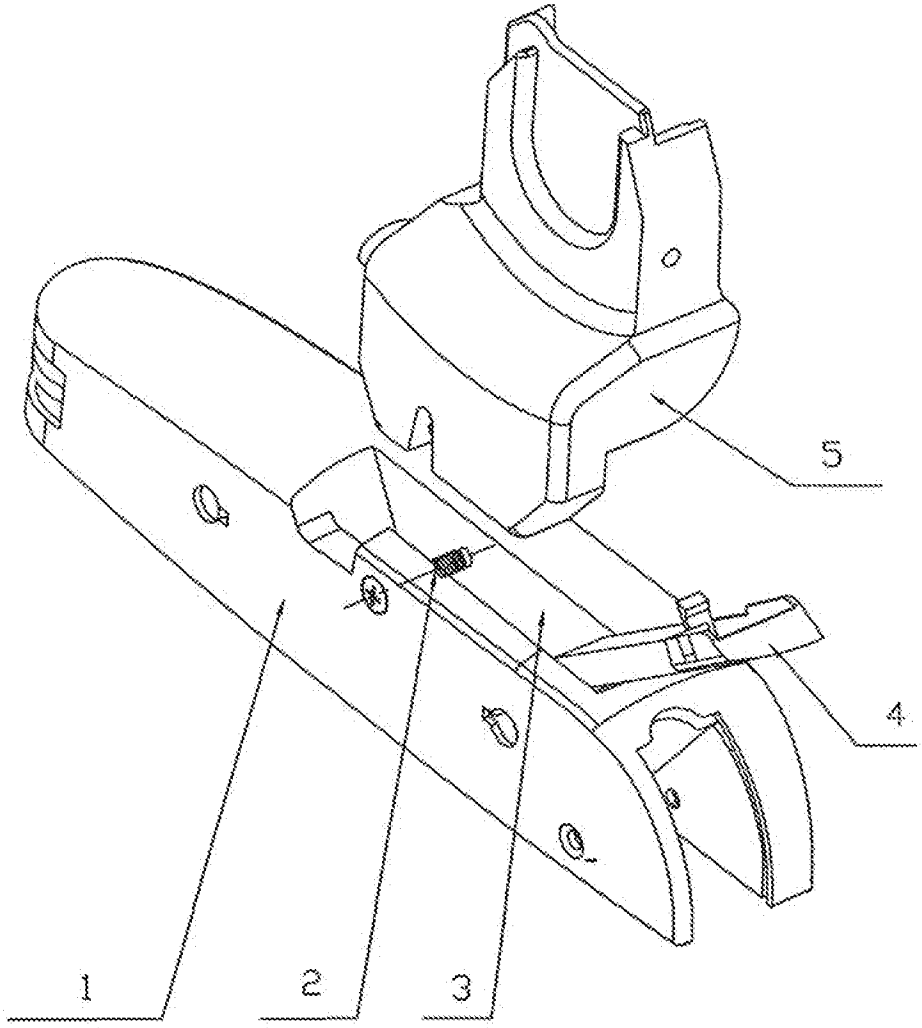


图 1

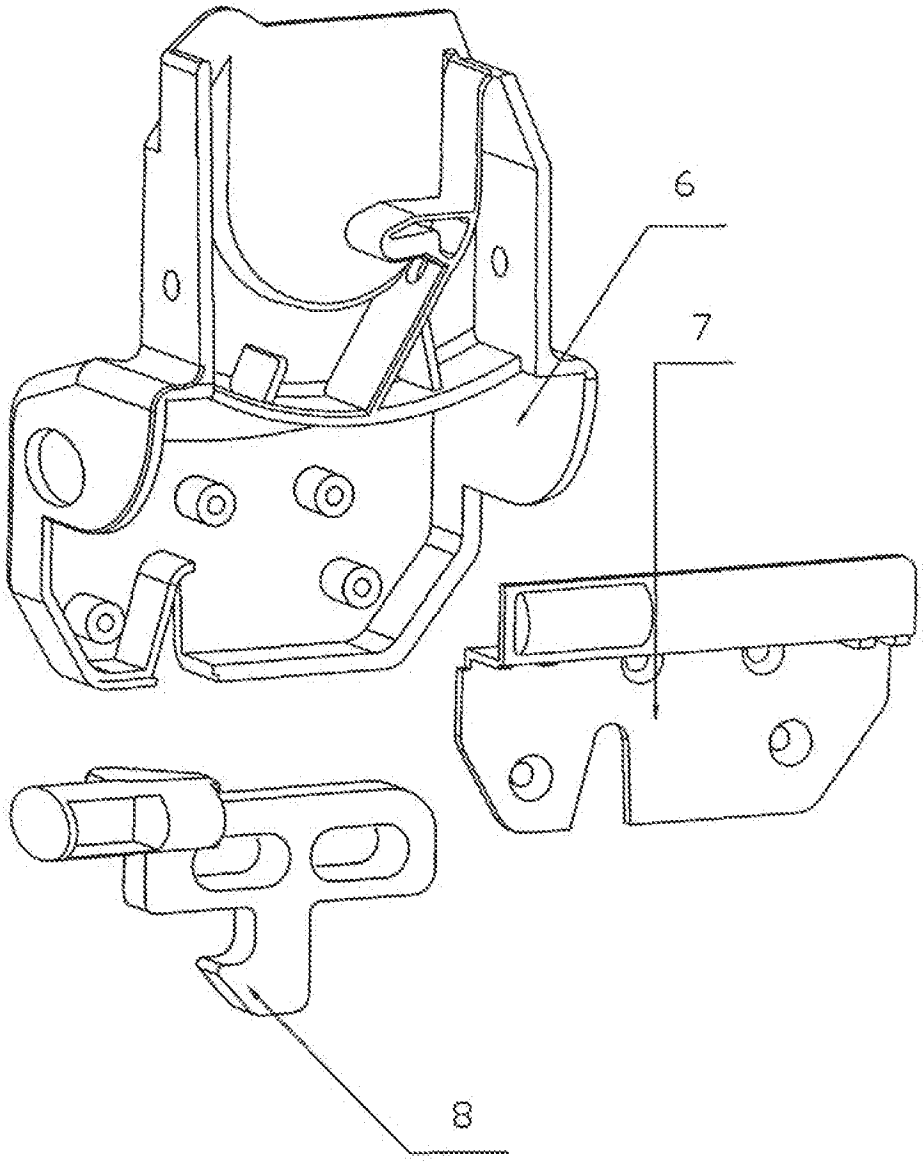


图 2

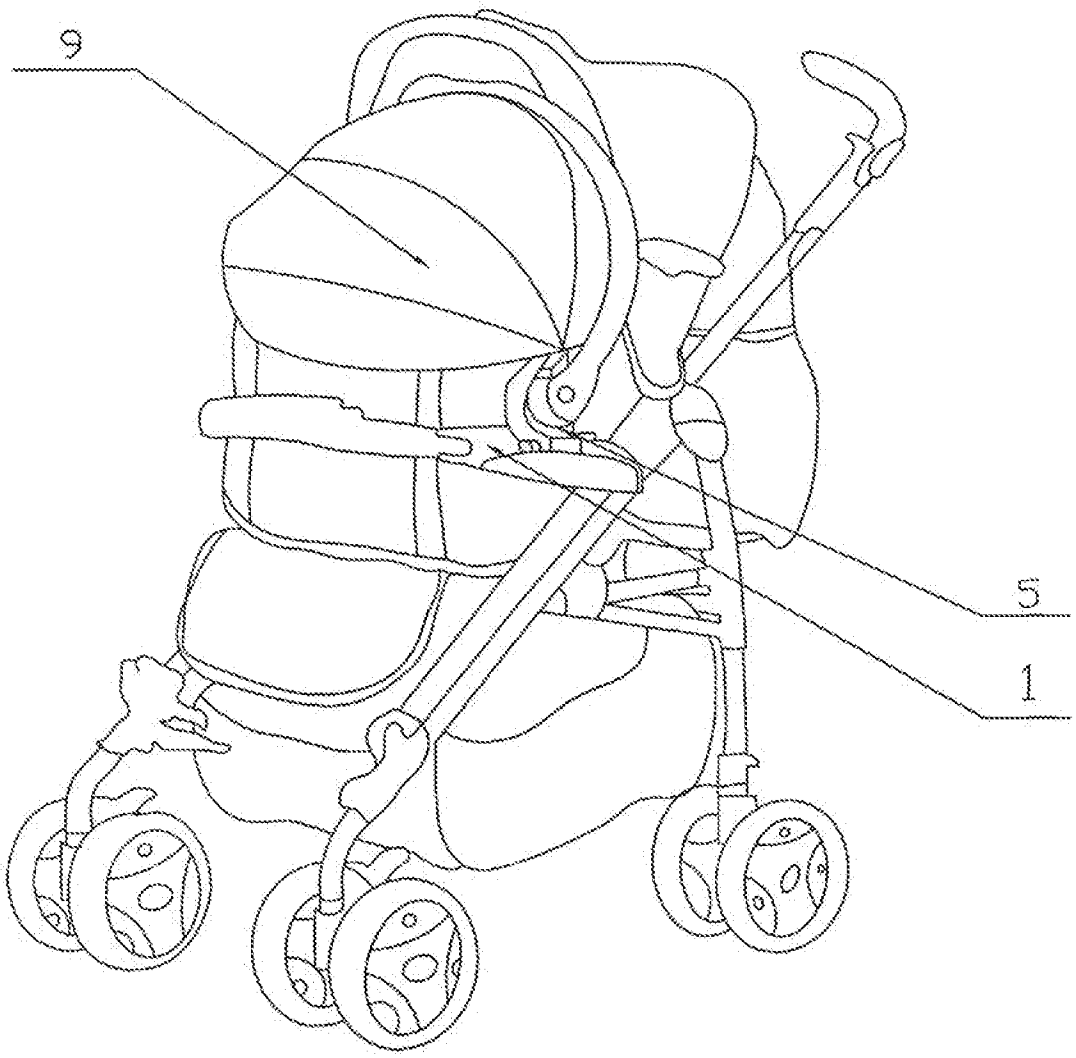


图 3

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(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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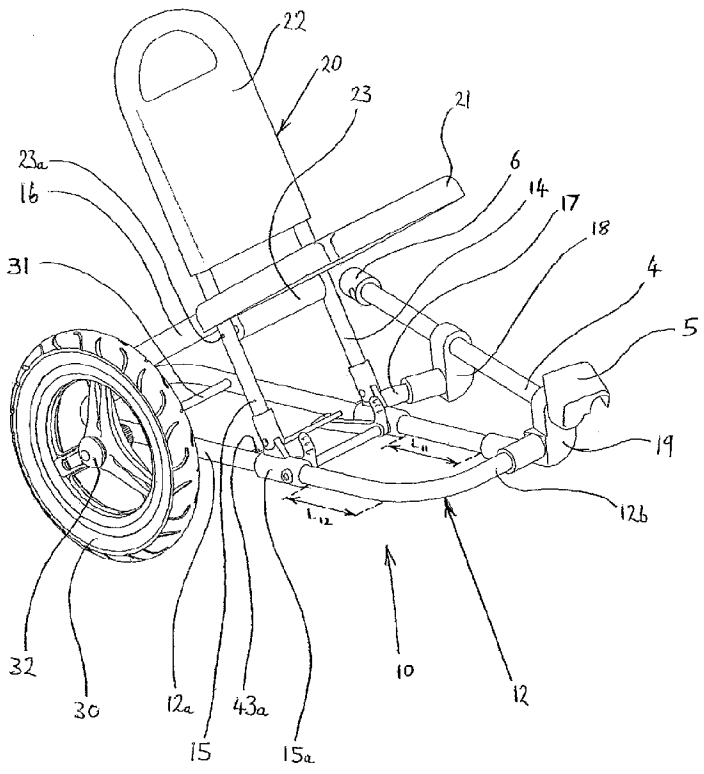
[Continued on next page]

(54) Title: AUXILIARY PUSHCHAIR SEAT



(57) Abstract: An auxiliary seat (1) attachable to a pushchair (2) to enable it to accommodate two children seated side-by-side and facing in the same direction. The seat comprises a frame (10) having a backrest (22) and a base (21) and a wheel (30) in contact with the ground in an operative position to support a child seated on the base (21) with their back against the backrest (22). The frame is configured so that the backrest (22) and the base fold substantially flat when the auxiliary seat is not in use.

WO 2005/105545 A1

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Auxiliary Pushchair Seat

Description

The present invention relates to a pushchair, and more specifically, to an add-on seating device for pushchairs.

It is often the case with parents having more than one child that the age gap between the children is such that the older child is not fully able to walk by the time the second child is born or is reluctant to do so for an extended period of time. During the first child's initial years, the parents will most probably have bought a single-seat pushchair to transport the child around in until it learns to walk properly. Modern pushchairs can be an expensive outlay, and perhaps difficult to afford, especially for young couples who may be at an early stage of their professional careers or those on low income. Therefore, when the second child is born, the parents find themselves requiring another pushchair so that both children can be transported together. Therefore, they must either buy another single-seat pushchair in addition to the first, which means having to use two pushchairs each time both children are taken out together or, buy a new double-seat pushchair, which means the original single-seat pushchair is then redundant. In either case, it involves another significant financial outlay for the parents.

One solution to this problem is to provide an add-on device that can be attached to the existing single-seat pushchair to adapt it to be able to carry both children simultaneously. Recently, pushchair add-on products have become commercially available and one such device comprises a wheeled platform that attaches to the rear of the pushchair, on which the elder child can stand whilst the younger child is seated.

However, this platform type of device has a number of disadvantages. Firstly, as the device is a platform and not a seat, it requires the elder child to remain standing, which can quickly tire them out and become uncomfortable for them. This has a safety implication as well, since the elder child is not provided with a harness to stop them falling off the device. Secondly, the device is positioned at the rear of the

pushchair between the pushchair and the parent. This means that the parent has to lean forward and stoop over and/or around the standing child in order to push the pushchair, and this can quickly cause backache and stiffness, and is generally uncomfortable over anything but the shortest distances. Thirdly, the wheels of the platform are positioned behind the rear wheels of the pram, which means that it can be difficult to push the pushchair up or down kerbs, as the device hinders the ability of the pushchair to be pivoted about the rear wheel axle. This device can also unbalance the pushchair and cause it to tip over very easily

It is therefore an object of the present invention to provide an add-on pushchair seating device that substantially alleviates or overcomes the problems mentioned above.

According to the present invention, therefore, there is provided an auxiliary seat attachable to a pushchair to enable it to accommodate two children seated side-by-side and facing the same direction, the seat comprising a frame having a backrest and a base and a wheel in contact with the ground in an operative position to support a child seated on the base with their back against the backrest, wherein the frame is configured so that the backrest and the base fold substantially flat when the auxiliary seat is not in use.

In a preferred embodiment, the base and the backrest are pivotable relative to one another such that they are collapsible from the erect operative position to the collapsed folded position by means of a scissor-like mechanism. Conveniently, the scissor-like mechanism includes at least one sliding joint to enable the base and backrest to be erected and collapsed.

Preferably, the backrest is attached to one end of a first support strut and the base is attached to one end of a second support strut, and said first and second support struts are pivotable relative to each other and the end of the first support strut remote from the backrest is connected to the at least one sliding joint.

Advantageously, the auxiliary seat comprises a locking mechanism to retain the seat in the erect operative position, and the locking mechanism preferably retains the seat in the erect operative position by locking the at least one sliding joint in place.

In a preferred embodiment, the locking mechanism comprises a latch extending from the at least one sliding joint, operable to lock onto a fixed shaft on the frame. Preferably, the latch is located at one end of an arm, the arm rotatably mounted to the at least one sliding joint and operable to move from a first locked position in which the latch snags on the fixed shaft, to a second unlocked position in which the latch is clear of the fixed shaft to allow movement of the at least one sliding joint.

The frame is preferably attached to the pushchair by a first clamping means extending from one side of the frame, and the first clamping means is conveniently attached to a first support strut which is hingedly attached to the frame.

Furthermore, the frame may further be attached to the pushchair by a second clamping means extending from said one side of the frame, and the second clamping means may also be hingedly attached to the frame.

In one preferred embodiment, the first and second clamping means are attachable to a supplementary pushchair frame bar which includes further attachment means operable to fix the bar and seat attached thereto, to the conventional pushchair. Alternatively, the first and second clamping means may be attachable to a replacement pushchair frame bar which can be fitted in place of an existing section of frame of a conventional pushchair to fix the seat thereto.

Preferably, the auxiliary seat is releasably attachable to said pushchair, and in a preferred embodiment, it can pivot relative to the pushchair to be folded against the side thereof in a storage position with the wheel off the ground, once the base and backrest of the seat have been folded substantially flat.

Conveniently, the at least one wheel is detachable, and is preferably positioned such that when the auxiliary seat is mounted on the pushchair in an operative position,

the at least one wheel is in alignment with a rear wheel of the pushchair. In a preferred embodiment, the at least one wheel is positioned such that when the auxiliary seat is mounted on the pushchair in an operative position, an axle of the at least one wheel is coaxial with an axle of a rear wheel of the pushchair.

Advantageously, the seat includes a safety harness to retain a child in position thereon.

A preferred embodiment includes a rain cover attached to the seat to at least partially surround a child sitting on the seat, and an alternative embodiment includes a sunshade attached to the seat to shade a child sitting on the seat. A toy steering wheel is conveniently positionable in front of a child sitting on the seat, or a toy hobby-horse style attachment may be positionable in front of a child sitting on the seat.

A preferred embodiment of the present invention will now be described, with reference to the accompanying drawings, in which:

Figure 1 shows a perspective view of a pushchair add-on device according to a first embodiment of the invention, in an erected operative position;
Figure 2 shows the pushchair add-on device of Figure 1 in a collapsed position;
Figure 3 shows a side view of the pushchair add-on device of Figure 1;
Figure 4 shows a side view of the pushchair add-on device of Figure 2;
Figure 5 shows a rear perspective view of the pushchair add-on device of Figures 1 and 3;
Figure 6 shows the pushchair add-on device in the erect position attached to a conventional pushchair; and
Figure 7 shows the pushchair add-on device in the collapsed position attached to a conventional pushchair, and folded up in a storage position.

Referring now to the drawings, a pushchair add-on device 1, for attachment to any type of conventional pushchair 2 (see Figures 6 and 7), is shown, comprising a chassis frame 10, a seat portion 20 and a wheel 30. The chassis 10 comprises first

and second generally curved L-shaped tubular chassis members 11, 12 arranged so that long sides 11a, 12a of each member 11, 12 are parallel to one another, and short sides 11b, 12b are parallel to one another. Each end of each chassis member 11, 12 is connected to a correspondingly opposite end of the other member so as to form a generally rectangular chassis frame 10.

The seat portion 20 comprises a base 21 and a backrest 22. It can also include a seat harness (not shown) comprising a strap extending from either side of the backrest 22 and one extending from the middle of the base 21 at the front thereof, in which all three straps meet in a 'T' – shaped clasp.

The chassis frame 10 includes two collars, 14a, 15a, one slideably received on each of the long sides 11a, 12a of the L-shaped chassis members 11, 12. Each collar 14a, 15a includes a pivot joint integrally formed therewith, and a backrest support stanchion 14, 15 is pivotably attached to each of the collar pivot joints 14a, 15a respectively, and extends therefrom. The backrest 22 is attached at either side to the backrest support stanchions 14, 15 and the backrest 22 is thereby pivotable about the collar pivot joints 14a, 15a.

The chassis 10 also includes a seat support stanchion 16 pivotably attached at one end by a pivot joint 16a to the short side 11b of the first L-shaped chassis member 11 at the rear of the chassis frame 10. The base 21 is rigidly secured to the other end of the seat support stanchion 16 and a lug 23 extends from the rear of the base 21. A hinge rod 23a extends through the lug 23 and each end of the hinge rod 23a extends through the backrest support stanchions 14, 15 respectively. The base 21 is thereby pivotable relative to the backrest support stanchions 14, 15 about said hinge rod 23a and lug 23.

The mechanism described above allows the seat portion 20 to be moveable from a collapsed position shown in Figures 2 and 4 in which the base 21 and backrest 22 lie substantially flat against the chassis frame 10, to an operative position as shown in Figures 1, 3, 5 and 6 in which the seat portion 20 is erected and the plane of the base 21 is substantially at right angles to the plane of the backrest 22. The

arrangement of the components is such that the backrest support stanchions 14, 15 and the seat support stanchion 16, are moveable relative to one another in a scissor-like action, wherein the central pivot point of the scissor action is the hinge rod 23a and the lug 23 on the base 21. The end of the seat support stanchion 16 remote from the base 21 is only pivotable relative to the chassis member 11, and is not moveable laterally relative to it. Therefore, to enable the scissor-action mentioned above, the collar pivot joints 14a, 15a, to which the backrest support stanchions 14, 15 are attached, slide along a section L_{11}, L_{12} of the chassis members 11, 12 respectively as the seat portion 20 is moved from the erect position to the collapsed position.

The chassis 10 further includes a horizontal axle shaft 31 that extends from the long side 11a of the first chassis member 11 through the long side 12a of the second chassis member 12 and protrudes a short distance out of the other side of the second chassis member 12. A section of the protruding end of the axle shaft 31 is threaded in order to receive a retaining nut 32. The wheel 30 includes a central aperture through which the protruding end of the axle shaft 31 can be received. The retaining nut 32 can then be screwed onto the threaded end of the axle shaft 31 to retain the wheel 30 in place whilst allowing it to be freely rotatable about the axle shaft 31. The wheel 30 is therefore easily removable from the axle shaft 31 by removal of the retaining nut 32. It will be appreciated that other such retaining means may be used instead of a screw thread and retaining nut, for example, a snap-fit retaining cap.

A clamp strut 17 is attached at one end to the first chassis member 11 and extends outwardly therefrom away from the second chassis member 12. An attachment clamp 18 is disposed on the other end of the clamp strut 17 and is operable to detachably clamp onto a frame of a conventional pushchair 2. Furthermore, a second attachment clamp 19 is disposed at the end of the short side 12b of the second chassis member 12, and, as with the first attachment clamp, is operable to detachably clamp onto a frame of a conventional pushchair 2. The two attachment clamps 18, 19 together can thereby secure the device 1 of the invention to the side of the conventional pushchair 2. Each attachment clamp 18, 19 is pivotable relative

to the clamp strut 17/chassis member 12 respectively, for reasons which will become apparent from the description hereafter.

The device 1 includes a locking mechanism 40 to enable the seat portion 20 of the device 1 to be retained in the erected operative position (see Figures 5 and 6). The locking mechanism 40 comprises a locking shaft 41 that extends between the slidable collar pivot joints 14a, 15a and is rotatable about its axis relative to the collar pivot joints 14a, 15a. The locking shaft 41 therefore restricts the movement of one collar pivot joint 14a relative to the other 15a, so they can only be moved together and in the same direction. Two locking arms 42, 43 are rigidly secured to the locking shaft 41 and extend rearwardly therefrom, substantially parallel to the long sides 11a, 12a of the chassis members 11, 12. Each arm 42, 43 includes a latch portion 42a, 43a at an end distal from the locking shaft 41. A fixed shaft 44 extends between the chassis members 11, 12 and parallel to the locking shaft 41, and is positioned rearwardly of the locking shaft 41 such that the latch portions 42a, 43a of the arms 42, 43 are just able to be clipped over the fixed shaft 44 and held in this locked position hooked over the fixed shaft 44 by friction therewith. Therefore, when the arms 42, 43 are in this locked position, the collar pivot joints 14a, 15a are prevented from sliding along sections L_{11}, L_{12} of the chassis members 11, 12 respectively, and thereby retain the seat portion 20 in the erect operative position.

As described above, the locking mechanism 40 enables the seat portion 20 of the device 1 to be locked in the erected operative position, and thereby capable of supporting a child thereon in a sitting position next to a child sitting in the pushchair 2 so that they are both facing in the same direction. When the device 1 is not in use, the locking mechanism 40 can be released by unclipping the latch portions 42a, 43a from the fixed shaft 44 and rotating the arms 42, 43 downwards. This can be done by pushing lever release tabs 42b, 43b which are formed on the end of the rotating arms 42, 43 perpendicular thereto and at the end distal from the latch portions 42a, 43a. This will allow the collar pivot joints 14a, 15a to freely slide along sections L_{11}, L_{12} of the chassis members 11, 12 respectively. The base 21 and seat stanchion 16 can then pivot downwards about the pivot joint 16a, and the backrest 22 and backrest stanchions 14, 15 can pivot downwards about the collar

pivot joints 14a, 15a, the backrest stanchions 14, 15 pivoting relative to the seat stanchion 16 about the hinge rod 23a in a scissor-like motion as described above, until the seat portion 20 of the device 1 is in the collapsed position.

Once the device 1 has been put into the collapsed position shown in Figures 2 and 4 and as described above, it can be folded up against the side of the conventional pushchair 2 into the storage position, as shown in Figure 7. This is possible due to the attachment clamps 18, 19 being pivotable relative the clamp strut 17/chassis member 12 respectively, as described above. Once the device 1 has been folded into this storage position, is can be held in place by a retaining means such as a clip (not shown).

With the device 1 in the storage position, the pushchair 2 has a much slimmer profile and will fit through normal doorways with ease. However, if a user wishes to neaten the appearance of the pushchair 2 and device 1 combination further, and make it even slimmer, they may unscrew the wheel retaining nut 32 and remove the wheel 30 from the axle shaft 31.

As can be seen in Figure 6, one of the advantages of the present invention is that when it is attached to a pushchair 2 and is not in the folded storage position, the wheel 30 of the device 1 is aligned with or is coaxial with wheels 3 of the pushchair 2. This means that the pushchair 2 and device 1 combination can be tilted backwards on all three wheels 30, 3 about their common contact line on the ground or their common axis, in order to get up a kerb, for example, and so is much more easily manoeuvrable than a conventional pushchair 2 would be with any of the other known add-on devices.

It is intended that the attachment clamps 18, 19 of the device 1 are suitable to attach to a frame of any conventional pushchair 2. However, some pushchairs currently available may not have side frames compatible with the attachment clamps 18, 19, and so it is envisaged that the device may be supplied with a replacement section of pushchair frame 4 that can be substituted for the relevant section of the original frame to allow the device to be attachable thereto. The specific replacement

section of frame 4 could be pushchair-specific, so that a user could identify which pushchair they already own, and purchase a device of the present invention that comes with the appropriate replacement frame section.

In an alternative attachment mechanism to that described above, a universal supplementary section of frame 4 could be provided. This supplementary section 4 would be attachable to the attachment clamps 18, 19 and could further include pushchair-specific attachment means 5, 6 to couple the device 1, via the supplementary frame section 4, to the pushchair 2. Therefore, instead of replacing a section of the existing pushchair frame, there would be an additional section of frame 4. In this case, the user would identify which pushchair they already own, and purchase a device 1 of the present invention that comes with the appropriate pushchair-specific attachment means 5, 6 to enable the device 1 to be fitted to their pushchair 2.

In a further embodiment of the invention, a strap 7 may be connected between a top part 22a of the backrest 22 and a part of the pushchair 2 which is higher than the top 22a of the backrest 22 (see Figure 6). This strap 7 prevents the auxiliary seat device 1 from pivoting downwards about the attachment clamps 18, 19 relative to the pushchair 2 if the wheel 30 runs over a hole or drops off a kerb, for example. In such a scenario, the weight of the auxiliary seat device 1 (and a child thereon) is transferred through the strap 7 to the pushchair 2 and is balanced out by the weight of said pushchair 2 and of a child in the pushchair seat. It will be appreciated that this means of preventing the auxiliary seat device 1 from pivoting downwards beyond a certain angle does not necessarily need to be a strap 7 as shown in Figure 6. For example, a rigid rod could be used secured to the pushchair 2 and some suitable point on the auxiliary seat device 1.

Other unillustrated embodiments of the present invention may include additional features or accessories. For example, a rain cover could be provided, attachable to the auxiliary seat device 1, to partially or entirely surround a child seated on the device to shelter the child from wind/rain/sleet/snow. The rain cover could

incorporate a supporting frame structure attachable to the device. Alternatively, the device could be provided with a sunshade or parasol.

In addition to the functional accessories mentioned above, the auxiliary seat device 1 may also include an accessory intended to amuse the child whilst the child is in the seat. This could include a toy steering wheel or dashboard arrangement, or a hobby-horse style attachment positionable in front of the child.

Claims

1. An auxiliary seat attachable to a pushchair to enable it to accommodate two children seated side-by-side and facing the same direction, the seat comprising a frame having a backrest and a base and a wheel in contact with the ground in an operative position to support a child seated on the base with their back against the backrest, wherein the frame is configured so that the backrest and the base fold substantially flat when the auxiliary seat is not in use.

2. An auxiliary seat according to claim 1 wherein the base and the backrest are pivotable relative to one another such that they are collapsible from the erect operative position to the collapsed folded position by means of a scissor-like mechanism.

3. An auxiliary seat according to claim 2 wherein the scissor-like mechanism includes at least one sliding joint to enable the base and backrest to be erected and collapsed.

4. An auxiliary seat according to claim 3 wherein the backrest is attached to one end of a first support strut and the base is attached to one end of a second support strut, and in which said first and second support struts are pivotable relative to each other and the end of the first support strut remote from the backrest is connected to the at least one sliding joint.

5. An auxiliary seat according to any preceding claim comprising a locking mechanism to retain the seat in the erect operative position.

6. An auxiliary seat according to claim 3 or claim 4 comprising a locking mechanism to retain the seat in the erect operative position and which locks the at least one sliding joint in place.

7. An auxiliary seat according to claim 6 wherein the locking mechanism comprises a latch extending from the at least one sliding joint, operable to lock onto a fixed shaft on the frame.

8. An auxiliary seat according to claim 7 wherein the latch is located at one end of an arm, the arm rotatably mounted to the at least one sliding joint and operable to move from a first locked position in which the latch snags on the fixed shaft, to a second unlocked position in which the latch is clear of the fixed shaft to allow movement of the at least one sliding joint.

9. An auxiliary seat according to any preceding claim wherein the frame is attached to the pushchair by a first clamping means extending from one side of the frame.

10. An auxiliary seat according to claim 9 wherein the first clamping means is attached to a first support strut which is hingedly attached to the frame.

11. An auxiliary seat according to claim 9 or claim 10 wherein the frame is further attached to the pushchair by a second clamping means extending from said one side of the frame.

12. An auxiliary seat according to claim 11 wherein the second clamping means is hingedly attached to the frame.

13. An auxiliary seat according to claim 11 or claim 12 wherein the first and second clamping means are attachable to a supplementary pushchair frame bar which includes further attachment means operable to fix the bar and seat attached thereto, to the conventional pushchair.

14. An auxiliary seat according to claim 11 or claim 12 wherein the first and second clamping means are attachable to a replacement pushchair frame bar which can be fitted in place of an existing section of frame of a conventional pushchair to fix the seat thereto.

15. An auxiliary seat according to any preceding claim which is releasably attachable to said pushchair.

16. An auxiliary seat according to any preceding claim which can pivot relative to the pushchair to be folded against the side thereof in a storage position with the wheel off the ground, once the base and backrest of the seat have been folded substantially flat.

17. An auxiliary seat according to any preceding claim wherein the at least one wheel is detachable.

18. An auxiliary seat according to any preceding claim wherein the at least one wheel is positioned such that when the auxiliary seat is mounted on the pushchair in an operative position, the at least one wheel is in alignment with a rear wheel of the pushchair.

19. An auxiliary seat according to any preceding claim wherein the at least one wheel is positioned such that when the auxiliary seat is mounted on the pushchair in an operative position, an axle of the at least one wheel is coaxial with an axle of a rear wheel of the pushchair.

20. An auxiliary seat according to any preceding claim wherein the seat includes a safety harness to retain a child in position thereon.

21. An auxiliary seat according to any preceding claim including a rain cover attached to the seat to at least partially surround a child sitting on the seat.

22. An auxiliary seat according to any preceding claim including a sunshade attached to the seat to shade a child sitting on the seat.

23. An auxiliary seat according to any preceding claim including a toy steering wheel positionable in front of a child sitting on the seat.

24. An auxiliary seat according to any preceding claim including a toy hobby-horse style attachment positionable in front of a child sitting on the seat.

25. A pushchair incorporating an auxiliary seat according to any preceding claim.

26. An auxiliary seat substantially as hereinbefore described with reference to the accompanying drawings.

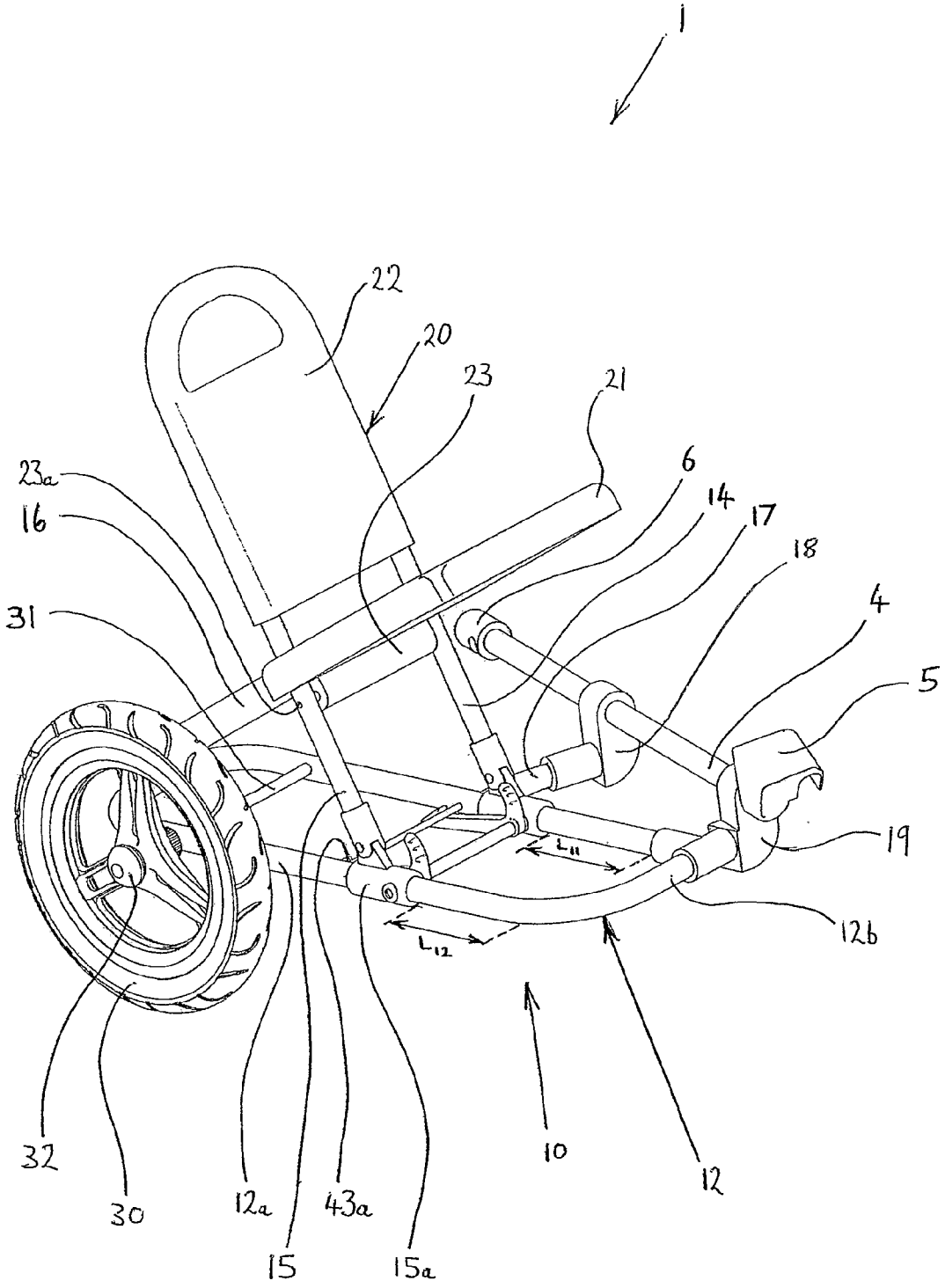


FIGURE 1

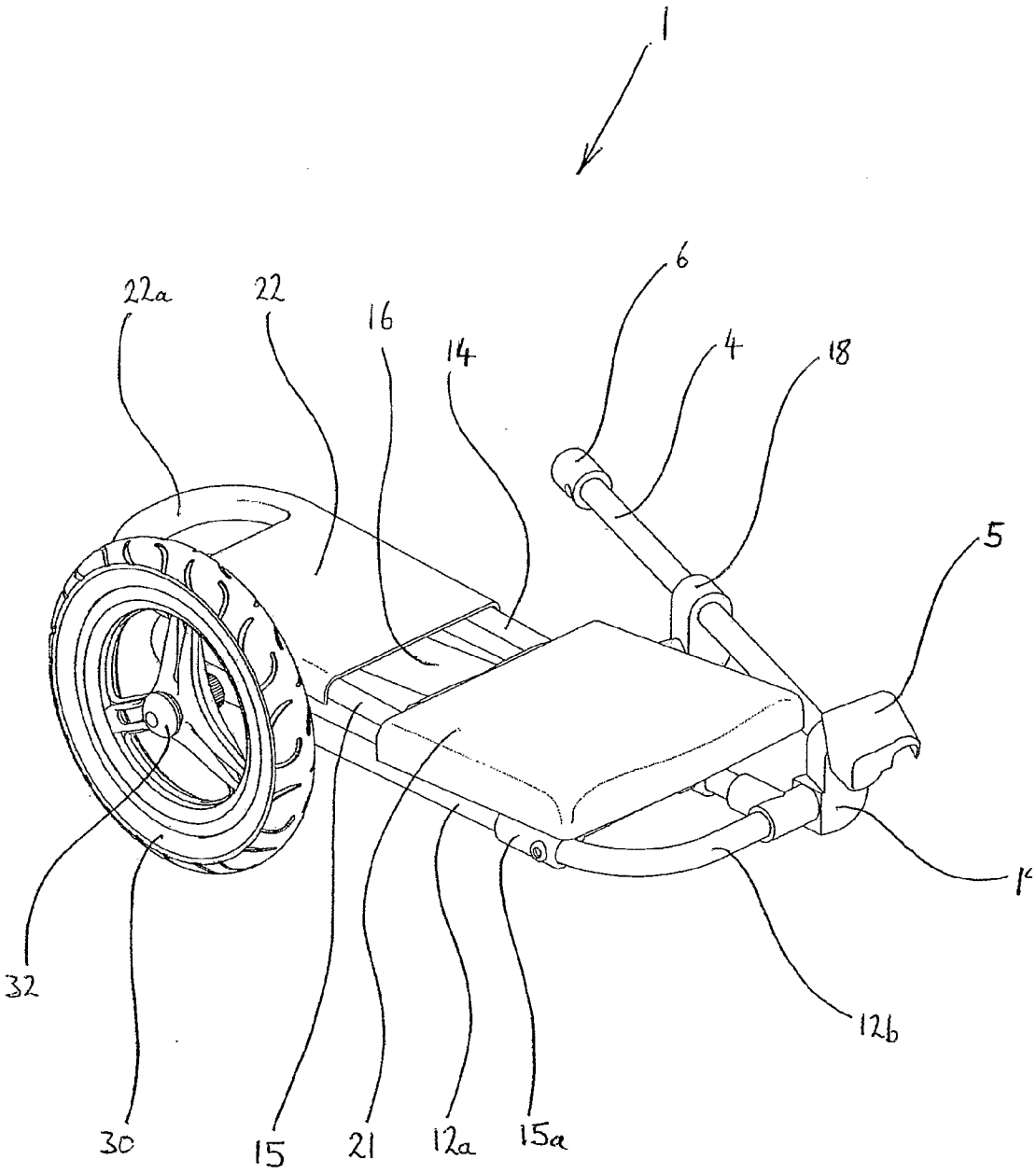


FIGURE 2.

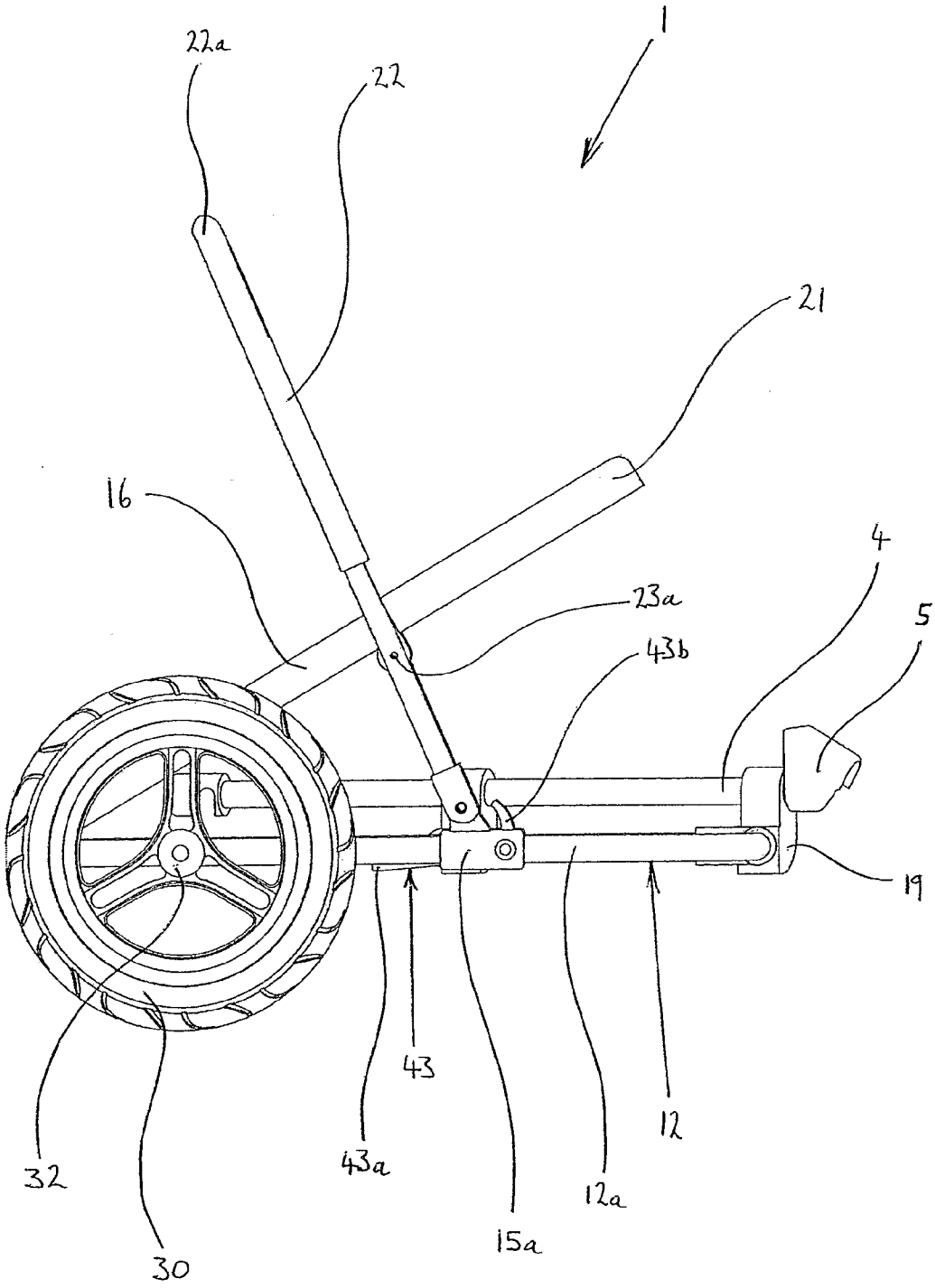


FIGURE 3

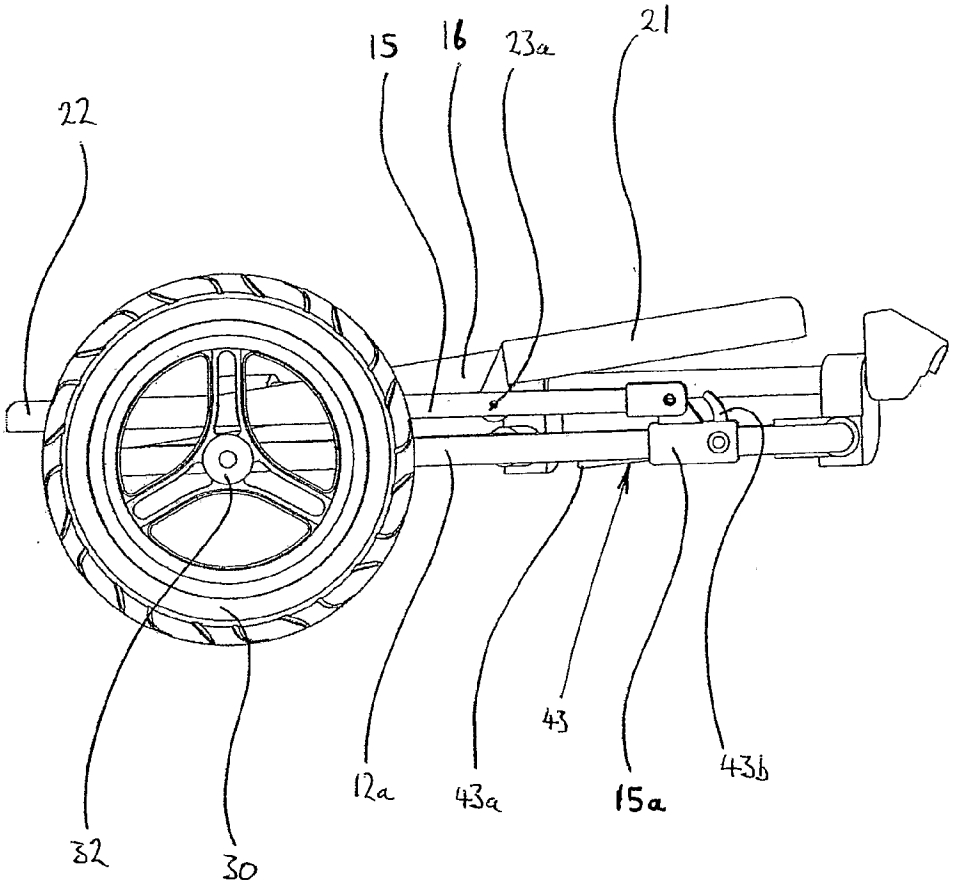


FIGURE 4

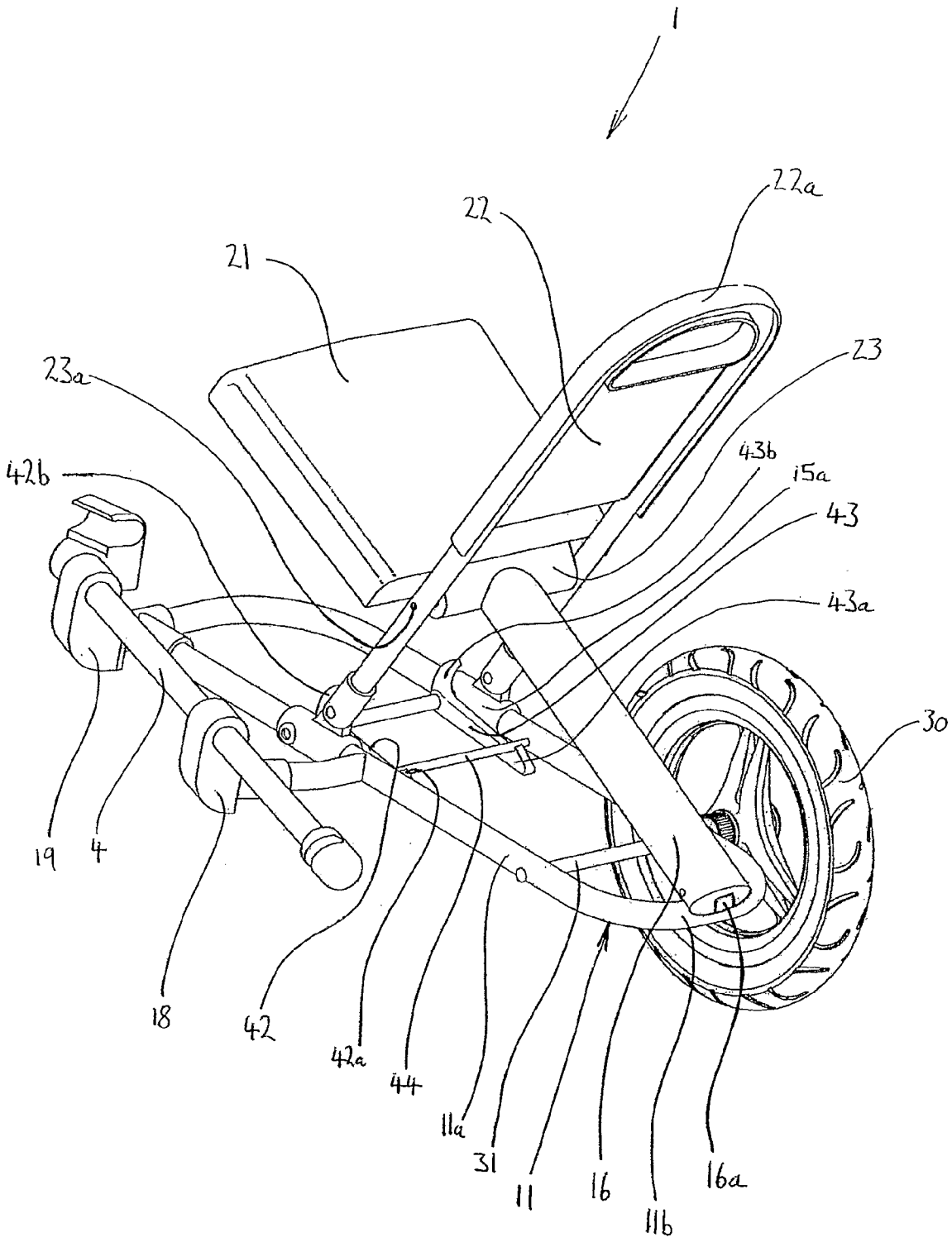

1
22a
22
21
23a
23
42b
43b
15a
43
43a
30
19
4
18
42
42a
44
11a
31
11
16
11b
16a

FIGURE 5

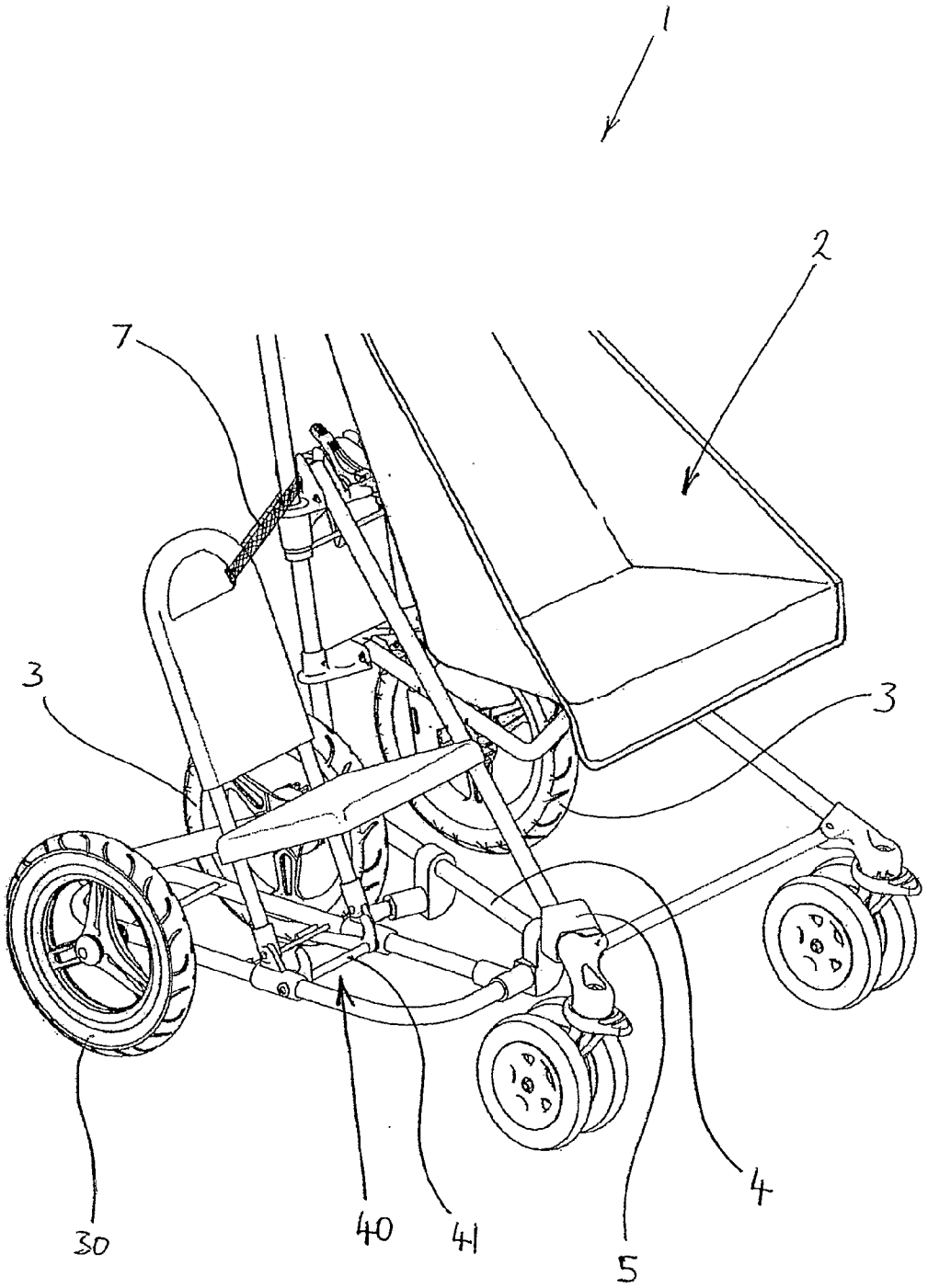


FIGURE 6.

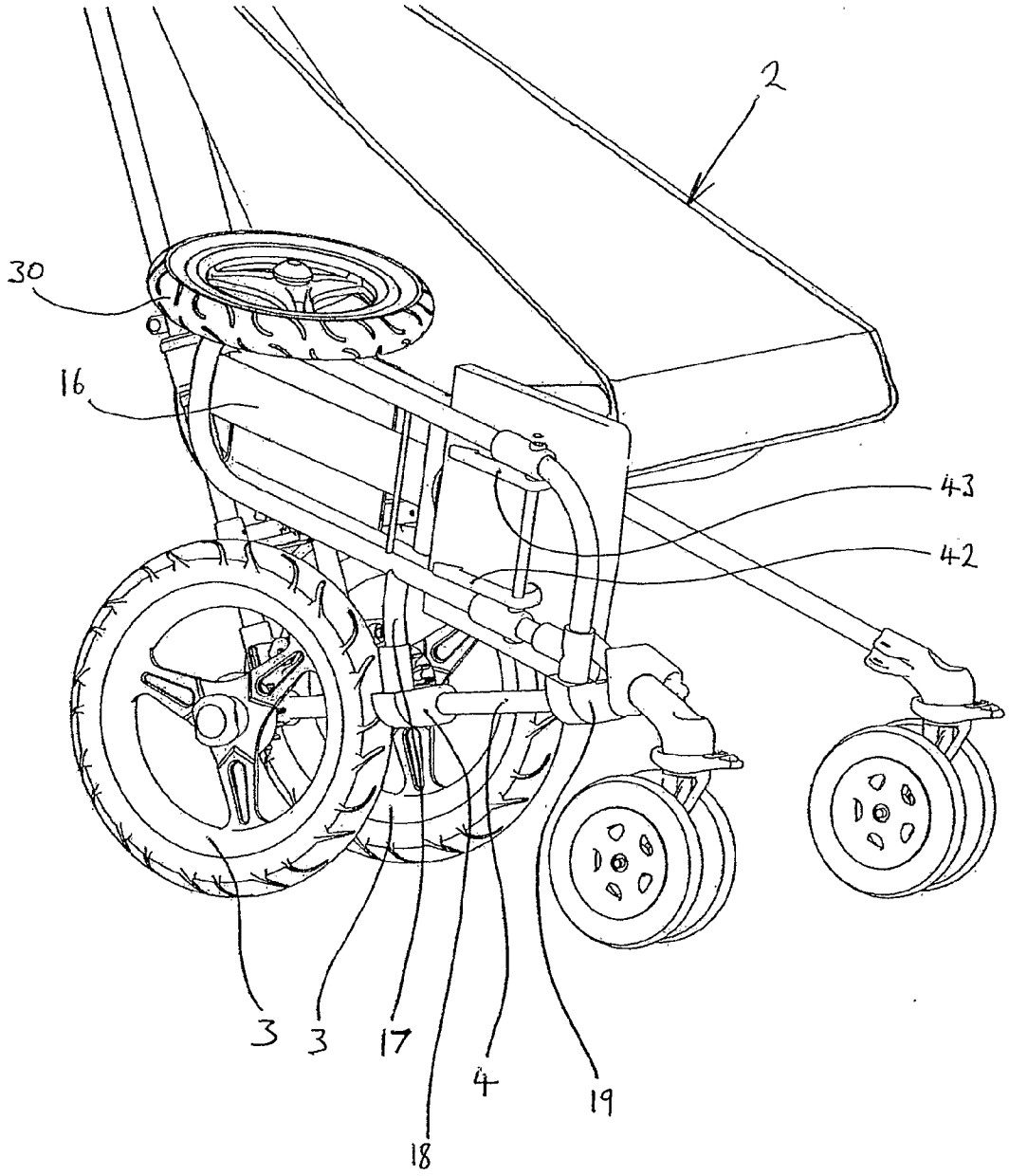


FIGURE 7

INTERNATIONAL SEARCH REPORT

Inte nal Application No
PCT/GB2004/002170

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 B62B9/00

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

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 B62B

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

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 3 000 645 A (SCHMIDT CARL O) 19 September 1961 (1961-09-19) abstract; figures 1,2,4,7	1,5, 9-18,25, 26
Y	figures 1,2,4,7	2-4,6
Y	US 6 715 783 B1 (HANSON WAYNE H ET AL) 6 April 2004 (2004-04-06) abstract; figures 4,8,10	2-4,6
A	figures	1
A	DE 40 33 548 A1 (TROAX-AXO AB, HILLERSTORP, SE) 25 April 1991 (1991-04-25) abstract; figure 1	1-4

-/--

[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

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Date of the actual completion of the international search	Date of mailing of the international search report
8 June 2005	15/06/2005

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Lindner, V

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

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A	US 5 125 712 A (STAMOUTSOS ET AL) 30 June 1992 (1992-06-30) abstract; figures	1,20-24
A	US 2003/209885 A1 (SZMIDT LESZEK G ET AL) 13 November 2003 (2003-11-13) abstract; figures	1,20-24
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...information on patent family members

Inte[illegible]al Application No
PCT/GB2004/002170

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1. CN113715891 - CHILD STROLLER

Office
China

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CPC
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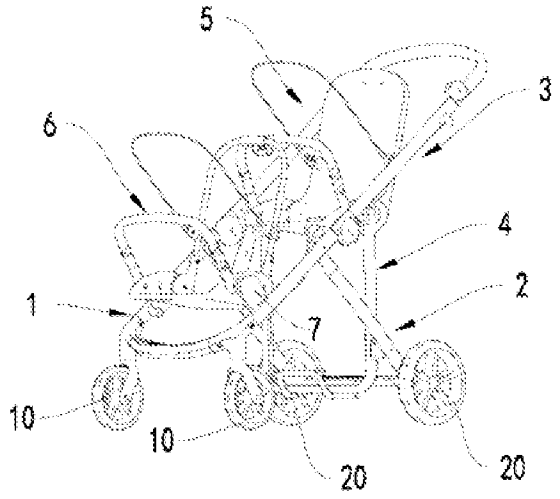
Title
[EN] Child stroller
[ZH] 儿童推车



Abstract

[EN] The invention provides a child stroller. The child stroller comprises a stroller frame in an unfolded state and a first seat pocket device arranged on the stroller frame, the stroller frame is at least provided with a supporting frame, the first seat pocket device can be arranged on the supporting frame in a relative sliding mode in the length extending direction of the supporting frame, and the first seat pocket device is provided with a plurality of different working positions in the length extending direction of the supporting frame. A user can adjust the position of the first seat pocket device on the supporting frame according to use requirements, so that the first seat pocket device can be quickly switched among different working positions. The child stroller is simple in structure and diversified in use mode, various different use requirements of users can be met, and multiple purposes are achieved through one stroller.

[ZH] 本发明公开了一种儿童推车，包括具有展开状态的车架，以及设置在所述车架上的第一座兜装置，所述车架至少具有支撑架，所述第一座兜装置能够沿所述支撑架的长度延伸方向相对滑动地设置在所述支撑架上，所述第一座兜装置在所述支撑架的长度延伸方向上具有多个不同的工作位置。用户可以根据使用需求来调整第一座兜装置在支撑架上的位置，使得第一座兜装置能够在不同的工作位置之间快速切换。该儿童推车的结构简单，使用方式多样，能够满足使用者的多种不同使用需求，实现一车多用。

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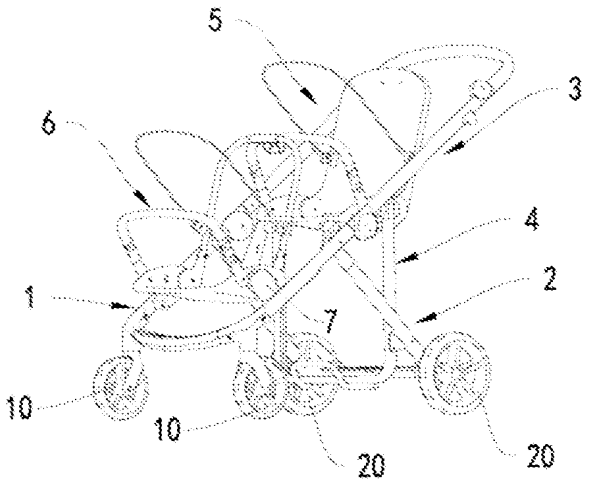
(54)发明名称

儿童推车

(57)摘要

本发明公开了一种儿童推车，包括具有展开状态的车架，以及设置在所述车架上的第一座兜装置，所述车架至少具有支撑架，所述第一座兜装置能够沿所述支撑架的长度延伸方向相对滑动地设置在所述支撑架上，所述第一座兜装置在所述支撑架的长度延伸方向上具有多个不同的工作位置。用户可以根据使用需求来调整第一座兜装置在支撑架上的位置，使得第一座兜装置能够在不同的工作位置之间快速切换。该儿童推车的结构简单，使用方式多样，能够满足使用者的多种不同使用需求，实现一车多用。



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1.一种儿童推车，包括具有展开状态的车架，以及设置在所述车架上的第一座兜装置，其特征在于：所述车架包括在展开状态下各自沿上下方向倾斜延伸的前支架、后支架及推杆架，以及沿上下方向延伸的支撑架，所述前支架的底部设有前轮组件，所述后支架的底部设有后轮组件，所述前支架的上部与所述推杆架的下部转动地连接，所述后支架的上部与所述前支架的上部转动地连接，所述支撑架转动地连接在所述推杆架与所述后支架之间所述第一座兜装置能够沿所述支撑架的长度延伸方向相对滑动地设置在所述支撑架上，所述第一座兜装置在所述支撑架的长度延伸方向上具有多个不同的工作位置，所述车架处于展开状态下，所述第一座兜装置在多个不同的工作位置下具有不同的高度，

其中，所述第一座兜装置包括靠背与座位，所述第一座兜装置具有第一使用状态与第二使用状态，当所述第一座兜装置处于第一使用状态时，所述靠背与所述座位相对展开，所述座位与所述靠背之间形成用于承载儿童的容纳区域；当所述第一座兜装置处于第二使用状态时，所述靠背收拢于所述座位相的上方且沿前后方向延伸，所述靠背的背面朝上并形成可供坐立或站立的承载面，

所述儿童推车还包括设置在所述前支架上的第二座兜装置，所述第二座兜装置沿前后方向位于所述第一座兜装置的前方。

2.根据权利要求1所述的儿童推车，其特征在于：所述支撑架具有分设于左右两侧且均沿上下方向延伸的两根支撑杆、能够分别沿上下方向相对滑动地设于两根所述支撑杆上的两个座兜安装座，所述第一座兜装置沿左右方向位于两根所述支撑杆之间并与两个所述座兜安装座固定地连接。

3.根据权利要求2所述的儿童推车，其特征在于：所述第一座兜装置与两侧的所述座兜安装座可拆卸地配合连接，所述第一座兜装置在所述支撑架上具有朝向前方的正向安装状态与朝向后方的反向安装状态。

4.根据权利要求3所述的儿童推车，其特征在于：所述第一座兜装置的左右两侧均具有插接件，两侧的所述座兜安装座上均具有开口朝上的安装槽，所述安装槽的纵向截面为倒梯形，所述插接件的纵向截面为与所述安装槽相对应的倒梯形。

5.根据权利要求2所述的儿童推车，其特征在于：所述第一座兜装置还包括与所述座兜安装座相配合连接的连接座，所述靠背与所述座位分别与所述连接座转动连接。

6.根据权利要求1所述的儿童推车，其特征在于：所述前支架上具有分设于左右两侧的两个座兜连接座，所述第二座兜装置与两个所述座兜连接座可拆卸地安装连接，所述座兜连接座活动地设置在所述前支架上，所述座兜连接座具有用于安装连接所述第二座兜装置的使用状态，以及与所述前支架相对收拢的收起状态，当所述座兜连接座处于所述使用状态时，所述座兜连接座向上凸出于所述前支架的上方；当所述座兜连接座处于所述收起状态时，所述座兜连接座与所述前支架收拢且不高于所述前支架。

7.根据权利要求6所述的儿童推车，其特征在于：所述前支架具有分设于左右两侧且均自前向后向上倾斜延伸的两根前支杆，两个所述座兜连接座分设于两根所述前支杆上，且所述座兜连接座绕转轴转动地连接在所述前支杆的内侧部，所述转轴的轴心线与所述前支杆的长度延伸方向相互平行。

8.根据权利要求1所述的儿童推车，其特征在于：所述前支架上具有分设于左右两侧的两个座兜连接座，所述第二座兜装置与两个所述座兜连接座可拆卸地安装连接，且所述第

二座兜装置在所述前支架上具有朝前的正向安装状态与朝后的反向安装状态。

儿童推车

技术领域

[0001] 本发明涉及一种儿童推车。

背景技术

[0002] 现有的儿童推车，其中座位装置往往是固定地设置的，即通常仅提供儿童以固定位置及固定方式的坐立支撑，使用方式及功能都较为单一。

发明内容

[0003] 本发明的目的是为了克服现有技术的缺陷，提供一种新型的儿童推车。

[0004] 为达到上述目的，本发明采用的技术方案是：一种儿童推车，包括具有展开状态的车架，以及设置在所述车架上的第一座兜装置，所述车架至少具有支撑架，所述第一座兜装置能够沿所述支撑架的长度延伸方向相对滑动地设置在所述支撑架上，所述第一座兜装置在所述支撑架的长度延伸方向上具有多个不同的工作位置。

[0005] 优选地，所述车架处于展开状态下，所述支撑架沿上下方向延伸，使得所述第一座兜装置在多个不同的工作位置下具有不同的高度。

[0006] 进一步地，所述支撑架具有分设于左右两侧且均沿上下方向延伸的两根支撑杆、能够分别沿上下方向相对滑动地设于两根所述支撑杆上的两个座兜安装座，所述第一座兜装置沿左右方向位于两根所述支撑杆之间并与两个所述座兜安装座固定地连接。

[0007] 在一些实施例中，所述第一座兜装置与两侧的所述座兜安装座可拆卸地配合连接，所述第一座兜装置在所述支撑架上具有朝向前方的正向安装状态与朝向后方的反向安装状态。

[0008] 在一些实施例中，所述第一座兜装置的左右两侧均具有插接件，两侧的所述座兜安装座上均具有开口朝上的安装槽，所述安装槽的纵向截面为倒梯形，所述插接件的纵向截面为与所述安装槽相对应的倒梯形。

[0009] 在一些实施例中，所述第一座兜装置包括与所述座兜安装座相配合连接的连接座、分别与所述连接座转动连接的靠背与座位，所述第一座兜装置具有第一使用状态与第二使用状态，当所述第一座兜装置处于第一使用状态时，所述靠背与所述座位相对展开，所述座位与所述靠背之间形成用于承载儿童的容纳区域；当所述第一座兜装置处于第二使用状态时，所述靠背收拢于所述座位相的上方且沿前后方向延伸，所述靠背的背面朝上并形成可供坐立或站立的承载面。

[0010] 进一步地，所述车架还包括在展开状态下各自沿上下方向倾斜延伸的前支架、后支架及推杆架，所述前支架的底部设有前轮组件，所述后支架的底部设有后轮组件，所述前支架的上部与所述推杆架的下部转动地连接，所述后支架的上部与所述前支架的上部转动地连接，所述支撑架转动地连接在所述推杆架与所述后支架之间。

[0011] 在一些实施例中，所述儿童推车还包括设置在所述前支架上的第二座兜装置，所述第二座兜装置沿前后方向位于所述第一座兜装置的前方。

[0012] 在一些实施例中，所述前支架上具有分设于左右两侧的两个座兜连接座，所述第二座兜装置与两个所述座兜连接座可拆卸地安装连接，所述座兜连接座活动地设置在所述前支架上，所述座兜连接座具有用于安装连接所述第二座兜装置的使用状态，以及与所述前支架相对收拢的收起状态，当所述座兜连接座处于所述使用状态时，所述座兜连接座向上凸出于所述前支架的上方；当所述座兜连接座处于所述收起状态时，所述座兜连接座与所述前支架收拢且不高于所述前支架。

[0013] 在一些实施例中，所述前支架具有分设于左右两侧且均自前向后向上倾斜延伸的两根前支杆，两个所述座兜连接座分设于两根所述前支杆上，且所述座兜连接座绕转轴转动地连接在所述前支杆的内侧部，所述转轴的轴心线与所述前支杆的长度延伸方向相互平行。

[0014] 在一些实施例中，所述前支架上具有分设于左右两侧的两个座兜连接座，所述第二座兜装置与两个所述座兜连接座可拆卸地安装连接，且所述第二座兜装置在所述前支架上具有朝前的正向安装状态与朝后的反向安装状态。

[0015] 由于上述技术方案的运用，本发明与现有技术相比具有下列优点：本发明的儿童推车，其中第一座兜装置能够沿支撑架的长度延伸方向相对滑动地设置，使得第一座兜装置在支撑架的长度延伸方向上具有多个不同的工作位置，这使得用户可以根据使用需求来调整第一座兜装置在支撑架上的位置，使得第一座兜装置能够在不同的工作位置之间快速切换。该儿童推车的结构简单，使用方式多样，能够满足使用者的多种不同使用需求，实现一车多用。

附图说明

[0016] 附图1为本发明一具体实施例的儿童推车展开状态下的立体结构示意图，其中，第一座兜装置与第二座兜装置均处于打开状态且均处于正向安装状态；

[0017] 附图2为附图1的儿童推车的侧视示意图；

[0018] 附图3为附图1的儿童推车的结构分解示意图；

[0019] 附图4为附图1的儿童推车中座兜安装座与支撑杆的连接结构示意图；

[0020] 附图5为在附图1的儿童推车的基础上将第一座兜装置降低高度后的立体示意图；

[0021] 附图6为附图5的儿童推车的侧视示意图；

[0022] 附图7为在附图5的儿童推车的基础上将第一座兜装置与第二座兜装置均转换为反向安装状态后的立体示意图；

[0023] 附图8为附图7的儿童推车的侧视示意图；

[0024] 附图9为在附图5的儿童推车的基础上仅将第二座兜装置转换为反向安装状态后的立体示意图；

[0025] 附图10为附图9的儿童推车的侧视示意图；

[0026] 附图11为在附图1的儿童推车的基础上拆除第二座兜装置后的立体结构示意图；

[0027] 附图12为附图11的儿童推车的侧视示意图；

[0028] 附图13为在附图5的儿童推车的基础上将第一座兜装置转换为收折状态且供坐立使用时的立体示意图；

[0029] 附图14为附图13的儿童推车的侧视示意图；

[0030] 附图15为在附图15的儿童推车的基础上将第一座兜装置下降一定高度后而供站立使用时的立体示意图；

[0031] 附图16为附图15的儿童推车的侧视示意图。

具体实施方式

[0032] 下面结合附图和具体的实施例来对本发明的技术方案作进一步的阐述。

[0033] 以下关于前、后、左、右、上、下的方位描述，均是按照推行者推行该儿童推车时所观察到的方位予以参考定义的。

[0034] 参见图1至图4所示，一种儿童推车，包括具有展开状态的车架，以及设置在车架上的第一座兜装置5，该车架中至少具有支撑架4，第一座兜装置5能够沿支撑架4的长度延伸方向相对滑动地设置在支撑架4上，且第一座兜装置5在支撑架4的长度延伸方向上具有多个不同的工作位置，如此，可以实现第一座兜装置5在车架上安装及使用位置的改变。

[0035] 参见各附图所示，本实施例中，车架处于展开状态下，支撑架4沿上下方向延伸，使得第一座兜装置5在多个不同的工作位置下具有不同的高度，亦即，第一座兜装置5在车架上可以以不同的高度位置安装及使用，从而满足用户的不同使用需求。

[0036] 具体地，参见图3及图4所示，支撑架4具有分设于左右两侧且均沿上下方向延伸的两根支撑杆41、能够分别地沿上下方向相对滑动地设于两根支撑杆41上的两个座兜安装座42，第一座兜装置5沿左右方向位于两根支撑杆41之间并与两个座兜安装座42固定地连接，如此，当座兜安装座42沿支撑杆41上下滑动并锁定在不同的高度档位时，第一座兜装置5沿上下方向上相应地处于不同高度的工作位置下。支撑架4上还设有用于将座兜安装座42锁定在支撑杆41上的锁定结构(图中未示出)，上述锁定结构在一些实施例中可以采用锁销与锁孔的配合形式，具体可以为在座兜安装座42上设置锁销且在支撑杆41上设置沿上下方向间隔地分布的多个锁孔，当锁销插入其中一个锁孔时即将座兜安装座42锁定在对应的高度档位下。此处，座兜安装座42上还设置有解锁操作件43，以用于将上述的锁定结构解锁，从而方便调整第一座兜装置5在支撑架4上的高度。

[0037] 本实施例中，第一座兜装置5与两侧的座兜安装座42之间为可拆卸地配合连接，第一座兜装置5在座兜安装座42上具有朝向前方的正向安装状态与朝向后方的反向安装状态，使得儿童在乘坐时可以面朝前方或者面朝推行者。第一座兜装置5的左右两侧均具有与座兜安装座42配合连接的连接座53，该连接座53上固定地设有插接件53a，两侧的座兜安装座42上均具有开口朝上的安装槽42a，安装槽42a的纵向截面呈倒梯形，插接件53a的纵向截面为与安装槽42a相对应的倒梯形，上述倒梯形具体为等腰梯形，使得两侧的插接件53a在第一座兜装置5朝向前方时或者在旋转180°后朝向后方时均可以对应配合地插入两侧的安装槽42a中。

[0038] 该第一座兜装置5还包括靠背51与座位52，靠背51的下部及座位52的后部分别与连接座53转动地连接，该第一座兜装置5具有靠背51与座位52相对展开的打开状态，以及靠背51与座位52相对靠拢的收折状态，该第一座兜装置5具有第一使用状态与第二使用状态，当第一座兜装置5处于第一使用状态时，第一座兜装置5处于打开状态，靠背51与座位52之间形成一用于承载儿童的容纳区域；当第一座兜装置5处于第二使用状态下，当需要将第一座兜装置5转换为第二使用状态时，先将第一座兜装置5转换为收折状态，将座位52与靠背

51均调节为沿前后方向水平延伸的状态，使得靠背51收拢在座位52的上方，靠背51的背面朝上而形成可供儿童站立或者坐立的承载面，可拓展儿童推车的使用功能，提供儿童不同的支撑方式。

[0039] 参见各附图所示，本实施例中，车架还包括在展开状态下各自沿上下方向倾斜延伸的前支架1、后支架2及推杆架3，其中，前支架1的底部设有前轮组件10，后支架2的底部设有后轮组件20，前支架1的上部与推杆架3的下部转动地连接，后支架2的上部与前支架1的上部转动地连接，支撑架4转动地连接在推杆架3与后支架2之间。如此，使得该车架可以收折地设置，车架收折时，无图示，推杆架3向后收拢于支撑架4的后侧，前支架1与后支架2沿前后方向收拢。

[0040] 具体地，前支架1包括分设于左右两侧且均自前向后向上倾斜延伸的两根前支杆11、固设于两前支杆11下部之间的前横杆12，该前横杆12为前脚踏；后支架2包括分设于左右两侧且均自后向前向上倾斜延伸的两根后支杆21、固设于两后支杆21下部之间的后横杆22，该后横杆22为后脚踏；推杆架3也具有分设于左右两侧且自前向后向上倾斜延伸的两根推杆31，车架的左右各侧上，前支杆11、后支杆21、推杆31及支撑杆41相互连接，且支撑架4沿左右方向位于两后支杆21、两推杆31之间。

[0041] 该儿童推车还包括设于前支架1上的第二座兜装置6，该第二座兜装置6在前后方向上位于第一座兜装置5的前方，第二座兜装置6可拆卸地安装在前支架1上且在前支架1上具有朝前的正向安装状态与朝后的反向安装状态。具体地，前支架1上具有分设于左右两侧的两个座兜连接座7，座兜连接座7上具有插接口7a，第二座兜装置6上具有插接凸起61，插接凸起61与插接口7a的纵向截面也均为倒梯形，使得第二座兜装置6可以正向安装或者反向安装于前支架1上，从而使得儿童可以面朝前或者面朝推行者。

[0042] 座兜连接座7活动地设置在前支架1上使得其可以相对前支架1打开使用或者收起，具体地，两座兜连接座7分别设置在两前支杆11上，且座兜连接座7绕转轴8枢转地连接在前支杆11的内侧部，转轴8的轴心线与前支杆11的长度延伸方向相互平行。座兜连接座7具有用于安装连接第二座兜装置6的使用状态，以及与前支架1相对收拢的收起状态，当座兜连接座7处于使用状态时，座兜连接座7向上凸出于前支杆11的上方，其上的插接口7a朝上而可与第二座兜装置6上的插接凸起61配合连接；当将第二座兜装置6从座兜连接座7上拆离后，座兜连接座7可以转换为收起状态，具体为，将座兜连接座7绕转轴8向内侧翻转，使得座兜连接座7与对应侧的前支杆11相互收拢，此时，座兜连接座7不高于前支杆11，其插接口7a朝下。

[0043] 以下示例性地列举本实施例的儿童推车的多种使用方式：

[0044] 参见图1、图2所示，第一座兜装置5与第二座兜装置6均安装在车架上，第二座兜装置6在前且第一座兜装置5在后，两个座兜装置均处于正向安装状态，一前一后地承载两个儿童坐立支撑，第一座兜装置5处于较高的工作位置下。

[0045] 参见图5、图6所示，在图1、图2的基础上，第一座兜装置5降低了高度。

[0046] 参见图7、图8所示，在图5、图6的基础上，第一座兜装置5与第二座兜装置6均转换为反向安装状态，使得乘坐的两个儿童都面朝推行者。

[0047] 参见图9、图10所示，在图7、图8的基础上，第一座兜装置5转换为正向安装状态，使得乘坐的两个儿童面对面。

[0048] 参见图11、图12所示，在图1、图2的基础上，将第二座兜装置6拆除，该儿童推车上仅保留第一座兜装置5而同时仅供一个儿童乘坐，此示意图中第一座兜装置5处于较高工作位置，在使用中可以根据需要将其调整至需要的高度的工作位置下。

[0049] 参见图13、图14所示，在图5、图6的基础上，将第一座兜装置5转换为收折状态，靠背51与座位52相互靠拢且均沿前后方向延伸，且靠背51的背面与后脚踏22沿上下方向具有一定的间距，此时，儿童可以面朝后方地坐立在靠背51上，后脚踏22可以提供其双脚支撑。

[0050] 参见图15、图16所示，在图13、图14的基础上，将第一座兜装置5的位置再降低，儿童可以站立在靠背51上而随车行走。该车架上，支撑架4的底部还具有一自支撑杆41的底部向前并向上弯曲延伸的辅撑杆43，当第一座兜装置5降低至最低高度位置时，辅撑杆43能够支撑在座位52的底部，使得该第一座兜装置5作为站板使用时具有更好的承载能力。

[0051] 当然，该儿童推车的使用方式不限于如上列举的形式。

[0052] 在不使用该儿童推车时，无论第一座兜装置5、第二座兜装置6是否安装于车架上，均能够收折，方便存放及携带。

[0053] 综上，本发明的儿童推车，其结构简单，使用方式及功能多样，能够满足使用者的多种不同使用需求，实现一车多用。

[0054] 上述实施例只为说明本发明的技术构思及特点，其目的在于让熟悉此项技术的人士能够了解本发明的内容并加以实施，并不能以此限制本发明的保护范围，凡根据本发明精神实质所作的等效变化或修饰，都应涵盖在本发明的保护范围内。

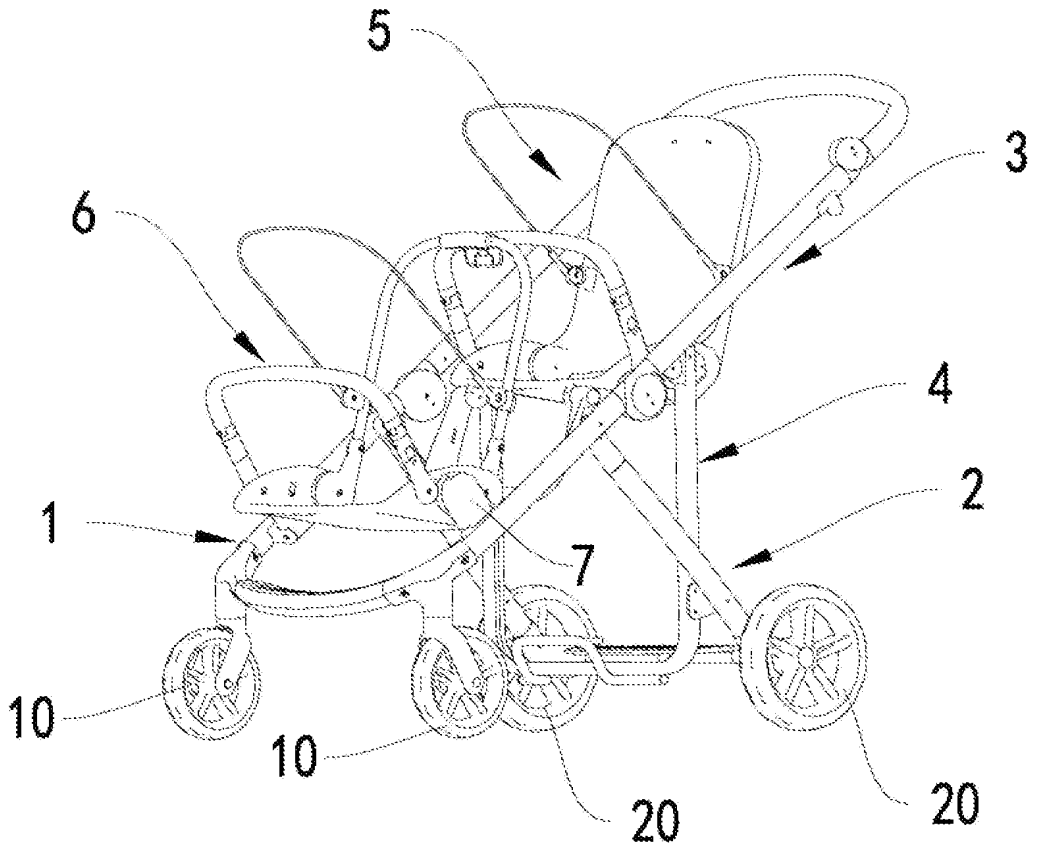


图1

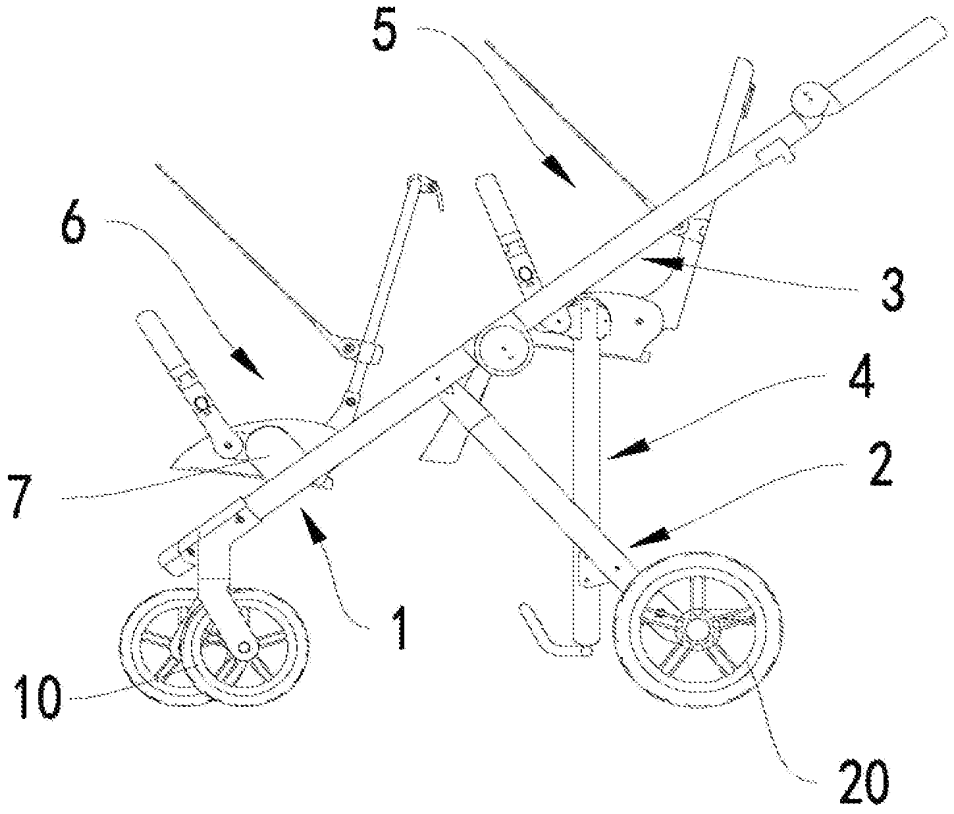
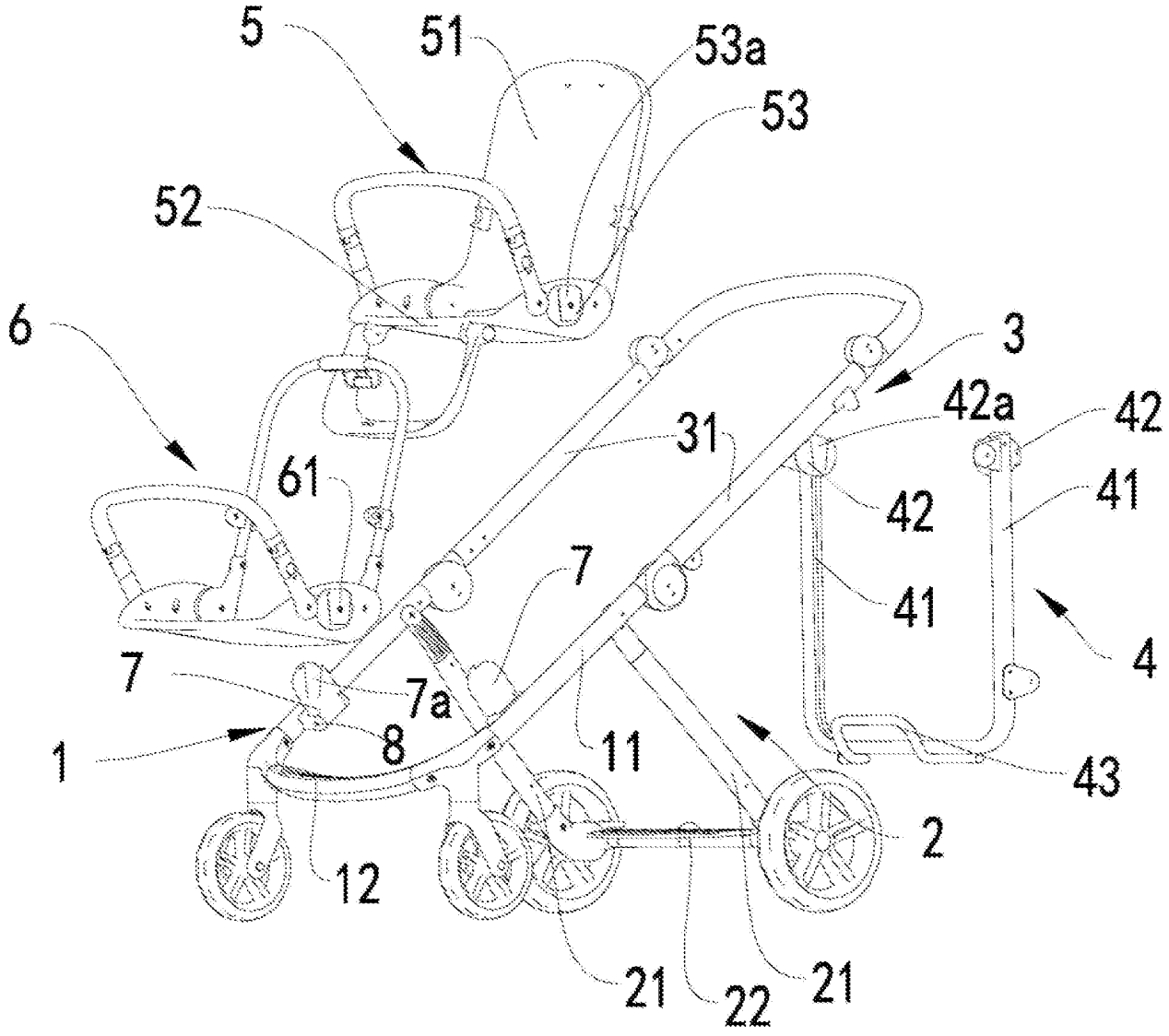


图2



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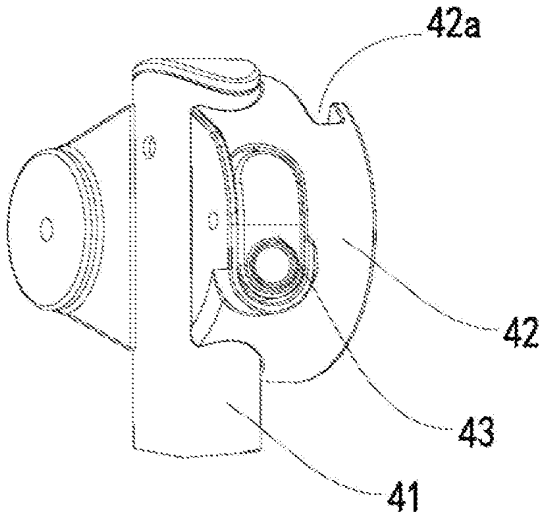


图4

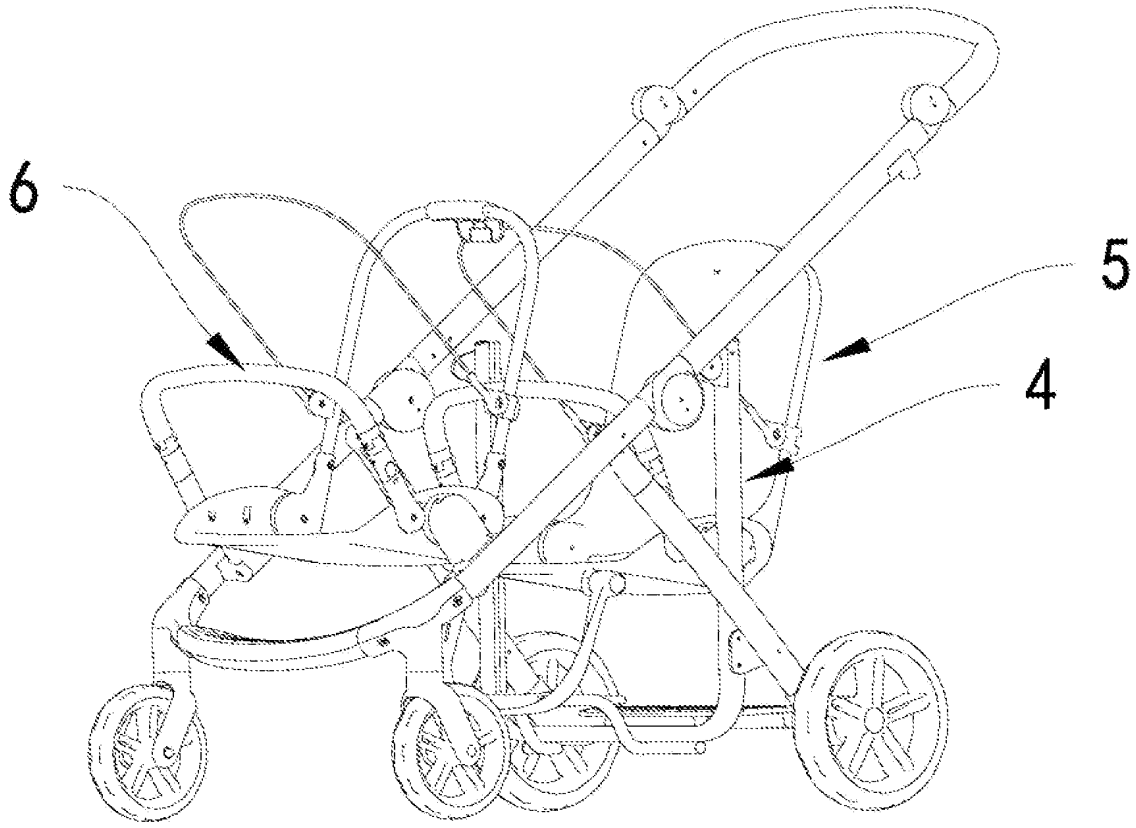


图5

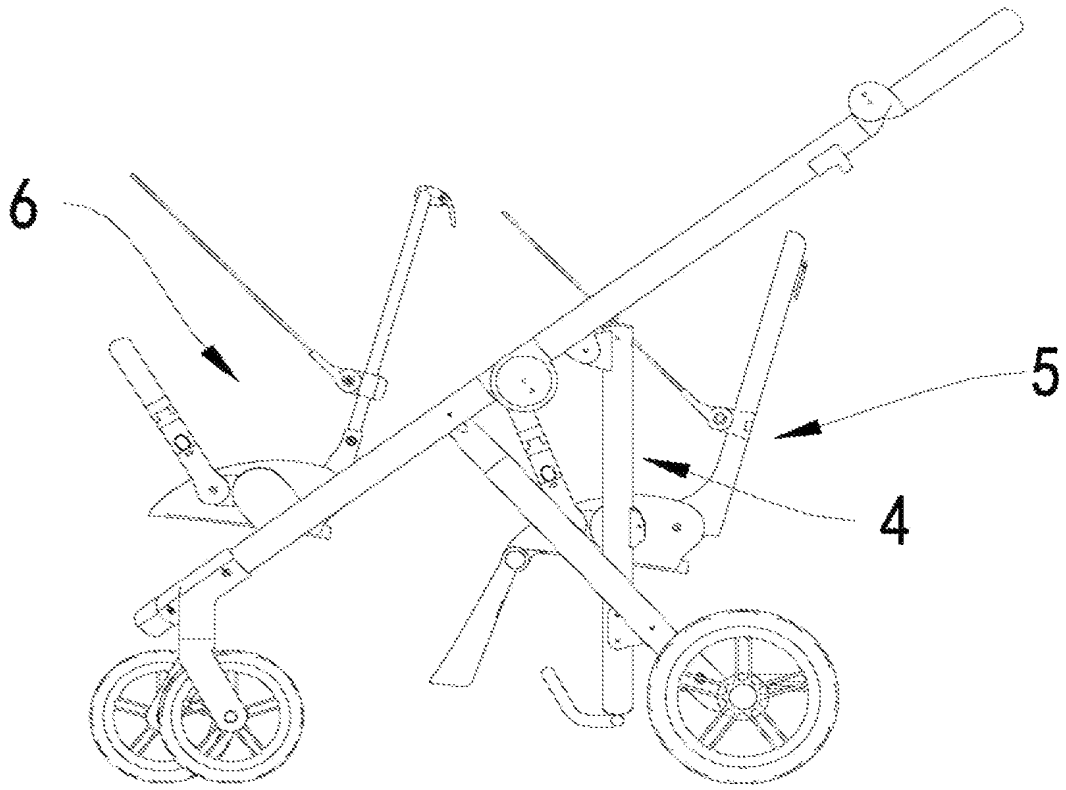
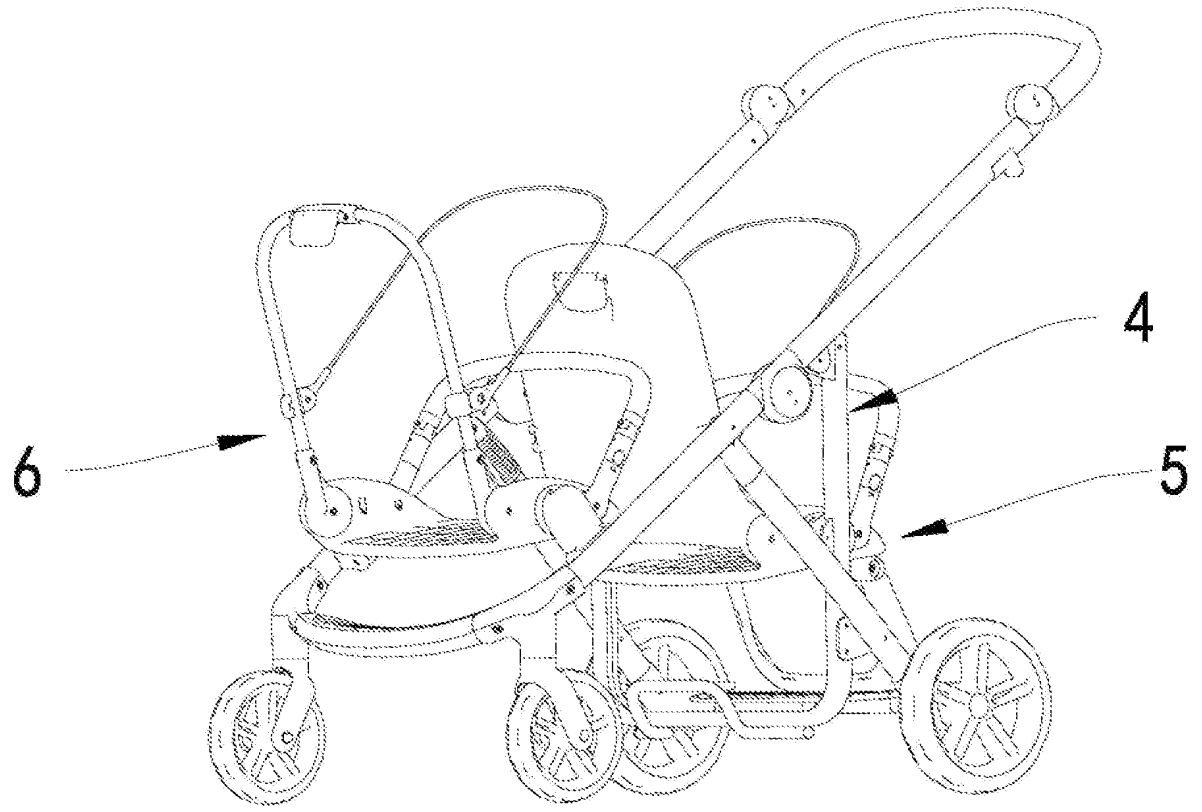


图6



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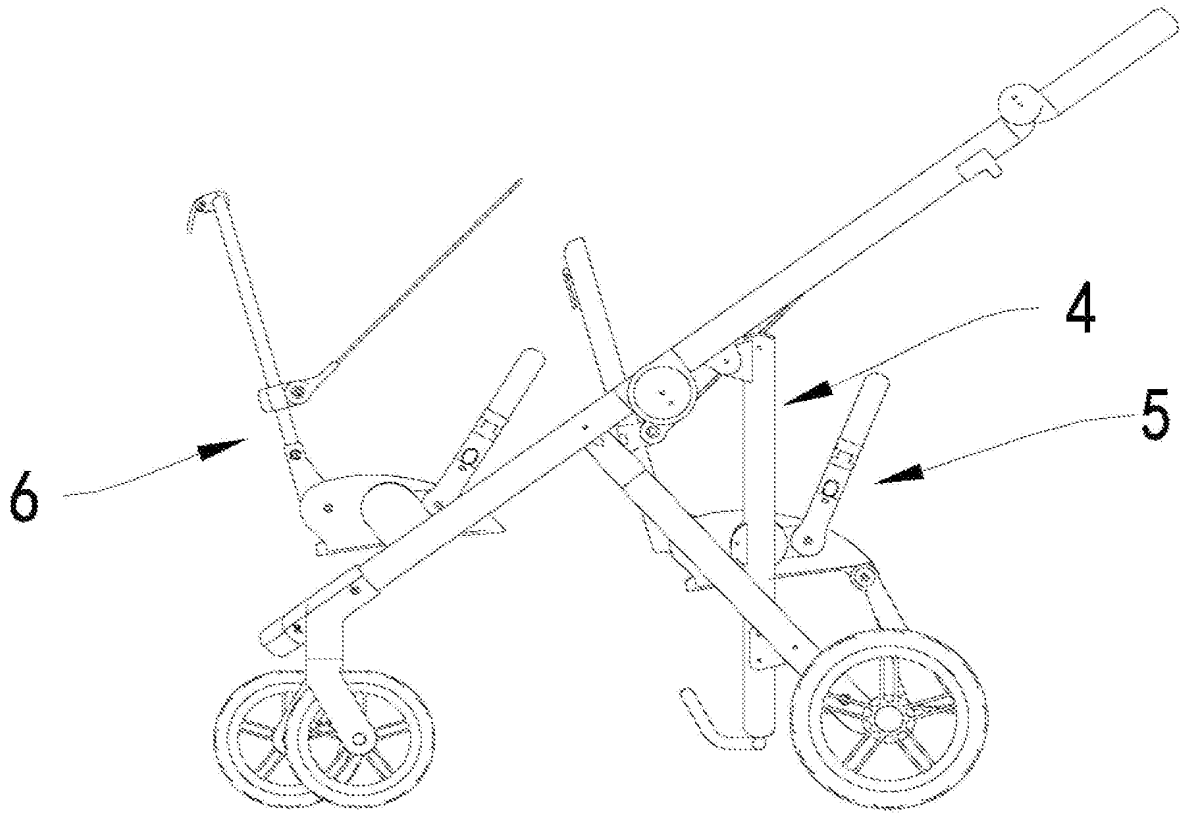

图8

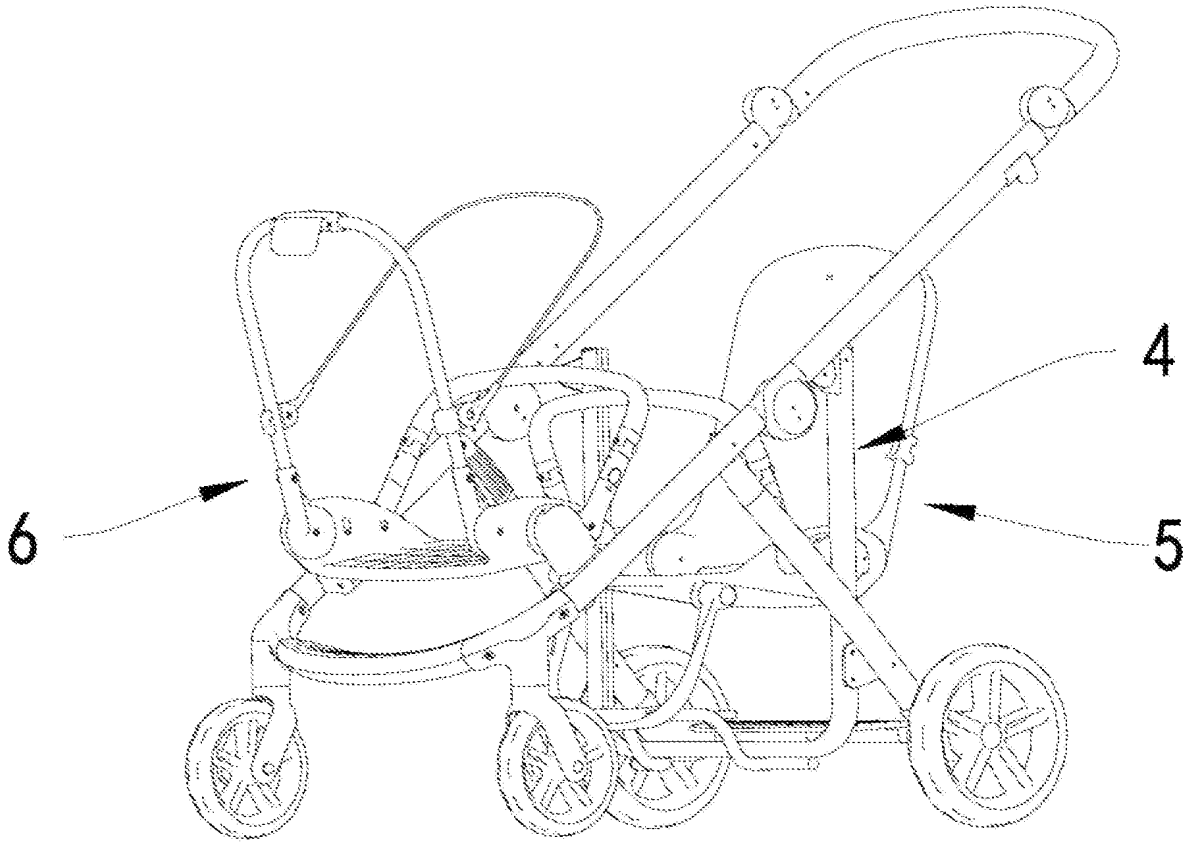

图9

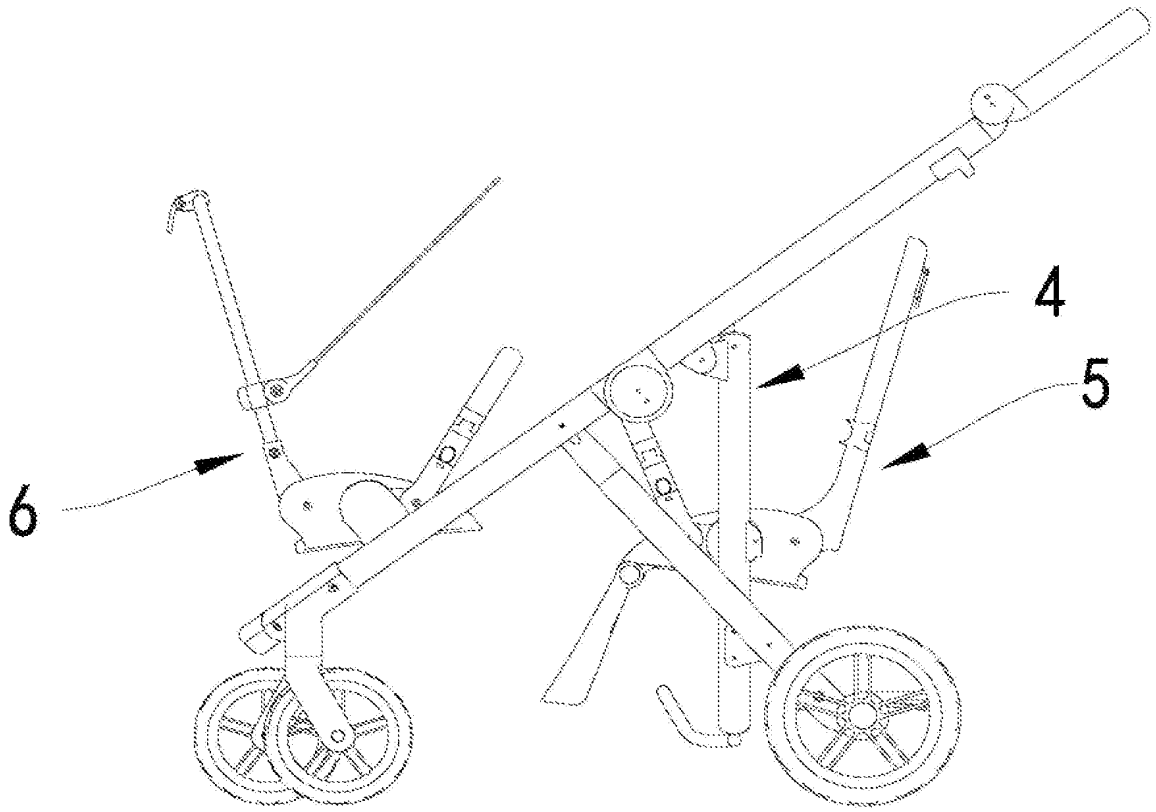

图10

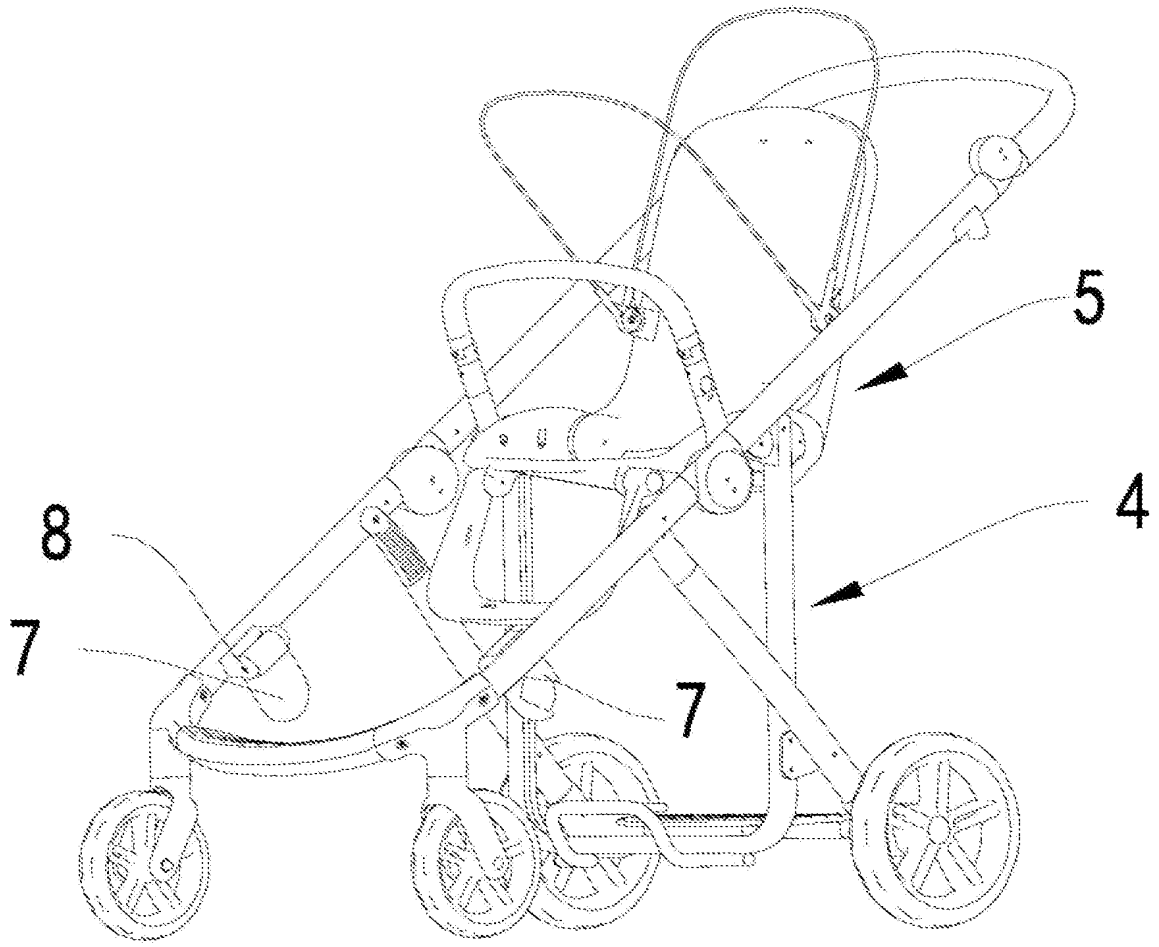

图11

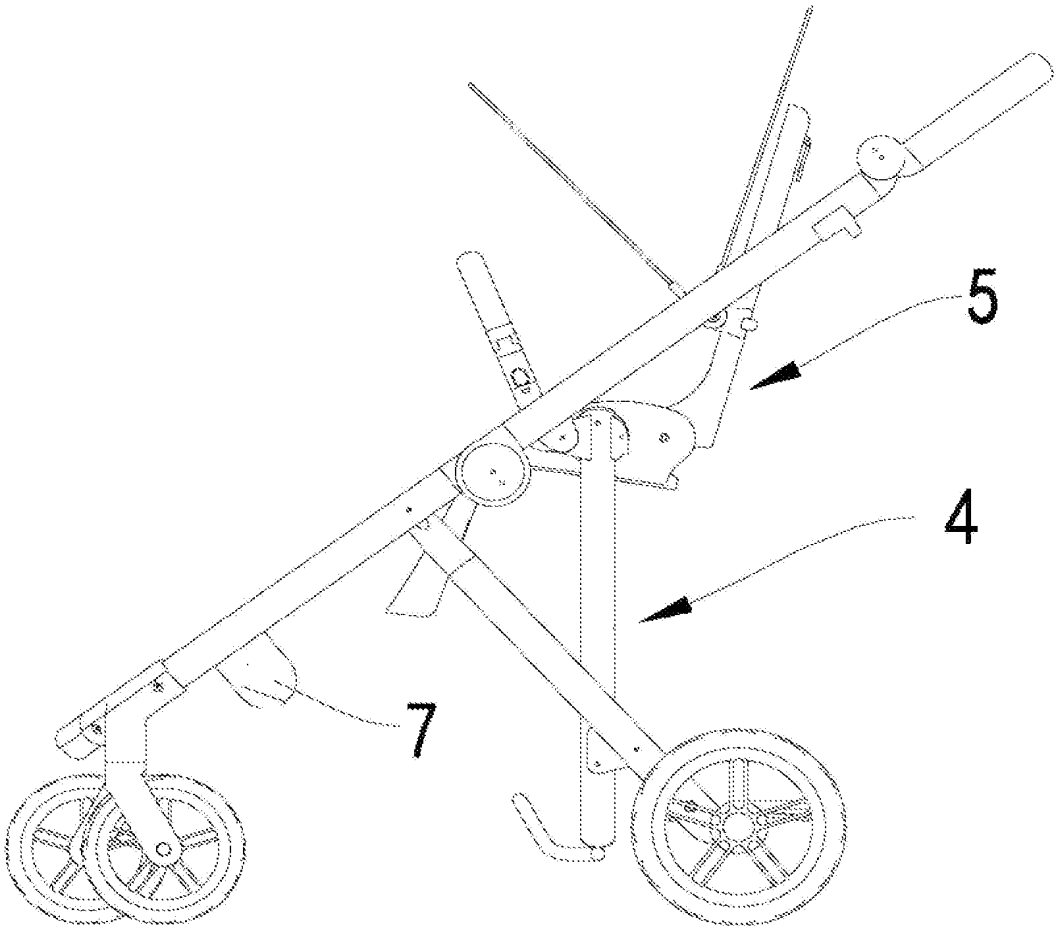

图12

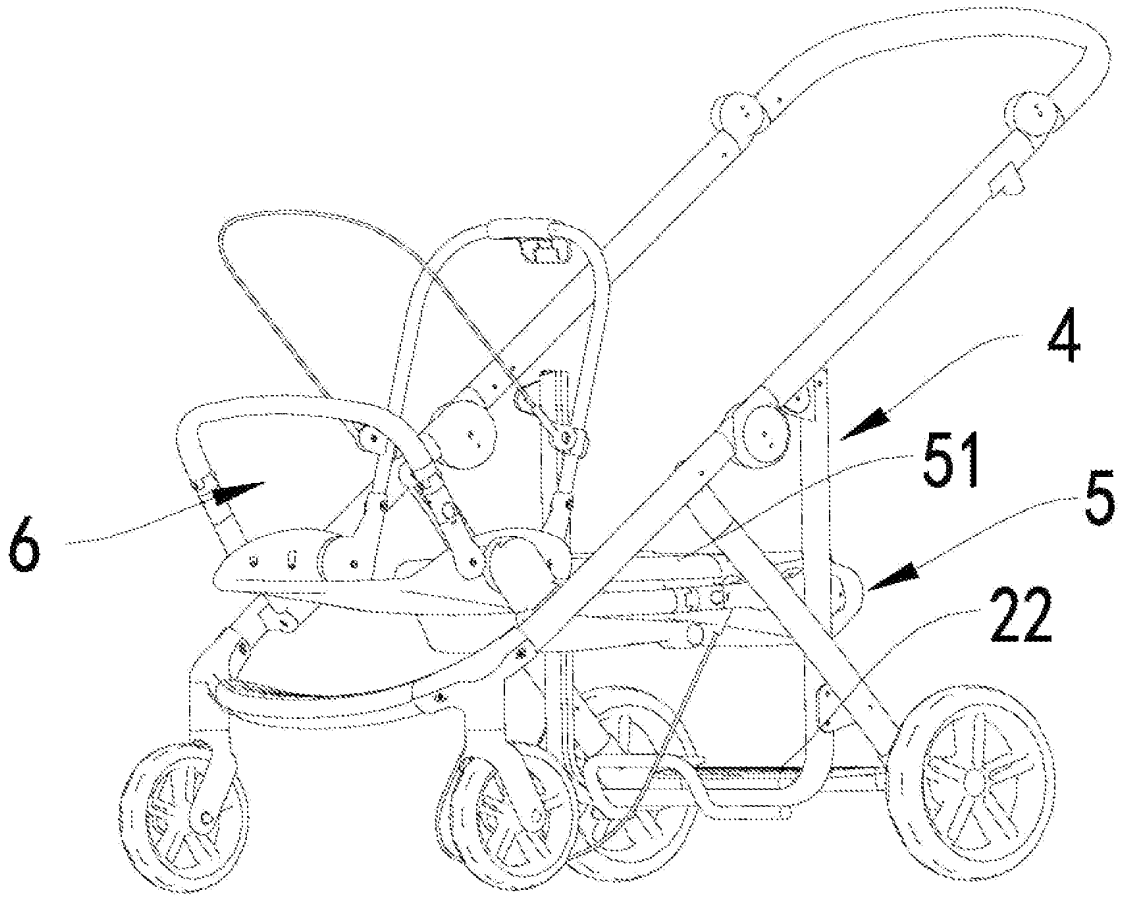

图13

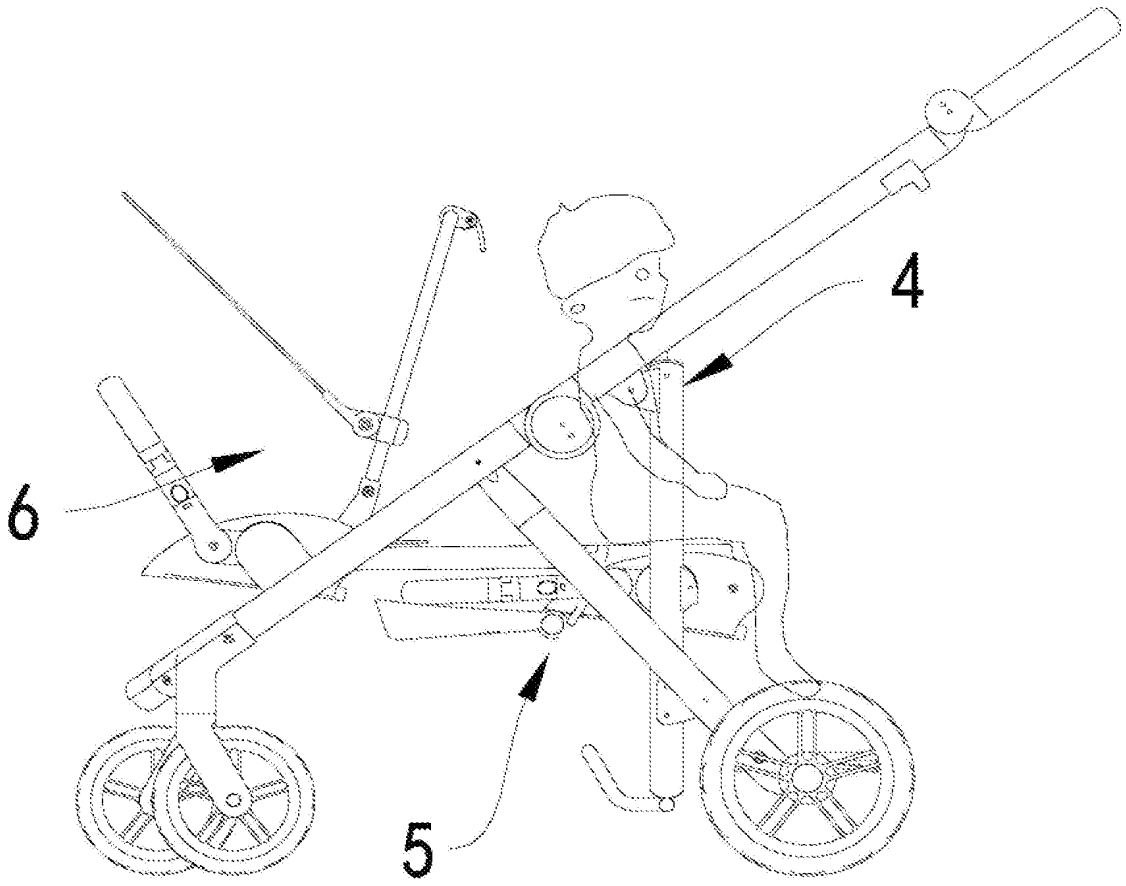

图14

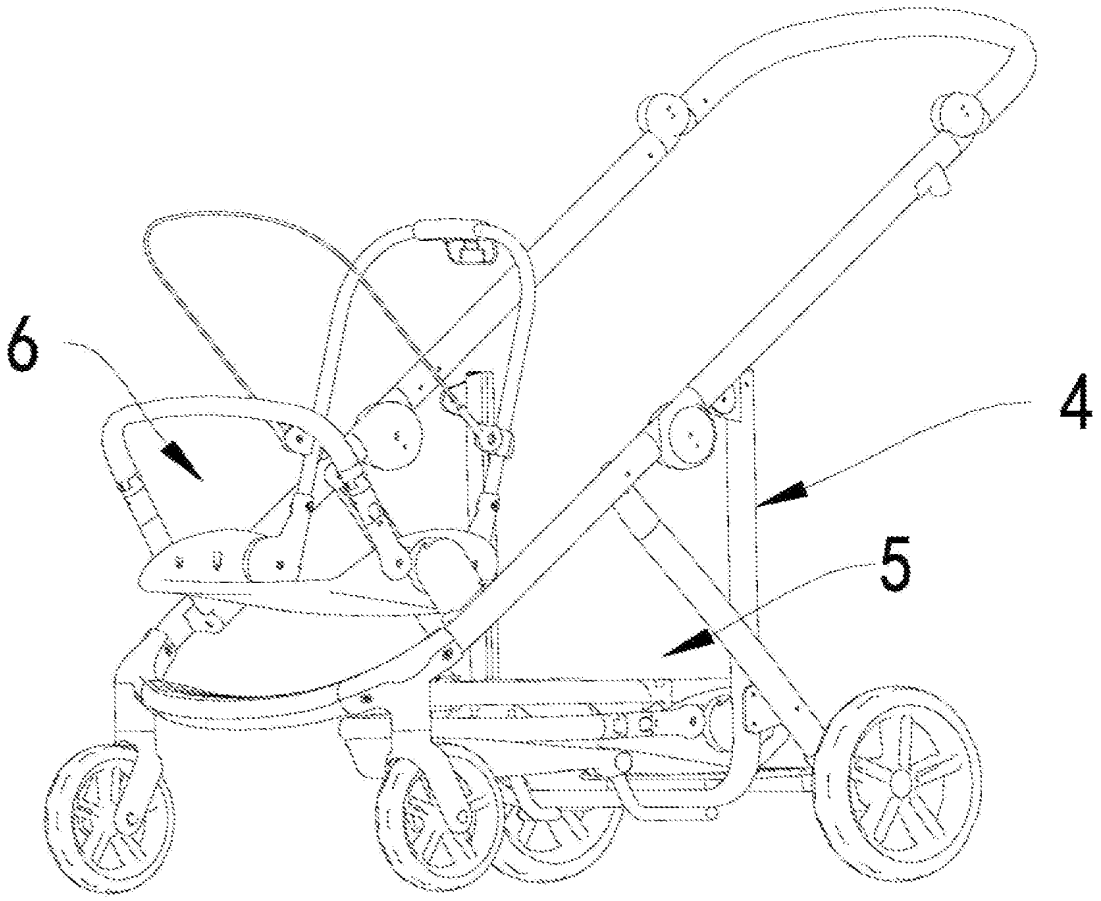

图15

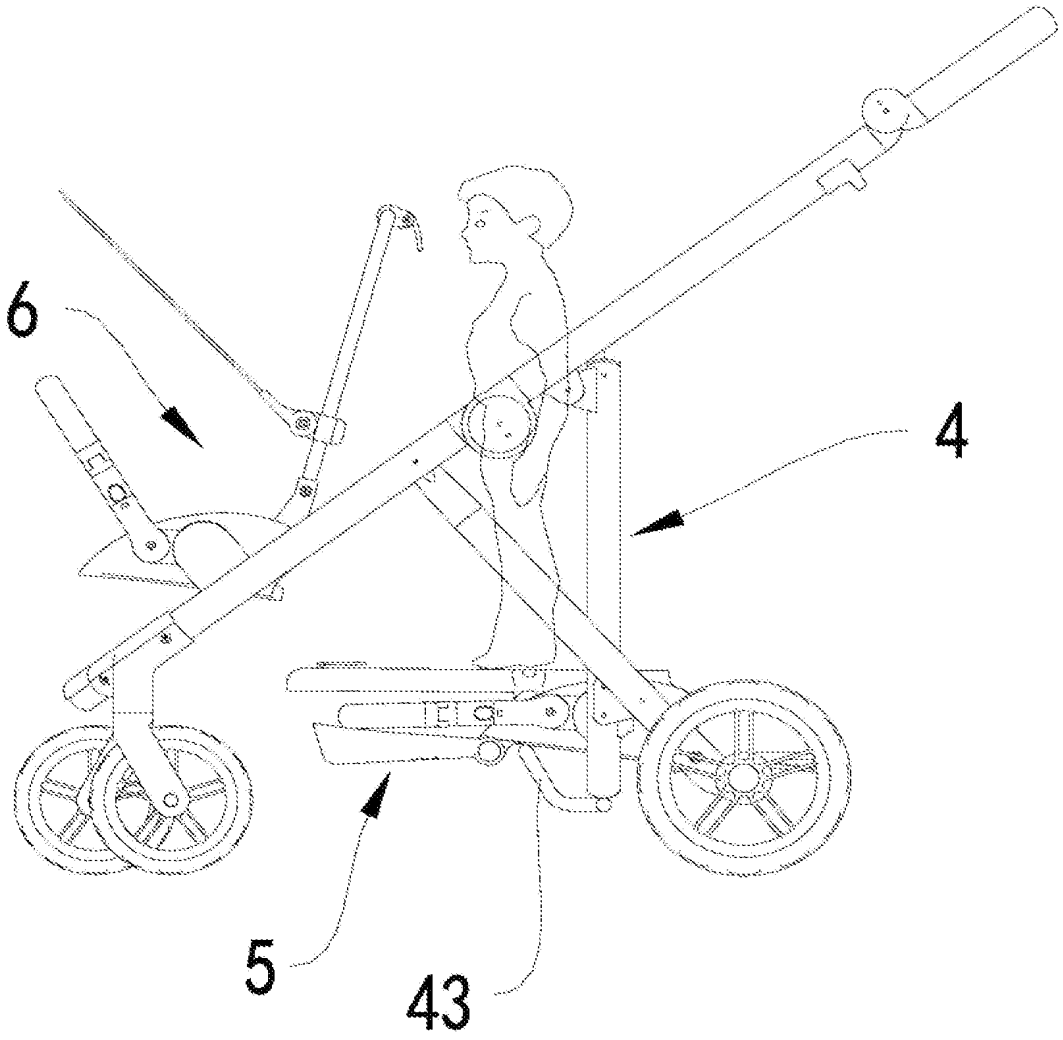

图16

Espacenet

Bibliographic data: CN1978264 (A) — 2007-06-13

Children's bicycle

Inventor(s): SONG ZHENGHUAN WANG [CN] ± (ZHENGHUAN,WANG SONG, ; SONG ZHENGHUAN, ; WANG JUNMA)

Applicant(s): HAOHAIZI CHILDREN S ARTICLES C [CN] ± (HAOHAIZI CHILDREN'S ARTICLES CO., LTD, ; GOODBABY CHILD PRODUCTS CO., LTD)

Classification: **- international:** ***B62B7/14; B62B9/18***
- cooperative:

Application number: CN20061107155 20060719

Priority number(s): CN2005275842U 20050922 ; CN20061107155 20060719

Also published as: CN100463826 (C)

Abstract of CN1978264 (A)

A baby carrier includes a primary carriage frame containing a master front wheel bracket, a master back wheel bracket, a master seat unit and a master seat set in the primary seat unit, and the carrier also includes a sub-frame containing a sub-wheel bracket, a sub-seat unit and a sub-seat on the unit, in which, the bottom of the sub-wheel bracket is set with a sub-wheel component, the primary frame and the sub-one can be connected and knocked down, so that they have a first working state of separation and a second working state of connection, the master frame forms an independent single carriage under the first state and they are connected to form an independent two carrier. When needing to carry two babies, one can connect the primary and the sub-carriers to form a two-carrier, and when carrying one baby, one can separate them to use the primary one to form a single-carrier.

[19] 中华人民共和国国家知识产权局

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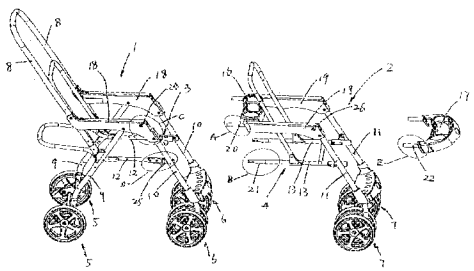
[74] 专利代理机构 苏州创元专利商标事务所有限公司
代理人 孙仿卫
权利要求书 4 页 说明书 8 页 附图 8 页

[54] 发明名称

童车

[57] 摘要

一种童车，包括主推车架，主推车架包括主前轮支架、主后轮支架、主座位机构、设置于主座位机构上的主座位，童车还包括附推车架，附推车架包括附轮支架、附座位机构、设置于附座位机构上的附座位，附轮支架的下端部设置有附轮组件，主推车架与附推车架相可拆卸地连接，使得附推车架与主推车架具有相分离的第一工作状态，以及相连接的第二工作状态，在第一工作状态下，主推车架构成独立的单人推车；在第二工作状态下，主推车架与附推车架构成独立的双人推车。由于当需要把两个小孩推行时，将主推车架与附推车架相连接组装成双人童车，当只需要把一个小孩推行时，将主推车架与附推车架相分离，从而使主推车架组装成单人童车，因而使用范围较广。



1、一种童车，包括主推车架（1），所述的主推车架（1）包括主前轮支架（10）、主后轮支架（9）、主座位机构（3）、设置于所述的主座位机构（3）上的供婴儿乘坐用的主座位，其特征在于：所述的童车还包括附推车架（2），所述的附推车架（2）包括附轮支架（11）、附座位机构（4）、设置于所述的附座位机构（4）上的供婴儿乘坐用的附座位，所述的附轮支架（11）的下端部设置有附轮组件（7），所述的主推车架（1）与所述的附推车架（2）相可拆卸地连接，使得所述的附推车架（2）与所述的主推车架（1）具有相分离的第一工作状态，以及所述的附推车架（2）与所述的主推车架（1）具有相连接的第二工作状态，在所述的附推车架（2）与所述的主推车架（1）处于第一工作状态下，所述的主前轮支架（10）的下端部设置有主前轮组件（6），所述的主后轮支架（9）的下端部设置有主后轮组件（5），所述的主推车架（1）上设置有推把杆（8），所述的主推车架（1）构成独立的单人推车；在所述的附推车架（2）与所述的主推车架（1）处于第二工作状态下，所述的主前轮支架（10）的下端部、所述的主后轮支架（9）的下端部中的至少一个部件上设置有轮组件，所述的主推车架（1）或所述的附推车架（2）上设置有推把杆（8），所述的附座位位于所述的主座位的前方或者位于所述的主座位的后方，所述的主推车架（1）与所述的附推车架（2）构成独立的双人推车。

2、根据权利要求 1 所述的童车，其特征在于：当所述的附推车架（2）与所述的主推车架（1）处于第二工作状态下，所述的主前轮支架（10）的下端部设置有主前轮组件(6)，所述的主后轮支架(9)的下端部设置有主后轮组件(5)。

3、根据权利要求 1 所述的童车，其特征在于：当所述的附推车架（2）与所述的主推车架（1）处于第二工作状态下，所述的附座位位于所述的主座位的前方，所述的附推车架（2）的后部与所述的主推车架（1）的前部相可拆卸地连接，所述的主推车架（1）上设置有推把杆（8），所述的主后轮支架（9）的下端部设置有主后轮组件（5）。

4、根据权利要求 3 所述的童车，其特征在于：当所述的附推车架（2）与所述的主推车架（1）处于第二工作状态下，所述的附推车架（2）的前部可拆卸地连接有附餐盘（17）或附前扶手，当所述的附推车架（2）与所述的主推车架（1）处于第一工作状态下，所述的附餐盘（17）或附前扶手与所述的主推车架（1）的前部相可拆卸地连接。

5、根据权利要求 3 所述的童车，其特征在于：所述的附推车架（2）的后

部连接有主餐盘（16）或主前扶手，当所述的附推车架（2）与所述的主推车架（1）处于第二工作状态下，所述的主餐盘（16）或主前扶手位于所述的主座位的前上方。

6、根据权利要求 3 所述的童车，其特征在于：所述的附推车架（2）还包括前端部与所述的附轮支架（11）的上端部相连接的附侧扶手（19），所述的附座位机构（4）包括附座连杆（13），所述的附座连杆（13）的前端部与所述的附轮支架（11）相连接，当所述的附推车架（2）与所述的主推车架（1）处于第二工作状态下，所述的附侧扶手（19）的后部与所述的主推车架（1）相连接，并且两者之间具有第一锁定机构（27），当所述的附推车架（2）与所述的主推车架（1）处于第二工作状态下，所述的附座连杆（13）的后部与所述的主推车架（1）相连接，并且两者之间具有第二锁定机构（28）。

7、根据权利要求 6 所述的童车，其特征在于：所述的主推车架（1）还包括前端部与所述的主前轮支架（10）的上端部相连接的主侧扶手（18）、与所述的主侧扶手（18）的后端部相连接的推把杆（8），所述的主后轮支架（9）的上端部与所述的主侧扶手（18）相连接，所述的主座位机构（3）包括位于所述的主前轮支架（10）与所述的主后轮支架（9）之间的主座连杆（12），当所述的附推车架（2）与所述的主推车架（1）处于第二工作状态下时，所述的附侧扶手（19）的后部与所述的主侧扶手（18）的前部相连接，所述的附座连杆（13）的后部与所述的主座连杆（12）的前部相连接。

8、根据权利要求 7 所述的童车，其特征在于：当所述的附推车架（2）与所述的主推车架（1）处于第二工作状态下，所述的附侧扶手（19）的前部可拆卸地连接有附餐盘（17）或附前扶手，当所述的附推车架（2）与所述的主推车架（1）处于第一工作状态下，所述的附餐盘（17）或附前扶手与所述的主侧扶手（18）的前部相可拆卸地连接。

9、根据权利要求 1 所述的童车，其特征在于：当所述的附推车架（2）与所述的主推车架（1）处于第二工作状态下，所述的附座位位于所述的主座位的后方，所述的附推车架（2）的前部与所述的主推车架（1）的后部相可拆卸地连接，所述的附推车架（2）上设置有推把杆（8），所述的主前轮支架（10）的下端部设置有主前轮组件（6）。

10、根据权利要求 9 所述的童车，其特征在于：当所述的附推车架（2）与所述的主推车架（1）处于第二工作状态下，所述的推把杆（8）可拆卸地连接

在所述的附推车架（2）的后部，当所述的附推车架（2）与所述的主推车架（1）处于第一工作状态下，所述的推把杆（8）与所述的主推车架（1）的后部相可拆卸地连接。

11、根据权利要求 9 所述的童车，其特征在于：所述的主推车架（1）的前部连接有主餐盘（16）或主前扶手。

12、根据权利要求 9 所述的童车，其特征在于：所述的主推车架（1）的后部连接有附餐盘或附前扶手。

13、根据权利要求 9 所述的童车，其特征在于：所述的附推车架（2）还包括前部与所述的附轮支架（11）的上端部相连接的附侧扶手（19）、上端部与所述的附侧扶手（19）的后端部相连接的附推把杆连杆（32），所述的附座位机构（4）包括附座连杆（13），所述的附座连杆（13）的后端部与所述的附轮支架（11）相连接，当所述的附推车架（2）与所述的主推车架（1）处于第二工作状态下，所述的附侧扶手（19）的前部与所述的主推车架（1）的后部相连接，并且两者之间具有第一锁定机构（27），当所述的附推车架（2）与所述的主推车架（1）处于第二工作状态下，所述的附座连杆（13）的前部与所述的主推车架（1）的后部相连接，并且两者之间具有第二锁定机构（28）。

14、根据权利要求 13 所述的童车，其特征在于：所述的主推车架（1）还包括前端部与所述的主前轮支架（10）的上端部相连接的主侧扶手（18）、上端部与所述的主侧扶手（18）的后端部相连接的主推杆连杆（31），所述的主后轮支架（9）的上端部与所述的主侧扶手（18）相连接，所述的主座位机构（3）包括位于所述的主前轮支架(10)与所述的主后轮支架(9)之间的主座连杆(12)，当所述的附推车架（2）与所述的主推车架（1）处于第二工作状态下，所述的附侧扶手（19）的前部与所述的主侧扶手（18）的后部相连接，所述的附座连杆（13）的前部与所述的主座连杆（12）的后部相连接。

15、根据权利要求 14 所述的童车，其特征在于：当所述的主推车架（1）与所述的附推车架（2）处于第二工作状态下，所述的推把杆（8）可拆卸地连接在所述的附推把杆连杆（32）上，当所述的主推车架（1）与所述的附推车架（2）处于第一工作状态下，所述的推把杆（8）与所述的主推杆连杆（31）相可拆卸地连接。

16、根据权利要求 14 所述的童车，其特征在于：所述的主餐盘（16）或主前扶手连接在所述的主侧扶手（18）的前部，所述的主侧扶手（18）的后部连

接有附餐盘或附前扶手。

童车

技术领域

本发明涉及一种童车。

背景技术

现有技术中，童车，有的是单人童车，这种单人童车通常包括推车架，所述的推车架包括前轮支架、后轮支架、一个座位机构、设置于所述的座位机构上的一个座位，这种单人童车只可供一个小孩坐，需将两个小孩推行时，这种单人童车则无法使用；还有的是双人童车，这种双人童车通常包括推车架，所述的推车架包括前轮支架、后轮支架、设置于前轮支架与所述的后轮支架之间的两个座位机构、分别设置于两个座位机构上的两个座位，这种双人童车可供两个小孩坐，但是当只需将一个小孩推行时，操作者通常会选择单人童车，原因是双人童车体积较大，较单人童车难推行。可见，以单人童车及双人童车两种单一的形式出现的童车在使用范围上都有局限性。

发明内容

本发明目的是提供一种童车，其使用范围较广，童车操作者可根据需要将童车组装成单人童车或双人童车。

本发明的技术方案是：一种童车，包括主推车架，所述的主推车架包括主前轮支架、主后轮支架、主座位机构、设置于所述的主座位机构上的供婴儿乘坐用的主座位，所述的童车还包括附推车架，所述的附推车架包括附轮支架、附座位机构、设置于所述的附座位机构上的供婴儿乘坐用的附座位，所述的附轮支架的下端部设置有附轮组件，所述的主推车架与所述的附推车架相可拆卸地连接，使得所述的附推车架与所述的主推车架具有相分离的第一工作状态，以及所述的附推车架与所述的主推车架具有相连接的第二工作状态，在所述的附推车架与所述的主推车架处于第一工作状态下，所述的主前轮支架的下端部设置有主前轮组件，所述的主后轮支架的下端部设置有主后轮组件，所述的主推车架上设置有推把杆，所述的主推车架构成独立的单人推车；在所述的附推车架与所述的主推车架处于第二工作状态下，所述的主前轮支架的下端部、所述的主后轮支架的下端部中的至少一个部件上设置有轮组件，所述的主推车架或所述的附推车架上设置有推把杆，所述的附座位位于所述的主座位的前方或者位于所述的主座位的后方，所述的主推车架与所述的附推车架构成独立的双人推车。

当所述的附推车架与所述的主推车架处于第二工作状态下，所述的主前轮支架的下端部设置有主前轮组件，所述的主后轮支架的下端部设置有主后轮组件。

当所述的附推车架与所述的主推车架处于第二工作状态下，所述的附座位位于所述的主座位的前方，所述的附推车架的后部与所述的主推车架的前部相可拆卸地连接，所述的主推车架上设置有推把杆，所述的主后轮支架的下端部设置有主后轮组件。

当所述的附推车架与所述的主推车架处于第二工作状态下，所述的附推车架的前部可拆卸地连接有附餐盘或附前扶手，当所述的附推车架与所述的主推车架处于第一工作状态下，所述的附餐盘或附前扶手与所述的主推车架的前部相可拆卸地连接。

所述的附推车架的后部连接有主餐盘或主前扶手，当所述的附推车架与所述的主推车架处于第二工作状态下，所述的主餐盘或主前扶手位于所述的主座位的前上方。

所述的附推车架还包括前端部与所述的附轮支架的上端部相连接的附侧扶手，所述的附座位机构包括附座连杆，所述的附座连杆的前端部与所述的附轮支架相连接，当所述的附推车架与所述的主推车架处于第二工作状态下，所述的附侧扶手的后部与所述的主推车架相连接，并且两者之间具有第一锁定机构，当所述的附推车架与所述的主推车架处于第二工作状态下，所述的附座连杆的后部与所述的主推车架相连接，并且两者之间具有第二锁定机构。

所述的主推车架还包括前端部与所述的主前轮支架的上端部相连接的主侧扶手、与所述的主侧扶手的后端部相连接的推把杆，所述的主后轮支架的上端部与所述的主侧扶手相连接，所述的主座位机构包括位于所述的主前轮支架与所述的主后轮支架之间的主座连杆，当所述的附推车架与所述的主推车架处于第二工作状态下时，所述的附侧扶手的后部与所述的主侧扶手的前部相连接，所述的附座连杆的后部与所述的主座连杆的前部相连接。

当所述的附推车架与所述的主推车架处于第二工作状态下，所述的附侧扶手的前部可拆卸地连接有附餐盘或附前扶手，当所述的附推车架与所述的主推车架处于第一工作状态下，所述的附餐盘或附前扶手与所述的主侧扶手的前部相可拆卸地连接。

当所述的附推车架与所述的主推车架处于第二工作状态下，所述的附座位

位于所述的主座位的后方，所述的附推车架的前部与所述的主推车架的后部相可拆卸地连接，所述的附推车架上设置有推把杆，所述的主前轮支架的下端部设置有主前轮组件。

当所述的附推车架与所述的主推车架处于第二工作状态下，所述的推把杆可拆卸地连接在所述的附推车架的后部，当所述的附推车架与所述的主推车架处于第一工作状态下，所述的推把杆与所述的主推车架的后部相可拆卸地连接。

所述的主推车架的前部连接有主餐盘或主前扶手。

所述的主推车架的后部连接有附餐盘或附前扶手。

所述的附推车架还包括前部与所述的附轮支架的上端部相连接的附侧扶手、上端部与所述的附侧扶手的后端部相连接的附推把杆连杆，所述的附座位机构包括附座连杆，所述的附座连杆的后端部与所述的附轮支架相连接，当所述的附推车架与所述的主推车架处于第二工作状态下，所述的附侧扶手的前部与所述的主推车架的后部相连接，并且两者之间具有第一锁定机构，当所述的附推车架与所述的主推车架处于第二工作状态下，所述的附座连杆的前部与所述的主推车架的后部相连接，并且两者之间具有第二锁定机构。

所述的主推车架还包括前端部与所述的主前轮支架的上端部相连接的主侧扶手、上端部与所述的主侧扶手的后端部相连接的主推杆连杆，所述的主后轮支架的上端部与所述的主侧扶手相连接，所述的主座位机构包括位于所述的主前轮支架与所述的主后轮支架之间的主座连杆，当所述的附推车架与所述的主推车架处于第二工作状态下，所述的附侧扶手的前部与所述的主侧扶手的后部相连接，所述的附座连杆的前部与所述的主座连杆的后部相连接。

当所述的主推车架与所述的附推车架处于第二工作状态下，所述的推把杆可拆卸地连接在所述的附推把杆连杆上，当所述的主推车架与所述的附推车架处于第一工作状态下，所述的推把杆与所述的主推杆连杆相可拆卸地连接。

所述的主餐盘或主前扶手连接在所述的主侧扶手的前部，所述的主侧扶手的后部连接有附餐盘或附前扶手。

本发明与现有技术相比，具有下列优点：由于所述的童车包括具有主座位的主推车架、具有附座位的附推车架，所述的主推车架与所述的附推车架之间可拆卸地连接，当需要把两个小孩推行时，将所述的主推车架与所述的附推车架相连接组装成双人童车，当只需要把一个小孩推行时，将主推车架与所述的附推车架相分离，从而使主推车架组装成单人童车，因而使用范围较广。

附图说明

附图 1 为本发明的立体图（第一实施例处于第二工作状态下）；

附图 2 为主推车架构成独立的单人推车的立体图（第一实施例）；

附图 3 为本发明的分解图（第一实施例）；

附图 4 为附图 3 的 A 处放大图；

附图 5 为附图 3 的 B 处放大图；

附图 6 为附图 3 的 C 处放大图；

附图 7 为附图 3 的 D 处放大图；

附图 8 为附图 3 的 E 处放大图；

附图 9 为本发明的示意图（第一实施例处于第二工作状态下）；

附图 10 为附图 9 的 N-N 处剖视图；

附图 11 为附图 9 的 M 处放大图；

附图 12 为本发明的示意图（第二实施例处于第二工作状态下）；

附图 13 为双人童车转换成单人推车的示意图（第二实施例）；

其中：1、主推车架；2、附推车架；3、主座位机构；4、附座位机构；5、主后轮组件；6、主前轮组件；7、附轮组件；8、推把杆；9、主后轮支架；10、主前轮支架；11、附轮支架；12、主座连杆；13、附座连杆；16、主餐盘；17、附餐盘；18、主侧扶手；19、附侧扶手；20、第一弹销；21、第二弹销；22、第三弹销；24、第一按钮；25、第二按钮；26、第三按钮；27、第一锁定机构；28、第二锁定机构；29、第一锁孔；30、第二锁孔；31、主推杆连杆；32、附推把杆连杆；

具体实施方式

一种童车，包括主推车架 1，所述的主推车架 1 包括主前轮支架 10、主后轮支架 9、主座位机构 3、设置于所述的主座位机构 3 上的供婴儿乘坐用的主座位，所述的童车还包括附推车架 2，所述的附推车架 2 包括附轮支架 11、附座位机构 4、设置于所述的附座位机构 4 上的供婴儿乘坐用的附座位，所述的附轮支架 11 的下端部设置有附轮组件 7，所述的主推车架 1 与所述的附推车架 2 相可拆卸地连接，使得所述的附推车架 2 与所述的主推车架 1 具有相分离的第一工作状态，以及所述的附推车架 2 与所述的主推车架 1 具有相连接的第二工作状态，在所述的附推车架 2 与所述的主推车架 1 处于第一工作状态下，所述的主前轮支架 10 的下端部设置有主前轮组件 6，所述的主后轮支架 9 的下端部

设置有主后轮组件 5，所述的主推车架 1 上设置有推把杆 8，所述的主推车架 1 构成独立的单人推车；在所述的附推车架 2 与所述的主推车架 1 处于第二工作状态下，所述的主前轮支架 10 的下端部、所述的主后轮支架 9 的下端部中的至少一个部件上设置有轮组件，所述的主推车架 1 或所述的附推车架 2 上设置有推把杆 8，所述的附座位位于所述的主座位的前方或者位于所述的主座位的后方，所述的主推车架 1 与所述的附推车架 2 构成独立的双人推车。

第一实施例，如附图 1-附图 11 所示，一种童车，包括主推车架 1，所述的主推车架 1 包括主前轮支架 10、主后轮支架 9、主座位机构 3、设置于所述的主座位机构 3 上的供婴儿乘坐用的主座位，所述的童车还包括附推车架 2，所述的附推车架 2 包括附轮支架 11、附座位机构 4、设置于所述的附座位机构 4 上的供婴儿乘坐用的附座位，所述的附轮支架 11 的下端部设置有附轮组件 7，所述的主推车架 1 与所述的附推车架 2 相可拆卸地连接，使得所述的附推车架 2 与所述的主推车架 1 具有相分离的第一工作状态，以及所述的附推车架 2 与所述的主推车架 1 具有相连接的第二工作状态，在所述的附推车架 2 与所述的主推车架 1 处于第一工作状态下，所述的主前轮支架 10 的下端部设置有主前轮组件 6，所述的主后轮支架 9 的下端部设置有主后轮组件 5，所述的主推车架 1 上设置有推把杆 8，所述的主推车架 1 构成独立的单人推车；在所述的附推车架 2 与所述的主推车架 1 处于第二工作状态下，所述的主前轮支架 10 的下端部、所述的主后轮支架 9 的下端部中至少所述的主后轮支架 9 的下端部上设置有主后轮组件 5，所述的主推车架 1 上设置有推把杆 8，所述的附座位位于所述的主座位的前方，所述的主推车架 1 与所述的附推车架 2 构成独立的双人推车。

当所述的附推车架 2 与所述的主推车架 1 处于第二工作状态下，从附图 1-附图 11 所示，所述的附座位位于所述的主座位的前方，所述的附推车架 2 的后部与所述的主推车架 1 的前部相可拆卸地连接，所述的主推车架 1 上设置有推把杆 8，所述的主后轮支架 9 的下端部设置有主后轮组件 5。

如附图 1、附图 9 所示，当所述的附推车架 2 与所述的主推车架 1 处于第二工作状态下，所述的主前轮支架 10 的下端部设置有主前轮组件 6，所述的主后轮支架 9 的下端部设置有主后轮组件 5。

当所述的附推车架 2 与所述的主推车架 1 处于第二工作状态下，所述的附推车架 2 的前部可拆卸地连接有附餐盘 17 或附前扶手，并且在附餐盘 17 与所述的附推车架 2 的前部之间设置有锁定机构，如附图 3、附图 8、附图 9 所示，

所述的锁定机构可以是在所述的附餐盘 17 上设置有第三弹销 22，在所述的附推车架 2 上开有第三锁孔，锁定时，所述的第三弹销 22 插在所述的第三锁孔内，并且在附推车架 2 上设置有第三按钮 26，通过所述的第三按钮 26 可将所述的锁定机构解锁。当所述的附推车架 2 与所述的主推车架 1 处于第一工作状态下，所述的附餐盘 17 或附前扶手与所述的主推车架 1 的前部相可拆卸地连接；

所述的附推车架 2 的后部连接有主餐盘 16 或主前扶手，当所述的附推车架 2 与所述的主推车架 1 处于第二工作状态下，所述的主餐盘 16 或主前扶手位于所述的主座位的前上方。

所述的附推车架 2 还包括前端部与所述的附轮支架 11 的上端部相连接的附侧扶手 19，所述的附座位机构 4 包括附座连杆 13，所述的附座连杆 13 的前端部与所述的附轮支架 11 相连接，当所述的附推车架 2 与所述的主推车架 1 处于第二工作状态下，所述的附侧扶手 19 的后部与所述的主推车架 1 相连接，并且两者之间具有第一锁定机构 27，当所述的附推车架 2 与所述的主推车架 1 处于第二工作状态下，所述的附座连杆 13 的后部与所述的主推车架 1 相连接，并且两者之间具有第二锁定机构 28。如附图 3-附图 8、附图 10、附图 11 所示，所述的第一锁定机构 27 可以是在所述的附侧扶手 19 上设置有第一弹销 20，在所述的主推车架 1 上开有第一锁孔 29，锁定时，所述的第一弹销 20 插在所述的第一锁孔 29 内，并且在主推车架 1 上设置有第一按钮 24，通过所述的第一按钮 24 可将所述的第一锁定机构 27 解锁。所述的第二锁定机构 28 可以是在所述的附座连杆 13 上设置有第二弹销 21，在所述的主推车架 1 上开有第二锁孔 30，锁定时，所述的第二弹销 21 插在所述的第二锁孔 30 内，并且在主推车架 1 上设置有第二按钮 25，通过所述的第二按钮 25 可将所述的第二锁定机构 28 解锁。如附图 2 所示，当所述的附推车架 2 与所述的主推车架 1 处于第一工作状态下，所述的附餐盘 17 或附前扶手与所述的主推车架 1 的前部相可拆卸地连接，并且所述的附餐盘 17 或所述的附前扶手与所述的主推车架 1 之间相锁定，此时，所述的附餐盘 17 上的第三弹销 22 可插在所述的主推车架 1 上的第一锁孔 29 内，按动第一按钮 24 可将所述的附餐盘 17 或附前扶手与所述的主推车架 1 的前部之间解锁。

所述的主推车架 1 还包括前端部与所述的主前轮支架 10 的上端部相连接的主侧扶手 18、与所述的主侧扶手 18 的后端部相连接的推把杆 8，所述的主后轮支架 9 的上端部与所述的主侧扶手 18 相连接，所述的主座位机构 3 包括位于所

述的主前轮支架 10 与所述的主后轮支架 9 之间的主座连杆 12，当所述的附推车架 2 与所述的主推车架 1 处于第二工作状态下时，所述的附侧扶手 19 的后部与所述的主侧扶手 18 的前部相连接，所述的附座连杆 13 的后部与所述的主座连杆 12 的前部相连接。当所述的附推车架 2 与所述的主推车架 1 处于第二工作状态下，所述的附侧扶手 19 的前部可拆卸地连接有附餐盘 17 或附前扶手，当所述的附推车架 2 与所述的主推车架 1 处于第一工作状态下，所述的附餐盘 17 或附前扶手与所述的主侧扶手 18 的前部相可拆卸地连接。所述的附侧扶手 19 的后部连接有主餐盘 16 或主前扶手。

第二实施例，从附图 12、附图 13 所示，一种童车，包括主推车架 1，所述的主推车架 1 包括主前轮支架 10、主后轮支架 9、主座位机构 3、设置于所述的主座位机构 3 上的供婴儿乘坐用的主座位，所述的童车还包括附推车架 2，所述的附推车架 2 包括附轮支架 11、附座位机构 4、设置于所述的附座位机构 4 上的供婴儿乘坐用的附座位，所述的附轮支架 11 的下端部设置有附轮组件 7，所述的主推车架 1 与所述的附推车架 2 相可拆卸地连接，使得所述的附推车架 2 与所述的主推车架 1 具有相分离的第一工作状态，以及所述的附推车架 2 与所述的主推车架 1 具有相连接的第二工作状态，在所述的附推车架 2 与所述的主推车架 1 处于第一工作状态下，所述的主前轮支架 10 的下端部设置有主前轮组件 6，所述的主后轮支架 9 的下端部设置有主后轮组件 5，所述的主推车架 1 上设置有推把杆 8，所述的主推车架 1 构成独立的单人推车；在所述的附推车架 2 与所述的主推车架 1 处于第二工作状态下，所述的主前轮支架 10 的下端部、所述的主后轮支架 9 的下端部中至少所述的主前轮支架 10 的下端部上设置有主前轮组件 6，所述的附推车架 2 上设置有推把杆 8，所述的附座位位于所述的主座位后方，所述的主推车架 1 与所述的附推车架 2 构成独立的双人推车。

当所述的附推车架 2 与所述的主推车架 1 处于第二工作状态下，所述的附座位位于所述的主座位的后方，所述的附推车架 2 的前部与所述的主推车架 1 的后部相可拆卸地连接，并且连接后相锁定，所述的附推车架 2 上设置有推把杆 8，所述的主前轮支架 10 的下端部设置有主前轮组件 6。

如附图 12 所示，当所述的附推车架 2 与所述的主推车架 1 处于第二工作状态下，所述的主前轮支架 10 的下端部设置有主前轮组件 6，所述的主后轮支架 9 的下端部设置有主后轮组件 5。

当所述的附推车架 2 与所述的主推车架 1 处于第二工作状态下，所述的推

把杆 8 可拆卸地连接在所述的附推车架 2 的后部，当所述的附推车架 2 与所述的主推车架 1 处于第一工作状态下，所述的推把杆 8 与所述的主推车架 1 的后部相可拆卸地连接。

所述的主推车架 1 的前部连接有主餐盘 16 或主前扶手。

所述的主推车架 1 的后部连接有附餐盘或附前扶手，当所述的附推车架 2 与所述的主推车架 1 处于第二工作状态下，所述的附餐盘或附前扶手位于所述的附座位的前上方。

所述的附推车架 2 还包括前部与所述的附轮支架 11 的上端部相连接的附侧扶手 19、上端部与所述的附侧扶手 19 的后端部相连接的附推把杆连杆 32，所述的附座位机构 4 包括附座连杆 13，所述的附座连杆 13 的后端部与所述的附轮支架 11 相连接，当所述的附推车架 2 与所述的主推车架 1 处于第二工作状态下，所述的附侧扶手 19 的前部与所述的主推车架 1 的后部相连接，并且两者之间具有第一锁定机构 27，当所述的附推车架 2 与所述的主推车架 1 处于第二工作状态下，所述的附座连杆 13 的前部与所述的主推车架 1 的后部相连接，并且两者之间具有第二锁定机构 28。

所述的主推车架 1 还包括前端部与所述的主前轮支架 10 的上端部相连接的主侧扶手 18、上端部与所述的主侧扶手 18 的后端部相连接的主推杆连杆 31，所述的主后轮支架 9 的上端部与所述的主侧扶手 18 相连接，所述的主座位机构 3 包括位于所述的主前轮支架 10 与所述的主后轮支架 9 之间的主座连杆 12，当所述的附推车架 2 与所述的主推车架 1 处于第二工作状态下，所述的附侧扶手 19 的前部与所述的主侧扶手 18 的后部相连接，所述的附座连杆 13 的前部与所述的主座连杆 12 的后部相连接。当所述的主推车架 1 与所述的附推车架 2 处于第二工作状态下，所述的推把杆 8 可拆卸地连接在所述的附推把杆连杆 32 上，当所述的主推车架 1 与所述的附推车架 2 处于第一工作状态下，所述的推把杆 8 与所述的主推杆连杆 31 相可拆卸地连接。所述的主餐盘 16 或主前扶手连接在所述的主侧扶手 18 的前部，所述的主侧扶手 18 的后部连接有附餐盘或附前扶手。

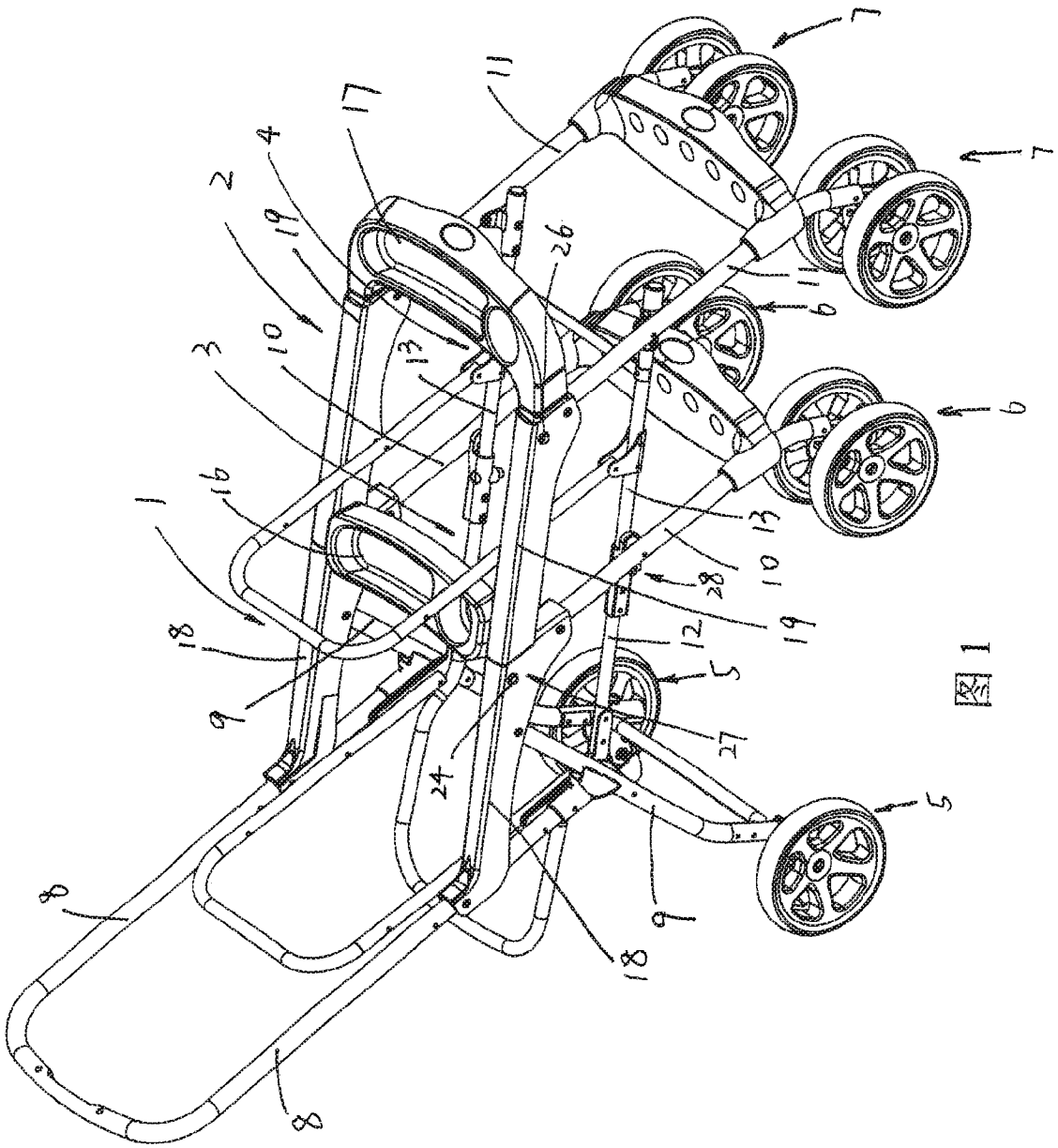


图 1

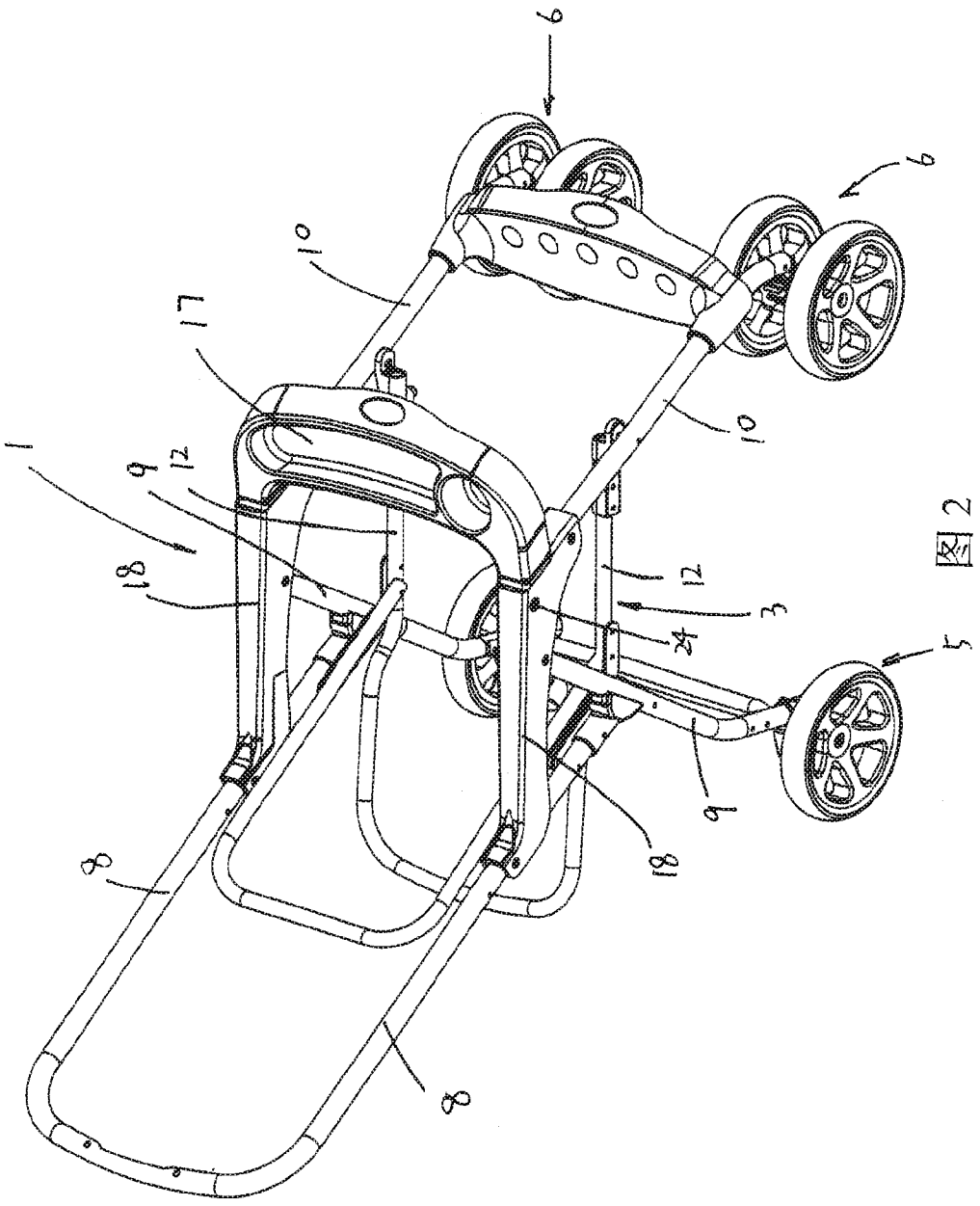


图 2

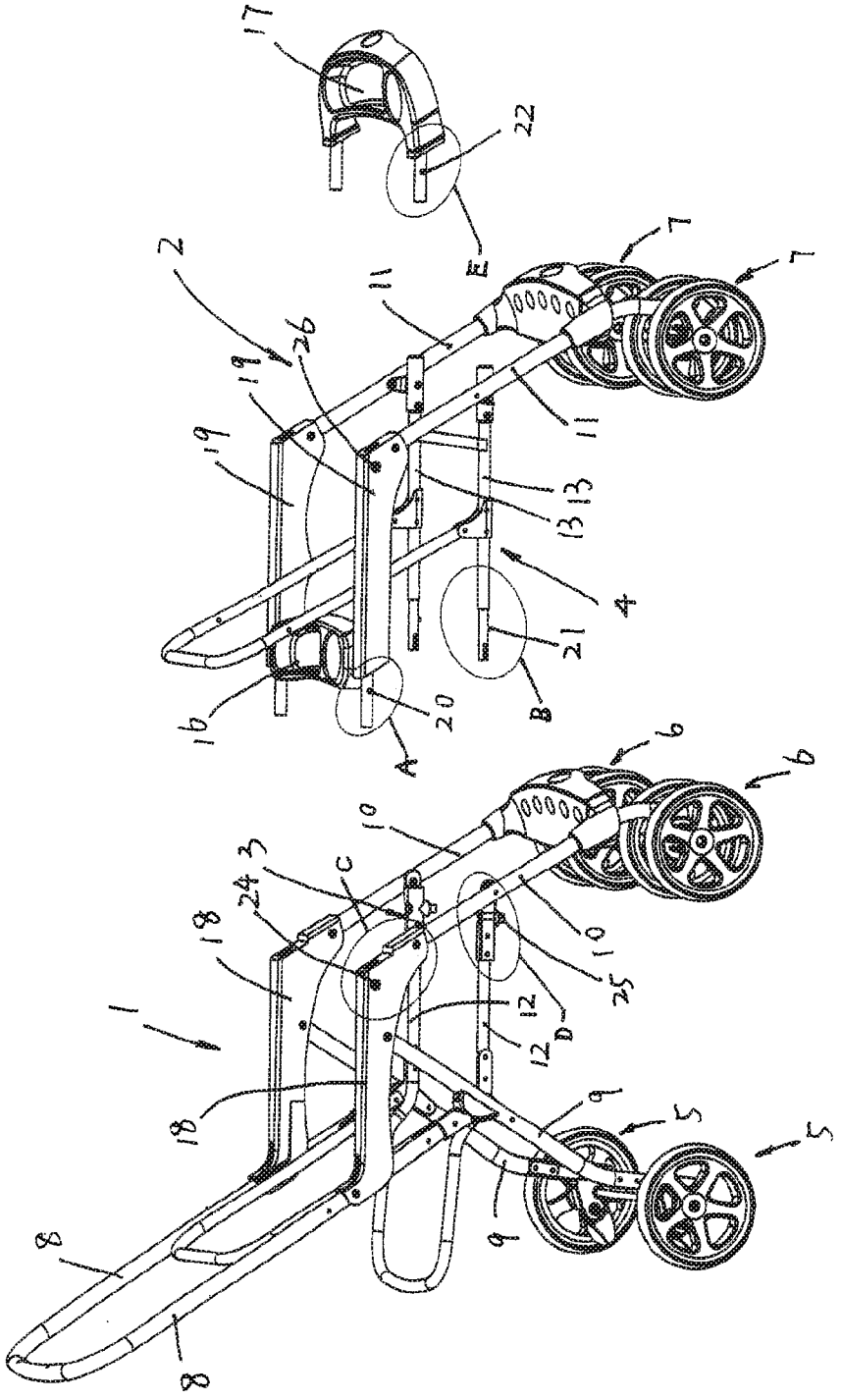

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图 3

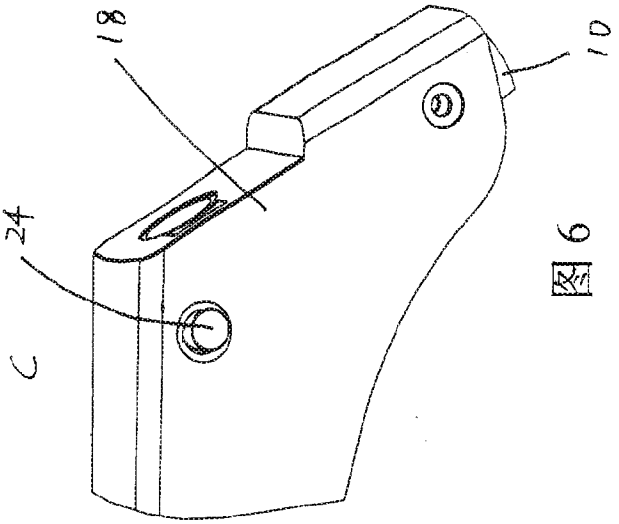

图6

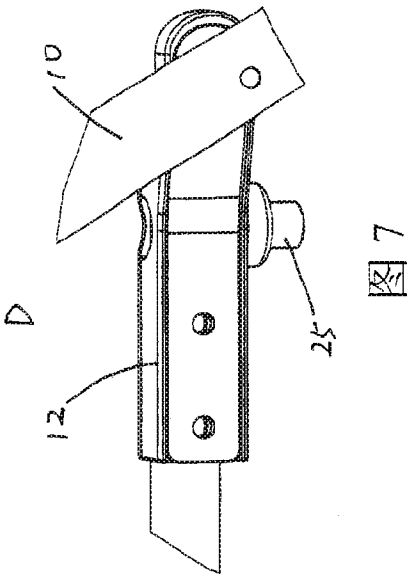

图7

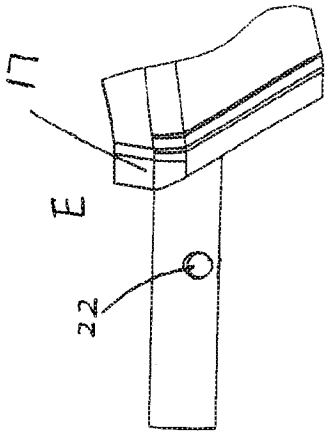

图8

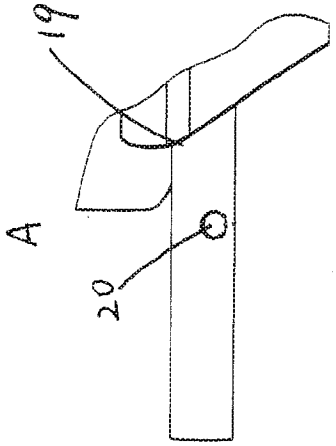

图4

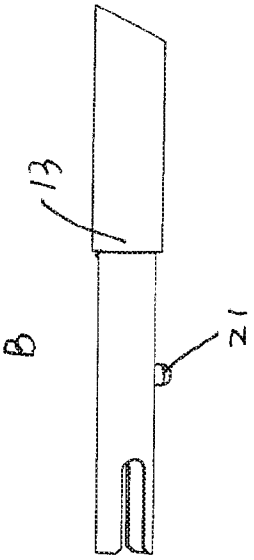

图5

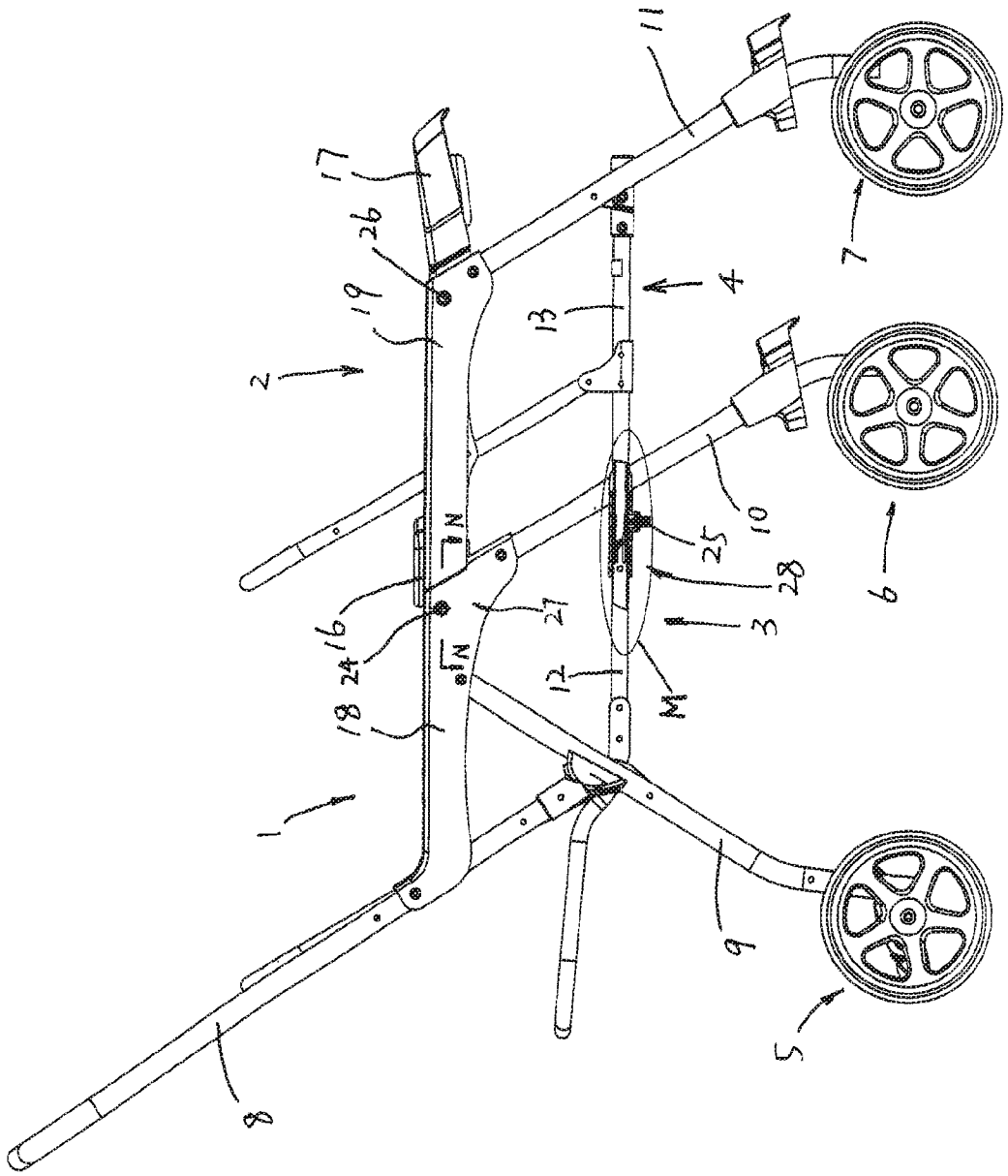

图 9

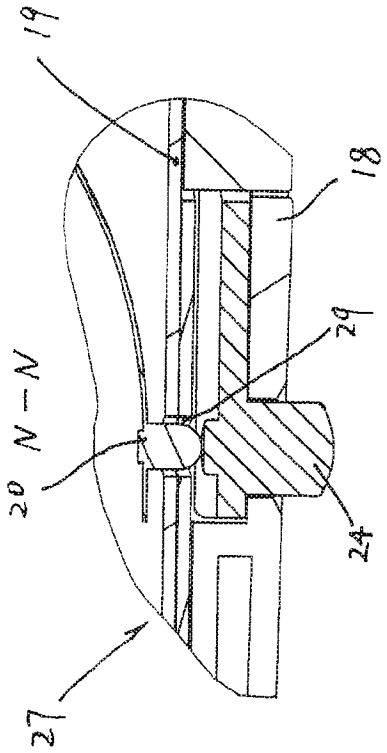

图 10

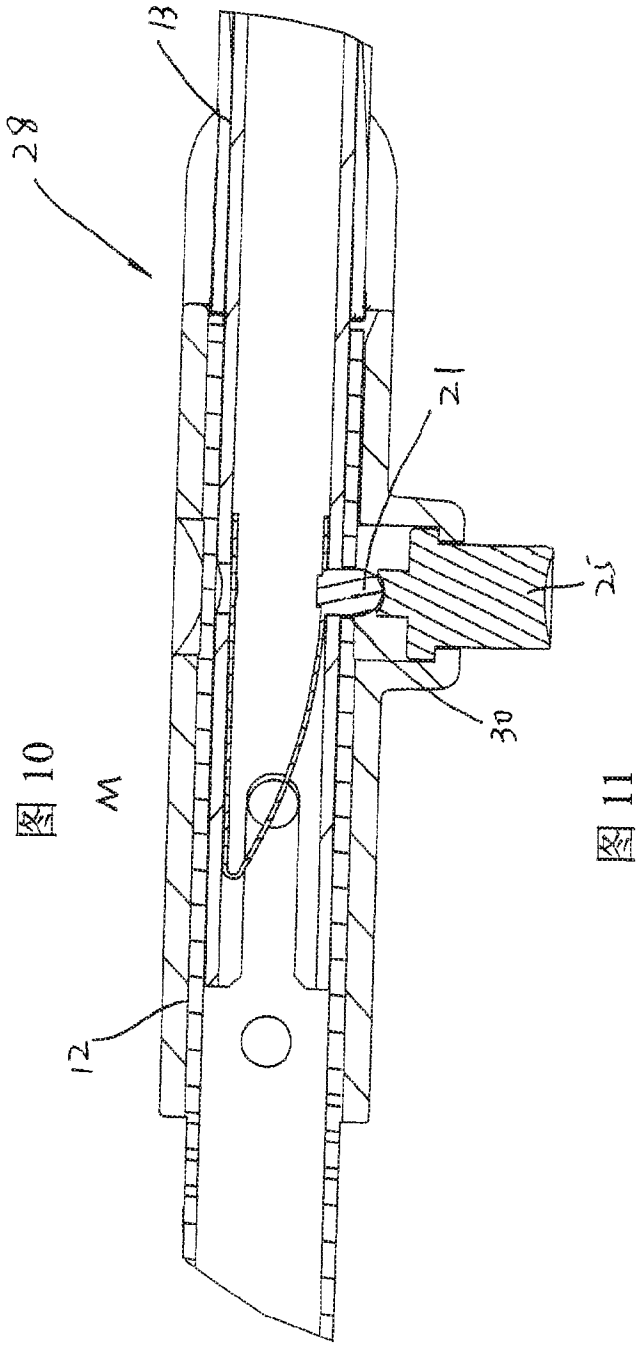

图 11

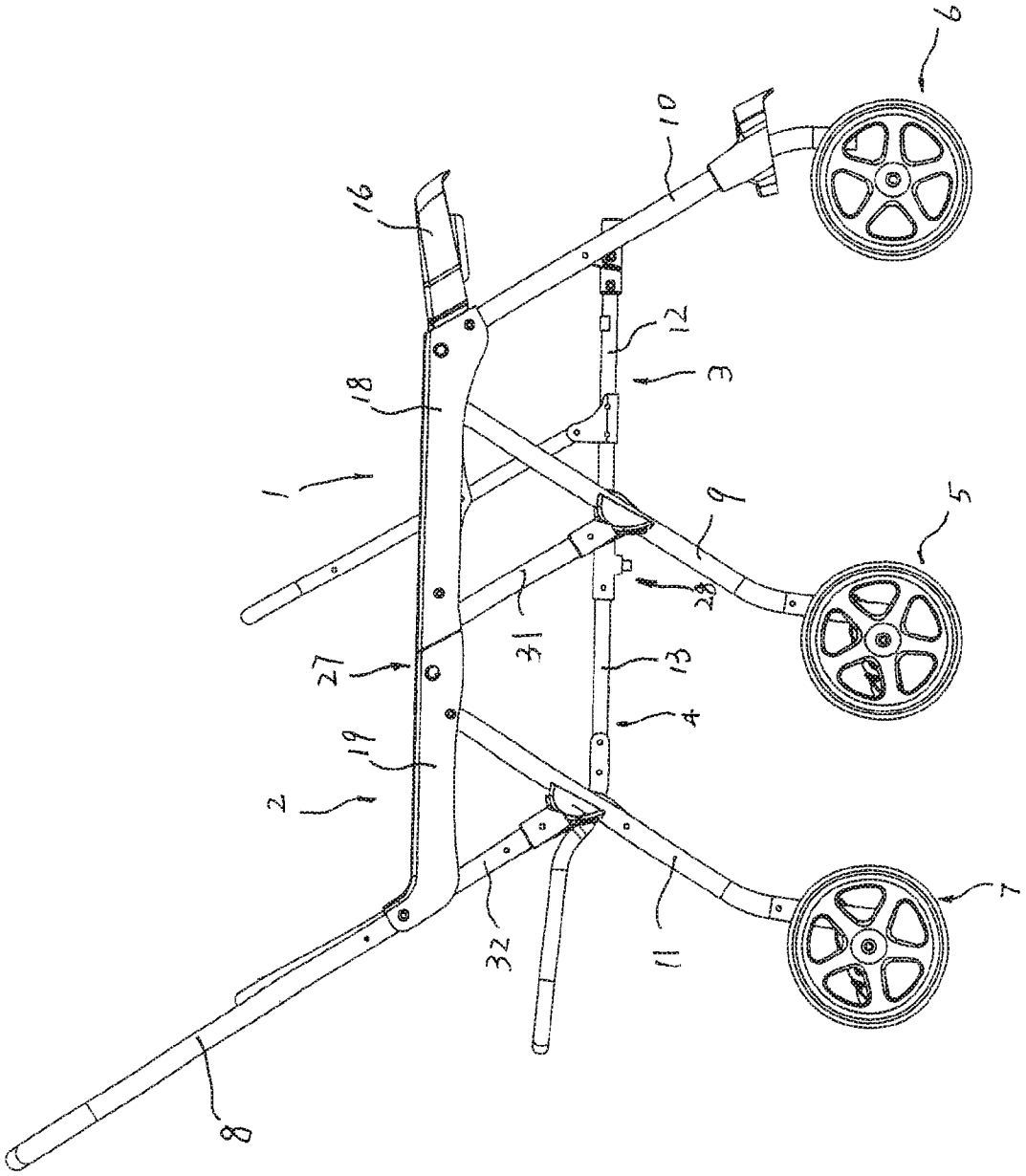

图 12

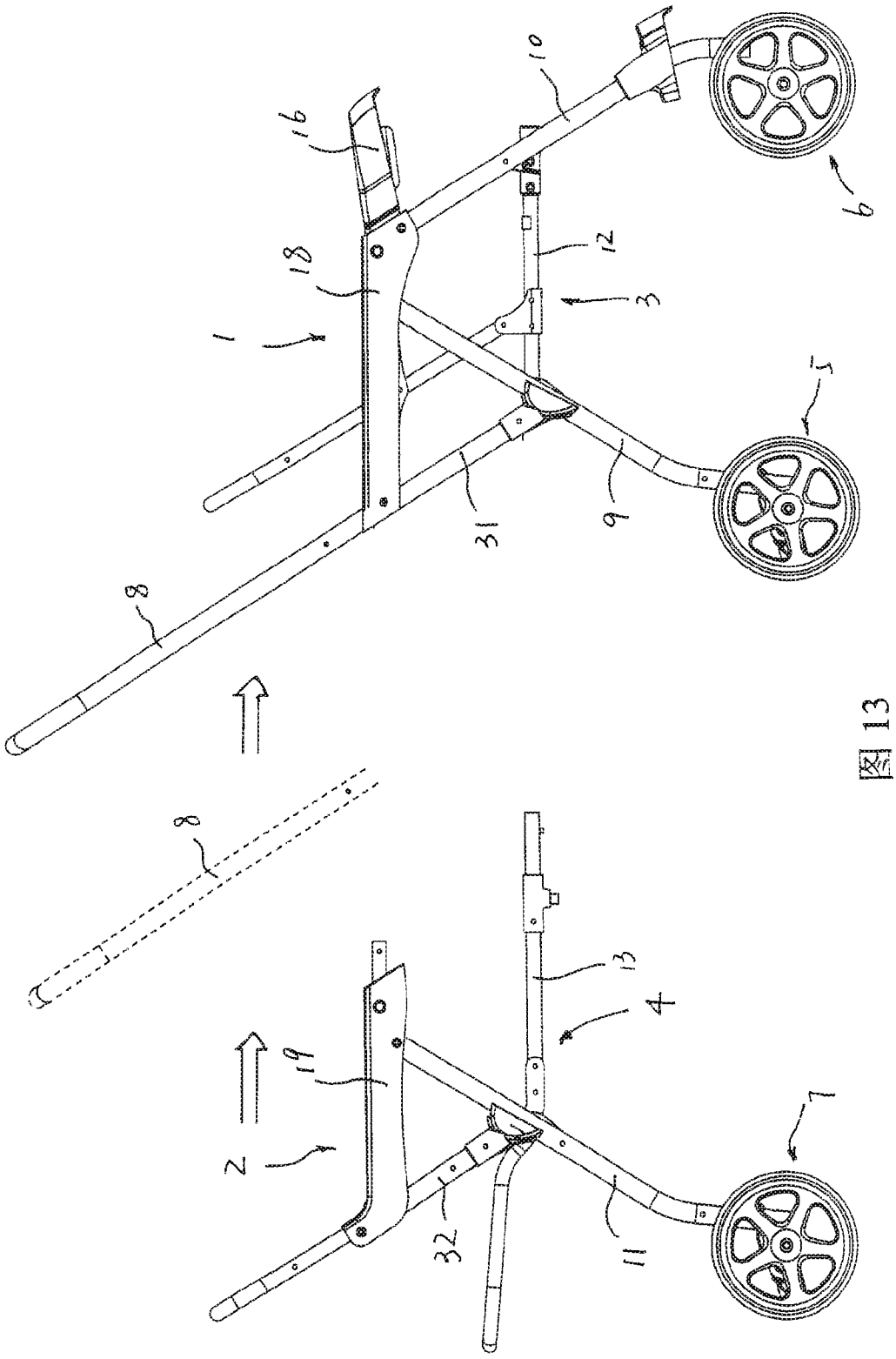

图 13

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference DYN005.PCT	FOR FURTHER ACTION	see Form PCT/ISA/220 as well as, where applicable, item 5 below.
International application No. PCT/US2009/066817	International filing date *(day/month/year)* 04 December 2009	(Earliest) Priority Date *(day/month/year)* 12 April 2009
Applicant DYNAMIC BRANDS, LLC		

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

This international search report consists of a total of 9 sheets.

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

1. **Basis of the report**

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

☒ the international application in the language in which it was filed.

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

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

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

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

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

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

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

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

☒ the text is approved as submitted by the applicant.

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

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

a. the figure of the **drawings** to be published with the abstract is Figure No. 3

☒ as suggested by the applicant.

☐ as selected by this Authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

b. ☐ none of the figures is to be published with the abstract.

Form PCT/ISA/210 (first sheet) (July 2009)

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2009/066817

A. CLASSIFICATION OF SUBJECT MATTER
IPC(8) - B62B 7/00 (2010.01)
USPC - 280/642
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC(8) - B62B 7/00; B62D 7/14, 63/00 (2010.01)
USPC - 280/642, 32.7, 47.131, 647, 648, 656, 657

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

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2007/0114738 A1 (JONES et al) 24 May 2007 (24.05.2007) entire document	1-5, 8, 11-14
Y		6, 7, 9, 10, 15-27
X	US 2007/0001429 A1 (MACIEJCZYK) 04 January 2007 (04.01.2007) entire document	28-31, 33, 34
Y		6, 7, 9, 10, 15, 24-27, 32
Y	US 5,338,096 A (HUANG) 16 August 1994 (16.08.1994) entire document	16-27
Y	US 2003/0025304 A1 (HAEGGBERG) 06 February 2003 (06.02.2003) entire document	32

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

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevance
"E" earlier application or patent but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed
"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
20 August 2010	29 JAN 2010
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	Authorized officer: Blaine R. Copenheaver PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

Form PCT/ISA/210 (second sheet) (July 2009)

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To: BERNARD PIKE
TROUTMAN SANDERS LLP
600 PEACHTREE STREET, N.E., SUITE 5200
PATENT & TRADEMARK DEPARTMENT
ATLANTA, GA 30308-2216

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43*bis*.1)

Date of mailing *(day/month/year)*	29 JAN 2010
Applicant's or agent's file reference: DYN005.PCT	FOR FURTHER ACTION: See paragraph 2 below

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/US2009/066817	04 December 2009	12 April 2009

International Patent Classification (IPC) or both national classification and IPC
IPC(8) - B62B 7/00 (2010.01)
USPC - 280/642

Applicant DYNAMIC BRANDS, LLC

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

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

2. FURTHER ACTION

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

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

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

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/US	Date of completion of this opinion	Authorized officer:
Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	20 January 2010	Blaine R. Copenheaver PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

Form PCT/ISA/237 (cover sheet) (July 2009)

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US2009/066817

Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of:

   ☒ the international application in the language in which it was filed.

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

2. ☐ This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43*bis*.1(a))

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of a sequence listing filed or furnished:

   a. (means)

      ☐ on paper

      ☐ in electronic form

   b. (time)

      ☐ in the international application as filed

      ☐ together with the international application in electronic form

      ☐ subsequently to this Authority for the purposes of search

4. ☐ In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

5. Additional comments:

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US2009/066817

Box No. V **Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Claims	6, 7, 9, 10, 15-27, 32	YES
	Claims	1-5, 8, 11-14, 28-31, 33, 34	NO
Inventive step (IS)	Claims	None	YES
	Claims	1-34	NO
Industrial applicability (IA)	Claims	1-34	YES
	Claims	None	NO

2. Citations and explanations:

Claims 1-5, 8 and 11-14 lack novelty under PCT Article 33(2) as being anticipated by Jones et al.
Referring to claims 1-5, 8 and 11-14, Jones et al disclose [Cl. 1] a seat attachment (see Fig. 1) for a stroller (10), comprising: an attachment frame member (2, 4, 8) comprising a connector portion (14) capable of connecting to a stroller frame (12); and a seat support element (20) capable of supporting a seat (22); [Cl. 2] comprising: a wheel (6); [Cl. 3] further comprising a wheel support frame (30) connecting the wheel (6) to the attachment frame member (2, 4, 8); [Cl. 4] wherein the wheel support frame (30) is pivotally connected to the attachment frame member (2, 4, 8); [Cl. 5] wherein the wheel support frame (30) is pivotally connected near the middle of the attachment frame member (2, 4, 8) (30 is pivotally connected to the middle portions of the sides of platform member 2 when viewed from the side, see Fig. 2); [Cl. 8] wherein the wheel support frame (30) is capable of pivoting from a first position to a second position (30 appears to be a 360 degree pivotable caster wheel); [Cl. 11] wherein the attachment frame member (2, 4, 8) has a first end (8) and a second end (4); [Cl. 12] wherein the first end (8) is capable of connecting to a stroller frame (12); [Cl. 13] wherein the second end (4) is connected to the seat attachment member (20); [Cl. 14] wherein the seat support element (20) is capable of supporting a seat (22) in either a forward (see Fig. 1) or backward position (20 may be attached in a reversed direction which would allow the child to sit in reverse direction and be able to place their feet on platform 2).

Claims 28-31, 33 and 34 lack novelty under PCT Article 33(2) as being anticipated by Maciejczyk.
Referring to claims 28-31, 33 and 34, Maciejczyk discloses [Cl. 28] a stroller (200), comprising: a frame (230, 240); at least one front wheel (210); at least one rear wheel (220) ; a stroller seat (260); and a seat attachment portion (100) capable of supporting a second seat (110) in front of the stroller seat (260); [Cl. 29] wherein the seat attachment portion (100) comprises two seat connectors (120, 130); [Cl. 30] wherein the seat attachment portion (100) is removably connected to the frame (230, 240); [Cl. 31] wherein the seat attachment portion (100) comprises two portions (120, 130) each comprising one seat connector (seat 110 would be supported by two attachment portions 100, one on each side of the stroller); [Cl. 33] wherein the second seat (110) is a stroller seat (110 is a toddler seat so that would be considered a stroller seat as well); [Cl. 34] wherein the second seat (110) is integral to the seat attachment portion (100) (Figs. 2 and 3 show the seat be connected directly to first support element 120).

Claims 6, 7, 9, 10 and 15 lack an inventive step under PCT Article 33(3) as being obvious over Jones et al in view of Maciejczyk.
Referring to claims 6, 7, 9, 10 and 15, Jones et al disclose the seat attachment for stroller of claims 1, 5 and 8 and [Cl. 15] wherein the seat support element (20) is capable of supporting the seat (22) in either a forward or backward position (20 may be attached in a reversed direction which would allow the child to sit in reverse direction and be able to place their feet on platform 2), but fails to disclose [Cl. 6] further comprising a folding mechanism; [Cl. 7] wherein the folding mechanism comprises a sliding connector slidingly connected to the attachment frame member and a strut having a first end connected to the sliding member and a second end connected to the wheel support frame; [Cl. 9] wherein the first position is a locked and in-use position and the second position is an unlocked and folded position; [Cl. 10] wherein the seat is a baby seat, a car seat, a stroller seat, a bassinet, or a pram; [Cl. 15] further comprising a stroller seat.
However, Maciejczyk disclose a stroller seat attachment [Cl. 6] further comprising a folding mechanism (500) (see Figs. 8 and 9); [Cl. 7] wherein the folding mechanism (500) comprises a sliding connector (523) slidingly connected to the attachment frame member (230) and a strut (530) having a first end (531) connected to the sliding member (523) and a second end (540) connected to the wheel support frame (230) (both ends of strut 530 are connected to wheel support frame 230 either directly or indirectly, see Figs 8 and 9); [Cl. 9] wherein the first position (see Fig. 8) is a locked and in-use position (a child could be placed in seat) and the second position (see Fig. 9) is an unlocked and folded position; [Cl. 10] wherein the seat (110) is a stroller seat (110 is a toddler seat so that would be considered a stroller seat as well); [Cl. 15] further comprising a stroller seat (110 is a toddler seat so that would be considered a stroller seat as well).
It would have been obvious to a person of ordinary skill at the time of the invention to use the seat attachment for a stroller of Jones et al and the folding mechanism and the stroller seat of Maciejczyk in order to provide a reliable means of being able to easily collapse a stroller with an attached seat so the stroller can easily be collapsed to place in the trunk of a car but still be able to safely secure the additional child when in use.

Continued on Supplemental Box

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US2009/066817

Supplemental Box

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

Claims 16-23 lack an inventive step under PCT Article 33(3) as being obvious over Jones et al in view of Huang.
Referring to claims 16-23, Jones et al disclose [Cl. 16] a stroller (10), comprising: a stroller frame (12) comprising wheels (see Fig. 6), a frame (12), a first seat (not labeled, see Fig. 6) and an attachment frame member (8) connected to the frame (12); a seat attachment (2, 4) comprising a wheel (6), a second seat (22), and a connector portion (14) capable of connecting to the attachment frame member (12); [Cl. 17] wherein the connector portion (14) is capable of being releasably connected to the attachment frame member (8) (attachment structure 107 may be attached or directly connected to arm 8, Para [0048]); [Cl. 18] wherein the second seat (22) is releasably connected to the seat support element (20); [Cl. 19] wherein the seat support element (20) is capable of supporting the second seat (22)in either a forward (see Fig. 1) or backward position (20 may be attached in a reversed direction which would allow the child to sit in reverse direction and be able to place their feet on platform 2); [Cl. 20] stroller (10), comprising: a first seat attachment (2, 4, 8) capable of removably supporting a child seat (22); and a second seat attachment (12) capable of supporting a child seat (stroller seat is supported by frame member 12); [Cl. 21] wherein each seat attachment (8) comprises two seat connector portions (14); [Cl. 22] wherein the child seat (stroller seat is supported by frame member 12) is one of a stroller seat (see Fig. 6); [CL. 23] comprising a frame (12), wherein the frame (12) comprises a handle portion (11), a front wheel support portion (see Fig. 11e) and a back wheel support portion (see Fig. 11e); but fails to disclose [Cl. 16] a double stroller; [Cl. 20] a double stroller.
However, Huang discloses a locking device for a front seat of a double stroller wherein [Cl. 16] a double stroller (see Fig. 1); [Cl. 20] a double stroller (see Fig. 1).
It would have been obvious to a person of ordinary skill at the time of the invention to use the seat attachment for a stroller of Jones et al and the double stroller of Huang in order to provide a reliable means of being able to safely transport more than 2 children by adding a additional seat to a double stroller.

Claims 24-27 lack an inventive step under PCT Article 33(3) as being obvious over Jones et al in view of Huang in view of Maciejczyk.
Referring to claims 24-27, Jones et al and Huang disclose the double stroller of claim 23, [Cl. 26] wherein the second seat attachment (22 of Jones et al) is adjacent to the handle portion (11 of Jones et al); but fails to disclose [Cl. 24] wherein a first seat attachment is adjacent to the front wheel support portion; [Cl. 25] wherein the first seat attachment is above at least one front wheel connected to the wheel support portion; [Cl. 27], further comprising a folding mechanism that connects the handle portion, the front wheel support portion, and the back wheel support portion.
However, Maciejczyk disclose a stroller seat attachment [Cl. 24] wherein a first seat attachment (100) is adjacent to the front wheel support portion (230); [Cl. 25] wherein the first seat attachment (100) is above at least one front wheel (210) connected to the wheel support portion (230); [Cl. 27], further comprising a folding mechanism (500) that connects the handle portion (210), the front wheel support portion (230), and the back wheel support portion (240) (mounting arrangement 500 is connected to portion 230 which is connected to handle portion 210 and back wheel support 240).
It would have been obvious to a person of ordinary skill at the time of the invention to use the double stroller of Jones et al and Huang and the seat attachment is placed on the front portion of the stroller in order to provide a reliable means of being able to safely transport more than 2 children by adding a additional seat to a double stroller, without the additional seat interfering with the person pushing the stroller.

Claim 32 lack an inventive step under PCT Article 33(3) as being obvious over Maciejczyk in view of Haeggberg.
Referring to claim 32, Maciejczyk discloses the stroller of claim 30, but fails to disclose [Cl. 32] wherein the frame comprises a sleeve for removably connecting the seat attachment portion to the frame.
However, Haeggberg discloses a stroller trailer [Cl. 32] wherein the frame (2) comprises a sleeve (18) for removably connecting the seat attachment portion (35) to the frame (2) (see Fig. 6a, holders 34 act as a sleeve for ball 35 of seat attachment portion).
It would have been obvious to a person of ordinary skill at the time of the invention to use the stroller of Maciejczyk and the sleeve attachment means of Haeggberg in order to provide a reliable means of attaching the seat attachment to the stroller that would require minimum effort to securely attach the additional seat.

Claims 1-34 meet the criteria set out in PCT Article 33(4), and thus have industrial applicability because the subject matter claimed can be made or used in industry.

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1. CN114475760 - BABY CARRIAGE WITH LIFTABLE SEAT

Office
China

Application Number
202210231907.3

Application Date
09.03.2022

Publication Number
114475760

Publication Date
13.05.2022

Publication Kind
A

IPC
B62B 9/10 B62B 9/12

CPC
B62B 9/102 B62B 9/12

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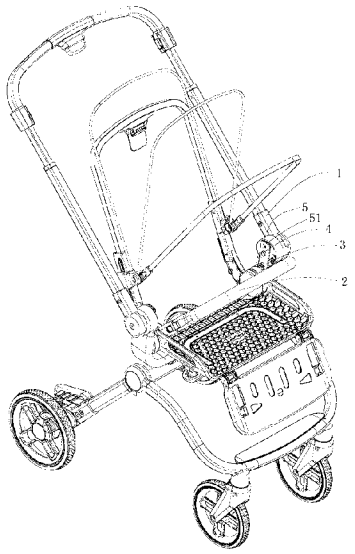
中山市捷凯专利商标代理事务所(特殊普通合伙) 44327

Title
[EN] Baby carriage with liftable seat
[ZH] 一种座椅可升降的童车



Abstract

[EN] The invention belongs to the technical field of baby carriages, and particularly relates to a baby carriage with a liftable seat. Comprising a baby carriage frame and a seat frame connected with the baby carriage frame. The seat frame can move relative to the baby carriage frame along the joint; a clamping and locking assembly for locking the seat frame relative to the baby carriage frame is arranged on the seat frame or the baby carriage frame; after the clamping and locking assembly is unlocked, the seat frame can move relative to the baby carriage frame so as to change the position of the seat frame in the height direction. By designing the mode that the seat frame moves up and down relative to the baby carriage frame, lifting of the seat frame is achieved, so that the baby carriage can be used by guardians of different heights or children of different heights, and more requirements of baby carriage products in actual use are met.

[ZH] 本发明属于童车的技术领域，尤其涉及一种座椅可升降的童车。包括童车车架、与所述童车车架连接的座椅架；所述座椅架可沿连接处相对所述童车车架移动；所述座椅架或童车车架上设有使所述座椅架相对童车车架锁紧的卡锁组件；所述卡锁组件解锁后，座椅架可相对童车车架移动，以改变座椅架在高度方向上的位置。通过设计座椅架相对童车车架上下移动的方式，实现座椅架的升降，从而满足不同身高的监护人或者不同身高的儿童的使用，满足童车产品在实际使用使得更多需求。

(19)国家知识产权局

(12)发明专利申请

(10)申请公布号 CN 114475760 A
(43)申请公布日 2022.05.13

(21)申请号 202210231907.3

(22)申请日 2022.03.09

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专利代理师 杨连华

(51)Int.Cl.
B62B 9/10(2006.01)
B62B 9/12(2006.01)

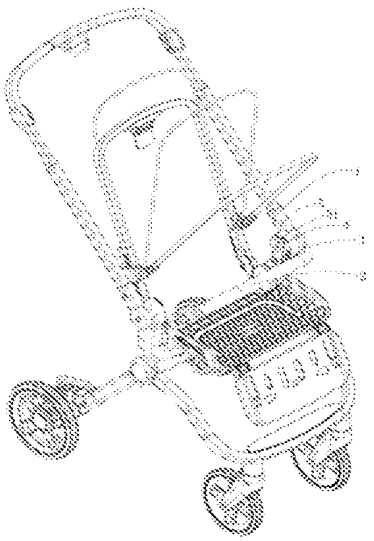
权利要求书1页 说明书5页 附图8页

(54)发明名称

一种座椅可升降的童车

(57)摘要

本发明属于童车的技术领域，尤其涉及一种座椅可升降的童车。包括童车车架、与所述童车车架连接的座椅架；所述座椅架可沿连接处相对所述童车车架移动；所述座椅架或童车车架上设有使所述座椅架相对童车车架锁紧的卡锁组件；所述卡锁组件解锁后，座椅架可相对童车车架移动，以改变座椅架在高度方向上的位置。通过设计座椅架相对童车车架上下移动的方式，实现座椅架的升降，从而满足不同身高的监护人或者不同身高的儿童的使用，满足童车产品在实际使用使得更多需求。



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1.一种座椅可升降的童车，其特征在于，包括童车车架(1)、与所述童车车架(1)连接的座椅架(2)；

所述座椅架(2)可沿连接处相对所述童车车架(1)移动；

所述座椅架(2)或童车车架(1)上设有使所述座椅架(2)相对童车车架(1)锁紧的卡锁组件(3)；

所述卡锁组件(3)解锁后，座椅架(2)可相对童车车架(1)移动，以改变座椅架(2)在高度方向上的位置。

2.根据权利要求1所述的一种座椅可升降的童车，其特征在于，所述童车车架(1)在与所述座椅架(2)连接处上设有多个卡锁键位(4)，多个所述卡锁键位(4)间隔设置，所述卡锁组件(3)与所述卡锁键位(4)配合，使所述座椅架(2)固定在不同的高度位置。

3.根据权利要求2所述的一种座椅可升降的童车，其特征在于，所述童车车架(1)在与所述座椅架(2)连接处还设有滑轨(5)，所述座椅架(2)连接在所述滑轨(5)上。

4.根据权利要求3所述的一种座椅可升降的童车，其特征在于，所述卡锁键位(4)设于所述滑轨(5)上，且多个卡锁键位(4)沿滑轨(5)长度方向间隔设置。

5.根据权利要求3所述的一种座椅可升降的童车，其特征在于，所述滑轨(5)的上端为自由端(51)，所述座椅架(2)可从滑轨(5)的自由端(51)滑出，使座椅架(2)从童车车架(1)上拆卸。

6.根据权利要求4所述的一种座椅可升降的童车，其特征在于，所述童车车架(1)包括下车架(11)以及上车架(12)；

所述上车架(12)连接在所述下车架(11)上，所述座椅架(2)连接在所述上车架(12)上。

7.根据权利要求6所述的一种座椅可升降的童车，其特征在于，所述上车架(12)下端连接有U型架(121)，所述U型架(121)两侧的内侧面上设有所述的滑轨(5)。

8.根据权利要求7所述的一种座椅可升降的童车，其特征在于，所述U型架(121)中部下端与所述下车架(11)转动连接，且所述U型架(121)可绕转动连接处相对下车架(11)水平转动。

9.根据权利要求4所述的一种座椅可升降的童车，其特征在于，所述座椅架(2)两侧设有座椅铰接部(21)，所述座椅铰接部(21)上设有供所述滑轨(5)嵌入的滑槽(210)，所述卡锁组件(3)设于所述座椅铰接部(21)上，且所述滑槽(210)内设有与所述卡锁键位(4)配合的卡口(211)。

10.根据权利要求9所述的一种座椅可升降的童车，其特征在于，所述卡锁组件(3)包括设于座椅铰接部(21)上且一端位于座椅铰接部(21)外侧的解锁按钮(31)、设于所述解锁按钮(31)上且位于座椅铰接部(21)上的复位弹簧，所述解锁按钮(31)的下端与卡口(211)相对，且通过按压所述解锁按钮(31)可使其下端移动至卡口(211)内；

所述卡锁键位(4)为设于滑轨(5)上且可回缩的卡销，所述卡销可卡入至所述卡口(211)内，所述解锁按钮(31)移动至卡口(211)内时，可使所述卡销回缩。

一种座椅可升降的童车

技术领域

[0001] 本发明属于童车的技术领域，尤其涉及一种座椅可升降的童车。

背景技术

[0002] 童车是一种为婴儿户外活动提供便利而设计的工具车，而童车为了方便运输以及携带，一般在结构上会设置成折叠式或座椅拆卸式；

[0003] 故现有的童车座椅都是固定或拆卸安装的，也有一些为了使得折叠后整体空间更少，座椅可随车架一同折叠，但这导致了座椅也是固定，无法对座椅的高度进行调节，而对于监护人的不同身高，其将婴儿抱入或抱离座椅，若座椅太低，则需要弯腰角度更大，容易伤到腰部。

发明内容

[0004] 本发明的目的在于提供一种座椅可升降的童车，通过设计座椅架相对童车车架上下移动的方式，实现座椅架的升降，从而满足不同身高的监护人或者不同身高的儿童的使用，满足童车产品在实际使用使得更多需求。

[0005] 基于此，本发明提供一种座椅可升降的童车，包括童车车架、与所述童车车架连接的座椅架；

[0006] 所述座椅架可沿连接处相对所述童车车架移动；

[0007] 所述座椅架或童车车架上设有使所述座椅架相对童车车架锁紧的卡锁组件；

[0008] 所述卡锁组件解锁后，座椅架可相对童车车架移动，以改变座椅架在高度方向上的位置。

[0009] 如上所述的一种座椅可升降的童车，所述童车车架在与所述座椅架连接处上设有多个卡锁键位，多个所述卡锁键位间隔设置，所述卡锁组件与所述卡锁键位配合，使所述座椅架固定在不同的高度位置。

[0010] 如上所述的一种座椅可升降的童车，所述童车车架在与所述座椅架连接处还设有滑轨，所述座椅架连接在所述滑轨上。

[0011] 如上所述的一种座椅可升降的童车，所述卡锁键位设于所述滑轨上，且多个卡锁键位沿滑轨长度方向间隔设置。

[0012] 如上所述的一种座椅可升降的童车，所述滑轨的上端为自由端，所述座椅架可从滑轨的自由端滑出，使座椅架从童车车架上拆卸

[0013] 如上所述的一种座椅可升降的童车，所述童车车架包括下车架以及上车架；

[0014] 所述上车架连接在所述下车架上，所述座椅架连接在所述上车架上。

[0015] 如上所述的一种座椅可升降的童车，所述上车架下端连接有U型架，所述U型架两侧的内侧面上设有所述的滑轨。

[0016] 如上所述的一种座椅可升降的童车，所述U型架中部下端与所述下车架转动连接，且所述U型架可绕转动连接处相对下车架水平转动。

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[0017] 如上所述的一种座椅可升降的童车，所述座椅架两侧设有座椅铰接部，所述座椅铰接部上设有供所述滑轨嵌入的滑槽，所述卡锁组件设于所述座椅铰接部上，且所述滑槽内设有与所述卡锁键位配合的卡口。

[0018] 如上所述的一种座椅可升降的童车，所述卡锁组件包括设于座椅铰接部上且一端位于座椅铰接部外侧的解锁按钮、设于所述解锁按钮上且位于座椅铰接部上的复位弹簧，所述解锁按钮的下端与卡口相对，且通过按压所述解锁按钮可使其下端移动至卡口内；

[0019] 所述卡锁键位为设于滑轨上且可回缩的卡销，所述卡销可卡入至所述卡口内，所述解锁按钮移动至卡口内时，可使所述卡销回缩。

[0020] 实施本发明实施例，具有如下有益效果：

[0021] 1、本发明提供了一种座椅可升降的童车，通过设计座椅架相对童车车架上下移动的方式，实现座椅架的升降，从而满足不同身高的监护人或者不同身高的儿童的使用，满足童车产品在实际使用使得更多需求。

[0022] 2、本发明一种座椅可升降的童车，采用多级调节的方式实现童车座椅的升降位置调节，整体结构简单，易于操作。

[0023] 3、本发明一种座椅可升降的童车，座椅架不仅可升降调节，还配合扶手架，可以转动换向，满足童车产品更多的使用需求。

附图说明

[0024] 为了更清楚地说明本申请实施例中的技术方案，下面将对实施例描述中所需要使用的附图作简单地介绍，显而易见地，下面描述中的附图仅仅是本申请的一些实施例，对于本领域普通技术人员来讲，在不付出创造性劳动的前提下，还可以根据这些附图获得其他的附图。

[0025] 图1为本发明实施例提供的一种座椅可转动的童车的结构示意图；

[0026] 图2为图1中座椅架下降后的姿态示意图；

[0027] 图3为图1中座椅铰接部的结构示意图；

[0028] 图4为图1中U型架内侧的结构示意图。

[0029] 图5为图1的扶手架解锁时的姿态示意图；

[0030] 图6为图1的转动后的姿态示意图；

[0031] 图7为图1转动后使用姿态示意图(扶手架复位)；

[0032] 图8为图1中U型架与周围结构的爆炸图一；

[0033] 图9为图1中U型架与周围结构的爆炸图二。

具体实施方式

[0034] 下面将结合本发明实施例中的附图，对本发明实施例中的技术方案进行清楚、完整地描述，显然，所描述的实施例仅仅是本发明一部分实施例，而不是全部的实施例。基于本发明中的实施例，本领域普通技术人员在没有作出创造性劳动前提下所获得的所有其他实施例，都属于本发明保护的范围。

[0035] 如图1至图4所示，本发明实施例提供一种座椅可升降的童车，所述座椅架2可沿连接处相对所述童车车架1移动；所述座椅架2或童车车架1上设有使所述座椅架2相对童车车

架1锁紧的卡锁组件3；所述卡锁组件3解锁后，座椅架2可相对童车车架1移动，以改变座椅架2在高度方向上的位置。通过设计座椅架2相对童车车架1上下移动的方式，实现座椅架的升降，从而满足不同身高的监护人或者不同身高的儿童的使用，满足童车产品在实际使用使得更多需求。

[0036] 进一步地，所述童车车架1在与所述座椅架2连接处上设有多个卡锁键位4，多个所述卡锁键位4间隔设置，所述卡锁组件3与所述卡锁键位4配合，使所述座椅架2固定在不同的高度位置。本方案通过设置多个卡锁键位4的结构，实现多级高度调节。

[0037] 另外，本方案为了使得升降使更为流畅，所述童车车架1在与所述座椅架2连接处还设有滑轨5，所述座椅架2连接在所述滑轨5上。

[0038] 而且，所述卡锁键位4设于所述滑轨5上，且多个卡锁键位4沿滑轨5长度方向间隔设置。其结构简单，便于装配和使用。

[0039] 本发明实施例中，所述滑轨5的上端为自由端51，所述座椅架2可从滑轨5的自由端51滑出，使座椅架2从童车车架1上拆卸。这样不仅座椅架可以升降调节，还可拆卸，满足童车产品现有便于携带、收纳的需求。

[0040] 具体而言，所述童车车架1包括下车架11以及上车架12；所述上车架12连接在所述下车架11上，所述座椅架2连接在所述上车架12上。当然，座椅架也可直接设于下车架上。本方案设置在上车架上是为了使得整体结构更为简单。

[0041] 而且，所述上车架12下端连接有U型架121，所述U型架121两侧的内侧面上设有所述的滑轨5。其结构简单，方便升降。

[0042] 本方案中，座椅架升降调节中卡锁组件3的具体结构为：所述座椅架2两侧设有座椅铰接部21，所述座椅铰接部21上设有供所述滑轨5嵌入的滑槽210，所述卡锁组件3设于所述座椅铰接部21上，且所述滑槽210内设有与所述卡锁键位4配合的卡口211。

[0043] 具体地，如图3、图4所示，所述卡锁组件3包括设于座椅铰接部21上且一端位于座椅铰接部21外侧的解锁按钮31、设于所述解锁按钮31上且位于座椅铰接部21上的复位弹簧，所述解锁按钮31的下端与卡口211相对，且通过按压所述解锁按钮31可使其下端移动至卡口211内；

[0044] 所述卡锁键位4为设于滑轨5上且可回缩的卡销，所述卡销可卡入至所述卡口211内，所述解锁按钮31移动至卡口211内时，可使所述卡销回缩。通过简单的结构，即可实现座椅架的升降调节以及拆卸。

[0045] 又进一步地，所述U型架121中部下端与所述下车架11转动连接，且所述U型架121可绕转动连接处相对下车架11水平转动。满足童车更多的使用需求。

[0046] 如图5至图9所示，具体结构为：所述上车架12包括U型架121、与所述U型架121铰接的扶手架122，所述U型架121与所述下车架11连接，且所述U型架121可绕转动连接处相对下车架11水平转动；所述扶手架122与U型架121铰接处设有铰接锁紧件6，所述U型架121与下车架11连接处设有转动锁紧件7；解锁所述铰接锁紧件6后，所述扶手架122可相对U型架121转动，并且在转动一定角度后，解锁所述转动锁紧件7，所述上车架12连同座椅架2即可相对所述下车架11水平转动。本方案通过联动解锁的方式，使得转动的解锁更为便捷，在解锁扶手架后，通过扶手架转动至一定角度，即可解锁转动锁紧件，整个过程操作简单。上车架相对下车架转动，从而带动座椅架转动，实现座椅架的换向。满足童车产品更多的使用需求。

[0047] 进一步地，本发明实施例中，所述扶手架122相对所述U型架121转动至垂直方向时，解锁所述转动锁紧件7。通过设置合理的转动角度，设置解锁位置在垂直方向上，方便转动时，扶手架在空间上的位置更少，方便操作。

[0048] 另外，所述下车架11上设有转座8，所述U型架121与所述转座8配合连接，所述转座8上设有定位口801，所述U型架121相对所述转座8转动180°或360°时，所述转动锁紧件7与所述定位口801配合，使所述U型架121卡锁。根据实际所需，本方案设定座椅的转向后的定位在180°或360°，由于转动至侧面朝向的作用并不大，故为了简化操作，本方案直接设定好转动的定位角度，从而方便操作。

[0049] 本方案具体的结构为：所述U型架121两侧上设有连接座1210，所述扶手架122两侧上设有与所述连接座1210配合的扶手架铰接座1221，所述铰接锁紧件6设于所述扶手架铰接座1221内以阻挡所述扶手架铰接座1221相对所述连接座1210转动；所述扶手架122上设有第一解锁组件91，通过按压所述第一解锁组件91可解锁所述铰接锁紧件6。本方案中，所述第一解锁组件91可采用解锁按钮联动钢绳的结构，通过按压解锁按钮，从而通过钢绳联动铰接锁紧件6，使其解锁。

[0050] 又具体第，所述铰接锁紧件6包括：第一卡锁件61，设于所述扶手架铰接座1221以及连接座1210之间，用以限制所述扶手架铰接座1221相对连接座1210转动；移动插块62，设于所述扶手架铰接座1221与所述第一卡锁件61连接，可相对所述扶手架铰接座1221移动，且移动时带动所述第一卡锁件61向扶手架铰接座1221方向移动，以脱离所述连接座1210，使所述扶手架铰接座1221可相对所述连接座1210转动。接上述第一解锁组件，通过钢绳连接移动插块62，当移动插块62移动时，带动第一卡锁件61移动，从而解除锁定。

[0051] 本方案中，所述第一卡锁件61周测设有卡齿，扶手架铰接座1221以及连接座1210上相对的侧面上均设有与第一卡锁件61卡齿啮合的配合卡齿，通过卡齿对接，使得扶手架铰接座1221与连接座1210相对锁定，而解锁时，第一卡锁件61脱离连接座1210上的配合卡齿，从而实现解锁。

[0052] 再具体地，在本方案中，所述移动插块62上设有卡柱，所述第一卡锁件61上设有供所述卡柱卡入的斜槽611，通过卡柱与斜槽的配合，使得向扶手架方向移动的移动插块62，带动第一卡锁件61向扶手架铰接座1221方向移动。

[0053] 本发明实施例中，所述U型架121下端还设有与所述转座8配合的转盘81，所述转动锁紧件7包括设于所述转盘81上设卡锁插块71，所述卡锁插块71一端伸出至所述转盘81外与所述定位口801配合，使所述转盘81与转座8卡锁；

[0054] 转动锁紧件的具体结构为：所述转动锁紧件7还包括联动解锁件72以及连接在所述联动解锁件72以及卡锁插块71之间的连接绳，所述联动解锁件72设于所述连接座1210内，所述扶手架铰接座1221上还设有顶块12210，当所述扶手架铰接座1221相对连接座1210转动至顶块12210与联动解锁件72接触时，推动联动解锁件72，且联动解锁件72通过连接绳带动卡锁插块71脱离所述定位口801。且卡锁插块71上设有复位弹簧，方便连接绳在不拉扯卡锁插块71的情况下，具有往外伸的趋势。另外，联动解锁件72上也设有复位弹簧。

[0055] 本方案中，在转座8的两侧设有定位口801，而卡锁插块71也分别在转座8两侧设置，对应两侧的扶手架铰接座1221联动解锁。

[0056] 又进一步第，还包括扶手架定位组件82，所述转座8的一侧上设有定位缺口820；所

述扶手架定位组件82包括设于所述转盘81上且位于转盘81两侧的第一定位件821和第二定位件822、分别设于两侧所述连接座1210上第一连接件823及第二连接件824，所述第一定位件821与第一连接件823通过连接绳连接，所述第二定位件822与第二连接件824通过连接绳连接；两侧所述的扶手架铰接座1221上还设有第一连接件823或第二连接件824卡入的限位槽12211，所述转盘81转动卡锁位置，所述第一定位件821或第二定位件822位于定位缺口820的一侧且伸入至所述定位缺口820内；所述第一定位件821或第二定位件822伸入定位缺口820内时，对应连接的第一连接件823或第二连接件824卡入至限位槽12211内；所述第一定位件821和第二定位件822的伸入端为弧形部，所述转盘81相对转座8转动时，通过该弧形部使第一定位件821或第二定位件822回缩，使对应连接的第一连接件823或第二连接件824脱离限位槽12211。该定位缺口820的作用在于，限制扶手架相对下车架水平转动(即座椅调转向后)，只能相对下车架向后转动。从而保证扶手架向后倾斜，满足童车安全规范需求。

[0057] 具体而言，正常情况下，第一定位件821插入至定位缺口820内，此时第一连接件823也卡在限位槽12211内，限位槽12211内沿扶手架铰接座1221周向开设，当扶手架相对下车架水平转动时，转盘81相对转座8转动，第一定位件821随转盘81转动，其弧形部与转座8接触使得被顶缩回转盘81内，此时第一定位件821在连接绳的带动下也回缩，脱离限位槽12211。

[0058] 而在扶手架转动到位后，比如第二定位件822回转至定位缺口820的位置，在复位弹簧的作用下，自动深入至定位缺口820，同样通过连接绳与其连接的第二连接件824也卡入至限位槽12211内，此时扶手架相对U型架转动的方向受限位槽12211限位，从而使得扶手架只能相对下车架向后转动，保持扶手架一直向后倾斜。

[0059] 应当理解的是，本发明中采用术语“第一”、“第二”等来描述各种信息，但这些信息不应限于这些术语，这些术语仅用来将同一类型的信息彼此区分开。例如，在不脱离本发明范围的情况下，“第一”信息也可以被称为“第二”信息，类似的，“第二”信息也可以被称为“第一”信息。此外，术语“中心”、“上”、“下”、“左”、“右”、“竖直”、“水平”、“内”、“外”等指示的方位或位置关系为基于附图所示的方位或位置关系，仅是为了便于描述本发明和简化描述，而不是指示或暗示所指的装置或元件必须具有特定的方位、以特定的方位构造和操作，因此不能理解为对本发明的限制。

[0060] 以上所述是本发明的优选实施方式，应当指出，对于本技术领域的普通技术人员来说，在不脱离本发明原理的前提下，还可以做出若干改进和变形，这些改进和变形也视为本发明的保护范围。

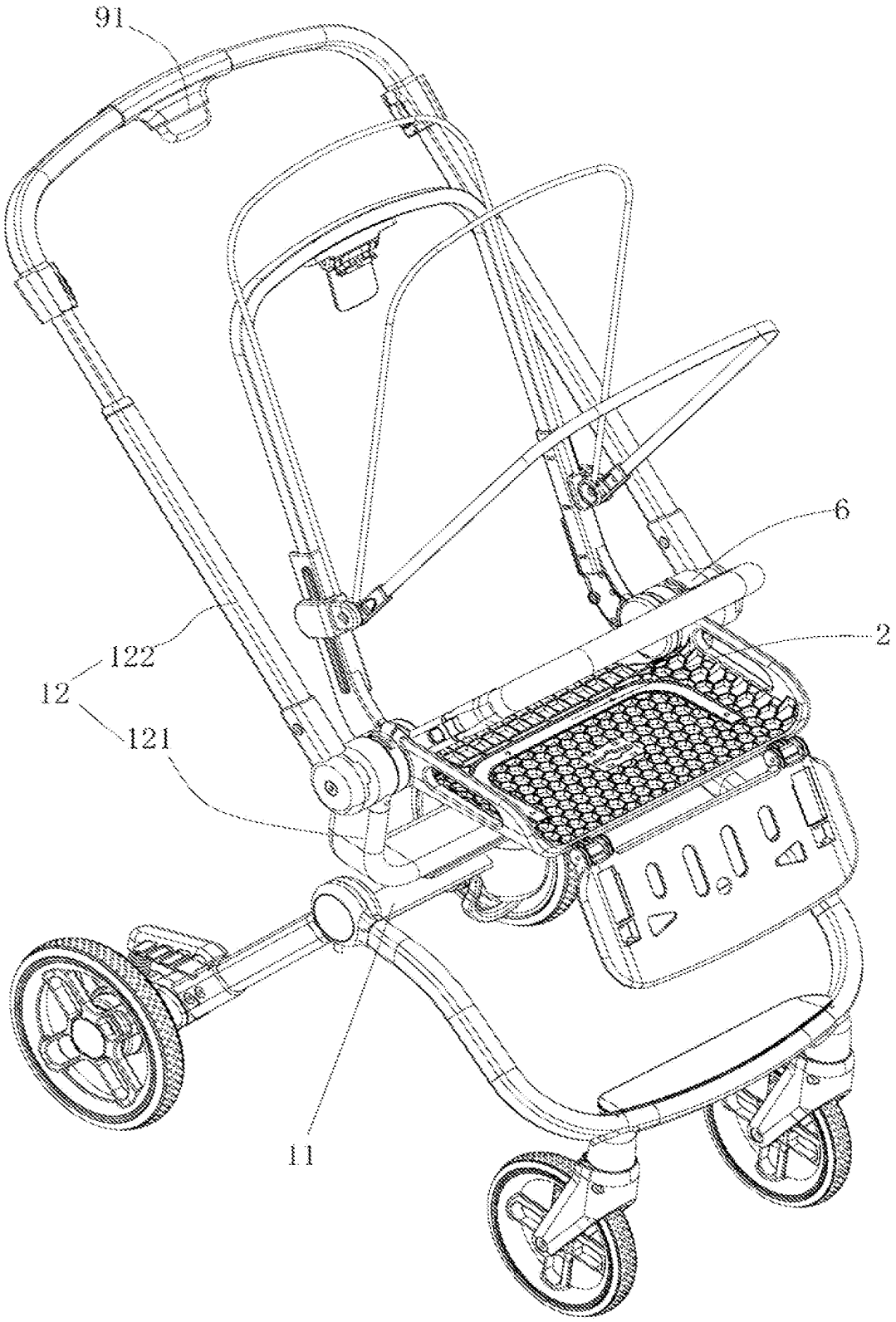

图1

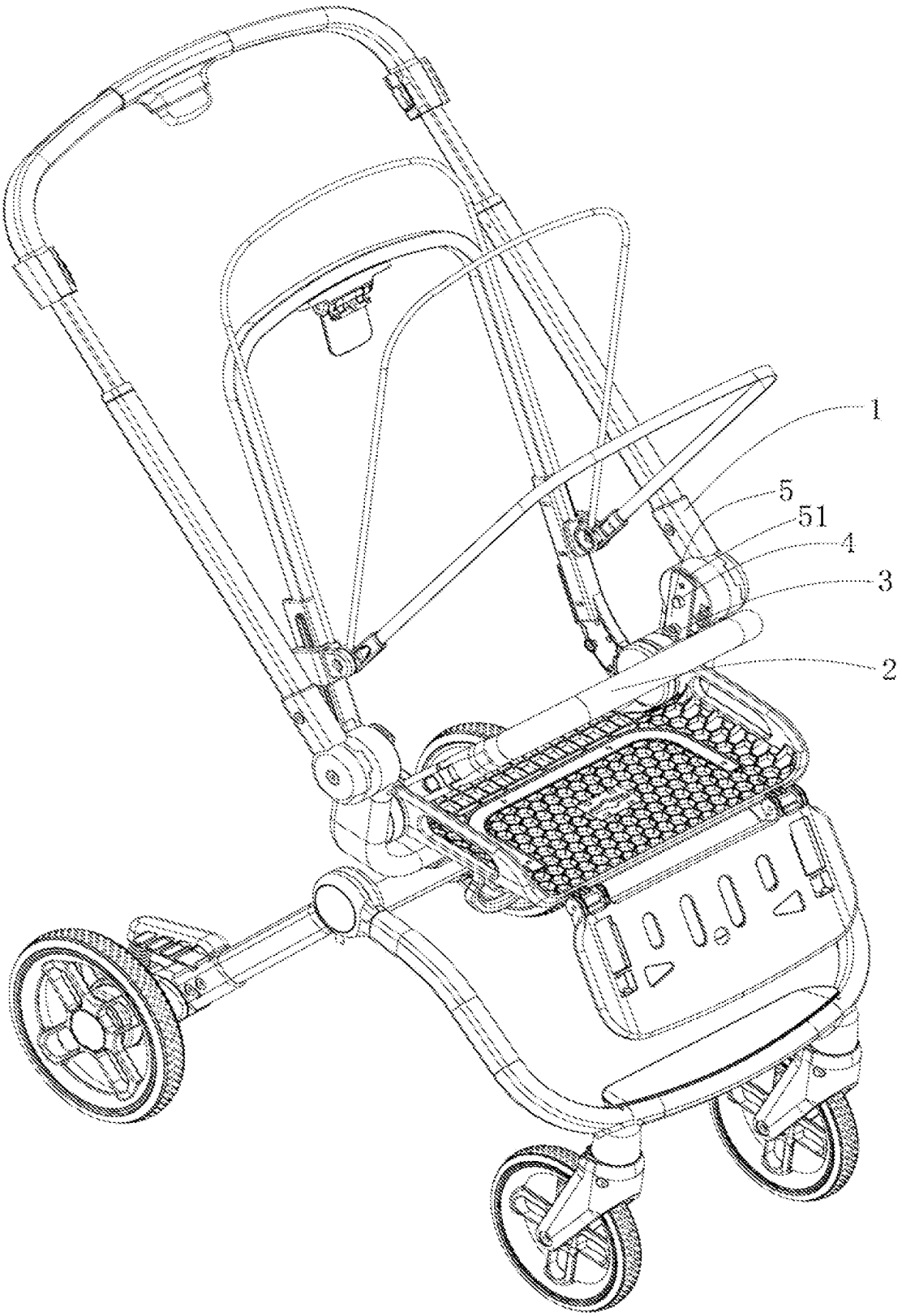

图2

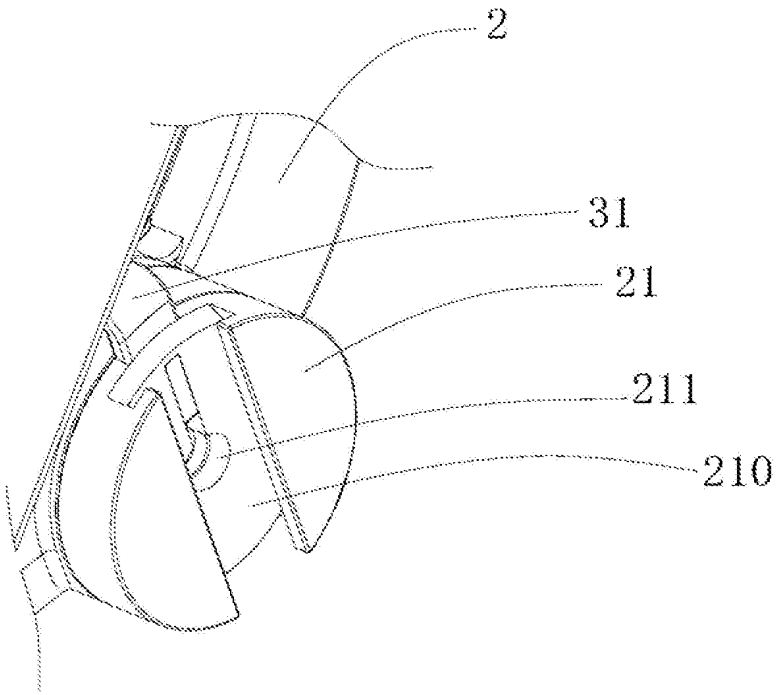

图3

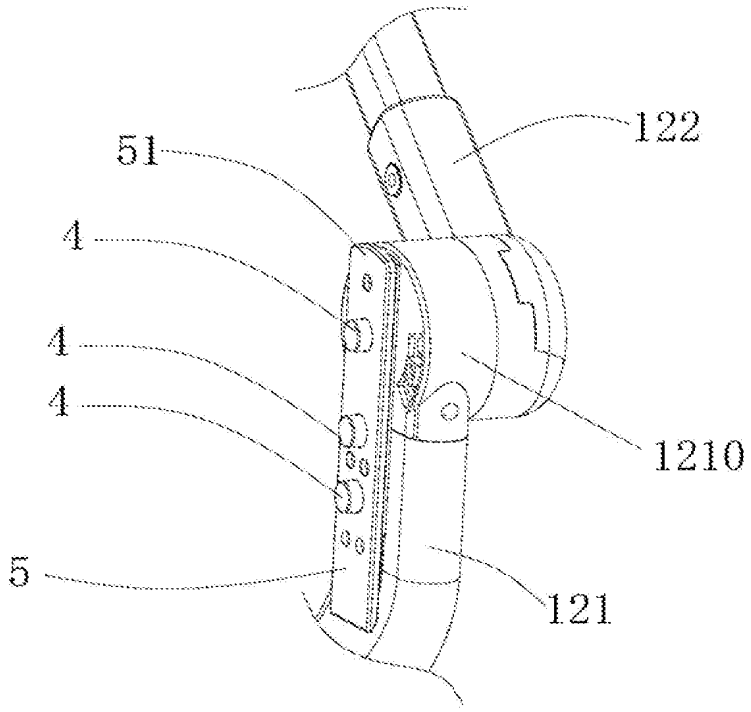

图4

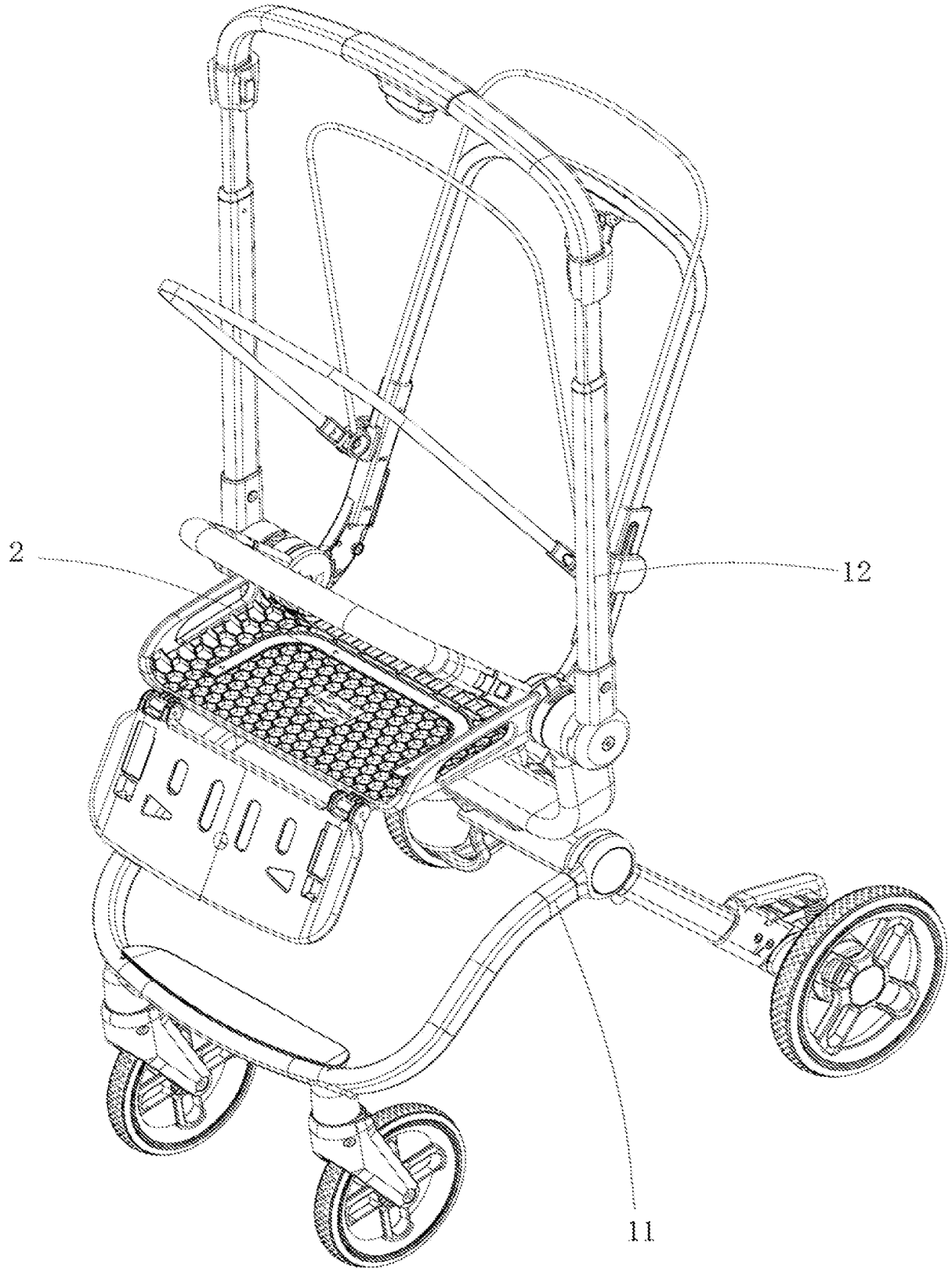

图5

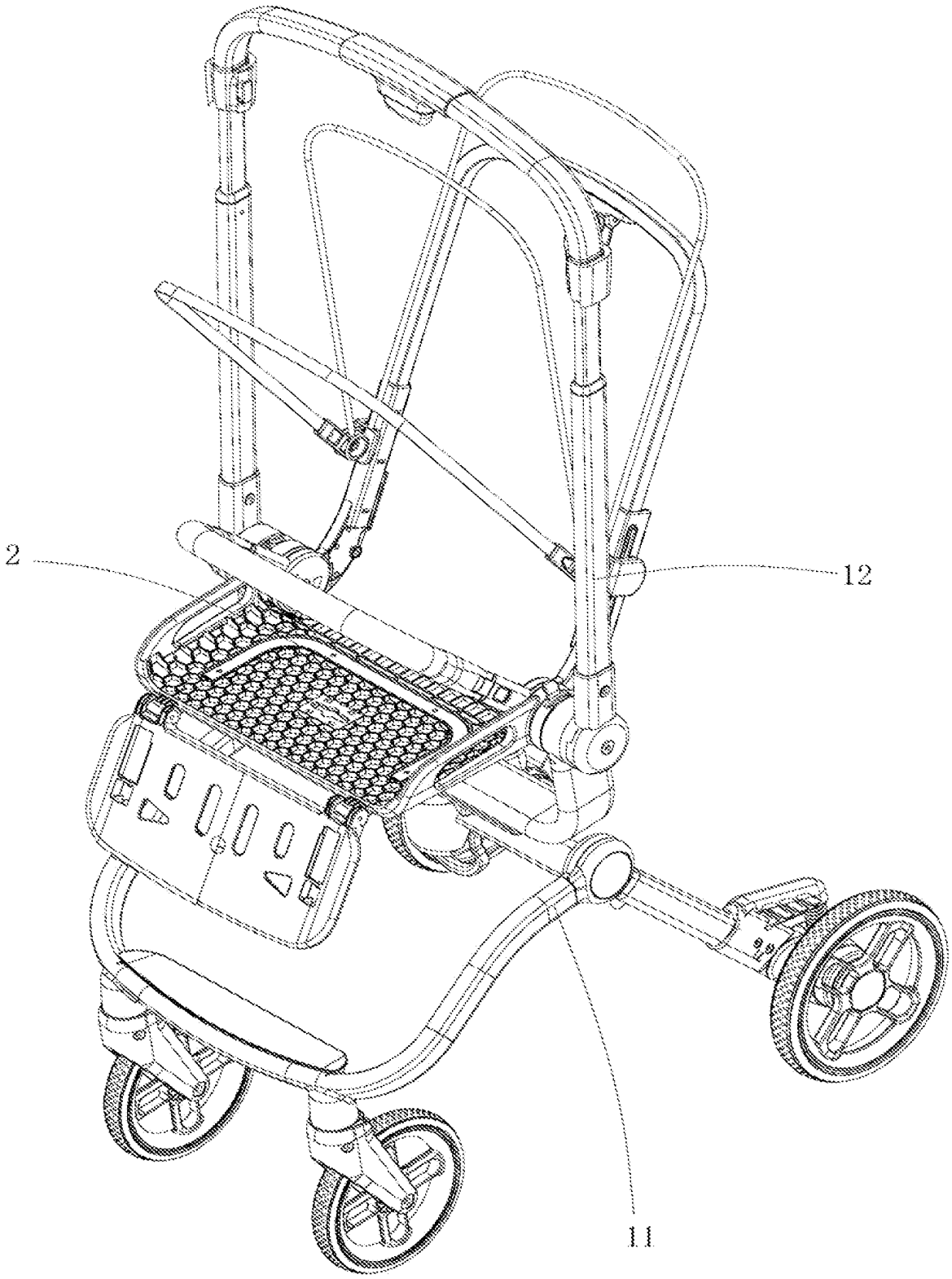

图6

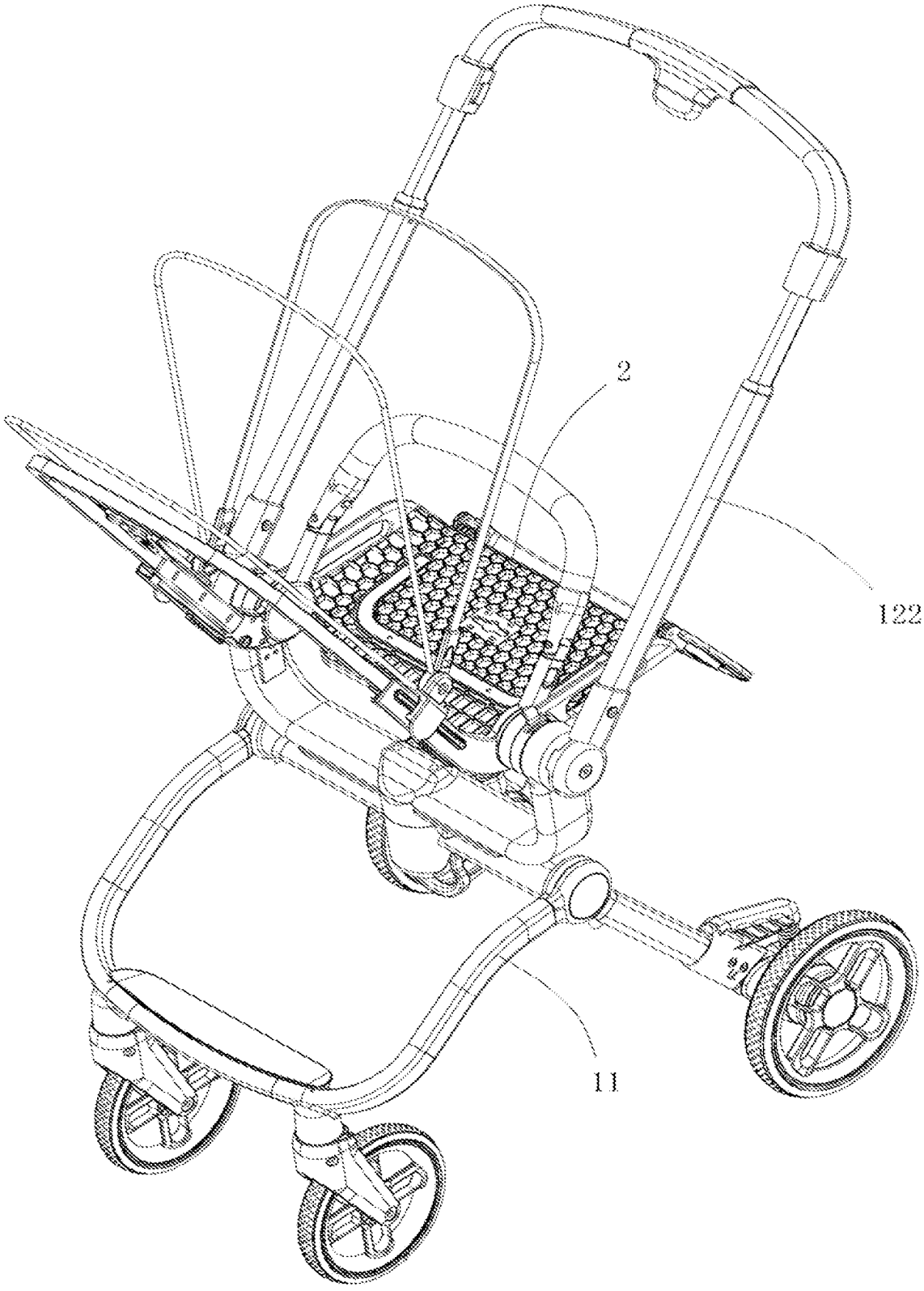

图7

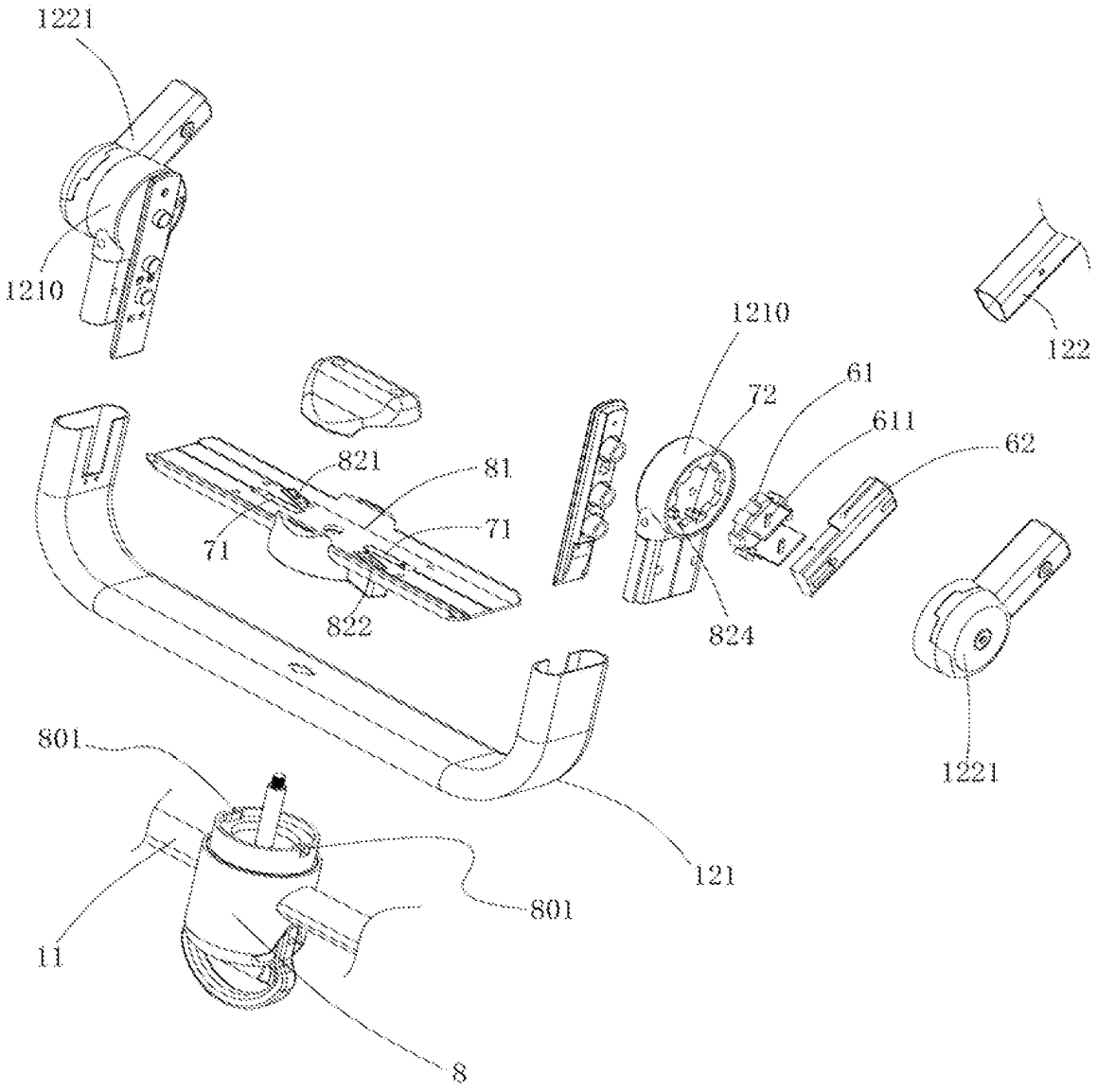
1221
1210
821
81
71
71
822
1210
72
61
611
62
824
122
1221
801
121
801
11
8

图8

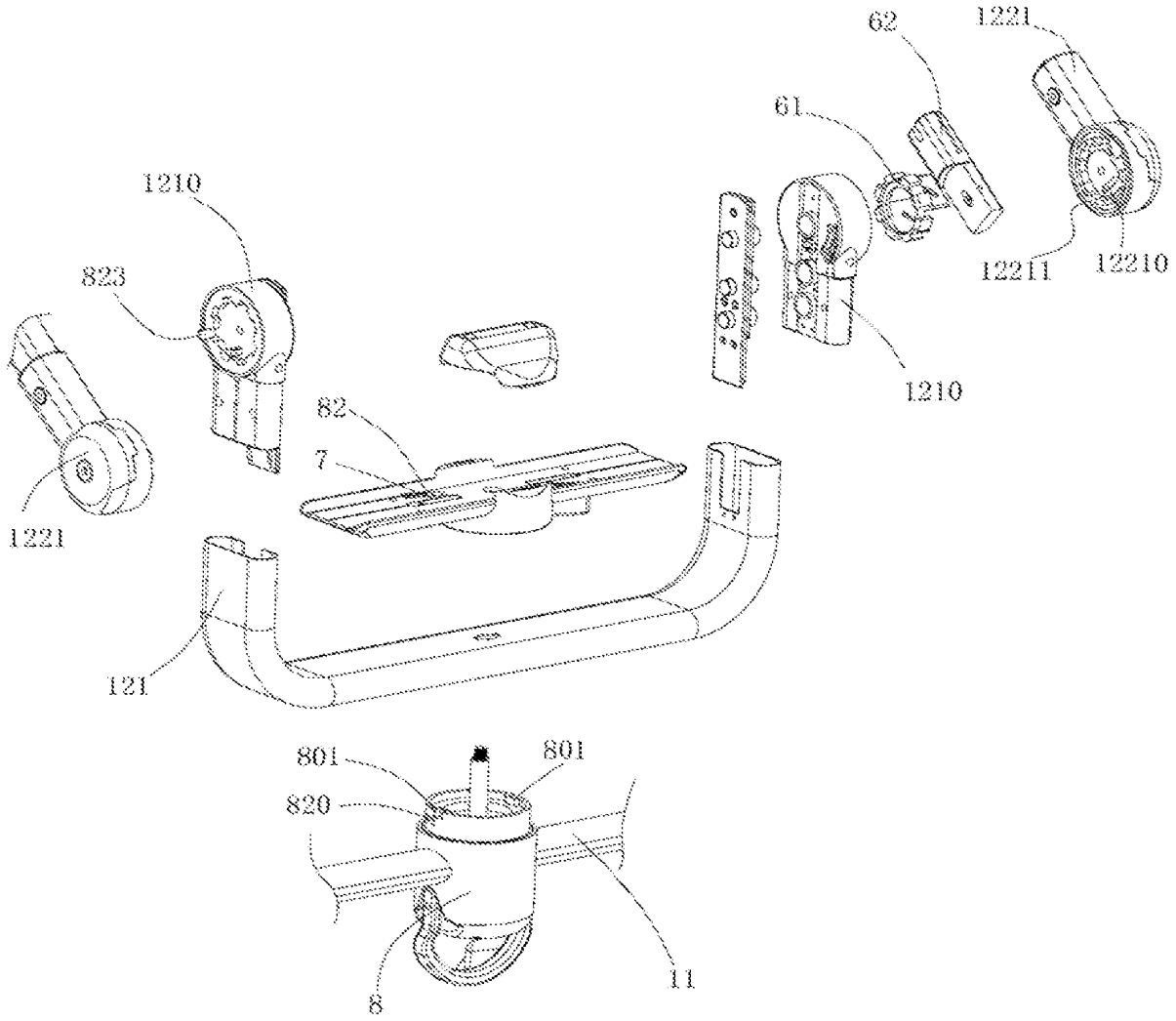
62
1221
61
1210
823
12211
12210
1210
82
7
1221
121
801
801
820
11
8

图9

PTO/SB/08a (01-22)
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Filing Date	2023-08-11
First Named Inventor	Mark ZEHFUSS
Art Unit	3618
Examiner Name	James M. DOLAK
Attorney Docket Number	34757-2775

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	First Named Inventor	Mark ZEHFUSS
	Art Unit	3618
	Examiner Name	James M. DOLAK
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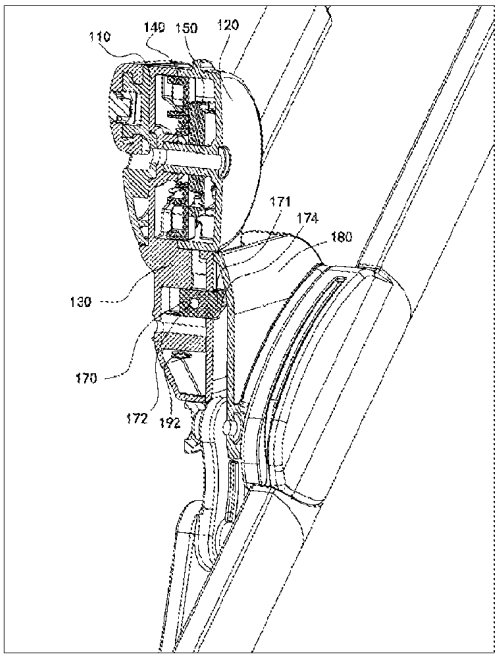

FIG. 12B

(57) Abstract: According to the application, a locking mechanism for connecting a first object and a second object rotatable to each other to a third object is disclosed. The locking mechanism is connected to the first object and the second object, and is releasably connected to the third object; wherein a rotation of the second object in respect to the first object allows the locking mechanism to be released from the third object. A child stroller is also disclosed.

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LOCKING MECHANISM AND CHILD STROLLER INCLUDING THE SAME

TECHNICAL FIELD

[0001] The present application relates to a locking mechanism and a child stroller including the locking mechanism.

BACKGROUND

[0002] A child stroller is a common infant product, which usually has a frame, wheels and a seat. Among them, the frame is a part used to carry and connect other parts, the wheels are located under the frame to provide a walking function for the child stroller, and the seat is mounted on the frame provide a sitting function for children. The frame includes handrails, which are located above the frame, so as to facilitate the caregiver to push the child stroller.

[0003] In an existing child stroller, the seat can be detachably mounted on the frame by a locking mechanism, and the car seat can be reversely installed, that is, it can be mounted on the frame in a forward or reverse direction, such that the child can turn his back to the caregiver or face the caregiver.

SUMMARY

[0004] According to the application, a locking mechanism for connecting a first object and a second object rotatable to each other to a third object is disclosed. The locking mechanism is connected to the first object and the second object, and is releasably connected to the third object; wherein a rotation of the second object in respect to the first object allows the locking mechanism to be released from the third object.

[0005] In an embodiment, the locking mechanism includes: a first casing fixed to the first object and having a first rotational disk; a second casing fixed to the second object and having a second rotational disk, the first rotational disk and the second rotational disk are stacked along a transversely extending rotating axis and rotatable in respect to each other; a fixed base fixed to the third object; a socket fixed to the first casing, extending outward from an outer periphery of

the first rotational disk and being releasably inserted into the fixed base; a locking member at least partially accommodated in the socket, capable of moving between a locked position where the locking member is protruding from the socket and engaged with the third object and a released position where the locking member is retracted into the socket and disengaged from the third object; wherein a convex portion is disposed on an outer periphery of the second rotational disk, and when the second rotational disk rotates from a first angular position to a second angular position in respect to the first rotational disk, the convex portion is capable of acting on the locking member to drive the locking member from the locked position to the released position.

[0006] In an embodiment, the locking mechanism further includes: a slider slidably disposed on the socket and capable of sliding between a proximal position close to the second casing and a distal position away from the second casing; when the second rotational disk rotates from the first angular position to the second angular position, the convex portion abuts against the slider and drives the slider from the proximal position to the distal position; and the slider is joined to the locking member, and drives the locking member from the locked position to the released position when moving from the proximal position to the distal position.

[0007] In an embodiment, the slider has two side walls and an accommodating space formed between the two side walls, at least one of the side walls is provided with a slot extending obliquely with respect to both vertical and horizontal directions, the locking member is inserted into the accommodation space, and a pin protruding from one side of the locking member is slidably inserted into the slot, such that a vertical movement of the slider from the proximal position to the distal position is converted into a transversal movement of the locking member from the locked position to the released position.

[0008] In an embodiment, the locking mechanism further includes: an engaging member and a driving member, stacked in an accommodation space formed between the first casing and the second casing along the rotating axis, the engaging member is inserted into the first casing in a matched shape, and the driving member is accommodated in the second casing and abuts against or is connected to the engaging member; wherein the driving member is driven to rotate about the rotating axis, and rotation of the driving member brings the engaging member to move transversely, such that the engaging member partially moves out of the first casing and is inserted into the second casing, or is separated from the second casing and moved into the first casing,

when the engaging member is inserted into the second casing, the engaging member locks the second casing and the first casing to prevent them from rotating in respect to each other, meanwhile the second rotational disk is in the first angular position, and when the engaging member is separated from the second casing, the second casing is rotatable in respect to the first casing.

[0009] In an embodiment, the driving member is a disk-shaped component, at least two driving member inclined surfaces facing the second casing are uniformly distributed on a periphery of the driving member along a circumferential direction, and a corresponding second casing inclined surface facing the at least two driving member inclined surfaces is formed on an inner side of the second casing, and when the driving member is driven to rotate, the driving member inclined surfaces interact with the second casing inclined surface to convert a rotational motion of the driving member in respect to the second casing into a lateral movement of the engaging member towards the first casing, such that the engaging member is separated from the second casing.

[0010] In an embodiment, the engaging member is substantially disk-shaped, and has two engaging portions projecting outwardly at two radial ends distributed along its circumferential direction, and an inner side of the second casing is provided with an engaging groove having a shape corresponding to that of the engaging member; and the locking mechanism further includes a first elastic member, and the first elastic member is disposed between the first casing and the engaging member to bias the engaging member into the second casing.

[0011] In an embodiment, the locking mechanism further includes a second elastic member, and the second elastic member is disposed between the slider and the socket to bias the slider toward the proximal position; the locking member has a locking tab capable of protruding from the socket to be inserted into the third object, and a locking member inclined surface is disposed on an outer surface of the locking tab in a direction of inserting into the fixed base along the socket, such that during a process that the locking mechanism is inserted into the fixed base, the fixed base is capable of temporarily retracting the locking member into the socket by the locking member inclined surface.

[0012] In an embodiment, the locking mechanism further includes a drag member, the drag member has a drag second end connected to the driving member and a drag first end extending

out of the locking mechanism, when the drag first end is dragged, the drag member is capable of brining the driving member to rotate.

[0013] In an embodiment, the locking mechanism further includes an operating device, the operating device is mounted on the second object and includes: a slidable connecting member transversal slidably mounted on the second object along a transversal direction; and an operating member slidably or rotatably mounted on the second object and operatively coupled with the slidable connecting member; wherein the drag first end of the drag member is connected to a pair of the slidable connecting members, and an operation of the operating member is capable of brining the slidable connecting members to slide toward each other, thereby dragging the drag member.

[0014] In an embodiment, at least one driving rib with a driving slope is arranged on the operating member, and each one of the slidable connecting members is provided with a driving groove portion engaged with the at least one driving rib, the at least one driving rib acts on the driving groove portion by the driving slope to bring the slidable connecting members to slide.

[0015] In an embodiment, an angle difference between the first angular position and the second angular position is between 120 degrees and 180 degrees; the driving member inclined surface and the second casing inclined surface are arc inclined surfaces capable of being engaged with each other.

[0016] According to the application, a child stroller includes: a frame; at least one wheel, mounted under the frame; and a seat, detachably mounted on the frame by the locking mechanism according to the application, wherein the first object is a lower supporting tube of the seat, the second object is an upper supporting tube of the seat, and the third object is the frame; wherein the lower supporting tube and the upper supporting tube are respectively U-shaped, and both ends of two legs of the U-shaped lower supporting tube and both ends of two legs of the U-shaped upper supporting tube are correspondingly connected to each other by the locking mechanism.

BRIEF DESCRIPTION OF THE DRAWINGS

[0017] Embodiments of the application will be described in detail below with reference to the accompanying drawings, in which:

[0018] Fig. 1 is a perspective view of a frame and a seat of a child stroller according to the application, only part of the frame is shown and the fabric part is not shown for sake of convenience;

[0019] Fig. 2 is a perspective view of a part of the frame shown in Fig. 1;

[0020] Figs. 3 and 4 are perspective views of the seat of the child stroller according to the application in two different angles, wherein an upper supporting tube is in an unfolded state;

[0021] Fig. 5 is a perspective view of the seat, in which the upper supporting tube is in a folded state;

[0022] Fig. 6A is a perspective view of the seat, in which an operating member on a handrail is shown in an exploded state, and Fig. 6B is a partially enlarged view of the block part in Fig. 6A;

[0023] Fig. 7A is a perspective view of the seat, in which the upper supporting tube and the handrail are removed to show that the operating member is connected to the locking mechanism by a drag member, and Fig. 7B is a partially enlarged view of the block part in Fig. 7A;

[0024] Fig. 8A is a perspective view of the seat, in which the locking mechanism is shown in an exploded view, and Fig. 8B is a partially enlarged view of the block part in Fig. 8A;

[0025] Fig. 9A is a perspective view of the seat in the unfolded state, in which an outer casing of the locking mechanism is removed to show an internal structure, and Fig. 9B is a partially enlarged view of the block part in Fig. 9A;

[0026] Fig. 10 is a perspective view of the outer casing viewed from the inside;

[0027] Fig. 11A is a perspective view of the seat, in which the upper supporting tube is in a partially folded state, and the outer casing of the locking mechanism is removed to show internal structure, and Fig. 11B is a partially enlarged view of the block part in Fig. 11A;

[0028] Fig. 12A is a perspective view of the seat, in which the upper supporting tube is in an unfolded state, the locking member is in a locked position, and the locking mechanism is vertically cut along a pivoting shaft of the upper supporting tube, and Fig. 12B is a partially enlarged view of the block part in Fig. 12A;

[0029] Fig. 12C is a front view of the seat, in which the upper supporting tube is in an unfolded state, the locking member is in a released position, and the locking mechanism is vertically cut along the pivoting shaft of the upper supporting tube, and Fig. 12D is a partially enlarged view of the block part in Fig. 12C;

[0030] Fig. 13A is a perspective view of the seat, in which the upper supporting tube is in an unfolded state, and an outer surface of the socket is removed to show the slider and the locking member; and Fig. 13B is a partially enlarged view of the block part in Fig. 13A;

[0031] Fig. 14A is a perspective view of the seat, in which the upper supporting tube is in a partially folded state, and the outer surface of the socket is removed to show the slider and the locking member; and Fig. 14B is a partially enlarged view of the block part in Fig. 14A;

[0032] Fig. 15A is a perspective view of the seat, in which the supporting tube is in a folded state, and the outer surface of the socket is removed to show the slider and the locking member; and Fig. 15B is a partially enlarged view of the block part in Fig. 15A.

DETAILED DESCRIPTION

[0033] Although the invention is illustrated and described herein with reference to specific embodiments, the invention should not be limited to the details shown. Exactly, within the scope of the equivalent solutions of the appended claims and without departing from the invention, varieties of modifications can be made to these details.

[0034] The directional descriptions related herewith, such as "front," "back," "up," and "down" and the like, are only for convenience of understanding, and the invention is not limited to these directions, but can be adjusted according to the actual situation. Moreover, although this application has been listed and described with reference to typical embodiments, the terms used are illustrative and exemplary, rather than restrictive. In addition, in the application, the singular forms "a," "an," and "the" include plural references unless the context clearly dictates otherwise.

[0035] A frame and a seat of the child stroller according to the application will be generally described with reference to Figs. 1 to 5.

[0036] As shown, a frame 400 generally extends in an up-and-down direction with an upper end inclined backwardly. The frame 400 has two vertical portions arranged side by side, and a transverse portion connecting the two vertical portions horizontally above. Wheels (not shown) are mounted under the vertical portions, and the transverse portion also serves as a handrail portion for a user to push the child stroller.

[0037] Referring to Figs. 1 to 2, the two vertical portions of the frame 400 are respectively fixedly mounted with fixed bases 180, and socket grooves 181 are formed on the fixed bases 180.

The socket grooves 181 are generally opened upwardly, such that sockets 130 (see Fig. 3) of locking mechanism 100 can be inserted into the socket grooves 181.

[0038] The seat is detachably mounted on the frame 400 by the locking mechanism 100. The seat includes an upper supporting tube 300, a lower supporting tube 200, and a backrest (not shown) mounted on the upper supporting tube 300 and a chair (not shown) mounted on the lower supporting tube 200. The lower supporting tube 200 and the upper supporting tube 300 are respectively U-shaped, and both ends of two legs of the U-shaped lower supporting tube 200 and both ends of two legs of the U-shaped upper supporting tube 300 are correspondingly connected to each other by the locking mechanism 100.

[0039] In the unfolded state of the child stroller shown in Figs. 3 to 4, the upper supporting tube 300 extends obliquely upward from the locking mechanism 100, and the lower supporting tube 200 extends obliquely downward from the locking mechanism 100, and extension directions of the two supporting tubes form an included angle of approximately 180 degrees. In the folded state of the child stroller shown in Fig. 5, the upper supporting tube 300 is rotated downward by the locking mechanism 100 to substantially overlap with the lower supporting tube 200.

[0040] The locking mechanism 100 of the application generally includes a first casing 110, a second casing 120, a fixed base 180, a socket 130, an operating device 500, and a drag member 510. Among them, the first casing 110 is fixed to the lower supporting tube 200 of the seat, the second casing 120 is fixed to the upper supporting tube 300 of the seat, the fixed base 180 is fixed to the frame 400, and the socket 130 is fixed to the first casing 110. The second casing 120 is rotatable about a transversal axis X in respect to the first casing 110, such that the upper supporting tube 300 rotates in respect to the lower supporting tube 200. The operating device 500 according to the application is disposed on the transverse portion of the upper supporting tube 300, and the user can unlock the rotation of the second casing 120 through the operating device 500. The socket 130 can be separated from the fixed base 180 only when the upper supporting tube 300 is rotated to a position substantially overlapping with the lower supporting tube 200. In this way, the user must fold the seat at first, then the seat can be taken off from the frame 400, which can avoid the dangerous operation that the user takes off the child together with the seat from the frame 400.

[0041] The operating device 500 according to the application will be described in detail with

reference to Figs. 6A to 7B.

[0042] As shown, the operating device 500 is mounted on the transverse portion of the upper supporting tube 300, and includes a slidable connecting member 530 (see Fig. 7A) and an operating member 520 (see Fig. 8A).

[0043] The slidable connecting member 530 is slidably mounted on the upper supporting tube 300 along a transversal direction. More specifically, the slidable connecting member 530 is arranged in a hollow interior of the transverse portion of the upper supporting tube 300, and is slidable along the transverse portion. The operating member 520 is slidably or rotatably mounted on the upper supporting tube 300, and is operatively coupled with the slidable connecting member 530. Both ends of the drag member 510 are respectively connected to the slidable connecting member 530 shown in Fig. 7A and a driving member 150 shown in Fig. 8A. More specifically, the drag member 510 has a drag second end 512 connected to the driving member 150, and a drag first end 511 extending out of the locking mechanism 100 and connected to the slidable connecting member 530. When the drag member 510 is dragged, it will bring the driving member 150 to unlock the second casing 120 to rotate.

[0044] In this embodiment, the operating member 520 is arranged to be rotatably mounted in a mount base 540, so as to rotate along the transversal axis. A driving rib 550 is arranged on an outer periphery of the operating member 520, and the driving rib 550 has an obliquely extending driving slope 560. The slidable connecting member 530 is provided with a driving groove portion 570 engaged with the driving rib 550. The driving rib 550 acts on the driving groove portion 570 to bring the slidable connecting member 530 to slide by the driving slope 560. The drag first end 511 of the drag member 510 is connected to a pair of slidable connecting members 530, and an operation of the operating member 520 can bring the slidable connecting members 530 to slide toward each other, thereby dragging the drag members 510. In this way, when the user rotates the operating member 520, the drag members 510 will be dragged to move toward the middle, that is, toward the direction away from the first casing 110 and the second casing 120.

[0045] In other embodiments, the operating member 520 may also be arranged to move linearly, such as being pulled outward or pushed inward in respect to the transverse portion of the upper supporting tube 300, so as to drive a lateral movement of the slidable connecting member 530.

[0046] The specific structure of the locking mechanism 100 will be described with reference to Figs. 8A to 12B.

[0047] As shown, in addition to the first casing 110, the second casing 120, the fixed bases 180, the sockets 130, and the driving member 150 which have been described above, the locking mechanism 100 further includes a locking member 170, a slider 160 (Fig. 14B), an engaging member 140, and a first elastic member 191 and a second elastic member 192.

[0048] Referring to Fig. 8B, the first casing 110 (see Fig. 1) has: a first rotational disk 111 (Fig. 1), a first connecting portion 112, a first hole 113, and an accommodation groove 114. Among them, the first rotational disk 111 is a disk-shaped portion for being joined to the second casing 120. The first connecting portion 112 extends obliquely downward from an outer periphery of the first rotational disk 111 for being joined to the lower supporting tube 200, and the first rotational disk 111 may be arranged corresponding to the lower supporting tube 200, for example, the first rotational disk 111 may be arranged as a sleeve or an insert. The first hole 113 is formed in a center of the first rotational disk 111 for a transversal rotating shaft to be inserted therein. The accommodation groove 114 is formed on an inner surface of the first rotational disk 111, and extends from the inner surface toward the second rotational disk 121 (i.e., in the transverse direction of the child stroller). The accommodation groove 114 has a shape corresponding to that of the engaging member 140 and is used for accommodating the engaging member 140.

[0049] Referring to Fig. 10, the second casing 120 has: a second rotational disk 121, a second connecting portion 122, a second hole 123, an engaging groove 124, a convex portion 125, and a second casing inclined surface 126. Among them, the second rotational disk 121 is a disk-shaped portion for being joined to the first casing 110, and may have approximately the same diameter as the first rotational disk 111. The first rotational disk 111 and the second rotational disk 121 are stacked along a transversely extending rotating axis, and can rotate in respect to each other. The first rotational disk 111 and the second rotational disk 121 can be engaged with each other to form a disk-shaped accommodation space for accommodating the driving member 150, the engaging member 140 and the first elastic member 191.

[0050] The convex portion 125 is disposed on the outer periphery of the second rotational disk 121. When the second rotational disk 121 rotates from a first angular position (unfolded

position) to a second angular position (folded position) in respect to the first rotational disk 111, the convex portion 125 can act on the locking member 170 to drive the locking member 170 from a locked position to a released position, which will be described in detail later.

[0051] In this embodiment, an angle difference between the first angular position and the second angular position is between 120 degrees and 180 degrees.

[0052] The second connecting portion 122 extends obliquely upward from the outer periphery of the second rotational disk 121 for being joined to the upper supporting tube 300, and the second connecting portion 122 may be arranged corresponding to the upper supporting tube 300, for example, the second connecting portion 122 may be arranged as a sleeve or an insert. The second hole 123 is formed in a center of the second rotational disk 121 for the transversal rotating shaft to be inserted therein. In an embodiment of the application, the rotating shaft is directly integrated on the second casing 120, and in other embodiments, the rotating shaft may be an independent component. The engaging groove 124 is formed on an inner surface of the second rotational disk 121, and extends from the inner surface toward the first rotational disk 111 (i.e., in the transverse direction of the child stroller). The engaging groove 124 has a shape corresponding to that of the engaging member 140 and is used for accommodating the engaging member 140. The second casing inclined surface 126 is arranged on an inner side of the second casing 120, and is corresponding to a drive inclined surface 151 of the driving member 150. More specifically, the second casing inclined surface 126 may be a spiral inclined surface extending along a circumferential direction of the second casing 120 and gradually rising toward the driving member 150.

[0053] The socket 130 extends downward from the outer periphery of the first casing 110. In this embodiment, the socket 130 and the first casing 110 are integrated into one component, and in other embodiments, the socket 130 and the first casing 110 may be independent components mounted together. The socket 130 is shaped substantially rectangular, and corresponding to the shape of the socket groove 181 of the fixed bases 180 (see Fig. 2). The socket 130 is provided with an opening 131 on a side facing the fixed base 180, and the locking member 170 can extend out of the socket 130 through the opening 131, so as to be inserted into the fixed base 180.

[0054] Referring to Figs. 12B and 13B, the locking member 170 is at least partially accommodated in the socket 130, and can protrude from the opening 131 (Fig. 8B) of the socket

130. The locking member 170 can move between the locked position where the locking member 170 is engaged with the fixed base 180 and the released position where the locking member 170 is retracted into the socket 130 and disengaged from the third object. More specifically, the locking member 170 includes a locking tab 171, a pin hole 172, a pin 173, and a locking member inclined surface 174. Among them, the locking tab 171 is a part protruding from the socket 130. The locking member inclined surface 174 is disposed on an outer surface of the locking tab 171 in the direction of inserting into the fixed base 180 along the socket 130, such that during the process that the locking mechanism 100 is inserted into the fixed base 180, the fixed base 180 can temporarily retract the locking member 170 into the socket 130 by the locking member inclined surface 174. The pin hole 172 is a through hole transversely formed along the locking member 170, and the pin 173 is transversely inserted into the pin hole 172.

[0055] Referring to Fig. 13B, the slider 160 is slidably disposed on or in the socket 130 (see Fig. 11B). The slider 160 has a cam contact portion 161 and slots 162. Among them, the cam contact portion 161 is disposed at an end close to the second casing 120, and the slots 162 are disposed at same positions on both side walls of the slider 160. The slider 160 can slide between a proximal position close to the second casing 120 and a distal position away from the second casing 120. In this embodiment, the slider 160 is arranged to be slidable substantially longitudinally, and in other embodiments, the slider 160 can also slide in an inclined direction. A second elastic member 192 (see Figs. 12B, 12D) is disposed between the slider 160 and the socket 130, and biases the slider 160 toward the proximal position.

[0056] The convex portion 125 of the second rotational disks 121 is able to contact the slider 160, such that when the second rotational disks 121 (and the upper supporting tube 300) rotates from the first angular position to the second angular position, the convex portion 125 abuts against the slider 160, driving the slider 160 from the proximal position to the distal position.

[0057] The slider 160 is joined to the locking member 170, and drives the locking member 170 from the locked position to the released position when moving from the proximal position to the distal position. More specifically, the slider 160 has two side walls and an accommodation space formed between the two side walls, and the two side walls are respectively provided with the same slots 162 extending obliquely in respect to both the vertical and horizontal directions. The locking member 170 is inserted into the accommodation space, and the pin 173 protruding

respectively from both sides of the locking member 170 is slidably inserted into the slots 162 on the two side walls, such that a vertical motion of the slider 160 from the proximal position to the distal position can be converted into a transversal motion of the locking member 170 from the locked position to the released position.

[0058] In other embodiments, the convex portion 125 of the second casing 120 may also directly act on the locking member 170. For example, the locking member 170 may be provided with an inclined abutment surface that extends obliquely toward the second casing 120 and in respect to both transversal and longitudinal directions. Such inclined abutment surface is relatively far away from the second casing 120 on a locked position side of the locking member 170 and is relatively close to the second casing 120 on a released position side of the locking member 170. In this way, when the second casing 120 is rotated from the first angular position to the second angular position, the convex portion 125 abuts against the inclined abutment surface, such that the locking member 170 moves from the locked position to the released position. In such an embodiment, the slider 160 may be omitted, and the second elastic member 192 may be arranged to bias the locking member 170 toward its locked position.

[0059] The engaging member 140 is inserted into the first casing 110 in a matched shape, and can move transversely to be partially inserted into the second casing 120. More specifically, the engaging member 140 has an annular portion 141 and two engaging portions 142 (see Fig. 8B). The annular portion 141 is approximately perpendicular to the rotating shaft of the first casing 110 and the second casing 120, and is sleeved on the rotating shaft. The engaging portion 142 extends radially outward from the periphery of the annular portion 141, and the shape of the engaging portion 142 corresponds to the accommodation groove 114 in the first casing 110 and the engaging groove 124 in the second casing 120. When the engaging member 140 is partially inserted into the second casing 120, the engaging member 140 locks the second casing 120 and the first casing 110 to prevent them from rotating in respect to each other. At this time, the second rotational disk 121 is in the first angular position.

[0060] The first elastic member 191 is disposed between the engaging member 140 and the first casing 110, and biases the engaging member 140 to be inserted into the second casing 120.

[0061] The driving member 150 is accommodated in the second casing 120, and abuts against or is connected to the engaging member 140. The driving member 150 is arranged in a

substantially disk shape and rotates along the same rotating axis as the first casing 110 and the second casing 120. The driving member 150 includes a driving member inclined surface 151 and a drag second end connecting portion 152 (see Fig. 8B). The driving member inclined surface 151 is provided by at least two, and the at least two driving member inclined surfaces 151 are uniformly distributed along a circumferential direction on a periphery of the driving member 150 and facing the second casing 120. The shape of each of the driving member inclined surfaces 151 correspond to the shape of the second casing inclined surface 126. More specifically, each of the driving member inclined surfaces 151 may be an inclined surface extending along the circumferential direction of the driving member 150 and gradually rising toward the second casing 120. The drag second end connecting portion 152 is disposed at a position outside the center of the disk portion of the driving member 150, and is arranged as a convex portion, a groove or any suitable form, as long as the drag member 510 can be fixed to the driving member 150.

[0062] The driving member 150 can be driven to rotate around the rotating shaft according to the user's operation, and its rotation will bring the engaging member 140 to move transversely, such that the engaging member 140 can be partially moved out of the first casing 110 and inserted into the second casing 120, or separated from the second casing 120 and moved into the first casing 110. More specifically, when the driving member 150 is dragged by the drag member 510 to rotate, the driving member inclined surface 151 and the second casing inclined surface 126 will abut against each other, thereby converting the rotational force into a traversal moving force, such that the driving member 150 moves toward the first casing 110. In this embodiment, the driving member 150 is disposed between the engaging member 140 and the second casing 120, and abuts against the engaging member 140, thus brining the engaging member 140 to move to the first casing 110, thereby releasing rotation of the second casing 120. In other embodiments, the driving member 150 may also be disposed between the engaging member 140 and the first casing 110 and rotatably joined to the engaging member 140, which can also bring the engaging member 140 to move to the first casing 110.

[0063] In other embodiments, the driving member 150 may be driven in other ways. For example, a part of the driving member 150 (referred to as a pulling portion) may be exposed to the outside through a slot on a side wall of the first casing 110 or the second casing 120. The

user can directly rotate the driving member 150 by the pulling portion. In such an embodiment, both the drag member 510 and the operating device 500 are unnecessary.

[0064] In other embodiments, other locking forms may be used between the first casing 110 and the second casing 120. For example, the outer periphery of the first casing 110 may be provided with a latch, and the outer periphery of the second casing 120 may be provided with a slot. The user can directly operate the latch to lock and unlock rotation of the second casing 120. In such an embodiment, the engaging member 140, the driving member 150, the drag member 510, and the operating device 500 are unnecessary.

[0065] The operation of the locking mechanism 100 according to the application will be described with reference to Figs. 12A to 15B.

[0066] In the state shown in Figs. 12A to 12B, the seat is in the unfolded position, the engaging member 140 is inserted into the first casing 110 and the second casing 120 at the same time, and the locking member 170 is inserted into the fixed base 180. Therefore, the second casing 120 (and the upper supporting tube 300) cannot rotate, and the seat cannot be taken off from the frame 400.

[0067] When the user wants to take off the seat, he must fold the seat firstly. Specifically, the user drags the drag member 510 by the operating device 500, and the drag member 510 brings the driving member 150 to rotate, such that the driving member 150 moves toward the first casing 110 (left side in Fig. 12B). The driving member 150 then brings the engaging member 140 to move into the first casing 110 and be separated from the second casing 120. At this time, the locking mechanism 100 becomes the state shown in Figs. 12C to 12D.

[0068] Since the engaging member 140 is separated from the second casing 120, now the second casing 120 can be rotated in respect to the first casing 110. Therefore, the user may rotate the second casing 120 toward the folded position, and the rotation process is shown in Figs. 13A to 15B. With rotation of the second casing 120, the convex portion 125 abuts against the slider 160 and drives the slider 160 to the distal position (downward in the figure). As the slider 160 moves toward the distal position, since the locking member 170 is limited to move transversely, the pin 173 of the locking member 170 moves leftward along the slots 162 of the slider 160, such that the locking member 170 moves from the locked position shown in Figs. 13A-13B to the released position shown in Figs. 15A-15B. At this time, the seat is unlocked from the frame

400, allowing the user to take off the seat from the frame 400.

[0069] When the user wants to mount the seat on the frame 400, it is only required to reverse the above steps.

[0070] In conclusion, the application proposes a locking mechanism that allows two relatively rotating components to be detachably locked to another component. Moreover, the locking of another component can only be released when the two components rotate to a specific angle in respect to each other. The current situation is that the caregiver may not take the child from before reversing direction of the seat and installing the seat, but directly separate the seat from the frame together with the child, which is very dangerous. In the child stroller of the application, the locking mechanism of the application is used to connect the seat and the frame, forcing the user to fold the seat before taking the seat off the frame. That is, if the caregiver wants to reverse direction of the seat, he must first take the child away, and then fold the seat before taking off the seat. In this way, the operation of the caregiver can be regulated compulsorily, and the safety performance of the child stroller can be increased, thus avoiding the dangerous operation of taking the child together with the seat from the frame.

[0071] Since this application can be embodied in various forms without departing from the spirit and essence of the application, it should be understood, the above-mentioned embodiments are not limited to any of the foregoing details, but should be interpreted in the broadest sense within the scope defined by the claims. Therefore, all changes that fall within the scope of the claims or their equivalents should be covered by the claims.

List of Reference Signs

100: Locking Mechanism
- 110: First Casing (Inner Casing)
  - 111: First Rotational Disk
  - 112: First Connecting Portion
  - 113: First Hole
  - 114: Accommodation groove
- 120: Second Casing (Outer Casing)

121: Second Rotational Disk
122: Second Connecting Portion
123: Second Hole
124: Engaging groove
125: Convex Portion
126: Second Casing Inclined Surface
130: Socket
131: Opening
140: Engaging member
141: Annular Portion
142: Engaging portion
150: Driving Member
151: Drive Inclined Surface
152: Drag Second End Connecting Portion
160: Slider
161: Cam Contact Portion
162: Slot
170: Locking Member
171: Locking Tab
172: Pin Hole
173: Pin
174: Locking Member Inclined Surface
180: Fixed Base
181: Socket groove
191: First Elastic Member (Locking member Elastic Member)
192: Second Elastic Member (Slider Elastic Member)
200: Lower Supporting Tube (First Object)
300: Upper Supporting Tube (Second Object)
400: Frame (Third Object)
500: Operating Device

520: Operating Member

530: Slidable Connecting Member

540: Mount Base

550: Driving Rib

560: Driving Slope

570: Driving Groove Portion

510: Drag Member

511: Drag First End

512 Drag Second End

X: Transversal Axis

WHAT IS CLAIMED IS:

1. A locking mechanism (100) for connecting a first object and a second object rotatable to each other to a third object, characterized in that:

the locking mechanism (100) is connected to the first object and the second object, and is releasably connected to the third object;

wherein a rotation of the second object in respect to the first object allows the locking mechanism (100) to be released from the third object.

2. The locking mechanism (100) according to claim 1, characterized in that:

the locking mechanism (100) comprises:

a first casing (110) fixed to the first object and having a first rotational disk (111);

a second casing (120) fixed to the second object and having a second rotational disk (121), wherein the first rotational disk (111) and the second rotational disk (121) are stacked along a transversely extending rotating axis and rotatable in respect to each other;

a fixed base (180) fixed to the third object;

a socket (130) fixed to the first casing (110), extending outward from an outer periphery of the first rotational disk (111) and being releasably inserted into the fixed base (180);

a locking member (170) at least partially accommodated in the socket (130), capable of moving between a locked position where the locking member (170) is protruding from the socket (130) and engaged with the third object and a released position where the locking member (170) is retracted into the socket (130) and disengaged from the third object;

wherein a convex portion (125) is disposed on an outer periphery of the second rotational disk (121), and when the second rotational disk (121) rotates from a first angular position to a second angular position in respect to the first rotational disk (111), the convex portion (125) is capable of acting on the locking member (170) to drive the locking member (170) from the locked position to the released position.

3. The locking mechanism (100) according to claim 2, characterized in that, the locking mechanism (100) further comprises:

a slider (160) slidably disposed on the socket (130) and capable of sliding between a proximal position close to the second casing (120) and a distal position away from the second casing (120);

wherein, when the second rotational disk (121) rotates from the first angular position to the second angular position, the convex portion (125) abuts against the slider (160) and drives the slider (160) from the proximal position to the distal position; and

wherein the slider (160) is joined to the locking member (170), and drives the locking member (170) from the locked position to the released position when moving from the proximal position to the distal position.

4. The locking mechanism (100) according to claim 3, characterized in that:

the slider (160) has two side walls and an accommodating space formed between the two side walls, at least one of the side walls is provided with a slot (162) extending obliquely with respect to both vertical and horizontal directions, the locking member (170) is inserted into the accommodation space, and a pin (173) protruding from one side of the locking member (170) is slidably inserted into the slot (162), such that a vertical movement of the slider (160) from the proximal position to the distal position is converted into a transversal movement of the locking member (170) from the locked position to the released position.

5. The locking mechanism (100) according to any of the claims 2 to 4, characterized in that, the locking mechanism (100) further comprises:

an engaging member (140) and a driving member (150), stacked in an accommodation space formed between the first casing (110) and the second casing (120) along the rotating axis, the engaging member (140) is inserted into the first casing (110) in a matched shape, and the driving member (150) is accommodated in the second casing (120) and abuts against or is connected to the engaging member (140);

wherein the driving member (150) is driven to rotate about the rotating axis, and rotation of the driving member (150) brings the engaging member (140) to move transversely, such that the engaging member (140) partially moves out of the first casing (110) and is inserted into the second casing (120), or is separated from the second casing (120) and moved into the first casing

(110),

wherein, when the engaging member (140) is inserted into the second casing (120), the engaging member (140) locks the second casing (120) and the first casing (110) to prevent them from rotating in respect to each other, meanwhile the second rotational disk (121) is in the first angular position, and

wherein, when the engaging member (140) is separated from the second casing (120), the second casing (120) is rotatable in respect to the first casing (110).

6. The locking mechanism (100) according to claim 5, characterized in that:

the driving member (150) is a disk-shaped component, at least two driving member inclined surfaces (151) facing the second casing (120) are uniformly distributed on a periphery of the driving member (150) along a circumferential direction, and a corresponding second casing inclined surface (126) facing the at least two driving member inclined surfaces (151) is formed on an inner side of the second casing (120), and

when the driving member (150) is driven to rotate, the driving member inclined surfaces (151) interact with the second casing inclined surface (126) to convert a rotational motion of the driving member (150) in respect to the second casing (120) into a lateral movement of the engaging member (140) towards the first casing (110), such that the engaging member (140) is separated from the second casing (120).

7. The locking mechanism (100) according to claim 5 or 6, characterized in that:

the engaging member (140) is substantially disk-shaped, and has two engaging portions (142) projecting outwardly at two radial ends distributed along its circumferential direction, and an inner side of the second casing (120) is provided with an engaging groove (124) having a shape corresponding to that of the engaging member (140); and

the locking mechanism (100) further comprises a first elastic member (191), and the first elastic member (191) is disposed between the first casing (110) and the engaging member (140) to bias the engaging member (140) into the second casing (120).

8. The locking mechanism (100) according to claim 3, optionally in combination with any

of the claims 4 to 7, characterized in that:

the locking mechanism (100) further comprises a second elastic member (192), and the second elastic member (192) is disposed between the slider (160) and the socket (130) to bias the slider (160) toward the proximal position;

the locking member (170) has a locking tab (171) capable of protruding from the socket (130) and inserting into the third object, and a locking member inclined surface (174) is disposed on an outer surface of the locking tab (171) in a direction of inserting into the fixed base (180) along the socket (130), such that during a process that the locking mechanism (100) is inserted into the fixed base (180), the fixed base (180) is capable of temporarily retracting the locking member (170) into the socket (130) by the locking member inclined surface (174).

9. The locking mechanism (100) according to claim 5, optionally in combination with any of the claims 6 to 8, characterized in that:

the locking mechanism (100) further comprises a drag member (510), wherein the drag member (510) has a drag second end (512) connected to the driving member (150) and a drag first end (511) extending out of the locking mechanism (100), wherein, when the drag first end (511) is dragged, the drag member (510) is capable of brining the driving member (150) to rotate.

10. The locking mechanism (100) according to claim 9, characterized in that:

the locking mechanism (100) further comprises an operating device (500), wherein the operating device (500) is mounted on the second object and includes:

a slidable connecting member (530) slidably mounted on the second object along a transversal direction; and

an operating member (520) slidably or rotatably mounted on the second object and operatively coupled with the slidable connecting member (530);

wherein the drag first end (511) of the drag member (510) is connected to a pair of the slidable connecting members (530), and an operation of the operating member (520) is capable of brining the slidable connecting members (530) to slide toward each other, thereby dragging the drag member (510).

11. The locking mechanism (100) according to claim 10, characterized in that:

at least one driving rib (550) with a driving slope (560) is arranged on the operating member (520), and each one of the slidable connecting members (530) is provided with a driving groove portion (570) engaged with the at least one driving rib (550), wherein the at least one driving rib (550) acts on the driving groove portion (570) by the driving slope (560) to bring the slidable connecting members (530) to slide.

12. The locking mechanism (100) according to claim 6, optionally in combination with any of the claims 7 to 11, characterized in that:

an angle difference between the first angular position and the second angular position is between 120 degrees and 180 degrees;

the driving member inclined surface (151) and the second casing inclined surface (126) are arc inclined surfaces capable of being engaged with each other.

13. A child stroller, characterized in that the child stroller comprises:

a frame (400);

at least one wheel, mounted under the frame (400); and

a seat, detachably mounted on the frame (400) by the locking mechanism (100) according to any of claims 1-12, wherein the first object is a lower supporting tube (200) of the seat, the second object is an upper supporting tube (300) of the seat, and the third object is the frame (400);

wherein the lower supporting tube (200) and the upper supporting tube (300) are respectively U-shaped, and both ends of two legs of the U-shaped lower supporting tube (200) and both ends of two legs of the U-shaped upper supporting tube (300) are correspondingly connected to each other by the locking mechanism (100).

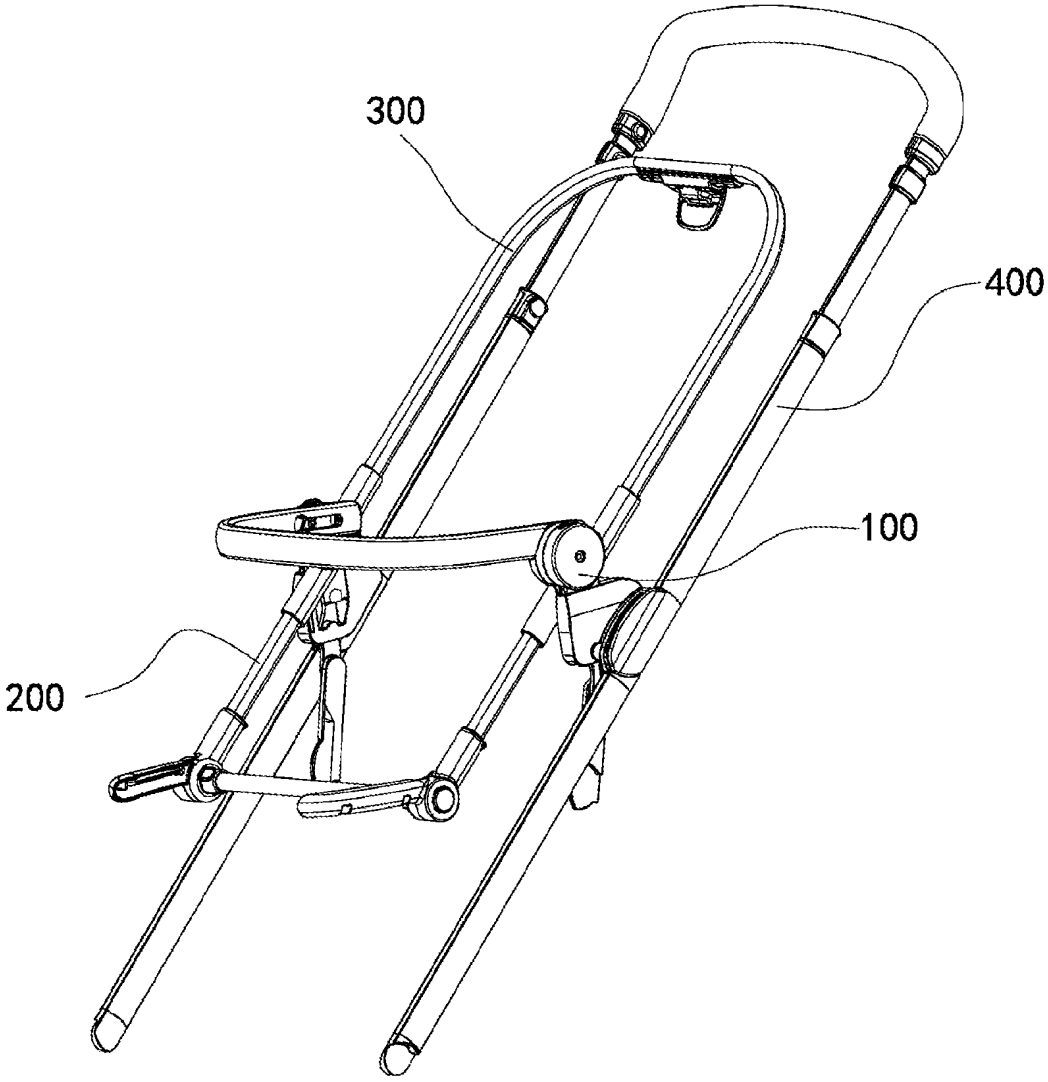

FIG. 1

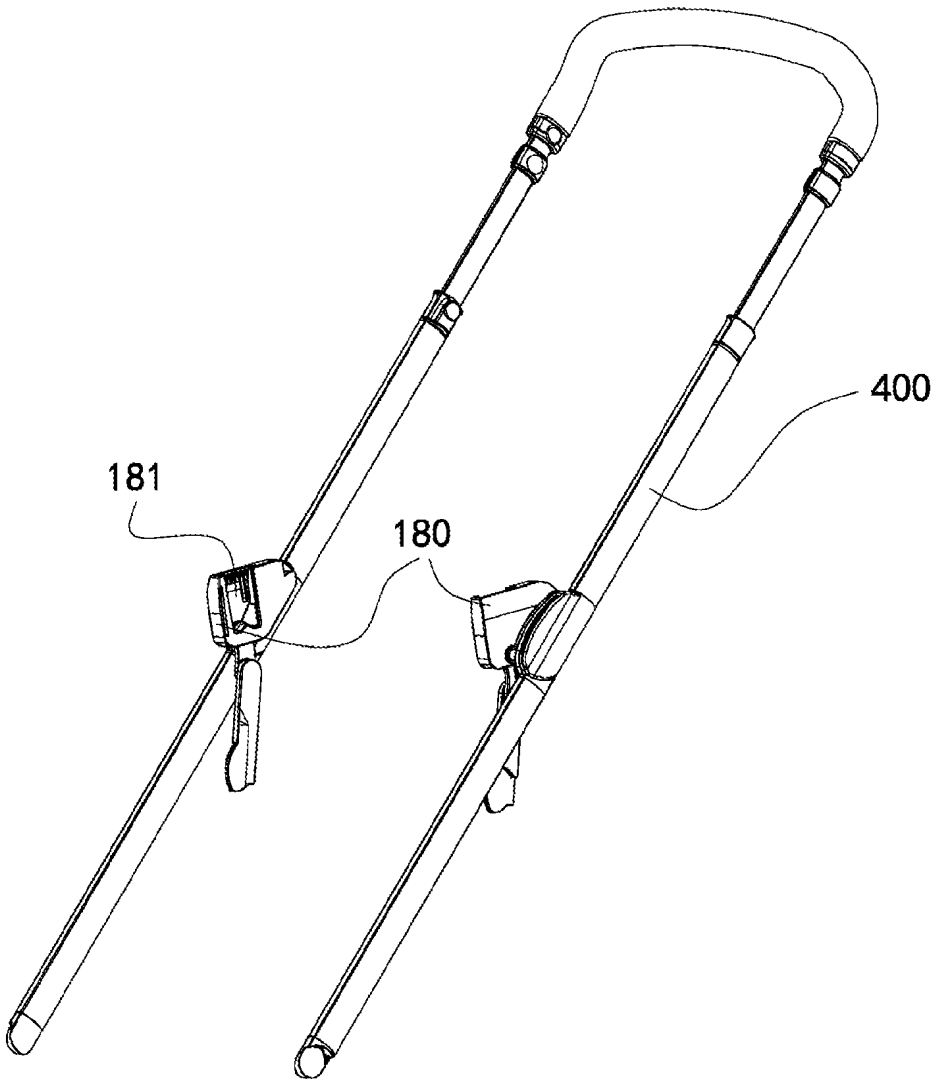

FIG. 2

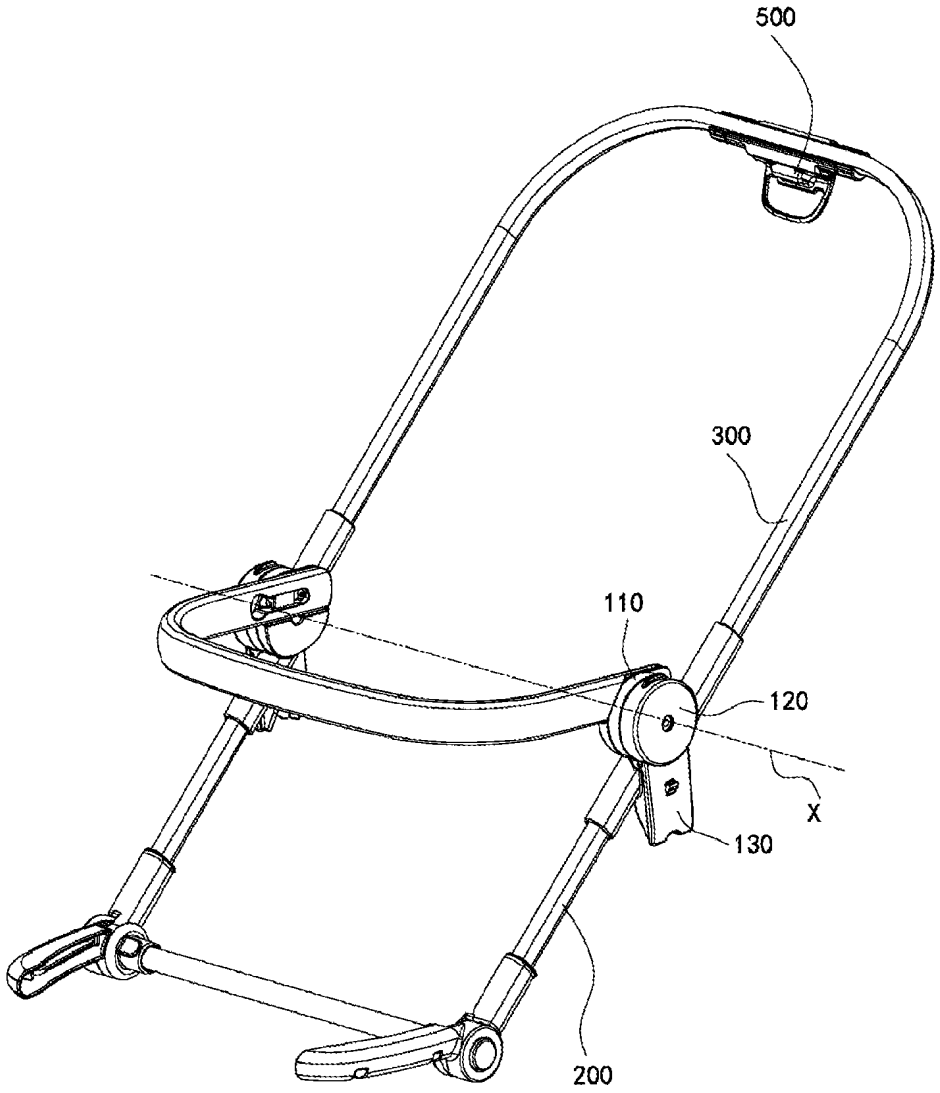

FIG. 3

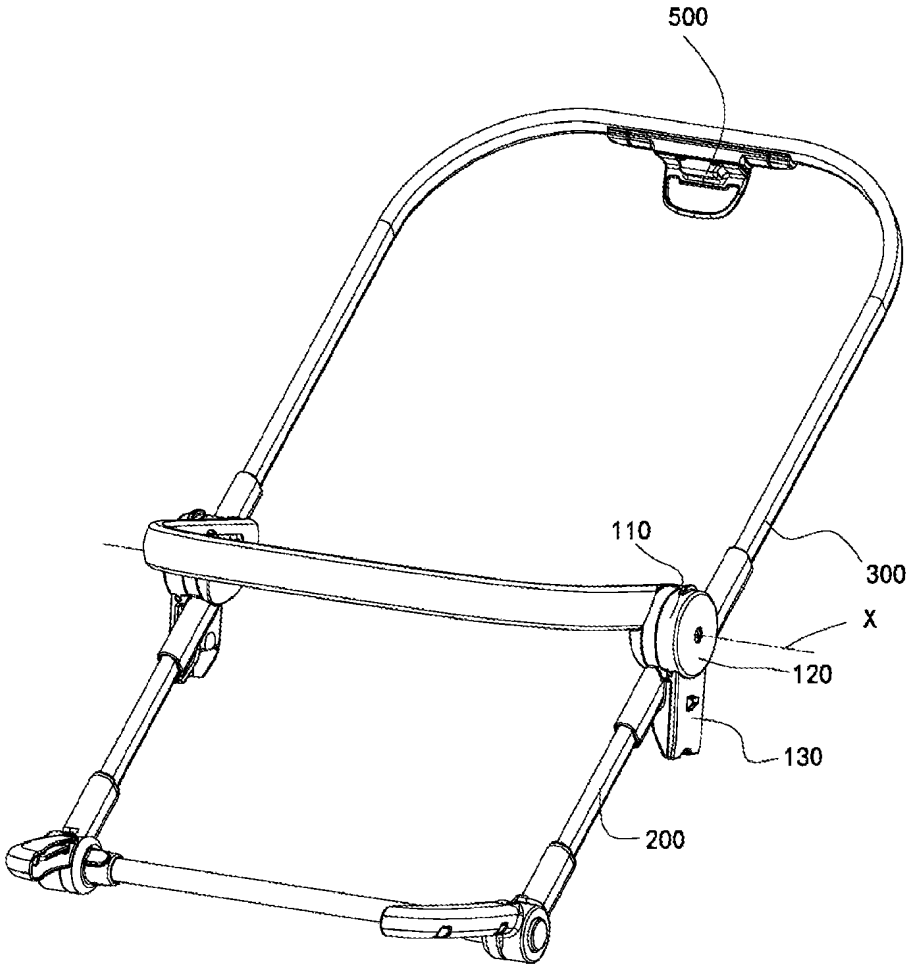

FIG. 4

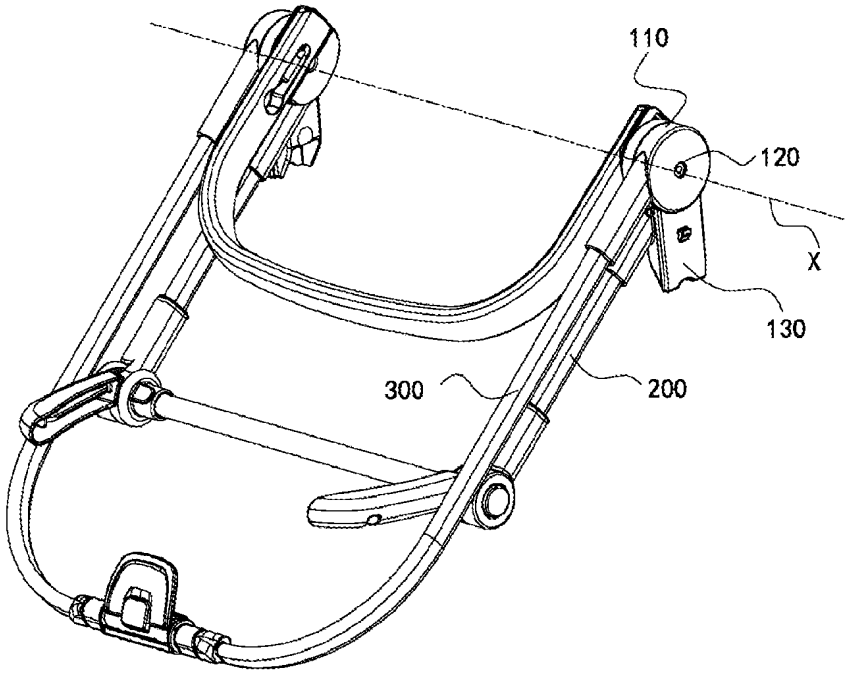

FIG. 5

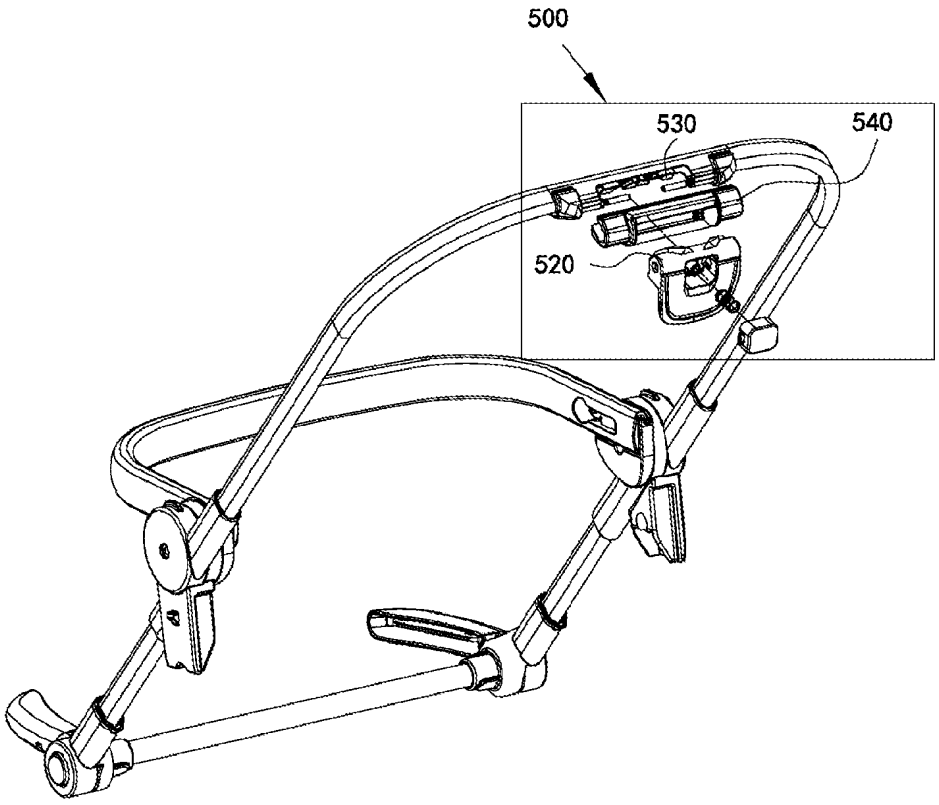

FIG. 6A

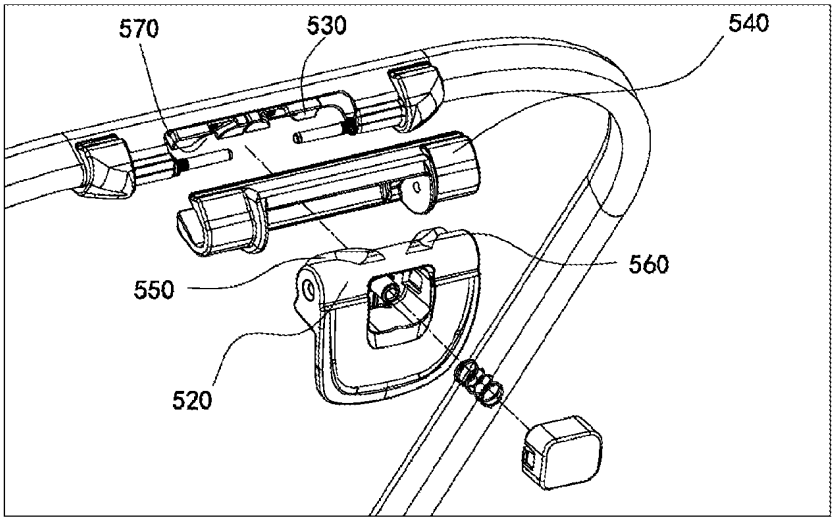

FIG. 6B

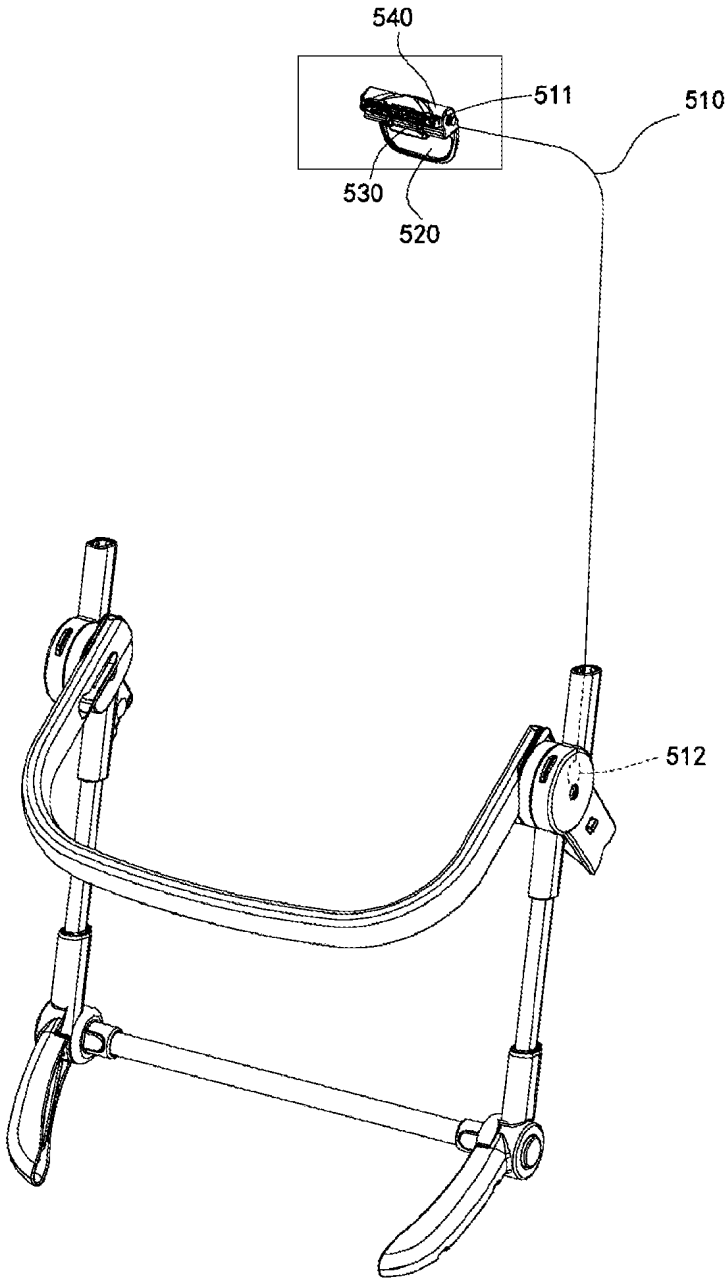

FIG. 7A

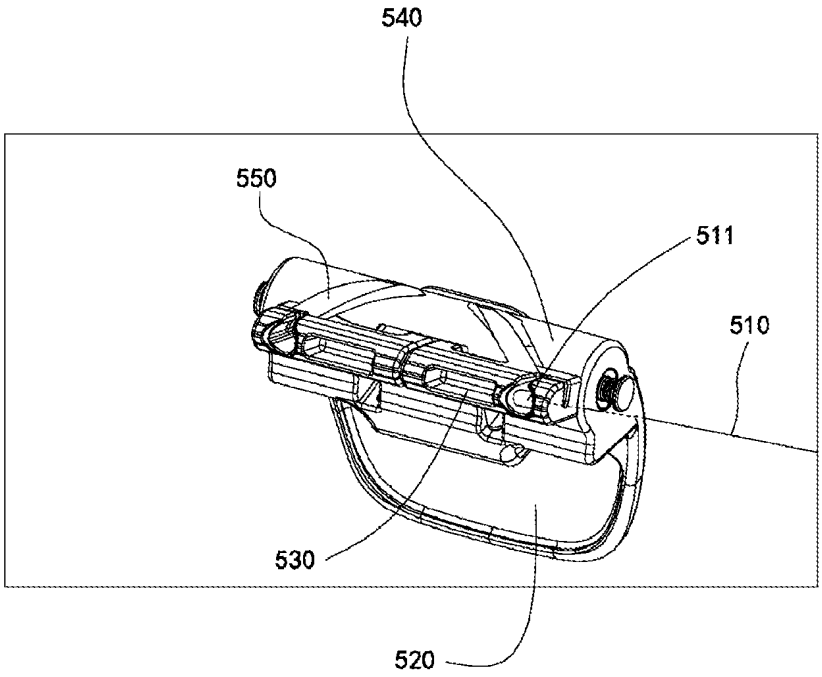

FIG. 7B

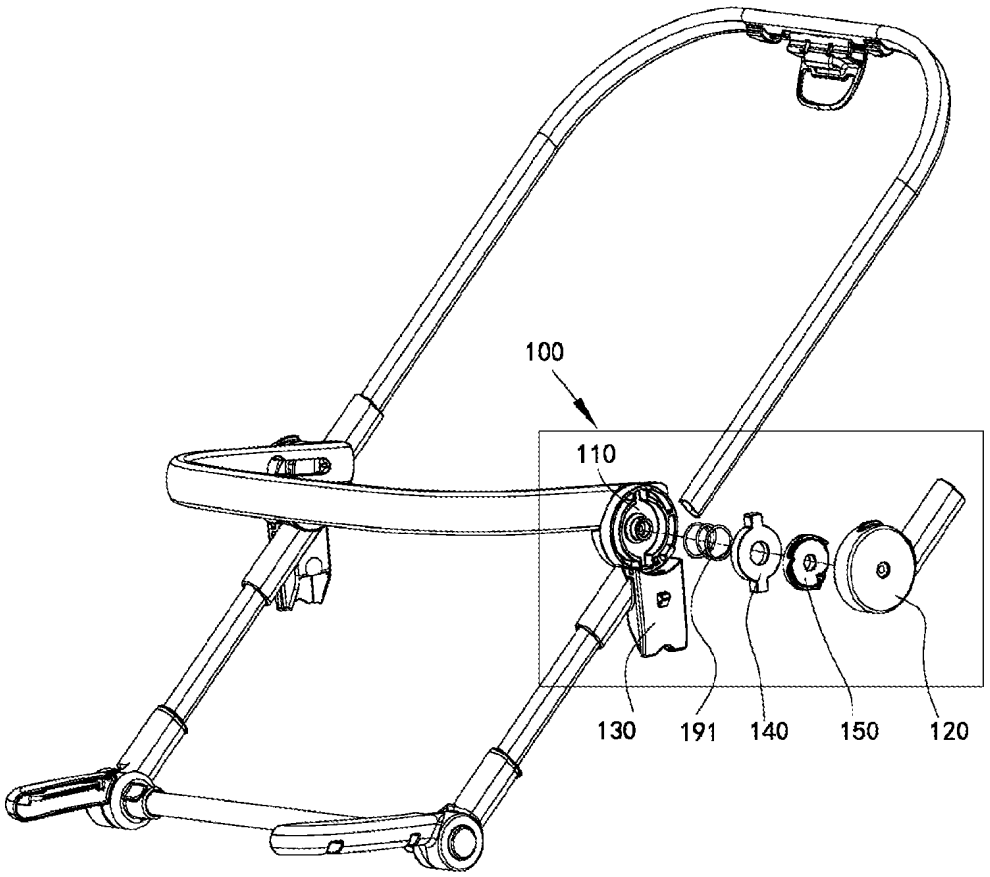

FIG. 8A

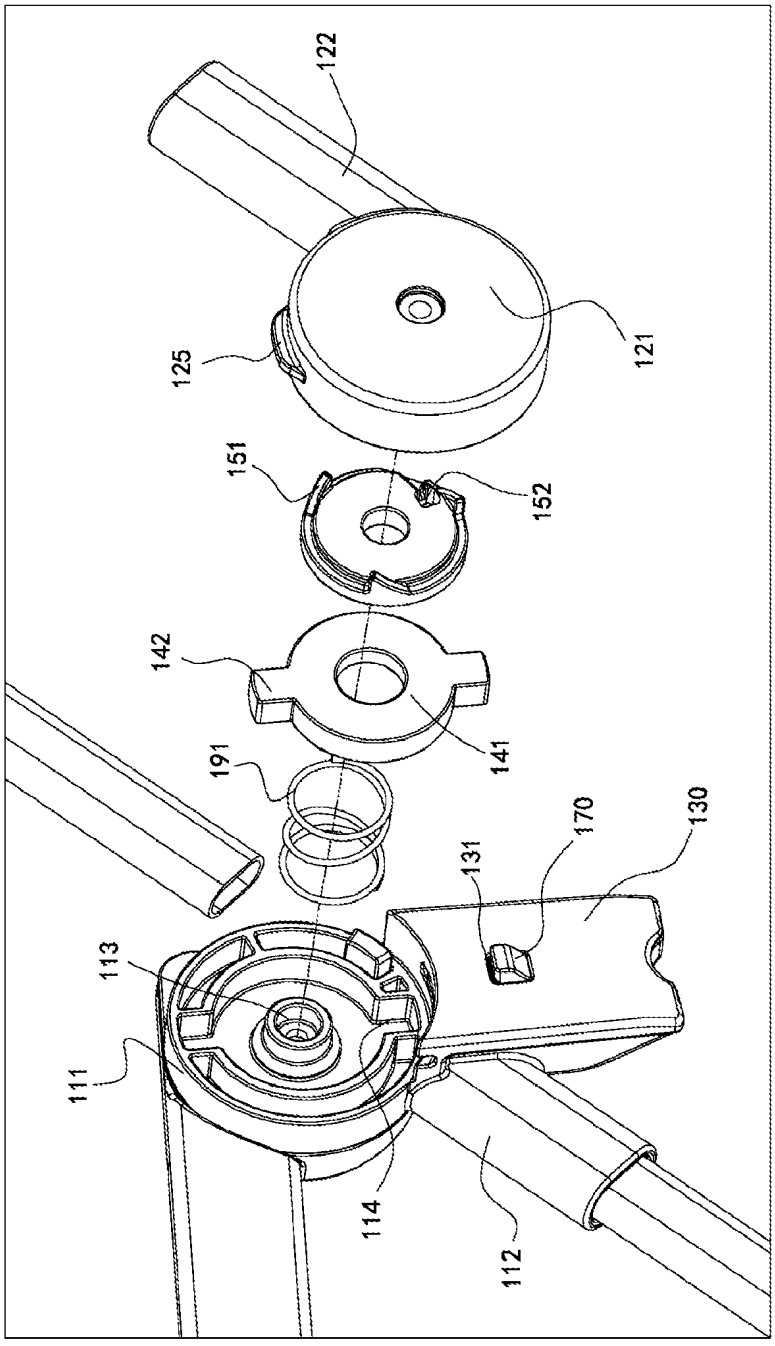

FIG. 8B

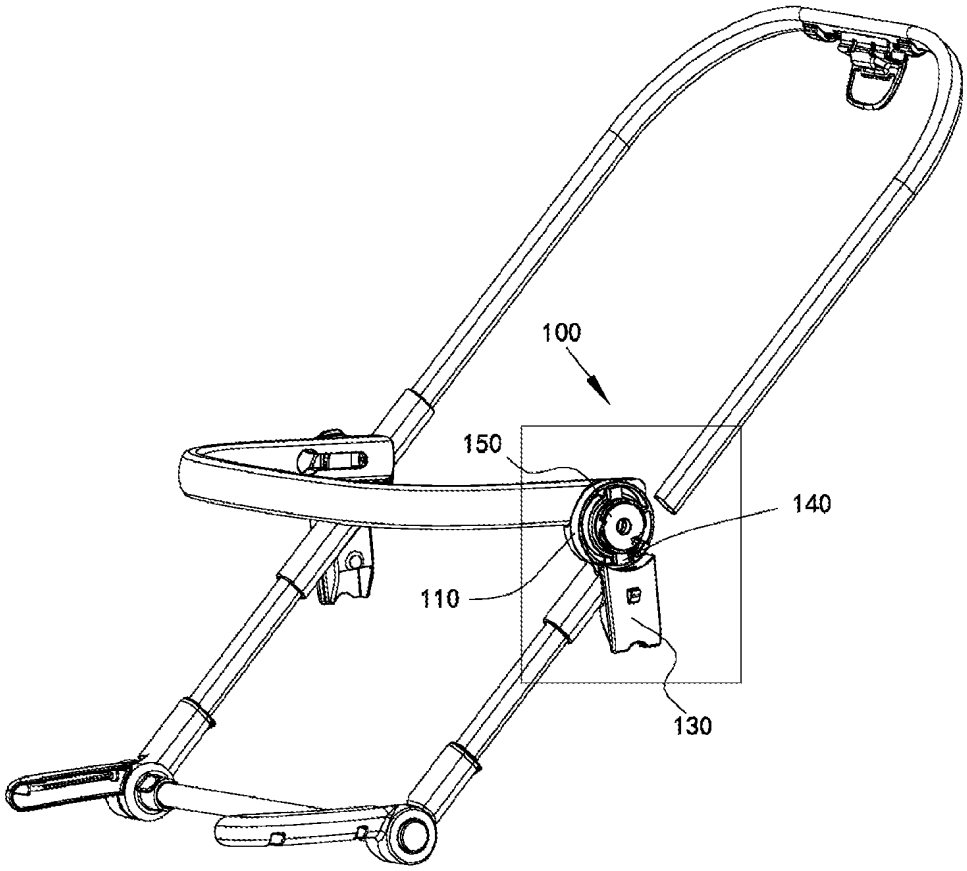

FIG. 9A

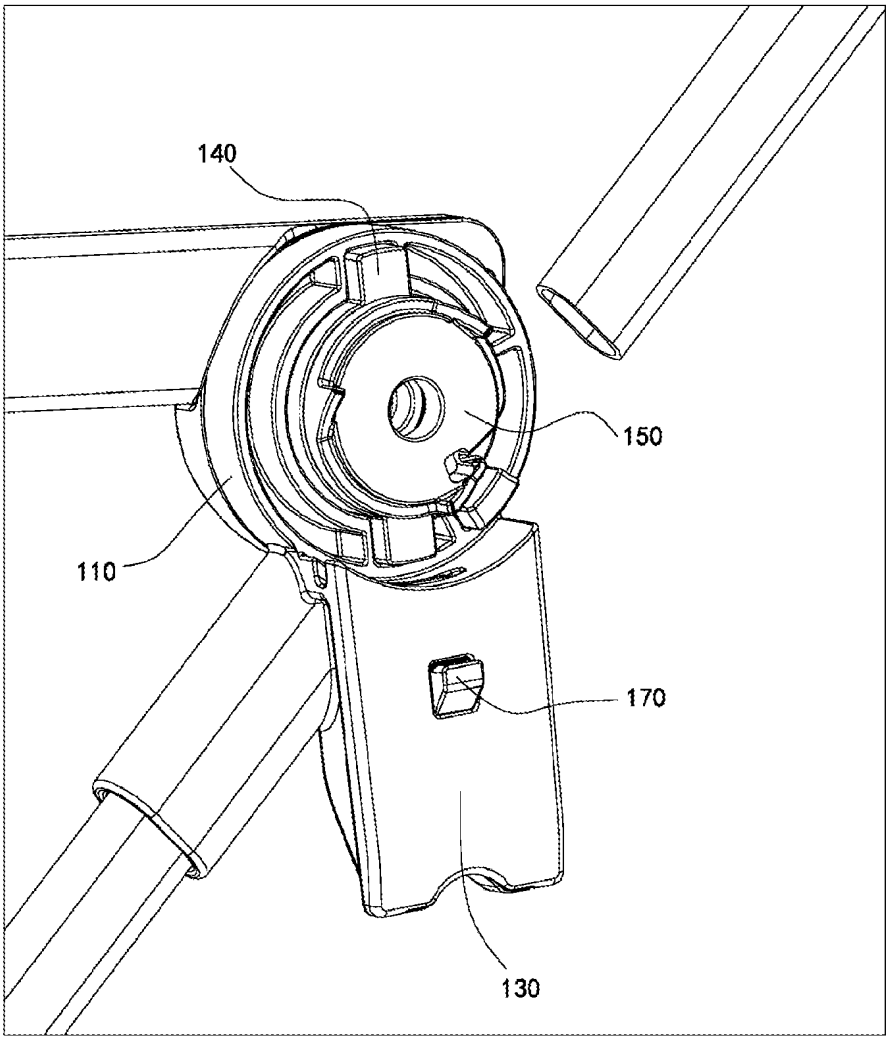

FIG. 9B

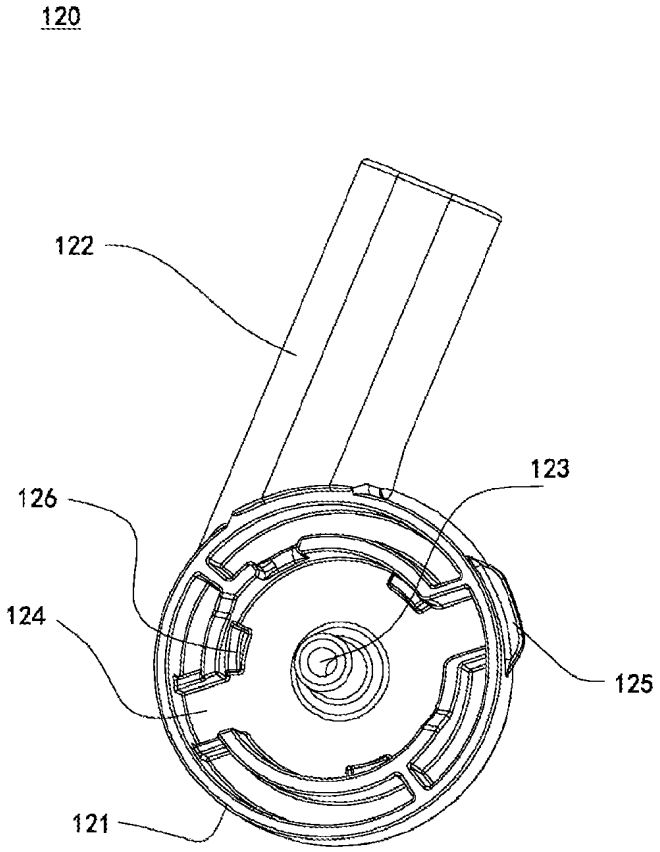

FIG. 10

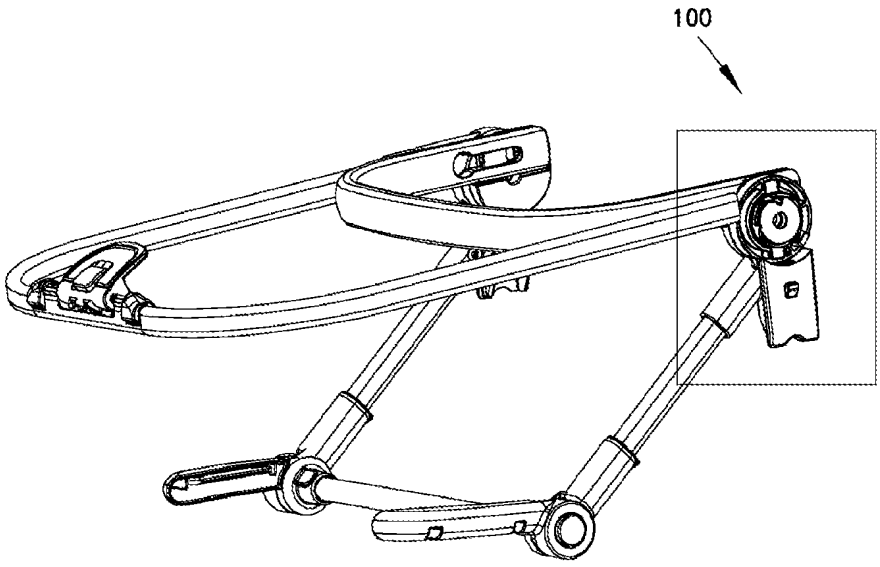

FIG. 11A

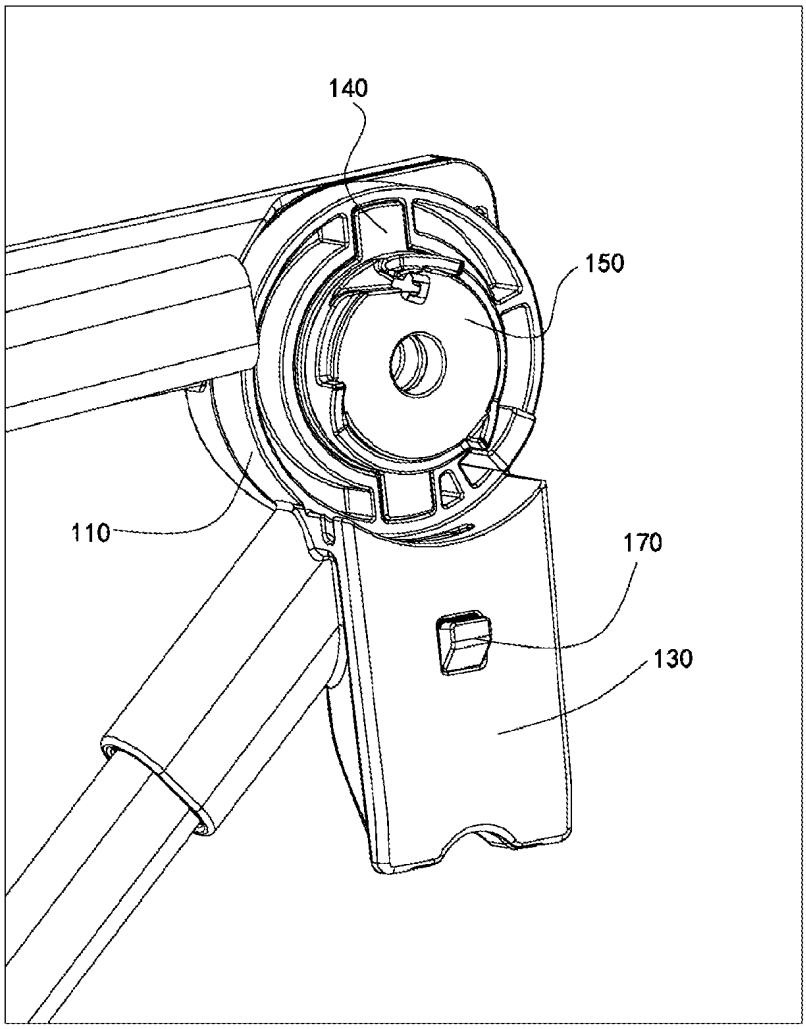

FIG. 11B

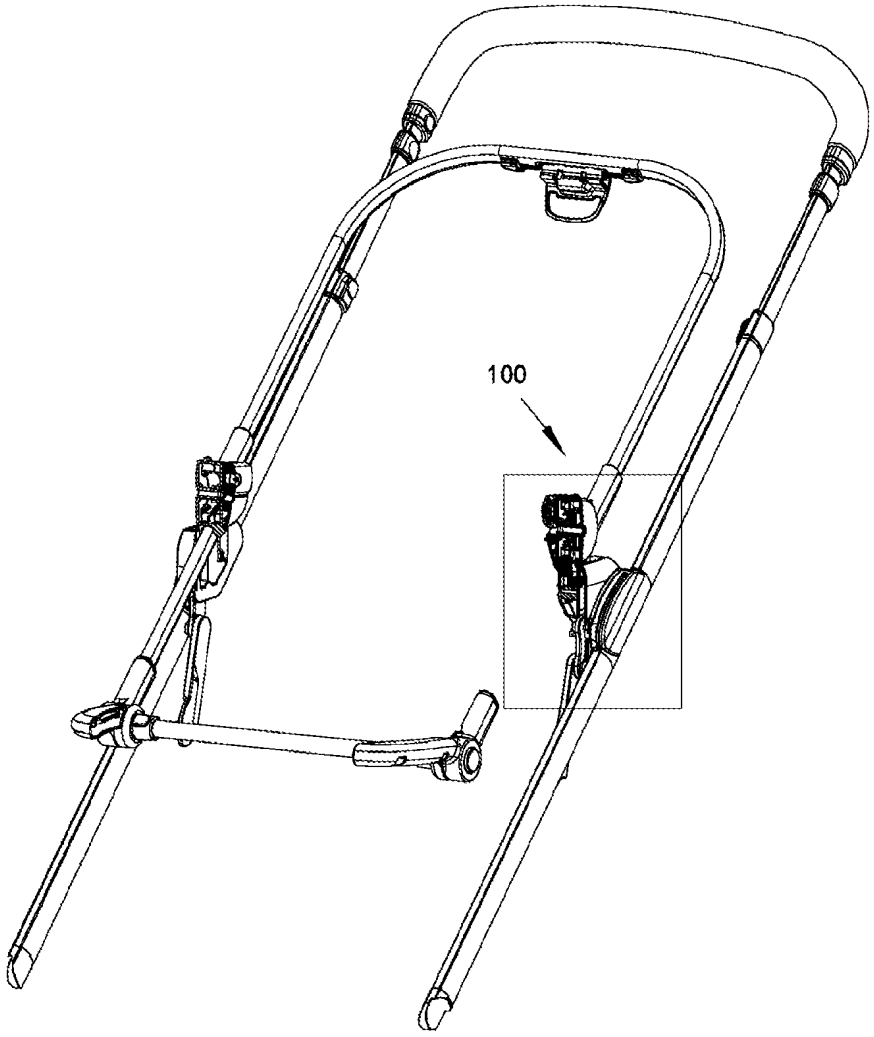

FIG. 12A

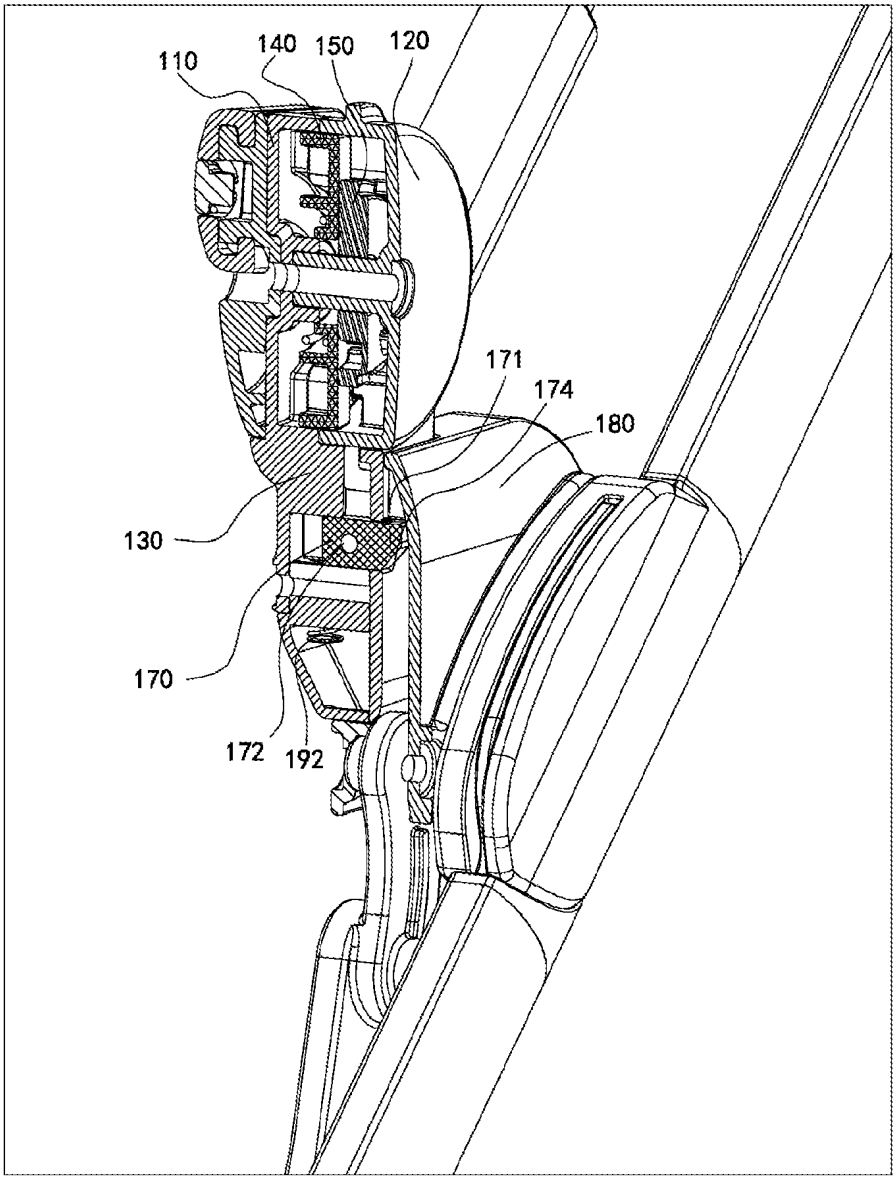

FIG. 12B

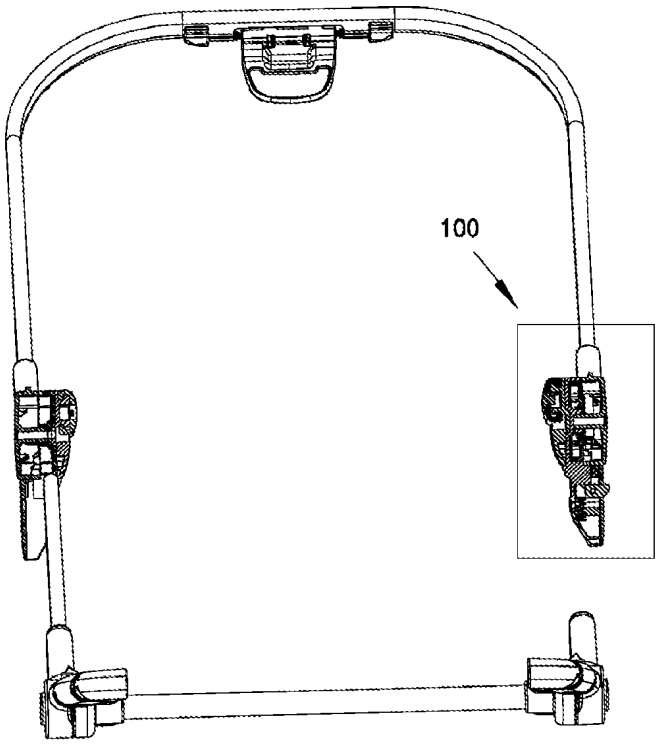

FIG. 12C

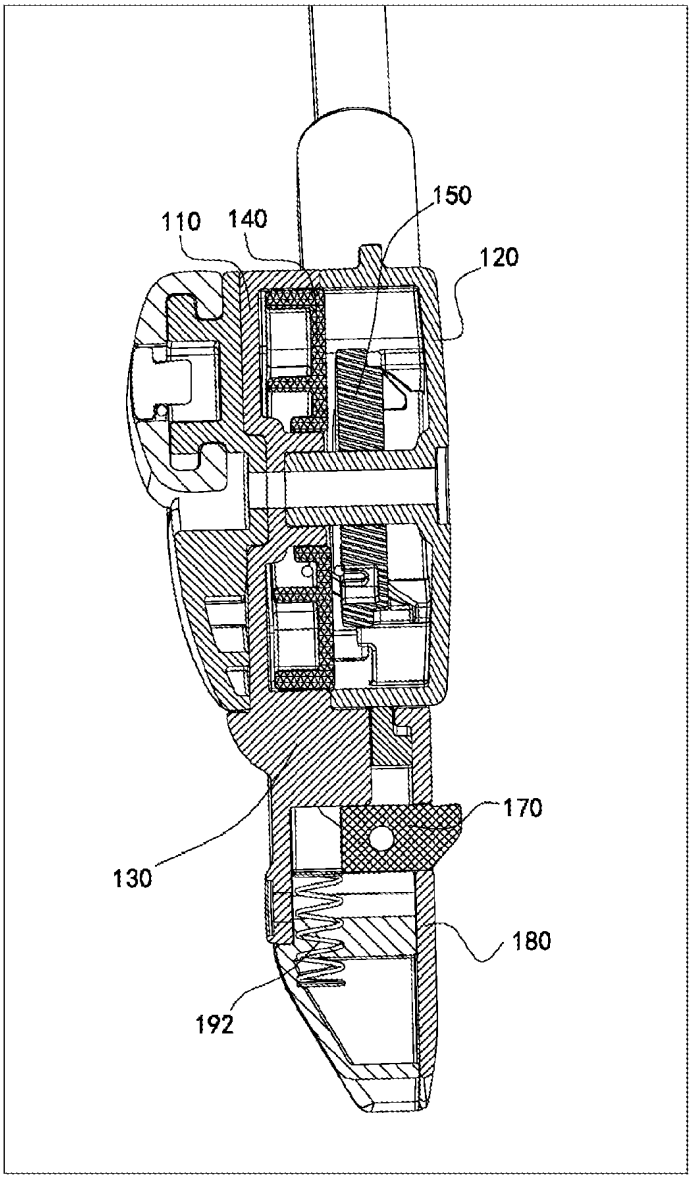

FIG. 12D

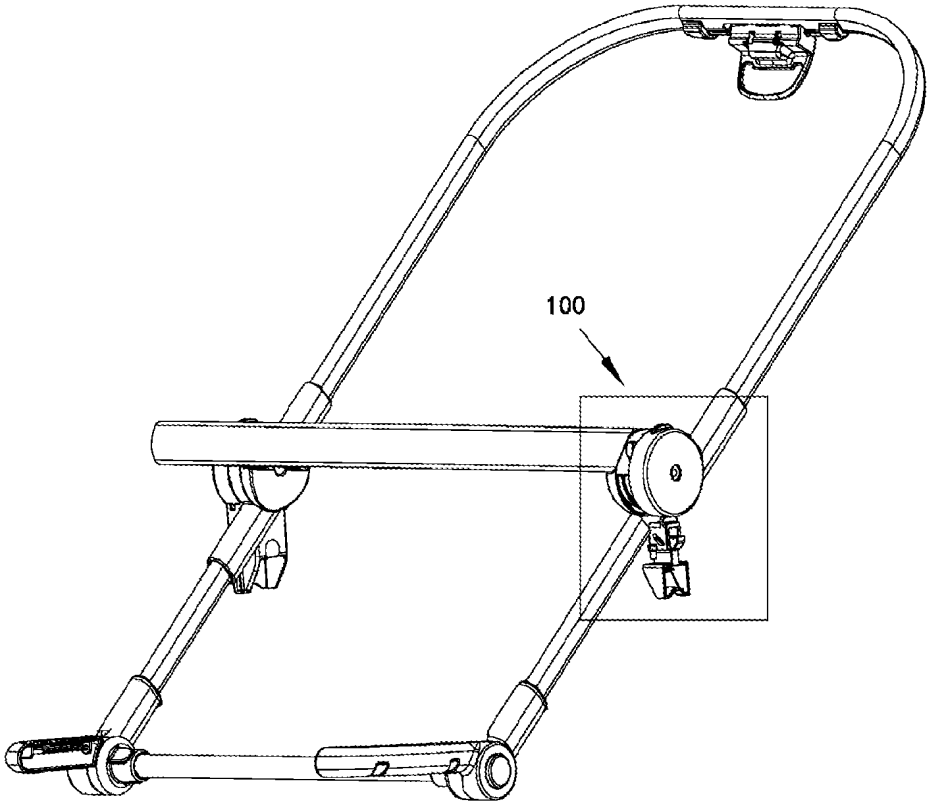

FIG. 13A

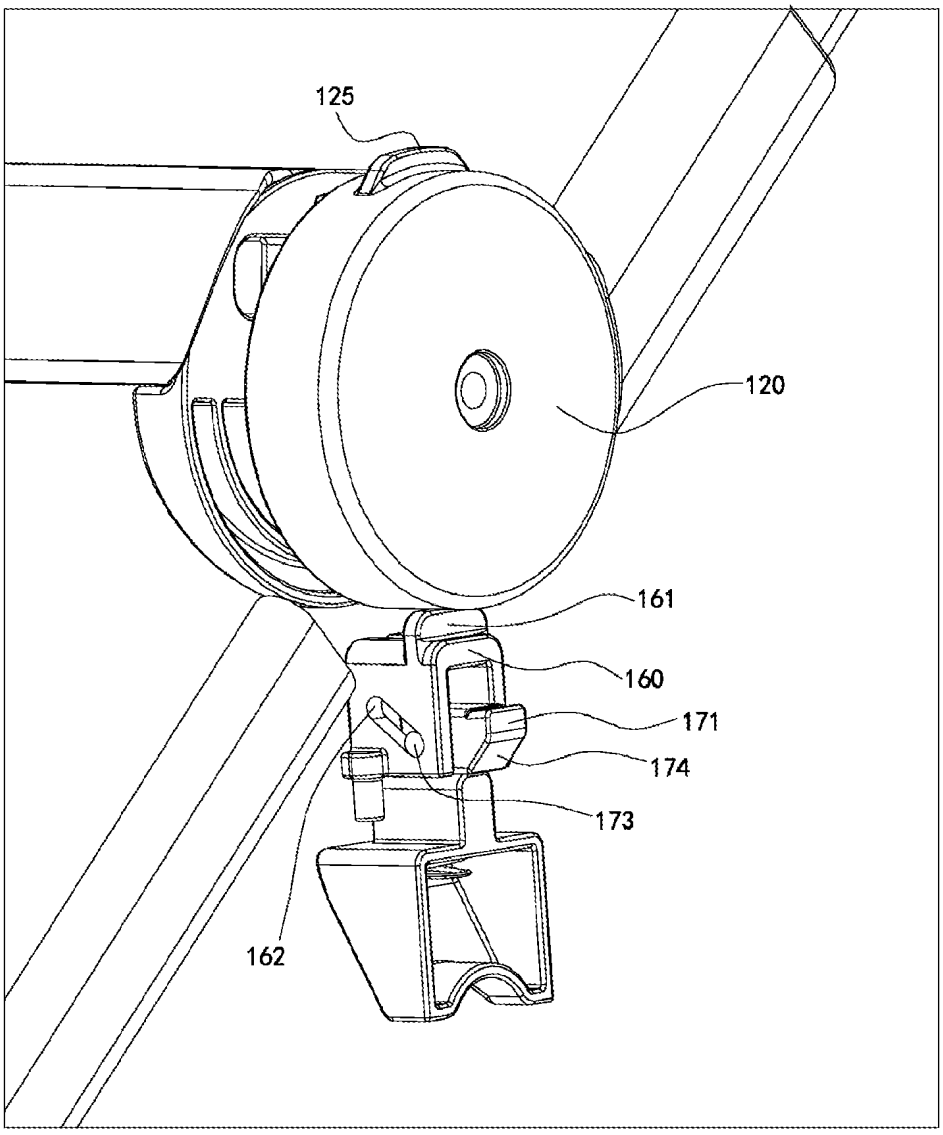

FIG. 13B

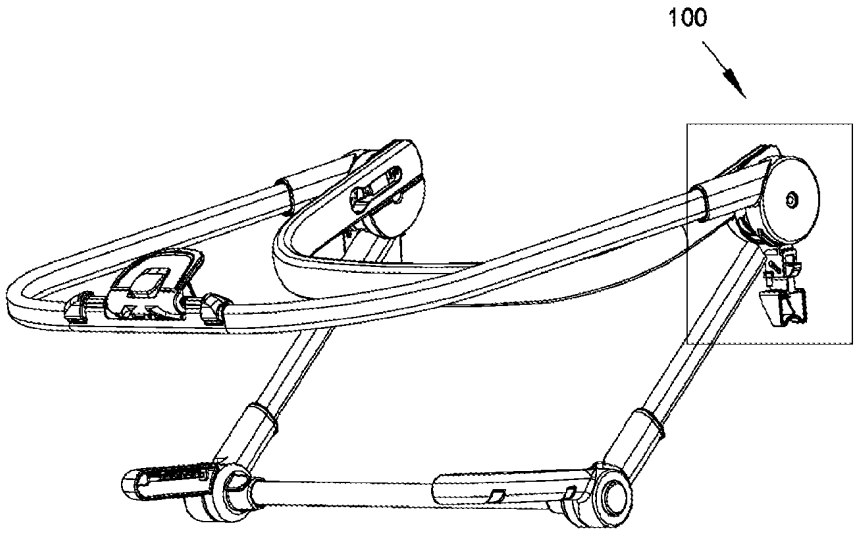

FIG. 14A

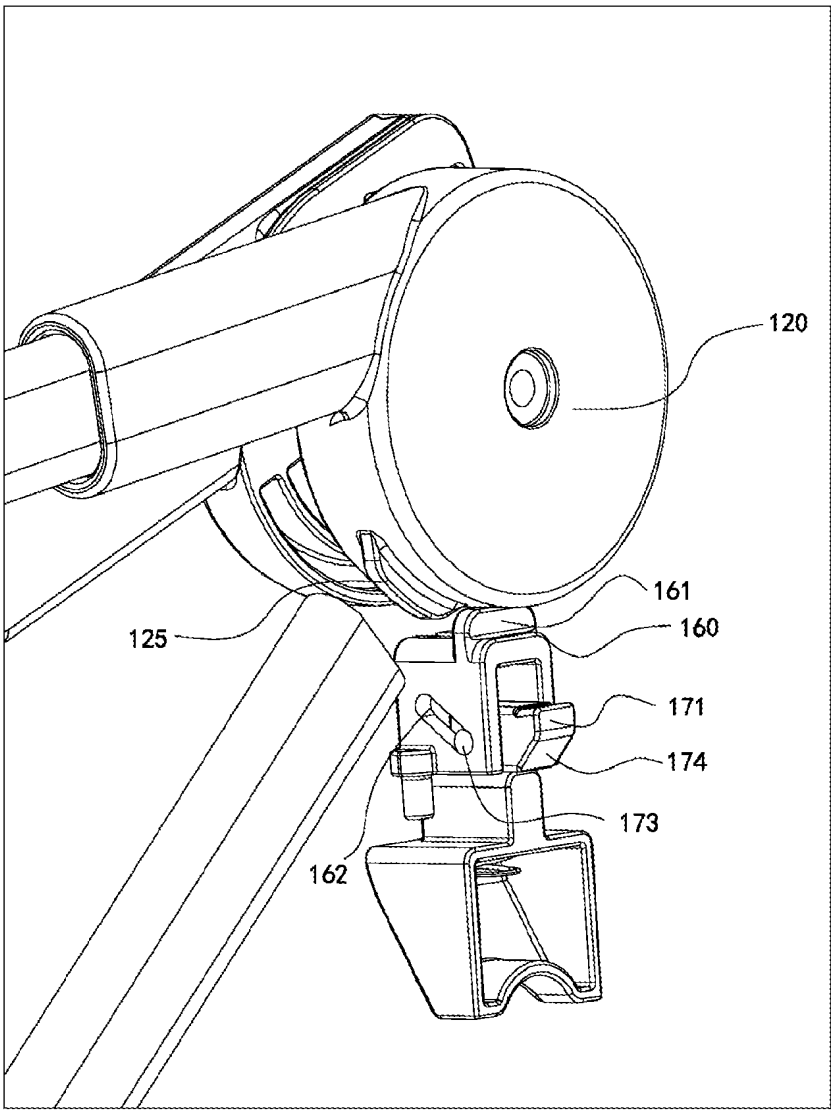

FIG. 14B

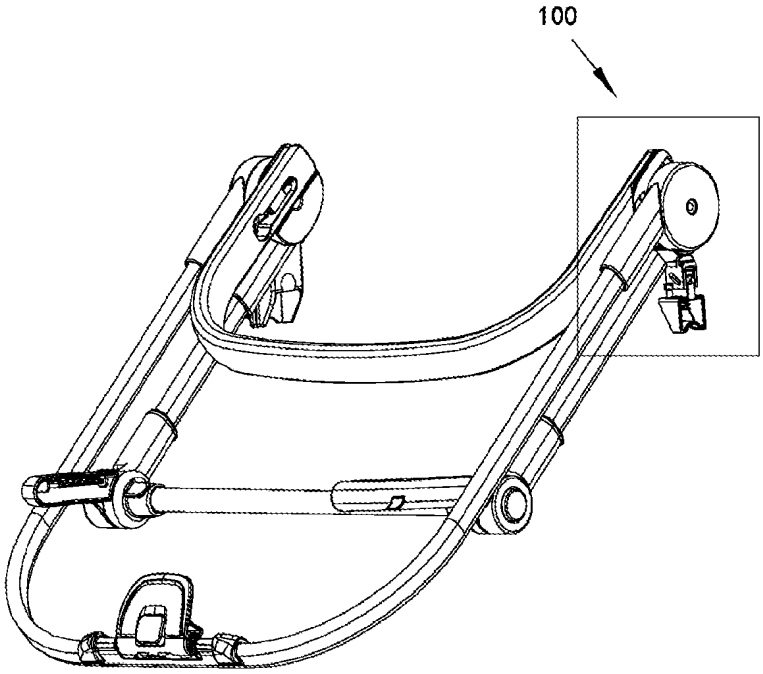

FIG. 15A

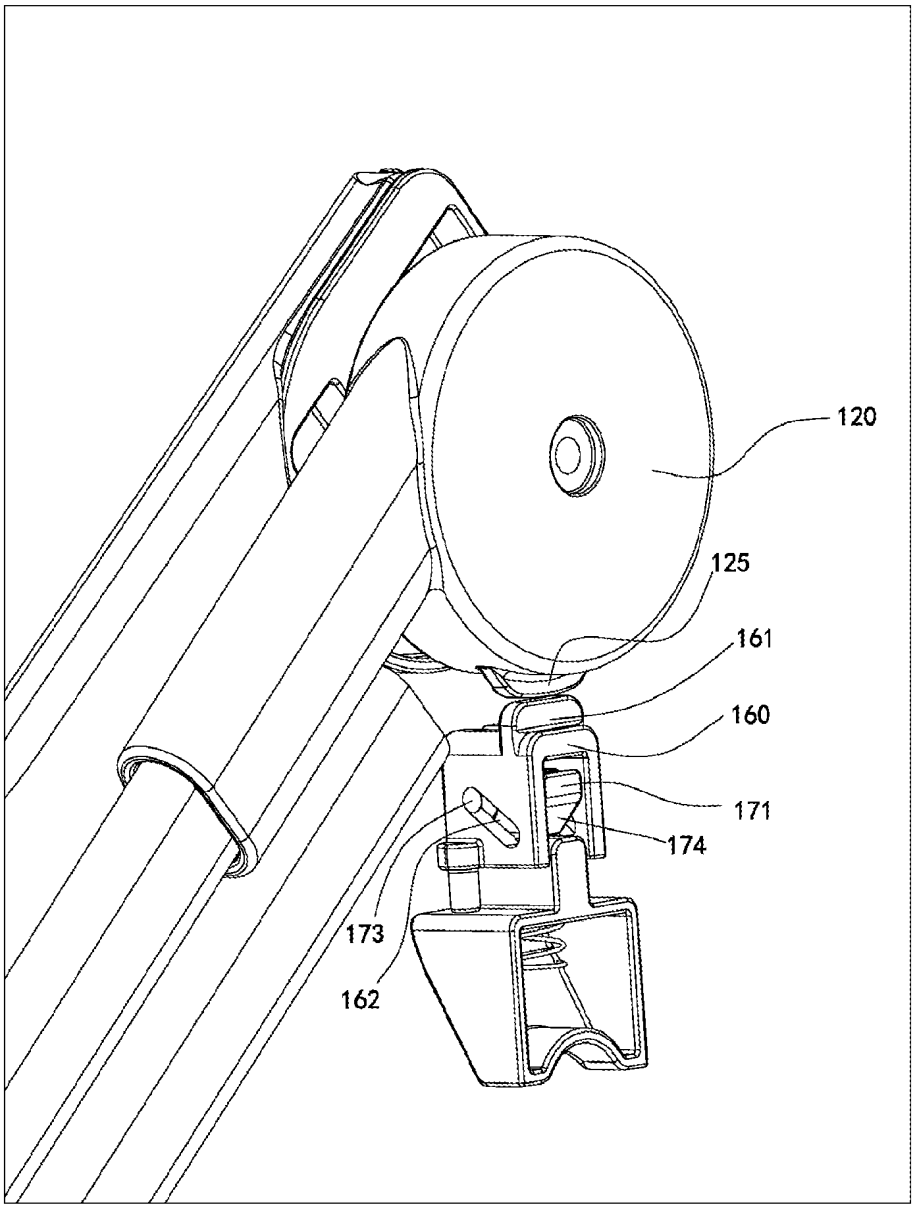

FIG. 15B

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2022/085236

A. CLASSIFICATION OF SUBJECT MATTER
INV. B62B7/06 B62B7/14
ADD.

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

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
B62B

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

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 2 275 321 A2 (LERADO ZHONG SHAN IND CO LTD [CN]) 19 January 2011 (2011-01-19)	1
A	the whole document	2-13
A	US 2019/322304 A1 (ZHONG ZHI-REN [CN]) 24 October 2019 (2019-10-24) paragraphs [0001], [0069]; figures	1-13
A	US 2020/239058 A1 (ZHANG XIAOJIAN [CN]) 30 July 2020 (2020-07-30) paragraphs [0006], [0007], [0036] - [0038], [0044]	1-13
A	US 2019/320812 A1 (ZHONG ZHIREN [CN]) 24 October 2019 (2019-10-24) paragraphs [0006], [0007], [0033] - [0043]; figures 1-8	1-13

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

☒ See patent family annex.

* Special categories of cited documents :

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

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

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

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

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

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

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

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"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
19 March 2023	28/03/2023

Name and mailing address of the ISA/	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Chaloupy, Marc

3

Form PCT/ISA/210 (second sheet) (April 2005)

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/EP2022/085236

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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		US 2021153665 A1	27-05-2021
		US 2023070407 A1	09-03-2023

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3. EP1992543 - CHASSIS FOR A PERAMBULATOR OR SIMILAR

Office
European Patent Office

Application Number
07015646

Application Date
08.08.2007

Publication Number
1992543

Publication Date
19.11.2008

Publication Kind
B1

IPC
B62B 7/14 | B62B 9/12 | B62B 9/20

CPC
B62B 9/20 | B62B 2206/06 | B62B 7/142

Applicants
HAUCK GMBH & CO KG

Inventors
FEYLER JOERG

Designated States
View all

Priority Data
202006012430 11.08.2006 DE

Title
[DE] Fahrgestell für einen Kinderwagen oder dergleichen
[EN] Chassis for a perambulator or similar
[FR] Châssis pour voiture d'enfant ou pareil

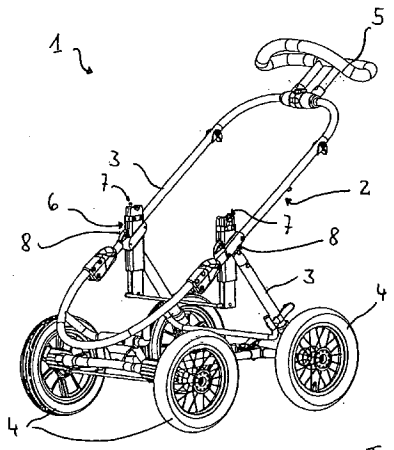

Fig. 1

Abstract
[DE] Fahrgestell für einen Kinderwagen, eine Kinderkarre oder dergleichen mit einem aus miteinander verbundenen Streben (3) aufgebauten Gestell (2) zum Festlegen einer Kinderwagenliegeschale, eines Kinderwagenkarrensitzes, eines Kinder-Autosicherheitssitzes oder dergleichen. Es ist eine Einrichtung (6) zum Verstellen der Höhe der Anschlussvorrichtung (7) relativ zur Position der Räder (4) vorgesehen, bei der die Einrichtung (6) zum Verstellen der Höhe der Anschlussvorrichtung (7) durch zwei auf einer Seite an dem Gestell angeordnete im wesentlichen vertikal verlaufende Führungsrohre (10) mit einem in den Führungsrohren in mindestens zwei unterschiedlichen Positionen arretierbaren Innenrohr (11) realisiert wird.
[EN] The chassis (1) for a pushchair or buggy with a connecting device (7) for fastening of a shell, seat, or car seat, has a unit (6) for adjusting the height of the connecting device, and is formed by vertically extending guide tubes installed on the frame (2) on each side, and an inner tube which is movable in the guide tube in each case and lockable in at least two different positions. A locking element as a component part of the connecting device is located on the upper section of the inner tube.

Related patent documents
DE202006012430 PL1992543 AT477985

(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 1 992 543 B1

(12) **EUROPÄISCHE PATENTSCHRIFT**

(45) Veröffentlichungstag und Bekanntmachung des Hinweises auf die Patenterteilung:
18.08.2010 Patentblatt 2010/33

(51) Int Cl.:
B62B 7/14 *(2006.01)* ***B62B 9/12*** *(2006.01)*
B62B 9/20 *(2006.01)*

(21) Anmeldenummer: **07015646.8**

(22) Anmeldetag: **08.08.2007**

(54) **Fahrgestell für einen Kinderwagen oder dergleichen**

Chassis for a perambulator or similar

Châssis pour voiture d'enfant ou pareil

(84) Benannte Vertragsstaaten:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC MT NL PL PT RO SE SI SK TR

(30) Priorität: **11.08.2006 DE 202006012430 U**

(43) Veröffentlichungstag der Anmeldung:
19.11.2008 Patentblatt 2008/47

(73) Patentinhaber: **HAUCK GmbH & Co. KG**
96242 Sonnefeld (DE)

(72) Erfinder: **Feyler, Jörg**
95268 Mitwitz (DE)

(74) Vertreter: **von Eichel-Streiber, Caspar et al**
Raffay & Fleck
Patentanwälte
Grosse Bleichen 8
20354 Hamburg (DE)

(56) Entgegenhaltungen:
WO-A-01/32493
WO-A-2005/002945
DE-A1- 4 025 009
DE-U1- 20 313 208
FR-A- 2 856 970

Anmerkung: Innerhalb von neun Monaten nach Bekanntmachung des Hinweises auf die Erteilung des europäischen Patents im Europäischen Patentblatt kann jedermann nach Maßgabe der Ausführungsordnung beim Europäischen Patentamt gegen dieses Patent Einspruch einlegen. Der Einspruch gilt erst als eingelegt, wenn die Einspruchsgebühr entrichtet worden ist. (Art. 99(1) Europäisches Patentübereinkommen).

EP 1 992 543 B1

Printed by Jouve, 75001 PARIS (FR)

UPPABABY ET AL. EX. 1068

Beschreibung

[0001] Die Erfindung betrifft ein Fahrgestell für einen Kinderwagen, eine Kinderkarre oder dergleichen gemäß dem Oberbegriff des Schutzanspruches 1.

[0002] Derartige Fahrgestelle sind beispielsweise aus der WO 01/32493 A1 oder der DE 40 25 009 A1 bekannt. So sind Kinderwagen, in denen Säuglinge in einer Liegeschale liegend transportiert werden können, Kinderkarren, in denen für den Transport von Kleinkindern diese in einem Sitz sitzend transportiert werden können, und dergleichen Gefährte für Babys und Kleinkinder heutzutage üblicherweise so aufgebaut, dass sie ein Unterteil in Form eines in der Regel durch Zusammenklappen verkleinerbaren Fahrgestells und einen über eine lösbare Verbindung an dem Fahrgestell festlegbaren Aufsatz in Form einer Kinderwagenliegeschale, eines Kinderkarrensitzes oder dergleichen enthalten.

[0003] Ferner sind Fahrgestelle bekannt, die verwendet werden können, um darauf Autosicherheitssitze, insbesondere solche Sitzschalen für Säuglinge, festzulegen und in dieser Kombination wie einen Kinderwagen zu verwenden.

[0004] In jüngster Zeit wurden Kinderwagen mit Fahrgestellen entwickelt, die durch die Verwendung vergleichsweise kleiner Räder mit großem Schwenkradius sehr beweglich sind und sich auf ein sehr kleines Maß zusammenlegen lassen. Ein Beispiel für solche Kinderwagen ist das unter der Marke Bugaboo® vertriebene Modell. Der Nachteil bei dieser Art von Modellen ist, dass die kompakte Bauweise dazu führt, dass die zugehörigen Aufsätze an dem Fahrgestell in einer sehr niedrigen Montagehöhe angebracht sind. Dies bedeutet insbesondere für größere Eltern, dass sie sich bspw. zu einer Kinderwagenliegeschale sehr weit hinunterbeugen müssen, um ein Kind in diese hinein zu legen oder aus dieser hinaus zu heben. Dies ist für den Rücken des jeweiligen Elternteils eine hohe Belastung. Ferner geht der unmittelbare Kontakt zu einem vergleichsweise tief liegenden bzw. sitzenden Kind verloren. In Bereichen mit hohem Verkehrsaufkommen, wie z.B. in der Stadt an viel befahrenen Straßen, kommt hinzu, dass die näher am Boden liegenden bzw. sitzenden Kinder den dort höheren Abgas- und sonstigen Schadstoffkonzentrationen ausgesetzt sind.

[0005] Hier kann grundsätzlich eine Möglichkeit zur Höhenverstellung der Anschlussvorrichtung Abhilfe schaffen. Über eine solche kann eine gewünschte Montagehöhe der Kinderwagenliegeschale oder dergleichen über dem Boden individuell eingestellt werden.

[0006] Vorschläge für eine solche Möglichkeit zur Höhenverstellung sind bereits gemacht worden. So ist in der WO 2005/002945 A2 ein Gestell beschrieben, welches eine zentrale Diagonalstrebe aufweist, an der in höhenverstellbarer Weise ein Kindersitz angeordnet werden kann.

[0007] Aus der WO 01/32493 A1 ist eine Kinderkarre bekannt, die für behinderte Kinder eingesetzt werden kann und über eine scherenförmige Anordnung von Seitenstreben in der Höhe verstellbar ist.

[0008] Jedoch gibt es hinsichtlich der Realisierung der Höhenverstellbarkeit noch Verbesserungsbedarf. Die in der WO 2005/002945 gezeigte Lösung eignet sich zwar für die Realisierung einer Kinderkarre mit einem Kindersitz, allerdings kann an der zentralen Diagonalstrebe eine vollwertige Kinderwagenliegeschale nicht befestigt werden, so dass dieses Konzept für die Zusammenstellung eines vollwertigen Kinderwagens unbrauchbar ist.

[0009] Bei der aus der WO 01/32493 bekannten Lösung ist es zwar möglich, das Fahrgestell durch Zusammenklappen auf ein kleine Maß zu reduzieren, jedoch ist die dort für einen Kinderwagen für Kinder mit einer Behinderung gezeigte Bauweise des Mechanismus zur Höhenverstellung baulich komplex und führt insbesondere zu einem hohen Gewicht, was für "normale" Kinderwagen nicht gewünscht ist.

[0010] Ziel der Erfindung ist es daher, ein Fahrgestell für einen Kinderwagen, eine Kinderkarre oder dergleichen der einganges genannten Art dahingehend weiterzubilden, dass es eine leichte Bauweise erlaubt und auch den Aufbau eines vollwertigen Kinderwagens ermöglicht.

[0011] Diese Aufgabe wird erfindungsgemäß gelöst durch ein Fahrgestell für einen Kinderwagen, eine Kinderkarre oder dergleichen mit den Merkmalen des Schutzanspruchs 1. Vorteilhafte Weiterbildungen dieses Fahrgestells sind in den abhängigen Ansprüchen 2 bis 7 genannt.

[0012] Die wesentliche Idee der Erfindung besteht darin, die Höhenverstellbarkeit der Anschlussvorrichtung zum Festlegen der Kinderwagenliegeschale, des Kinderkarrensitzes oder dergleichen Elements durch zwei seitlich an dem Gestell, also in Fahrtrichtung rechts und links, angeordnete in jeweils einem Führungsrohr laufende Innenrohre zu realisieren, auf deren Oberseite jeweils ein Anschlusselement als Bestandteil der Anschlussvorrichtung gebildet ist. Eine solche Einrichtung zum Verstellen der Montagehöhe hat gegenüber der in der WO 2005/002945 A2 offenbarten Konstruktionsvariante den entscheidenden Vorteil, dass sie ohne wesentlichen konstruktiven Zusatzaufwand in bekannte Fahrgestelle für Kinderwagen, Kinderkarren oder dergleichen integriert werden kann, wobei hiermit dann gleichermaßen Kinderwagenliegeschalen, Kinderkarrensitze, Kinderautosicherheitssitze und dergleichen auf der höhenverstellbaren Anschlussvorrichtung angeordnet werden können.

[0013] Im Vergleich mit der in der WO 01/32493 A1 offenbarten Lösung ist die erfindungsgemäße Lösung einfacher aufgebaut und besteht aus wenigen, in leichter Bauweise zu realisierenden Teilen.

[0014] Ein weiterer Vorteil besteht darin, dass, sofern ein zusammenklappbares Fahrgestell verwendet werden soll, die erfindungsgemäße Lösung nach wie vor ein Zusammenklappen des Fahrgestells auf sehr kompakte Ausmaße ermöglicht.

[0015] Die Einrichtung zum Verstellen der Höhe der Anschlussvorrichtung ist erfindungsgemäß in wenig-

stens zwei Positionen arretierbar. Selbstverständlich ist es möglich und erhöht den Komfort des erfindungsgemäßen Fahrgestells, wenn die Einrichtung in mehr als zwei Positionen in der Höhe arretierbar ist. Es ist auch denkbar, eine stufenlose Einstellmöglichkeit zu schaffen.

[0016] Derzeit wird eine Distanz zwischen einer niedrigsten und einer höchsten Endstellung des Innenrohres in dem zugeordneten Führungsrohr von zwischen 100 mm und 150 mm, insbesondere zwischen 120 mm und 130 mm bevorzugt. Eine solche Distanz und damit Verstellhöhe erlaubt noch ein kompaktes Zusammenklappen.

[0017] In einer weiteren vorteilhaften Ausgestaltung der Erfindung ist vorgesehen, dass die Innenrohre der Einrichtung zum Verstellen der Höhe der Anschlussvorrichtung miteinander über eine starre Verbindung verbunden sind. Dies kann z.B. über eine mit beiden Innenrohren fest verbundene, diese verbindende Stange geschehen oder in anderer geeigneter Weise. Eine solche Verbindung hat den Vorteil, dass sichergestellt wird, dass beide Innenrohre gegenüber den Führungsrohren stets nur auf gleicher Höhe eingestellt werden können. Somit ist sichergestellt, dass nicht versehentlich beim Verstellen nur eines der Innenrohre in dem zugehörigen Führungsrohr eine seitlich schräge bzw. verkippte Position einer auf dem Fahrgestell montierten Kinderwagenliegeschale, eines Kinderkarrensitzes oder dergleichen und damit eine Unfallgefahr entsteht.

[0018] Mit Vorteil sind bei einer zum Zusammenklappen vorgesehenen Bauweise des Fahrgestells die Führungsrohre im Bereich von zum Zusammenklappen des Gestells vorgesehenen Gelenken angeordnet. Auf diese Weise können die Halterungen für die Führungsrohre zusammen mit einem Gelenkelement ausgeführt werden, was zusätzliche Anbauteile erspart und eine damit auch Kostenersparnis bei dem Zusammenbau des erfindungsgemäßen Fahrgestells mit sich bringt.

[0019] Die gemäß einer weiteren vorteilhaften Ausgestaltung der Erfindung vorgeschlagene Ausführung der Führungs- und Innenrohre als Vierkantrohre stellt eine sehr stabile und insbesondere verdrehsichere Lösung dar. In diesem Fall ist eine mögliche Ausgestaltung eines Arretiermechanismus zum Festlegen des Innenrohres in einem Führungsrohr in einer gewünschten Position näher erläutert, wobei in jedem Innenrohr ein Paar in einer Kulisse geführter, durch die Kulissenführung hinsichtlich ihres Abstandes verlagerbarer Verriegelungsstifte angeordnet ist. Die Kulissenführung ist über eine federbelastete Zugstange oder ein vergleichbares Element (ein Zugseil o. dgl.) mit einem in dem Innenrohr schwenkbar festgelegten Auslösehebel verbunden. Dieser Auslösehebel ist durch einen vertikal verlaufenden Schlitz in dem Führungsrohr mit einer Betätigungselement aus diesem hinaus geführt, so dass eine Betätigung des Auslösehebels von außen möglich ist. In dem Führungsrohr befinden sich in wenigstens zwei unterschiedlichen Positionen Verriegelungsvorsprünge, hinter denen die Verriegelungsstifte arretieren. In einem Grundzustand, in dem die Zugstange durch die Federbelastung in eine Normalposition gezogen und der Betätigungshebel entsprechend in einer nicht Betätigungsstellung gehalten ist, können die Verriegelungsstifte z.B. in der Kulisse nach außen weisen. So können sie hinter entsprechenden Verriegelungsvorsprüngen in dem Führungsrohr liegen und das Innenrohr in seiner Position halten. Durch Betätigen des Auslösehebels kann dann die Kulisse, die z.B. diagonal verlaufende Führungsschlitze aufweist, nach oben gezogen bzw. nach unten gedrückt werden, wobei die z.B. in einem waagerechten Schlitz gelagerten Verriegelungsstifte zueinander gezwungen werden und sich so aus dem jeweils zugeordneten Verriegelungsvorsprung in dem Führungsrohr lösen. Nun kann das Innenrohr in seiner Position verstellt werden, bis bei Loslassen des Auslösehebels die Verriegelungsstifte durch die von der Federkraft in ihrer Ausgangsstellung zurückgezogene Kulissenführung wieder in ihre äußeren Positionen gezwungen werden und hinter einem weiteren Verriegelungsvorsprung aufliegen.

[0020] Schließlich wird in einer weiteren vorteilhaften Weiterbildung der Erfindung beansprucht, dass die Anschlusselemente auf den Stirnseiten der Innenrohre angeordnet und Riegelzapfen oder Zapfenaufnahmen sind, die mit entsprechend geformten Zapfenaufnahmen bzw. Riegelzapfen an einer Kinderwagenliegeschale, einem Kinderkarrensitz, einem Kinderautosicherheitssitz oder dergleichen zusammen wirken.

[0021] Weitere Vorteile und Merkmale der Erfindung ergeben sich aus der nachfolgenden Beschreibung von Ausführungsbeispielen anhand der beigefügten Figuren. Dabei zeigen:

Fig. 1	eine dreidimensionale Ansicht eines erfindungsgemäßen Fahrgestells schräg von vorn,
Fig. 2	eine Ansicht des Fahrgestells aus Fig. 1 von der Seite mit in der hochgestellten Position befindlicher Einrichtung zum Verstellen der Höhe der Anschlussvorrichtung,
Fig. 3	eine dreidimensionale Ansicht eines erfindungsgemäßen Fahrgestells mit einem aufgesetzten Rahmen eines Kinderkarrensitzes schräg von vorn,
Fig. 4	eine Ansicht der Anordnung aus Fahrgestell und aufgesetztem Rahmen gemäß Fig. 3 von der Seite mit in einer unteren Position festgestellter Einrichtung zum Verstellen der Höhe der Anschlussvorrichtung,
Fig. 5	eine Ansicht wie in Fig. 4, jedoch mit hochgestellter Einrichtung zum Ver-

stellen der Höhe der Anschlussvorrichtung,

Fig. 6 eine dreidimensionale separate Ansicht der Einrichtung zum Verstellen der Höhe der Anschlussvorrichtung,

Fig. 7 eine Ansicht der in Fig. 6 gezeigten Einrichtung von der Seite und

Fign. 8a und 8b jeweils in einer Schnittansicht die Anordnung aus Führungsrohr und Innenrohr mit wesentlichen Elementen einer Feststelleinrichtung in einer unteren (Fig. 8a) und einer ausgefahrenen, oberen (Fig 8b) Position.

[0022] In den Figuren sind gleiche Teile mit gleichen Bezugsziffern versehen.

[0023] In den Figuren 1 und 2 ist jeweils in einer dreidimensionalen Ansicht schräg von vorn (Fig. 1) und in einer Seitenansicht (Fig. 2) ein erfindungsgemäßes Fahrgestell für einen Kinderwagen, eine Kinderkarre oder dergleichen in einem Ausführungsbeispiel gezeigt und mit 1 bezeichnet. Das Fahrgestell 1 enthält ein Gestell 2 aus verschiedentlich miteinander zusammengefügten Streben 3, die in diesem Ausführungsbeispiel rohrförmig sind, an dem Gestell 2 angeordneten Rädern 4 und einem an dem Gestell 2 angeordneten Griff 5. An dem Gestell 2 ist ferner eine Einrichtung 6 zum Verstellen der Höhe einer Anschlussvorrichtung 7 für eine Kinderwagenliegeschale, einen Kinderkarrensitz oder dergleichen angeordnet. Diese Einrichtung 6 ist in Fig. 1 in einer unteren, in Fig. 2 in einer oberen arretierten Position gezeigt. Das Fahrgestell 1 ist in dieser Ausführungsvariante zusammenklappbar ausgestaltet, wozu u.a. Gelenke 8 zwischen den einzelnen Streben 3 vorgesehen sind. Im Bereich der hier dargestellten Gelenke 8 ist die Einrichtung zur Höhenverstellung festgelegt, so dass die Gelenke 8 und die Aufnahme der Einrichtung 6 zur Höhenverstellung in einem einzigen Element miteinander vereint sind. Dies vereinfacht die Konstruktion des Fahrgestells 1 und spart Herstellungs- und Montagekosten.

[0024] In den Figuren 3 bis 5 ist das erfindungsgemäße Fahrgestell 1 gezeigt, wobei an der Anschlussvorrichtung 7 auf der Einrichtung 6 zur Höhenverstellung ein Rahmen 9 für einen Kinderkarrensitz befestigt ist. Insbesondere der Vergleich zwischen den Figuren 4 und 5 zeigt, wie mittels der Einrichtung 6 zur Höhenverstellung die Höhe eines Kinderkarrensitzes (von dem hier nur der Rahmen 9 gezeigt ist), verändert werden kann. Gleiches gilt für die Montagehöhe einer Kinderwagenliegeschale, die in gleichartiger Weise mit ihrem Rahmen an der Anschlussvorrichtung 7 festgelegt werden und mittels der Einrichtung 6 zur Höhenverstellung in ihrer Montagehöhe verstellt werden kann. Die Montagehöhe der Einrichtung 6 und die maximale "Ausfahrhöhe" sind bei diesem Ausführungsbeispiel des Fahrgestells 1 so bemessen, dass bei einer Nutzung des Fahrgestells 1 als Unterteil einer Kinderkarre ein in dem zugehörigen Kinderkarrensitz befindliches Kind in der hochgestellten Position der Einrichtung 6 zur Höhenverstellung bequem an einem Tisch z.B. in einem Restaurant sitzen kann. Auf diese Weise ersetzt eine mit dem erfindungsgemäßen Fahrgestell 1 ausgestatte Kinderkarre einen Kinderhochstuhl.

[0025] In den Figuren 6, 7, 8a und 8b ist die Einrichtung 6 zur Höhenverstellung in verschiedenen Ansichten noch einmal separat und vergrößert dargestellt. Anhand dieser Figuren wird die Funktionsweise dieser Einrichtung 6 nunmehr erläutert.

[0026] Die Einrichtung 6 besteht im wesentlichen aus zwei seitlich an dem Gestell 2 angeordneten Führungsrohren 10, in denen Innenrohre 11 verschiebbar und arretierbar angeordnet sind. Sowohl Führungsrohre 10 als auch Innenrohre 11 sind in diesem Beispiel Rechteckrohre. Die Innenrohre 11 sind an ihren unteren Enden über eine Verbindungsstange 12 aus unten näher erläuterten Gründen miteinander verbunden.

[0027] Auf der oberen Stirnseite eines jeden Innenrohres 11 ist als wesentlicher Bestandteil der Anschlussvorrichtung 7 ein Verriegelungszapfen 13 angeordnet, der zum Anschließen einer Kinderwagenliegewanne oder dergleichen mit an diesem Element angeordneten Zapfenaufnahmen zusammenwirkt und mit einem an seinem oberen Ende ausgebildeten Vorsprung ein entsprechendes Verriegelungselement in der Zapfenaufnahmen hintergreift und festsitzt.

[0028] In dem Führungsrohr 10 ist ein im wesentlichen vertikal verlaufender Längsschlitz 14 vorgesehen, durch welchen ein in dem Innenrohr 11 festgelegter Auslösehebel 16 mit seinem Betätigungselement 15 hindurchgeführt ist (vgl. Fig. 8).

[0029] Der Mechanismus zum Festlegen des Innenrohres 11 in dem Führungsrohr 10 in unterschiedlichen Höhenpositionen ist in Figuren 8a und 8b in den jeweiligen Schnittdarstellungen näher gezeigt. In den Figuren 8a und 8b ist die Einrichtung 6 in einer untersten Position (Fig. 8a) und einer obersten Position (Fig. 8b) gezeigt. Die Höhendifferenz zwischen den in Figuren 8a und 8b gezeigten Positionen beträgt in diesem Ausführungsbeispiel etwa 125 mm.

[0030] In dem Innenrohr 11 ist der Auslösehebel 16 an einem Drehpunkt 17 festgelegt. An einem Aufhängungspunkt 22 ist an dem Auslösehebel 16 eine Zugstange 18 angeordnet, an welcher wiederum an ihrem unteren Ende eine Kulisse 19 festgelegt ist, die über eine mit dem Boden des Innenrohres 11 verbundene Feder 20 vorgespannt ist. Die Kulisse 19 enthält V-förmig angeordnete Schrägschlitze (Führungsschlitze), in denen in einem waagerechten Schlitz in der Seitenwand des Innenrohres 11 zusätzlich geführte, die Seitenwand des Innenrohres 11 durch den waagerechten Schlitz durchragende, verschiebbare Verriegelungsstifte 21 laufen.

[0031] Durch Betätigen des Auslösehebels 16 (Anheben des Betätigungselementes 15) wird die über den Aufhängungspunkt 22 mit dem Auslösehebel 16 verbunde-

ne Zugstange 18 und damit auch die Kulisse 19 entgegen der Federkraft der Feder 20 nach oben gezogen. Hierdurch werden durch die schrägen Schlitze in der Kulisse 19 die Verriegelungsstifte 21 von der Wand des Innenrohres 11 weg aufeinander zu gezwungen in eine enger stehende, von der Wand 11 weiter beabstandete Position. Die Verriegelungsstifte 21 liegen in den Figuren 8a und 8b gezeigten Position an hier nicht dargestellten Verriegelungsvorsprüngen des Außenrohres an und halten somit die Position des Innenrohres 11. Werden die Verriegelungsstifte 21 in der oben beschriebenen Weise durch Betätigen des Betätigungselementes 15 bzw. des Auslösehebels 16 nach innen gezwungen, werden sie von den Verriegelungsvorsprüngen befreit und können entlang des Führungsrohres 10 vertikal frei bewegt werden. Auf diese Weise kann das Innenrohr 11 in dem Führungsrohr 10 bewegt werden bis zu einer Position, in welcher wiederum Verriegelungsvorsprünge vorhanden sind, in denen die Verriegelungsstifte 21 arretieren können. Dies geschieht beim Loslassen des Auslösehebels 16, da durch die Federkraft der Feder 20 die Kulisse 19 und damit die Zugstange 18 und der Auslösehebel 16 wieder in die ursprüngliche Position nach unten gezogen werden, wodurch, gezwungen durch die Form der Schrägschlitze in der Kulisse 19, die Verriegelungsstifte 21 wieder voneinander weg und nach außen gedrückt werden. In dieser Stellung können sie, wie oben bereits erwähnt, erneut hinter entsprechenden Verriegelungsvorsprüngen positioniert werden und somit das Innenrohr 11 in einer vorbestimmten Position gegenüber dem Außenrohr 10 verriegelt werden.

[0032] Schließlich soll, wie oben bereits angekündigt, die Funktion der Verbindungsstange 12 erläutert werden. Diese dient dazu, dass die Innenrohre 11 in den Führungsrohren 10 nicht für jede Seite unabhängig in ihrer Höhenposition verschoben werden können, sondern nur gemeinsam. Damit ist sichergestellt, dass stets eine waagerechte Ausrichtung der beiden die Anschlussvorrichtung 7 bildenden Verriegelungszapfen eingehalten wird, so dass es nicht zu einer Verkippung eines auf der Anschlussvorrichtung 7 angeordneten Elementes, z.B. einer Kinderwagenliegeschale oder eines Kinderkarrensitzes (und einer damit verbundenen Unfallgefahr) kommen kann.

[0033] Aus der obigen Beschreibung des Ausführungsbeispiels ist noch einmal deutlich geworden, dass mit der Erfindung ein Fahrgestell 1 ein Kinderwagen, eine Kinderkarre oder dergleichen angegeben ist, das eine einfach zu realisierende, vom Gewicht her leichte Höhenverstellbarkeit einer in dem Fahrgestell angeordneten Kinderliegeschale, eines Kinderkarrensitzes oder dergleichen Elemente ermöglicht. Darüber hinaus kann das erfindungsgemäße Fahrgestell 1 in einer zusammenklappbaren Variante nach wie vor auf ein geringes Maß reduzieren werden.

Bezugszeichenliste

[0034]

1	Fahrgestell
2	Gestell
3	Strebe
4	Rad
5	Griff
6	Einrichtung zur Höhenverstellung
7	Anschlussvorrichtung
8	Gelenk
9	Rahmen
10	Führungsrohr
11	Innenrohr
12	Verbindungsstange
13	Verriegelungszapfen
14	Längsschlitz
15	Betätigungselement
16	Auslösehebel
17	Drehpunkt
18	Zugstange
19	Kulisse
20	Feder
21	Verriegelungsstift
22	Aufhängungspunkt

Patentansprüche

1. Fahrgestell für einen Kinderwagen, eine Kinderkarre oder dergleichen mit einem aus miteinander verbundenen Streben (3) aufgebauten Gestell (2), an dem Gestell (2) angeordneten Rädern (4), einem an dem Gestell (2) angeordneten Griff (5) und mit einer Anschlussvorrichtung (7) zum Festlegen einer Kinderwagenliegeschale, eines Kinderkarrensitzes, eines

Kinder-Autosicherheitssitzes oder dergleichen, wobei eine Einrichtung (6) zum Verstellen der Höhe der Anschlussvorrichtung (7) relativ zu der Position der Räder (4) vorgesehen ist, **dadurch gekennzeichnet, dass** die Einrichtung (6) zum Verstellen der Höhe der Anschlussvorrichtung (7) durch jeweils auf einer Seite an dem Gestell (2) angeordnete, im wesentlichen vertikal verlaufende Führungsrohre (10) und je ein in jedem der Führungsrohre (10) verschiebbar und in wenigstens zwei unterschiedlichen Positionen arretierbar geführtes Innenrohr (11), an dessen oberen Abschnitt jeweils ein Anschlusselement (13) als Bestandteil der Anschlussvorrichtung (7) angeordnet ist, gebildet ist.

2. Fahrgestell nach Anspruch 1, **dadurch gekennzeichnet, dass** die Distanz zwischen zwei möglichen Endstellungen eines Innenrohres (11) in dem zugeordneten Führungsrohr (10) zwischen 100 mm und 150 mm, vorzugsweise zwischen 120 mm und 130 mm beträgt.

3. Fahrgestell nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** die Innenrohre (11) miteinander über eine starre Verbindung (12) verbunden sind.

4. Fahrgestell nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** arretierbare Gelenkverbindungen (8) zwischen einzelnen der Streben (3) des Gestells (2) vorgesehen sind zum Zusammenklappen des Gestells (2) und dass die Führungsrohre (10) im Bereich derartiger Gelenke (8) angeordnet sind.

5. Fahrgestell nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** die Führungs- (10) und die Innenrohre (11) Vierkantrohre sind.

6. Fahrgestell nach Anspruch 5, **dadurch gekennzeichnet, dass** in jedem Innenrohr (11) ein Paar in einer Kulisse (19) geführter, durch die Kulissenführung hinsichtlich ihres Abstandes verlagerbarer Verriegelungsstifte (21) angeordnet ist, wobei die Kulissen (19) über eine federbelastete Zugstange (18) mit einem in dem Innenrohr (11) schwenkbar festgelegten Auslösehebel (16) verbunden ist, welcher durch einen vertikal verlaufenden Schlitz (14) in dem Führungsrohr (10) mit einem Betätigungselement (15) aus letzterem hinausragt, und dass in dem Führungsrohr (10) in wenigstens zwei unterschiedlichen Positionen Verriegelungsvorsprünge vorgesehen sind, hinter denen die Verriegelungsstifte (21) arretieren.

7. Fahrgestell nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** die Anschlusselemente (13) auf den Stirnseiten der Innenrohre (11) angeordnet und Riegelzapfen oder Zapfenaufnahmen sind, die mit entsprechend geformten Zapfenaufnahmen bzw. Riegelzapfen an einer Kinderwagenliegeschale, einem Kinderkarrensitz, einem Kinder-Autosicherheitssitz oder dergleichen zusammenwirken.

Claims

1. A rolling chassis for pram, a baby buggy or similar with a chassis (2) consisting of struts (3) connected to one another, wheels (4) arranged on the chassis (2), a handle (5) arranged on the chassis (2) and with a coupling device (7) for mounting a pram seat shell, a baby buggy seat, a baby self-securing seat or similar, wherein a device (6) is provided for height adjustment of the coupling device (7) with respect to the position of the wheels (4), **characterised in that** the device (6) for height adjustment of the coupling device (7) consists of guiding pipes (10) running substantially vertically, arranged on one side of the chassis (2) and an inner pipe (11) is mobile in each of the guiding pipes (10) and lockable in at least two different positions, wherein a coupling element (13) is mounted at the upper section of said inner pipe as integral part of the coupling device (7).

2. A rolling chassis according to claim 1, **characterised in that** the distance between two possible end positions of an inner pipe (11) in the allocated guiding pipe (10) ranges between 100 mm and 150 mm, preferably between 120 mm and 130 mm.

3. A rolling chassis according to any of the preceding claims, **characterised in that** the inner pipes (11) are linked together via a rigid connection (12).

4. A rolling chassis according to any of the preceding claims, **characterised in that** lockable articulated links (8) are provided individually between the struts (3) of the chassis (2) for folding up said chassis (2) and that the guiding pipes (10) are arranged in the region of such articulations (8).

5. A rolling chassis according to any of the preceding claims, **characterised in that** the guiding (10) and inner pipes (11) are square pipes.

6. A rolling chassis according to claim 5, **characterised in that** each inner pipe (11) includes a pair of locking pins (21) situated in a crank (19) whose distance can be changed via the crank guide, whereas the crank (19) is connected via a spring-loaded tie rod (18) to a release lever (16) swivel-mounted in the inner pipe (11), which protrudes therefrom through a vertically running slit (14) in the guiding pipe (10) with an ac-

tuating element (15), and that locking protrusions are arranged in at least two different positions in the guiding pipe (10), behind which the locking pins (21) are locked.

7. A rolling chassis according to any of the preceding claims, **characterised in that** the connection elements (13) are arranged on the front sides of the inner pipes (11) and consist of locking spigots or spigot seats, which co-perate with matching spigot seats and/or locking spigots on a pram seat shell, a baby buggy seat, a baby self-securing seat or similar.

Revendications

1. Châssis roulant pour poussette, landau ou autres avec un châssis (2) consistant en montants (3) connectés l'un à l'autre, des roues (4) disposées sur le châssis (2), une poignée (5) disposée sur le châssis (2) et un dispositif d'accouplement (7) permettant de monter une coquille de siège de poussette, un siège de landau, un siège bébé à fixation automatique ou autres, un dispositif (6) étant prévu pour le réglage en hauteur du dispositif d'accouplement (7) par rapport à la position des roues (4), **caractérisé en ce que** le dispositif (6) pour le réglage en hauteur du dispositif d'accouplement (7) consiste en tubes de guidage (10) coulissant de manière sensiblement verticale, disposés d'un côté du châssis (2) et un tube interne (11) est mobile dans chacun des tubes de guidage (10) et verrouillable dans au moins deux positions différentes, un élément d'accouplement (13) étant monté dans la partie supérieure dudit tube interne comme partie intégrante du dispositif d'accouplement (7).

2. Châssis roulant selon la revendication 1, **caractérisé en ce que** la distance entre deux positions d'extrémité possibles d'un tube interne (11) dans le tube de guidage (10) correspondant est comprise entre 100 mm et 150 mm, de préférence entre 120 mm et 130 mm.

3. Châssis roulant selon l'une quelconque des revendications précédentes, **caractérisé en ce que** les tubes internes (11) sont reliés ensemble par une connexion rigide (12).

4. Châssis roulant selon l'une quelconque des revendications précédentes, **caractérisé en ce que** des liaisons articulées verrouillables (8) sont prévues individuellement entre les montants (3) du châssis (2) pour replier ledit châssis (2) et que les tubes de guidage (10) sont disposés dans la zone desdites articulations (8).

5. Châssis roulant selon l'une quelconque des revendications précédentes, **caractérisé en ce que** les tubes de guidage (10) et les tubes internes (11) sont des tubes carrés.

6. Châssis roulant selon la revendication 5, **caractérisé en ce que** chaque tube interne (11) comporte une paire de goupilles de verrouillage (21) situées dans une coulisse (19) dont la distance peut être changée à l'aide du guide de coulisse, la coulisse (19) étant connectée par le biais d'une tige de raccordement montée sur ressort (18) à un levier de libération (16) monté de manière pivotante dans le tube interne (11), qui fait saillie à partir de celui-ci à travers une fente verticale (14) dans le tube de guidage (10) avec un élément d'actionnement (15), et en que des parties saillantes sont disposés en au moins deux points différents dans le tube de guidage (10), derrière lequel les goupilles de verrouillage (21) se bloquent.

7. Châssis roulant selon l'une quelconque des revendications précédentes, **caractérisé en ce que** les éléments de connexion (13) sont aménagés sur les côtés avant des tubes internes (11) et se composent de tourillons de verrouillage ou de sièges de tourillon, coopérant avec des sièges de tourillon et/ou des tourillons de verrouillage correspondant sur une coquille de siège de poussette, un siège de landau, un siège bébé à fixation automatique ou autres.

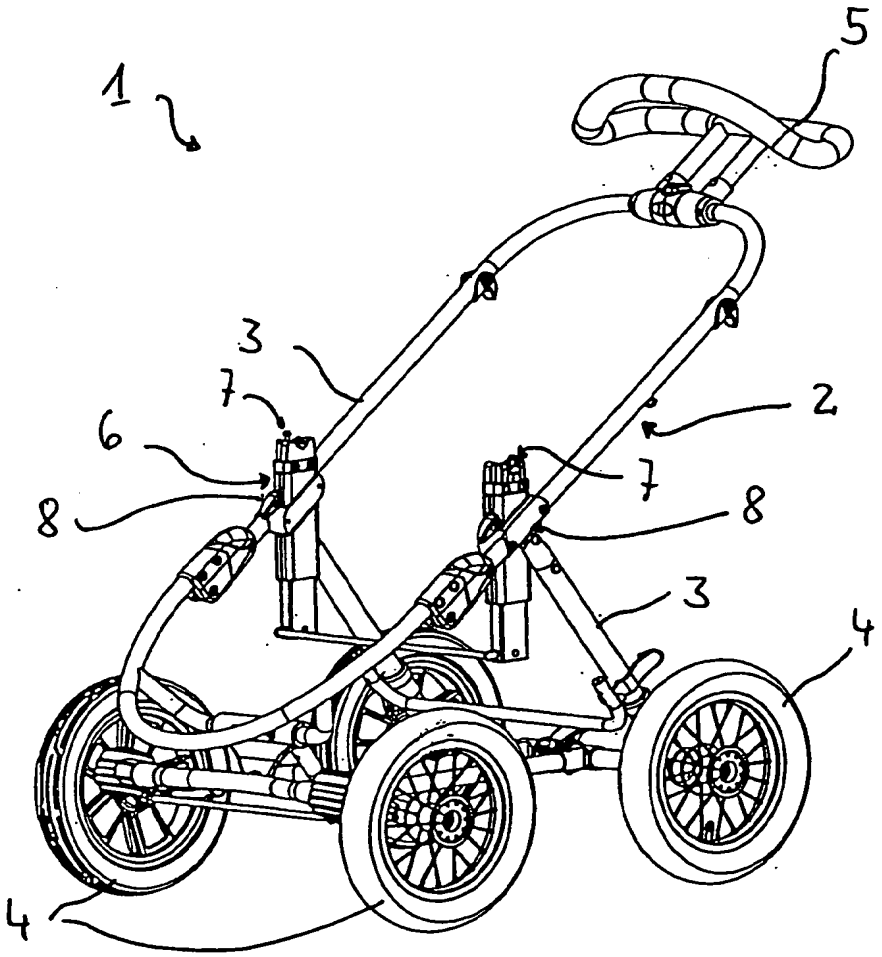

Fig. 1

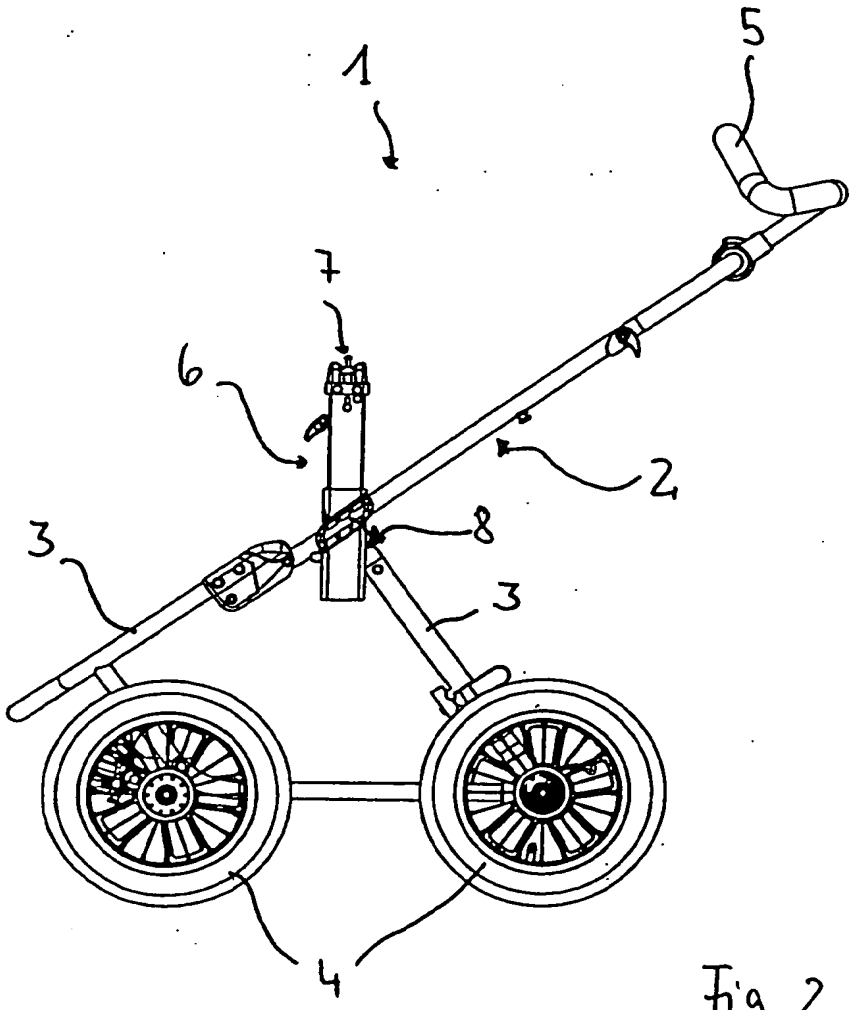

Fig. 2

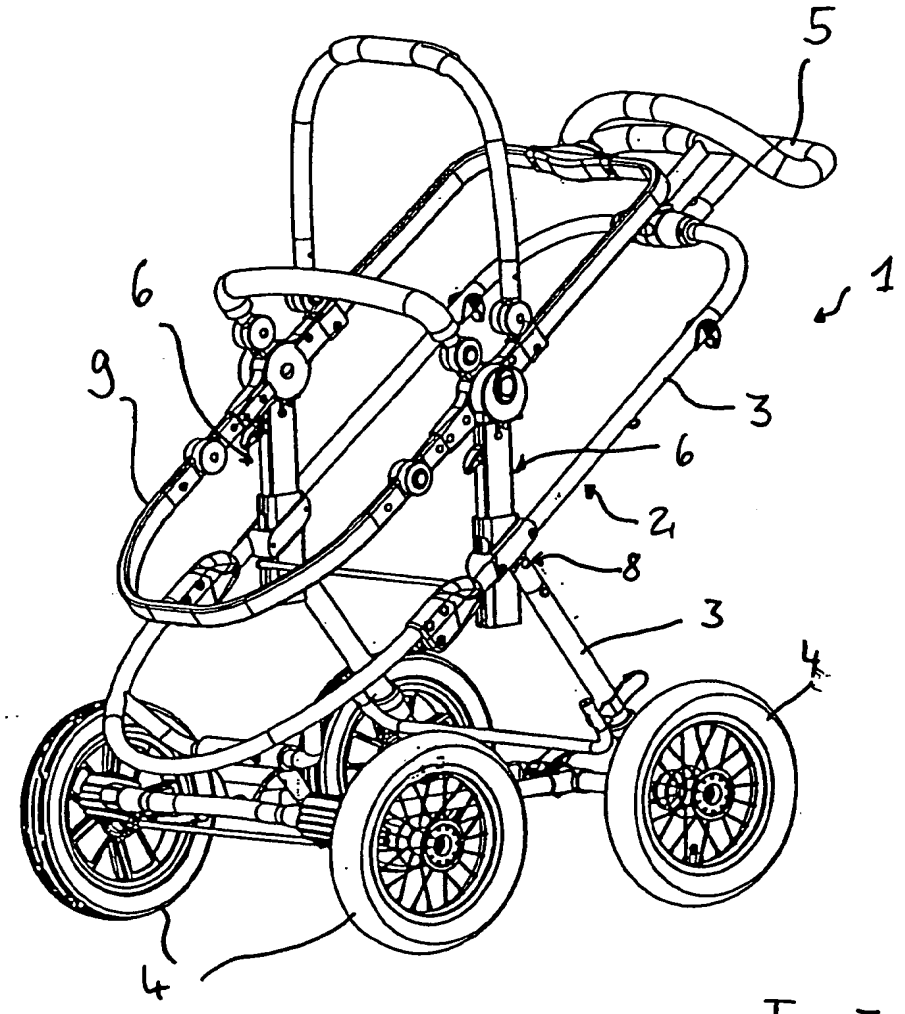

Fig. 3

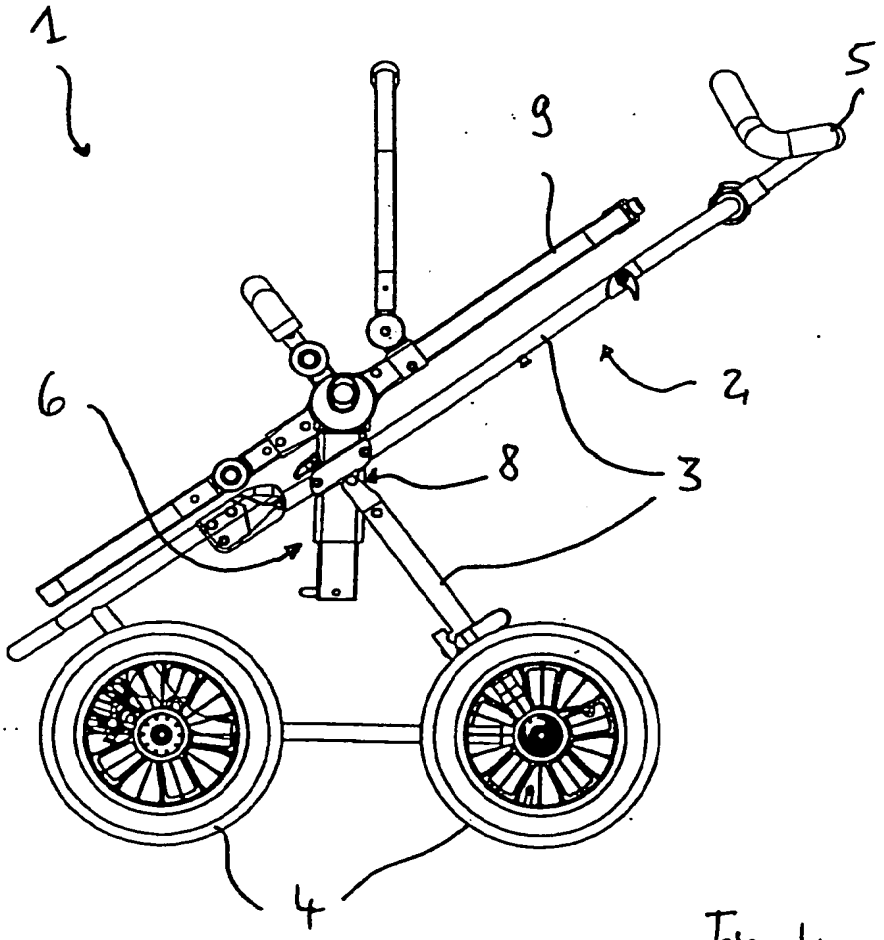

Fig. 4

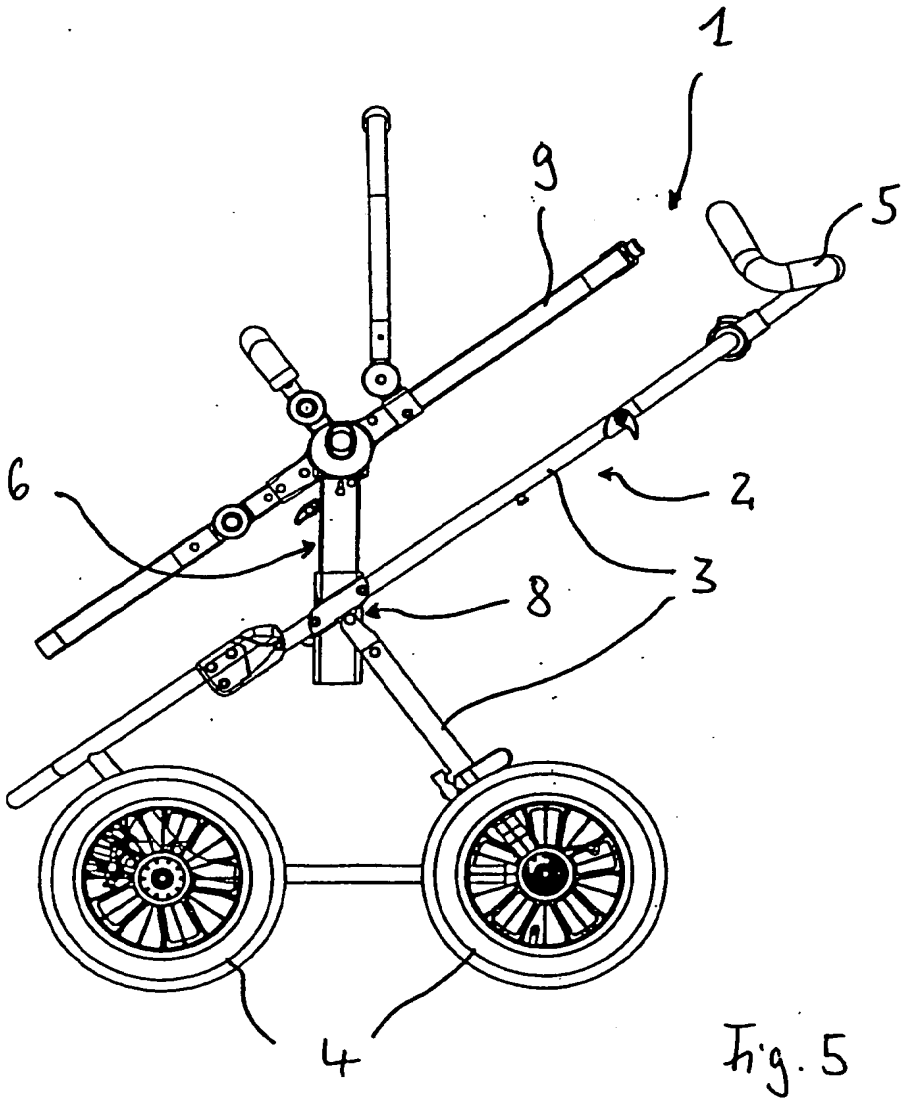

Fig. 5

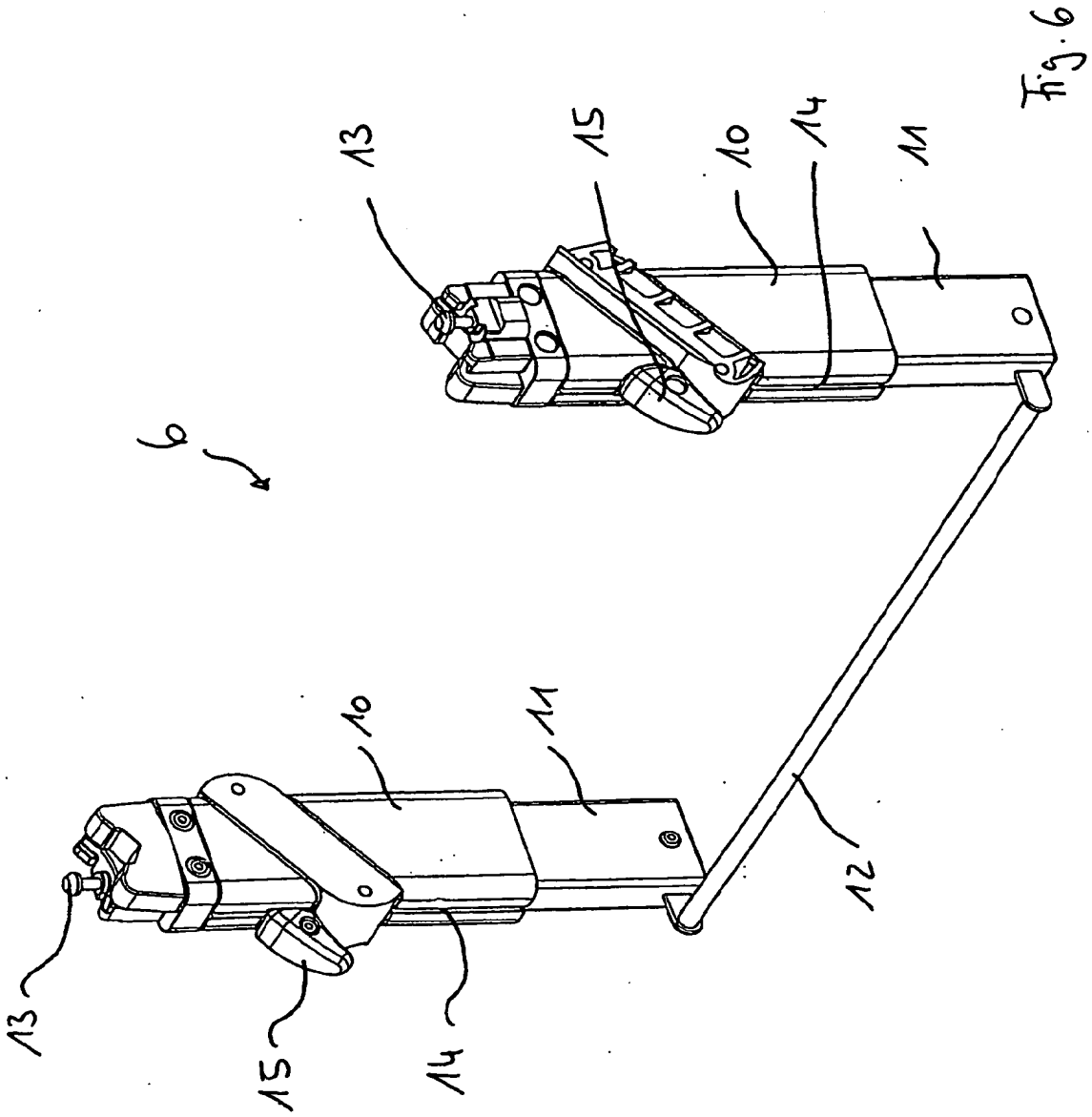

Fig. 6

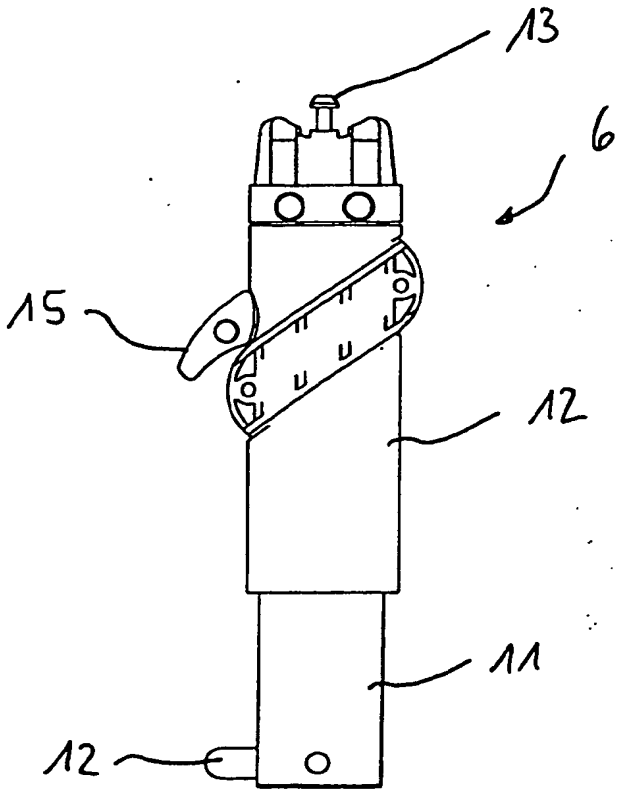

Fig. 7

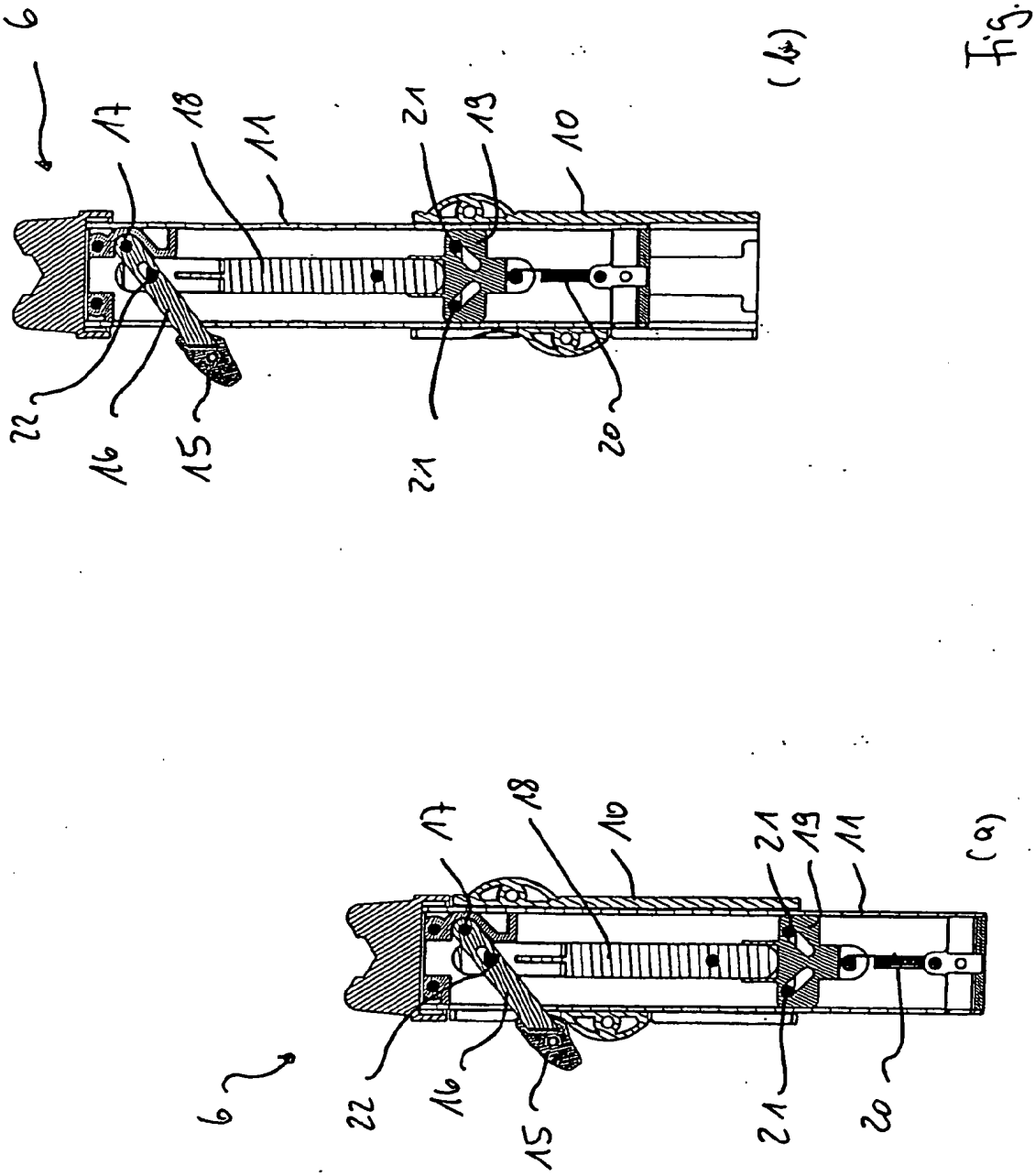

Fig. 8

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In der Beschreibung aufgeführte Patentdokumente

- WO 0132493 A1 **[0002] [0007] [0013]**
- DE 4025009 A1 **[0002]**
- WO 2005002945 A2 **[0006] [0012]**
- WO 2005002945 A **[0008]**
- WO 0132493 A **[0009]**

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APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
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Title of Invention

REMOVABLE SEAT ATTACHMENT FOR A STROLLER

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	3414	FILED BY	Loretta Garcia
PATENT CENTER #	65545042	FILING DATE	08/11/2023
CUSTOMER #	134811	FIRST NAMED INVENTOR	Mark ZEHFUSS
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	Umar Bakhsh

Documents

TOTAL DOCUMENTS: 43

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
34757-2775 Supplemental IDS.pdf	18	Information Disclosure Statement (IDS) Form (SB08)	1238 KB
Foreign-1.pdf	27	Foreign Reference	2222 KB
Foreign-2.pdf	19	Foreign Reference	2029 KB
Foreign-3.pdf	20	Foreign Reference	1740 KB
Foreign-4.pdf	15	Foreign Reference	1506 KB
Foreign-5-Part 1.pdf	21	Foreign Reference	12419 KB
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Foreign-29.pdf	26	Foreign Reference	2203 KB
NPL-1.pdf	9	Non Patent Literature	684 KB
NPL-2.pdf	6	Non Patent Literature	962 KB
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NPL-11.pdf	5	Non Patent Literature	316 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
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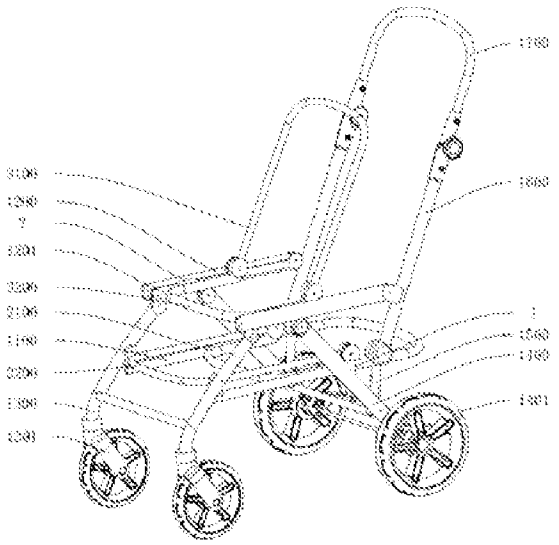
闫德锋

Agents
苏州创元专利商标事务所有限公司 32103

Title
[EN] Stroller
[ZH] 儿童推车



Abstract

[EN] The invention discloses a stroller which comprises a stroller frame and two sets of seat assemblies capable of being folded respectively, at least one set of seat assemblies can be arranged on the stroller frame in a relative sliding mode in the front-back direction, the stroller has a double-person use state and a single-person use state, and when the stroller is in the double-person use state, the two sets of seat assemblies are respectively in an unfolded state, and are arranged on the stroller frame at an interval along the front-back direction; when the stroller is converted from the double-person use state to the single-person use state, the two seat assemblies are relatively close to each other in the front-back direction; when the stroller is in the single-person use state, one seat assembly is in a folded state, and the other seat assembly is in an unfolded state. According to the stroller provided by the invention, when the stroller is switched between the double-person use state and the single-person use state, the unused seat assembly does not need to be detached from the stroller frame, and the switching operation is very convenient.

[ZH] 本发明公开了一种儿童推车，包括车架及两组可分别折叠的座位组件，至少一组座位组件能够沿前后方向相对滑动地设置在车架上，儿童推车具有双人使用状态及单人使用状态，当儿童推车处于双人使用状态时，两组座位组件分别处于展开状态，且两组座位组件沿前后方向间隔地设置在车架上；当儿童推车由双人使用状态向单人使用状态转换时，两组座位组件沿前后方向相对靠拢；当儿童推车处于单人使用状态时，其中一组座位组件处于折叠状态，另一组座位组件处于展开状态。本发明提供的儿童推车，在双人使用状态与单人使用状态之间转换时，无需将不使用的座位组件从车架上拆卸下来，转换操作十分便捷。

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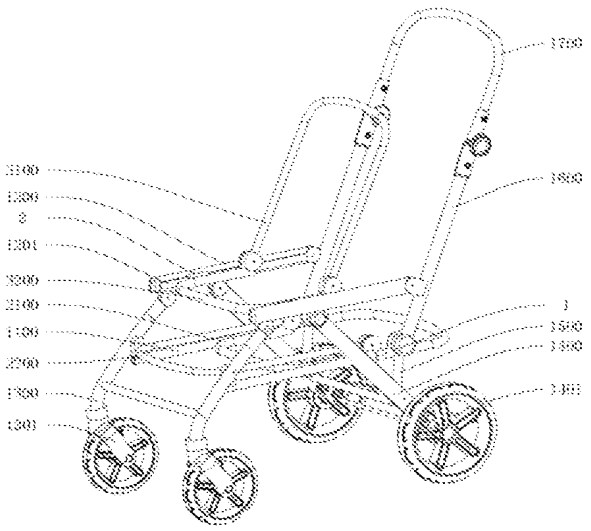
权利要求书2页 说明书6页 附图15页

(54)发明名称

儿童推车

(57)摘要

本发明公开了一种儿童推车，包括车架及两组可分别折叠的座位组件，至少一组座位组件能够沿前后方向相对滑动地设置在车架上，儿童推车具有双人使用状态及单人使用状态，当儿童推车处于双人使用状态时，两组座位组件分别处于展开状态，且两组座位组件沿前后方向间隔地设置在车架上；当儿童推车由双人使用状态向单人使用状态转换时，两组座位组件沿前后方向相对靠拢；当儿童推车处于单人使用状态时，其中一组座位组件处于折叠状态，另一组座位组件处于展开状态。本发明提供的儿童推车，在双人使用状态与单人使用状态之间转换时，无需将不使用的座位组件从车架上拆卸下来，转换操作十分便捷。



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1.一种儿童推车，其特征在于：包括车架及两组可分别折叠的座位组件，所述车架包括分别沿前后方向延伸的第一连杆及第二连杆，所述第一连杆与所述第二连杆沿所述车架的高度方向间隔设置，所述座位组件包括第一座位组件及第二座位组件，所述第一座位组件能够沿所述第一连杆的长度延伸方向相对滑动地设置在所述第一连杆上，和/或，所述第二座位组件能够沿所述第二连杆的长度延伸方向相对滑动地设置在所述第二连杆上，所述儿童推车具有双人使用状态及单人使用状态，当所述儿童推车处于双人使用状态时，两组所述座位组件分别处于展开状态，且两组所述座位组件沿前后方向间隔地设置在所述车架上；当所述儿童推车由双人使用状态向单人使用状态转换时，两组所述座位组件沿前后方向相对靠拢；当所述儿童推车处于单人使用状态时，其中一组所述座位组件处于折叠状态，另一组所述座位组件处于展开状态。

2.根据权利要求1所述的儿童推车，其特征在于：两组所述座位组件分别沿前后方向相对滑动地设置在所述车架上。

3.根据权利要求1所述的儿童推车，其特征在于：当所述儿童推车处于单人使用状态时，处于折叠状态的所述座位组件位于另一组所述座位组件的下方。

4.根据权利要求1所述的儿童推车，其特征在于：所述第一连杆位于所述第二连杆的下方，当所述儿童推车处于双人使用状态时，所述第一座位组件位于所述第二座位组件的前侧。

5.根据权利要求1所述的儿童推车，其特征在于：所述第一连杆位于所述第二连杆的下方，当所述儿童推车处于单人使用状态时，所述第一座位组件处于折叠状态，所述第二座位组件处于展开状态，所述第一座位组件收拢于所述第二座位组件的下方。

6.根据权利要求1所述的儿童推车，其特征在于：所述第一座位组件设置在所述第一连杆上，所述第一座位组件包括第一上围框及第一下围框，所述第一上围框与所述第一下围框转动连接，所述第一座位组件处于展开状态下，所述第一上围框沿上下方向延伸，所述第一下围框沿前后方向延伸；所述第一座位组件处于折叠状态下，所述第一上围框沿前后方向延伸并与所述第一下围框、所述第一连杆相互收拢在一起。

7.根据权利要求1至6任一项所述的儿童推车，其特征在于，所述车架可折叠，所述车架具有分设于左右两侧的两组侧支架，所述车架处于展开状态下，每组所述侧支架均包括：

前轮支架，所述前轮支架的底部设有前轮组件；

后轮支架，所述后轮支架的底部设有后轮组件；

所述第一连杆，所述第一连杆沿前后方向延伸，所述第一连杆的前端部与所述前轮支架转动连接；

所述第二连杆，所述第二连杆沿前后方向延伸，所述第二连杆位于所述第一连杆的上方，所述第二连杆的前端部与所述前轮支架的上端部转动连接，所述第二连杆与所述后轮支架的上端部转动连接；

推杆，所述推杆沿上下方向延伸，所述第二连杆的后端部与所述推杆转动连接。

8.根据权利要求7所述的儿童推车，其特征在于：所述车架处于展开状态下，每组所述侧支架还包括摆杆，所述摆杆的下端部与所述后轮支架转动连接，所述摆杆的上端部、所述推杆的下端部、所述第一连杆的后部三者中的两者转动连接，第三者与前两者中的至少一者转动连接。

9.根据权利要求7所述的儿童推车，其特征在于：沿所述第二连杆的长度延伸方向上，所述前轮支架与所述第二连杆的转动连接处位于所述后轮支架与所述第二连杆的转动连接处的前侧；或，所述第二连杆、所述前轮支架、所述后轮支架三者绕同一转动中心线转动连接。

10.根据权利要求1所述的儿童推车，其特征在于：所述第一座位组件能够沿所述第一连杆的长度延伸方向相对滑动地设置在所述第一连杆上，当所述儿童推车处于双人使用状态时，所述第一座位组件至少部分位于所述第一连杆的前侧。

儿童推车

技术领域

[0001] 本发明涉及儿童用品领域，尤其涉及一种儿童推车。

背景技术

[0002] 随着二胎、三胎政策的推广，越来越多的家庭会同时育有两名幼童。为了家庭出行的方便，许多用户会选择购买双人推车，并且倾向于选择能够在单人车模式与双人车模式之间切换的儿童推车，从而当仅需要推行一名幼童时，可以适当缩小推车的体积，并使得单名儿童具有更大、更舒适的活动空间。

[0003] 现有的可单、双人转换的儿童推车中，实现模式切换的方式各不相同。一些推车需要将其中一个座位乃至部分车架拆卸下来，才能够转换为单人车模式，操作繁琐而吃力。一些推车为了节省空间，在双人车模式下，两个座位为背靠背的形式，两名儿童互相看不到，缺少互动。此外，由于双人车的体积普遍大于单人车，因此许多推车在双人车模式下无法折叠或折叠体积大，必须将一个或两个座兜拆卸下来才可实现有效折叠，给使用者带来不便。

发明内容

[0004] 本发明的目的是针对现有技术存在的问题，提供一种在不需要拆卸座位组件的情况下可以实现单双人转换的儿童推车。

[0005] 为达到上述目的，本发明采用的技术方案是：

[0006] 一种儿童推车，包括车架及两组可分别折叠的座位组件，至少一组所述座位组件能够沿前后方向相对滑动地设置在所述车架上，所述儿童推车具有双人使用状态及单人使用状态，当所述儿童推车处于双人使用状态时，两组所述座位组件分别处于展开状态，且两组所述座位组件沿前后方向间隔地设置在所述车架上；当所述儿童推车由双人使用状态向单人使用状态转换时，两组所述座位组件沿前后方向相对靠拢；当所述儿童推车处于单人使用状态时，其中一组所述座位组件处于折叠状态，另一组所述座位组件处于展开状态。

[0007] 优选地，两组所述座位组件分别沿前后方向相对滑动地设置在所述车架上。

[0008] 优选地，当所述儿童推车处于单人使用状态时，处于折叠状态的所述座位组件位于另一组所述座位组件的下方。

[0009] 优选地，所述车架包括分别沿前后方向延伸的第一连杆及第二连杆，所述第一连杆与所述第二连杆沿所述车架的高度方向间隔设置，所述座位组件包括第一座位组件及第二座位组件，所述第一座位组件能够沿所述第一连杆的长度延伸方向相对滑动地设置在所述第一连杆上。

[0010] 进一步优选地，所述第二座位组件能够沿所述第二连杆的长度延伸方向相对滑动地设置在所述第二连杆上。

[0011] 进一步优选地，所述第一连杆位于所述第二连杆的下方，当所述儿童推车处于双人使用状态时，所述第一座位组件位于所述第二座位组件的前侧。

[0012] 进一步优选地，所述第一连杆位于所述第二连杆的下方，当所述儿童推车处于单

人使用状态时，所述第一座位组件处于折叠状态，所述第二座位组件处于展开状态，所述第一座位组件收拢于所述第二座位组件的下方。

[0013] 优选地，所述车架包括沿前后方向延伸的第一连杆，所述座位组件包括第一座位组件，所述第一座位组件设置在所述第一连杆上，所述第一座位组件包括第一上围框及第一下围框，所述第一上围框与所述第一下围框转动连接，所述第一座位组件处于展开状态下，所述第一上围框沿上下方向延伸，所述第一下围框沿前后方向延伸；所述第一座位组件处于折叠状态下，所述第一上围框沿前后方向延伸并与所述第一下围框、所述第一连杆相互收拢在一起。

[0014] 在一些优选实施例中，所述车架可折叠，所述车架具有分设于左右两侧的两组侧支架，所述车架处于展开状态下，每组所述侧支架均包括：

[0015] 前轮支架，所述前轮支架的底部设有前轮组件；

[0016] 后轮支架，所述后轮支架的底部设有后轮组件；

[0017] 第一连杆，所述第一连杆沿前后方向延伸，所述第一连杆的前端部与所述前轮支架转动连接；

[0018] 第二连杆，所述第二连杆沿前后方向延伸，所述第二连杆位于所述第一连杆的上方，所述第二连杆的前端部与所述前轮支架的上端部转动连接，所述第二连杆与所述后轮支架的上端部转动连接；

[0019] 推杆，所述推杆沿上下方向延伸，所述第二连杆的后端部与所述推杆转动连接。

[0020] 优选地，所述车架处于展开状态下，每组所述侧支架还包括摆杆，所述摆杆的下端部与所述后轮支架转动连接，所述摆杆的上端部、所述推杆的下端部、所述第一连杆的后部三者中的两者转动连接，第三者与前两者中的至少一者转动连接。

[0021] 一种优选地，沿所述第二连杆的长度延伸方向上，所述前轮支架与所述第二连杆的转动连接处位于所述后轮支架与所述第二连杆的转动连接处的前侧。

[0022] 另一种优选地，所述第二连杆、所述前轮支架、所述后轮支架三者绕同一转动中心线转动连接。

[0023] 优选地，所述第一座位组件能够沿所述第一连杆的长度延伸方向相对滑动地设置在所述第一连杆上，所述第二座位组件能够沿所述第二连杆的长度延伸方向相对滑动地设置在所述第二连杆上。

[0024] 优选地，所述第一座位组件能够沿所述第一连杆的长度延伸方向相对滑动地设置在所述第一连杆上，当所述儿童推车处于双人使用状态时，所述第一座位组件至少部分位于所述第一连杆的前侧。

[0025] 由于上述技术方案的运用，本发明提供的儿童推车，两组座位组件能够分别折叠，在双人使用状态与单人使用状态之间转换时，只需要将其中任意一组座位组件折叠或展开即可，而无需将不使用的座位组件从车架上拆卸下来，转换操作十分便捷；进一步地可以将一组或两组座位组件在车架上沿前后方向相对滑动，使得儿童推车在双人使用状态下具有足够的乘坐空间，在单人使用状态下又能够缩小体积，重心更稳定，外形也更为美观；此外，当车架可以折叠时，车架折叠过程中也无需将座位组件拆卸下来，车架与两组座位组件可以一起折叠，进一步简化了该儿童推车的使用方法，提升了用户体验。

附图说明

[0026] 为了更清楚地说明本发明的技术方案，下面将对实施例描述中所需要使用的附图作简单的介绍，显而易见地，下面描述中的附图仅仅是本发明的一些实施例，对于本领域普通技术人员来讲，在不付出创造性劳动的前提下，还可以根据这些附图获得其他的附图。

[0027] 附图1为本发明一具体实施例中儿童推车处于双人使用状态时的立体示意图；

[0028] 附图2为图1中儿童推车的侧视示意图；

[0029] 附图3为本实施例中第一座位组件处于展开状态时的立体示意图；

[0030] 附图4为本实施例中第一座位组件处于折叠状态时的立体示意图；

[0031] 附图5为本实施例中第二座位组件处于展开状态时的立体示意图；

[0032] 附图6为本实施例中儿童推车向单人使用状态转换过程中的立体示意图；

[0033] 附图7为图6中儿童推车的侧视示意图；

[0034] 附图8为本实施例中儿童推车处于单人使用状态时的立体示意图；

[0035] 附图9为图8中儿童推车的侧视示意图；

[0036] 附图10为本实施例中儿童推车折叠过程中的立体示意图；

[0037] 附图11为图10中儿童推车的侧视示意图；

[0038] 附图12为本实施例中儿童推车进一步折叠过程中的立体示意图；

[0039] 附图13为图12中儿童推车的侧视示意图；

[0040] 附图14为本实施例中儿童推车处于折叠状态下的立体示意图；

[0041] 附图15为图14中儿童推车的侧视示意图；

[0042] 附图16为本实施例中儿童推车折叠过程中的立体示意图，其中第二座位组件被拆离；

[0043] 其中：1000、车架；1100、第一连杆；1200、第二连杆；1201、滑轨；1300、前轮支架；1301、前轮组件；1400、后轮支架；1401、后轮组件；1500、摆杆；1600、推杆；1700、握把杆；2000、第一座位组件；2100、第一上围框；2200、第一下围框；3000、第二座位组件；3100、第二上围框；3200、第二下围框；1、第一滑动件；2、第二滑动件。

具体实施方式

[0044] 下面结合附图对本发明的较佳实施例进行详细阐述，以使本发明的优点和特征能更易于被本领域的技术人员理解。

[0045] 在本发明的描述中，需要说明的是，术语“中心”、“上”、“下”、“左”、“右”、“竖直”、“水平”、“内”、“外”、“左右方向”、“高度方向”、“前后方向”等指示的方位或位置关系为基于附图1，儿童正常乘坐在该儿童推车上时，儿童所观察到的方位或位置关系，仅是为了便于描述本发明和简化描述，而不是指示或暗示所指的装置或元件必须具有特定的方位、仅具有特定的方位、以特定的方位构造和操作，因此不能理解为对本发明的限制。此外，术语“第一”、“第二”、“第三”等仅用于描述目的，而不能理解为指示或暗示相对重要性。

[0046] 需要说明的是，如无特殊说明，当某一特征被称为“固定”、“连接”在另一个特征，它可以直接固定、连接在另一个特征上，也可以间接地固定、连接在另一个特征上。除非另有明确的规定和限定，术语“安装”、“相连”、“连接”应做广义理解，例如，可以是固定连接，也可以是可拆卸连接，或一体地连接；可以是机械连接，也可以是电连接；可以是直接相连，

也可以通过中间媒介间接相连，可以是两个元件内部的连通。对于本领域的普通技术人员而言，可以具体情况理解上述术语在本发明中的具体含义。此外，本发明中所使用的上、下、左、右等描述仅仅是相对于附图中本发明各组成部分的相互位置关系来说的。

[0047] 参见图1及图2所示，一种可单双人转换的儿童推车，包括车架1000及两组座位组件——第一座位组件2000及第二座位组件3000，两组座位组件分别可供一名儿童乘坐，车架1000及两组座位组件可以分别折叠，互不影响。

[0048] 本实施例中，车架1000具有分设于左右两侧的两组侧支架，以及连接在两组侧支架之间的横支架，每组侧支架均包括第一连杆1100、第二连杆1200、前轮支架1300、后轮支架1400、摆杆1500、推杆1600等，车架1000处于展开状态下：

[0049] 第一连杆1100沿前后方向延伸，第一座位组件2000能够沿第一连杆1100的长度延伸方向相对滑动地设置在第一连杆1100上。第二连杆1200沿前后方向延伸，第二座位组件3000能够沿第二连杆1200的长度延伸方向相对滑动地设置在第二连杆1200上。其中，第一连杆1100位于第二连杆1200的下方，第一座位组件2000整体设置在第二座位组件3000的下方。

[0050] 前轮支架1300自上而下逐渐向前倾斜延伸，其底部设有前轮组件1301；后轮支架1400自上而下逐渐向后倾斜延伸，其底部设有后轮组件1401。前轮支架1300的上端部与第二连杆1200的前端部绕转动中心线d转动连接，前轮支架1300与第一连杆1100的前端部绕转动中心线e转动连接。后轮支架1400的上端部与第二连杆1200绕转动中心线c转动连接。本实施例中，沿第二连杆1200的长度延伸方向上，转动中心线d位于转动中心线c的前侧；在其他实施中，转动中心线d与转动中心线c也可以共线延伸。

[0051] 摆杆1500沿上下方向延伸，其下端部与后轮支架1400的下部绕转动中心线g转动连接。

[0052] 推杆1600自上而下逐渐向前倾斜延伸，第二连杆1200的后端部绕转动中心线b与推杆1600转动连接。摆杆1500的上端部、推杆1600的下端部、第一连杆1100的后部三者中的两者转动连接，第三者与前两者中的至少一者转动连接，本实施例中，摆杆1500的上端部、推杆1600的下端部、第一连杆1100的后部三者共同绕转动中心线f转动连接。

[0053] 此外，上述横支架包括握把杆1700，握把杆1700呈开口向下的U字型，握把杆1700的两端部分别与两组推杆1600的上端部绕转动中心线a转动连接。

[0054] 参见图3至图5所示，本实施例中，第一座位组件2000与第二座位组件3000的结构相似。其中，第一座位组件2000包括相互转动连接的第一上围框2100及第一下围框2200，第一上围框2100及第一下围框2200均呈U字型，且两者的开口相对设置。第一座位组件2000处于展开状态下，第一上围框2100沿上下方向延伸，第一下围框2200沿前后方向延伸，第一上围框2100的下端部与第一下围框2200的后端部绕转动中心线h转动连接；第一座位组件2000处于折叠状态下，第一上围框2100向下转动至沿前后方向延伸并与第一下围框2200、第一连杆1100相互收拢在一起。进一步地，第一下围框2200的左右两侧分别固设有第一滑动件1，此处具体采用第一滑套，每侧的第一滑套能够沿第一连杆1100的长度延伸方向相对滑动地套设在同侧的第一连杆1100上，从而实现第一座位组件2000沿车架1000的前后方向相对滑动。

[0055] 类似地，第二座位组件3000包括第二上围框3100及第二下围框3200，第二座位组

件3000处于展开状态下，第二上围框3100沿上下方向延伸，第二下围框3200沿前后方向延伸，第二上围框3100的下端部与第二下围框3200的后端部绕转动中心线i转动连接；第二座位组件3000处于折叠状态下，第二上围框3100向下转动至沿前后方向延伸并与第二下围框3200、第二连杆1200相互收拢在一起。第二下围框3200的左右两侧分别固设有第二滑动件2，此处具体采用第二滑套，每侧的第二滑套能够沿第二连杆1200的长度延伸方向相对滑动地套设在同侧的第一连杆1100上，从而实现第二座位组件3000沿车架1000的前后方向相对滑动。

[0056] 参见图2所示，本实施例中，沿第一连杆1100的长度延伸方向上，第一滑套位于转动中心线e的后方；沿第二连杆1200的长度延伸方向上，转动中心线d、转动中心线c、第二滑套、转动中心线b自前向后依次设置。

[0057] 需要说明的是，本发明的主要构思在于，当第一座位组件2000或第二座位组件3000折叠时，能够与车架1000的某一杆件收拢在一起，从而两组座位组件均能够随车架1000一起收折转动。因此，第一座位组件2000与第二座位组件3000的折叠方式不限于本实施例所描述的情况。例如，在其他实施例中，第二滑动件2可以设置在第二上围框3100与第二下围框3200的转动连接处，且同侧的第二滑动件2、第二上围框3100、第二下围框3200三者绕同一转动中心线转动连接，如此，当第二滑动件2滑动至第二连杆1200的后端部时，可以将第二下围框3200向上转动至沿上下方向延伸，从而第二座位组件3000能够与推杆1600收拢在一起。

[0058] 此外，参见图1所示，第一座位组件2000与第一连杆1100的滑动连接方式、第二座位组件3000与第二连杆1200的滑动连接方式可以采用相同或不同的方法。本实施例中，第一滑套直接套设在第一连杆1100上，而第二连杆1200上还固设有沿第二连杆1200的长度方向延伸的滑轨1201，第二滑套实际是套设在滑轨1201上。当然，在其他实施例中，上述滑动连接方式也可以采用滑块与导槽、滚轮与滑槽等不同方法，均可以实现本发明的技术方案。

[0059] 进一步地，为了增强本儿童推车使用的灵活性，第一座位组件2000可拆卸地设置在第一连杆1100上，第二座位组件3000可拆卸地设置在第二连杆1200上。如此，根据用户的个人喜好，也可以在折叠推车或模式转换时选择性地将一个或两个座位组件拆卸下来。

[0060] 为了实现多种状态的转换，本实施例中的儿童推车还设有多套锁定机构(图中未示出)，包括用于将车架1000锁定在展开状态下的第一锁定机构、用于将第一座位组件2000锁定在展开状态下的第二锁定机构、用于将第二座位组件3000锁定在展开状态下的第三锁定机构、用于将第一座位组件2000锁定在第一连杆1100上的某一滑动位置的第四锁定机构、用于将第二座位组件3000锁定在第二连杆1200上的某一滑动位置的第五锁定机构等，上述各锁定机构的具体结构均可采用现有技术中的锁定结构，本发明不作限定。

[0061] 下面具体阐述本实施例中儿童推车的使用方法：

[0062] 该儿童推车具有双人使用状态及单人使用状态，根据实际需要可供两名或一名儿童乘坐。

[0063] 参见图1及图2所示，当儿童推车处于双人使用状态时，第一座位组件2000及第二座位组件3000分别处于展开状态，且第一座位组件2000位于第二座位组件3000的前侧，第一下围框2200部分位于第一连杆1100的前侧，第二下围框3200部分位于第二连杆1200的后侧，从而第一座位组件2000与第二座位组件3000之间的间距较大，前方的第一座位组件

2000不会完全遮挡住后方第二座位组件3000上儿童的视线，且两名儿童都拥有较大的活动空间。

[0064] 在其他实施例中，也可以将第一座位组件2000设置在第二座位组件3000的后侧，两组座位组件之间的间距也可以适当减小，缩小整车在前后方向上的长度。

[0065] 参见图6至图9所示，本实施例中，当需要将儿童推车从双人使用状态向单人使用状态转换时，选择将第一座位组件2000折叠，而第二座位组件3000保持展开状态，用于乘坐。第一座位组件2000折叠后，便与第一连杆1100收拢在一起，此时再将第一座位组件2000沿第一连杆1100向后滑动，同时将第二座位组件3000沿第二连杆1200向前滑动，使得两组座位组件沿前后方向相对靠拢，第一座位组件2000收拢于第二座位组件3000的下方，从而乘车的结构更为紧凑，体积减小且更为美观。单人使用状态下，第一下围框2200的前端部位于第一连杆1100的前端部的后侧，第一座位组件2000没有明显突出车架1000的部分。

[0066] 在其他实施例中，也可以选择将第二座位组件3000折叠，而第一座位组件2000保持展开状态。此外，第一座位组件2000与第二座位组件3000之间的相对滑动也不是必须的，家长可以选择只将其中一者朝向另一者滑动；甚至两者均不滑动，仅保持双人使用状态下的相对位置。另外需要说明的是，双人使用状态下，第一座位组件2000及第二座位组件3000可以没有特定的锁定位置，即，第一座位组件2000在可以滑动范围内被锁定在第一连杆1100的任意位置，第二座位组件3000也可以在滑动范围内被锁定在第二连杆1200的任意位置，使用者可以根据需要自由调节。

[0067] 参见图10至图15所示，本实施例中，当儿童推车需要折叠时，无需将座位组件从车架1000上拆卸下来，第一座位组件2000与第二座位组件3000均能够随车架1000一起折叠。具体地，首先将第一座位组件2000与第二座位组件3000折叠，分别与第一连杆1100、第二连杆1200收拢在一起；进一步将握把杆1700绕转动中心线a向后转动并与推杆1600收拢；继续驱使握把杆1700绕转动中心线b向前转动，从而车架1000相互转动连接的各个杆件相互联动收拢，最终达到折叠状态，此时车架1000所有杆件及第一座位组件2000、第二座位组件3000均紧凑地收拢在一起，整车折叠体积小。

[0068] 参见图16所示，本实施例中，使用者还可以选择性地将一个或两个座位组件拆卸下来，使得车架1000在折叠时更为轻便。

[0069] 综上所述，本发明的儿童推车，可以实现双人使用状态与单人使用状态之间的转换，还可以进行折叠，转换或折叠过程中均无需拆卸座位组件，十分方便。

[0070] 上述实施例只为说明本发明的技术构思及特点，其目的在于让熟悉此项技术的人士能够了解本发明的内容并加以实施，并不能以此限制本发明的保护范围，凡根据本发明精神实质所作的等效变化或修饰，都应涵盖在本发明的保护范围内。

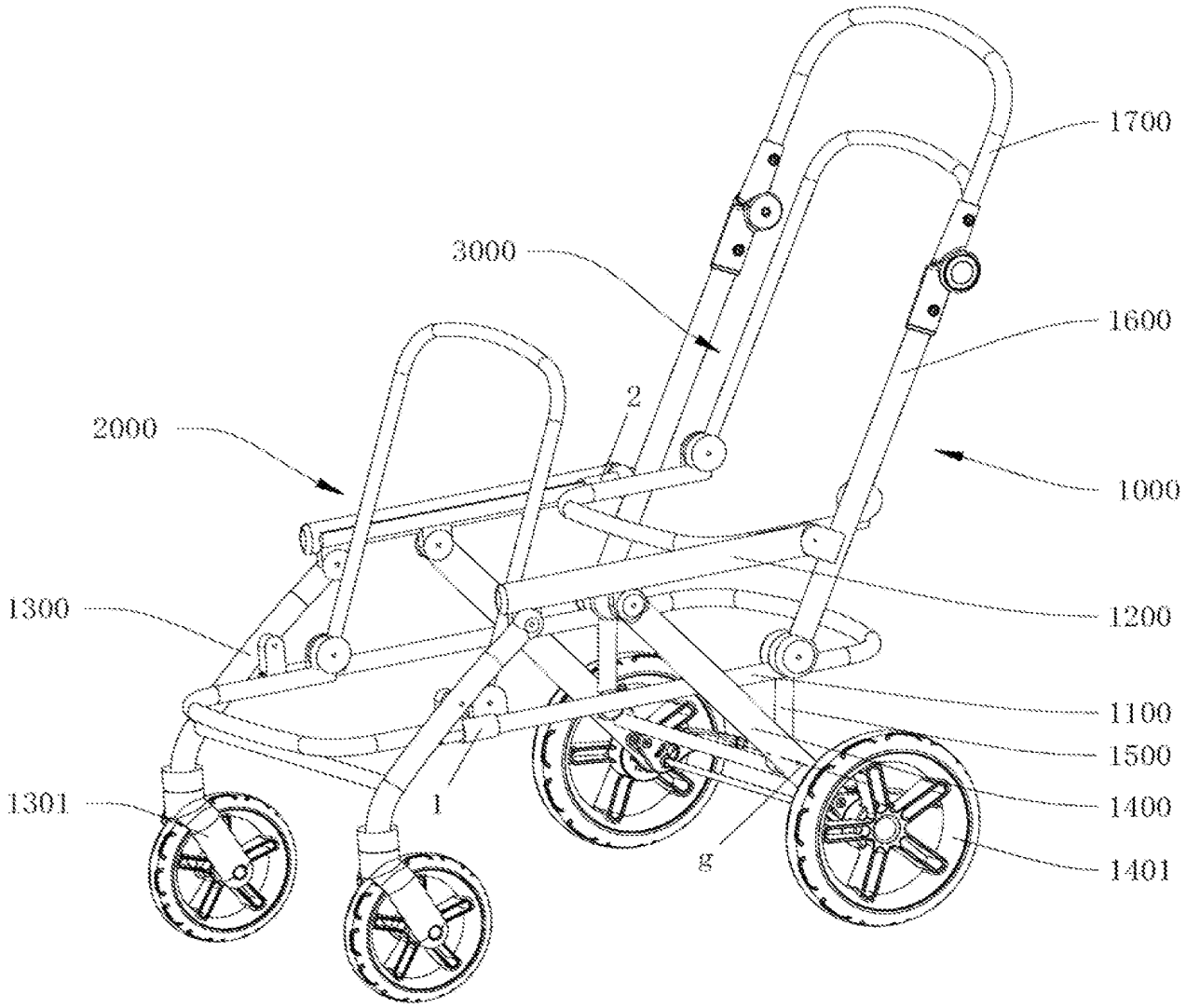
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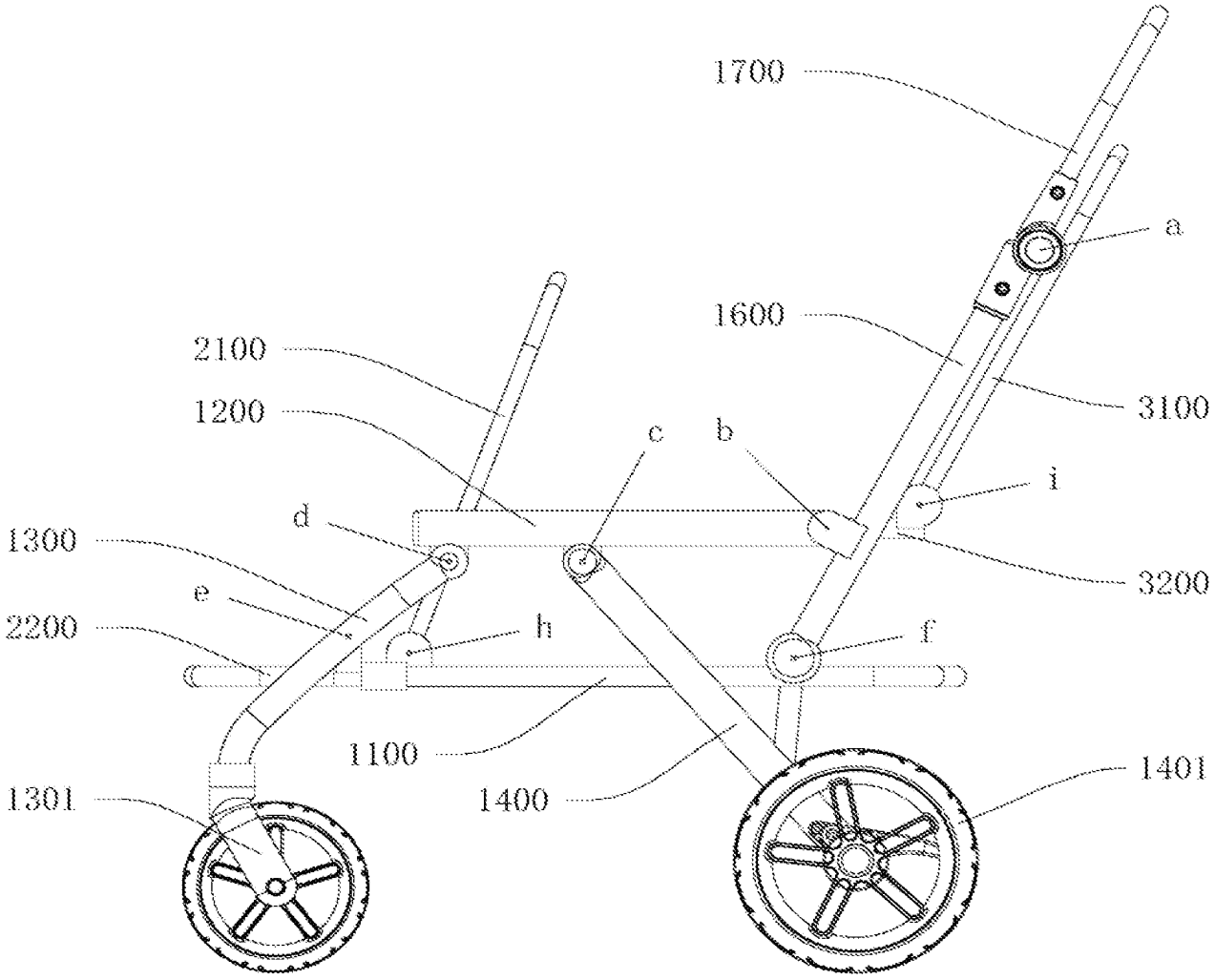
图1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1301
1400

图2

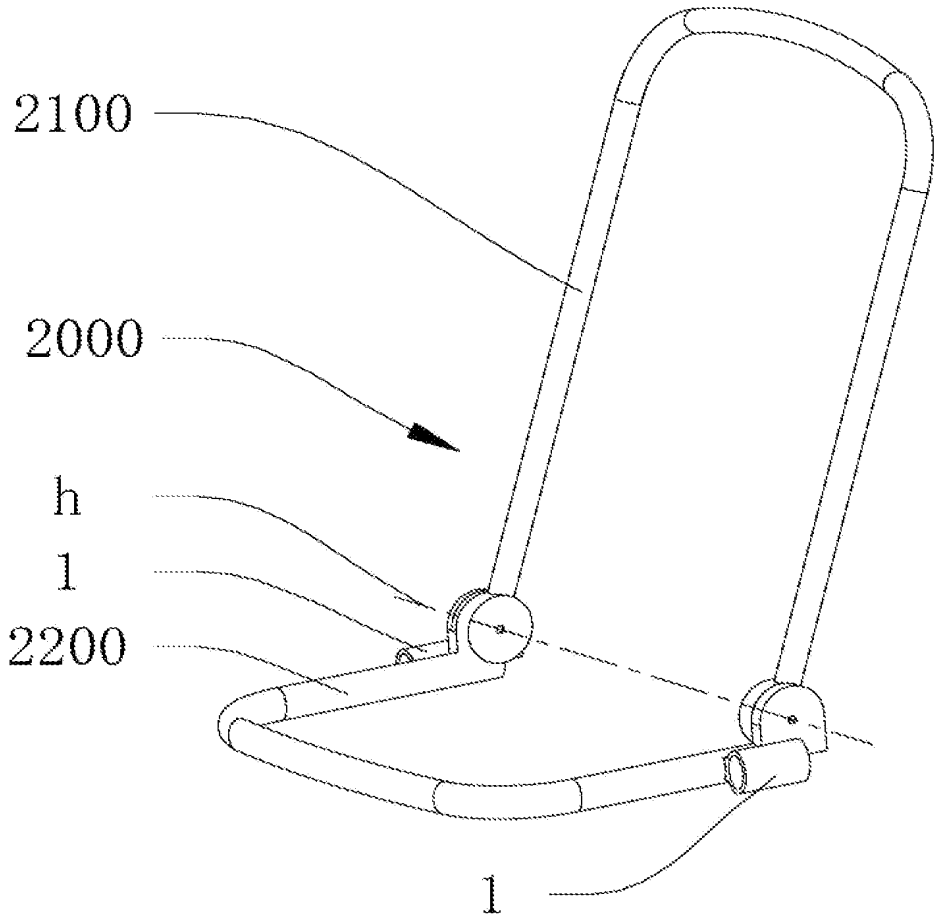
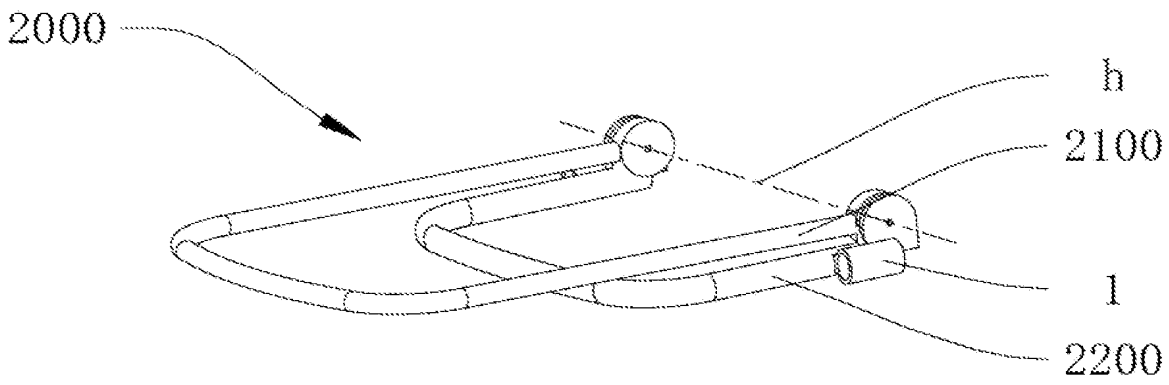


图3



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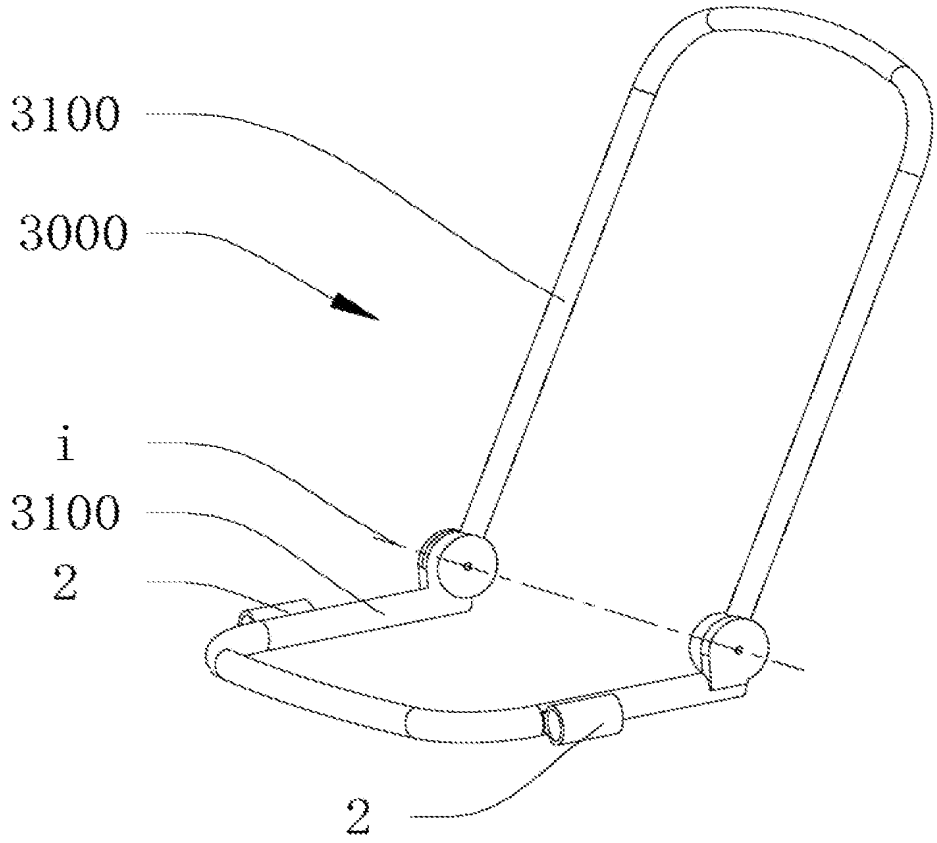

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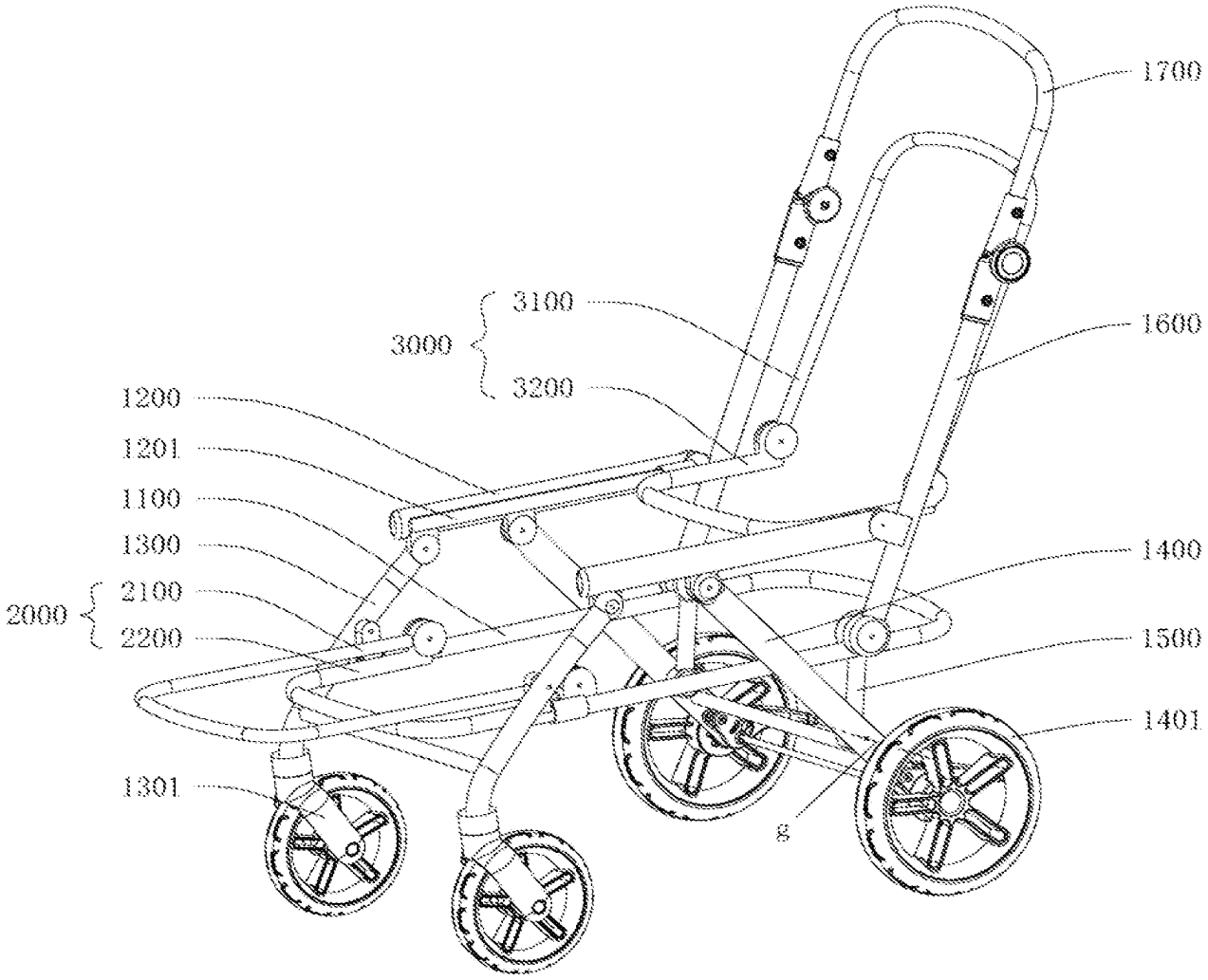
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图6

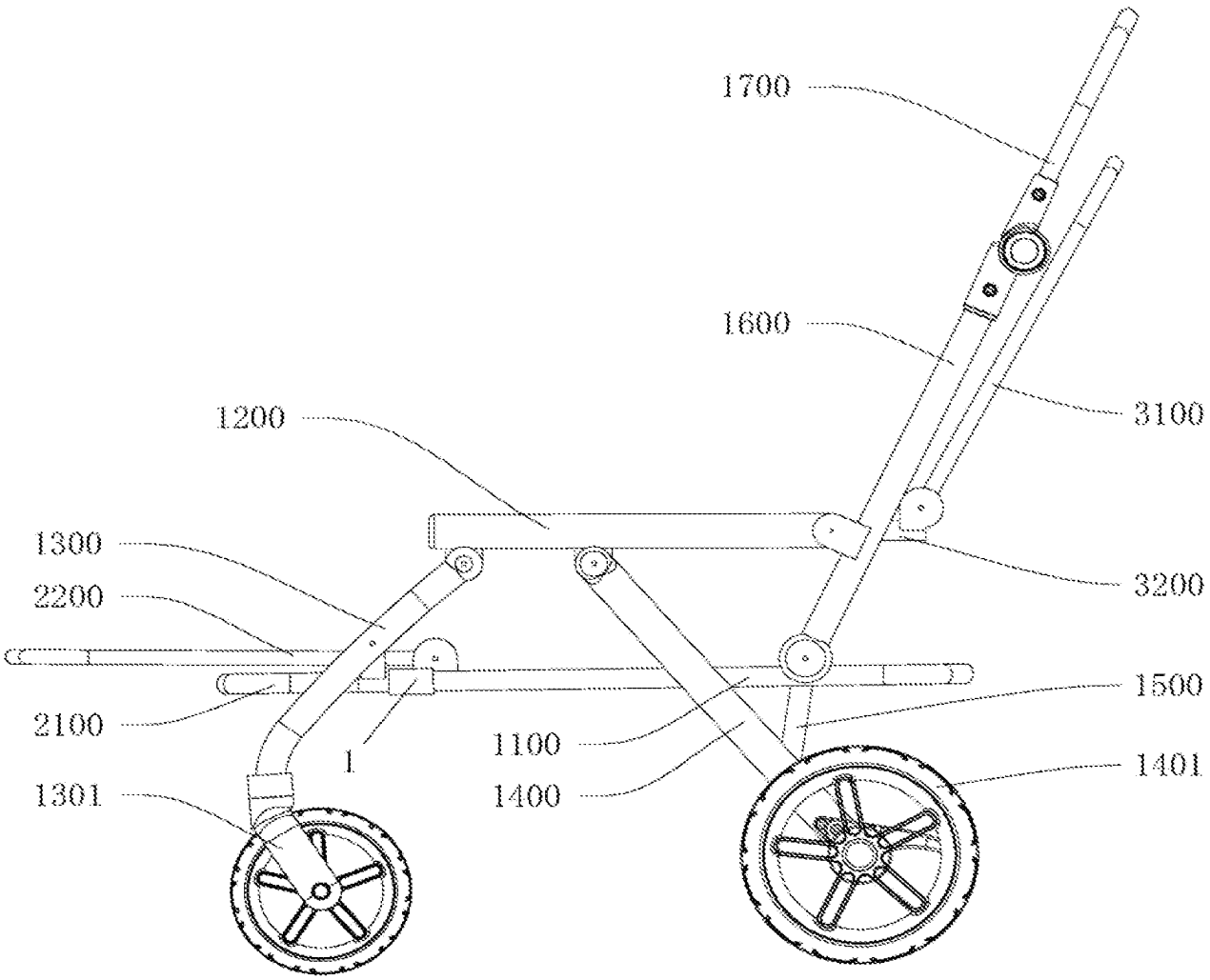
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图7

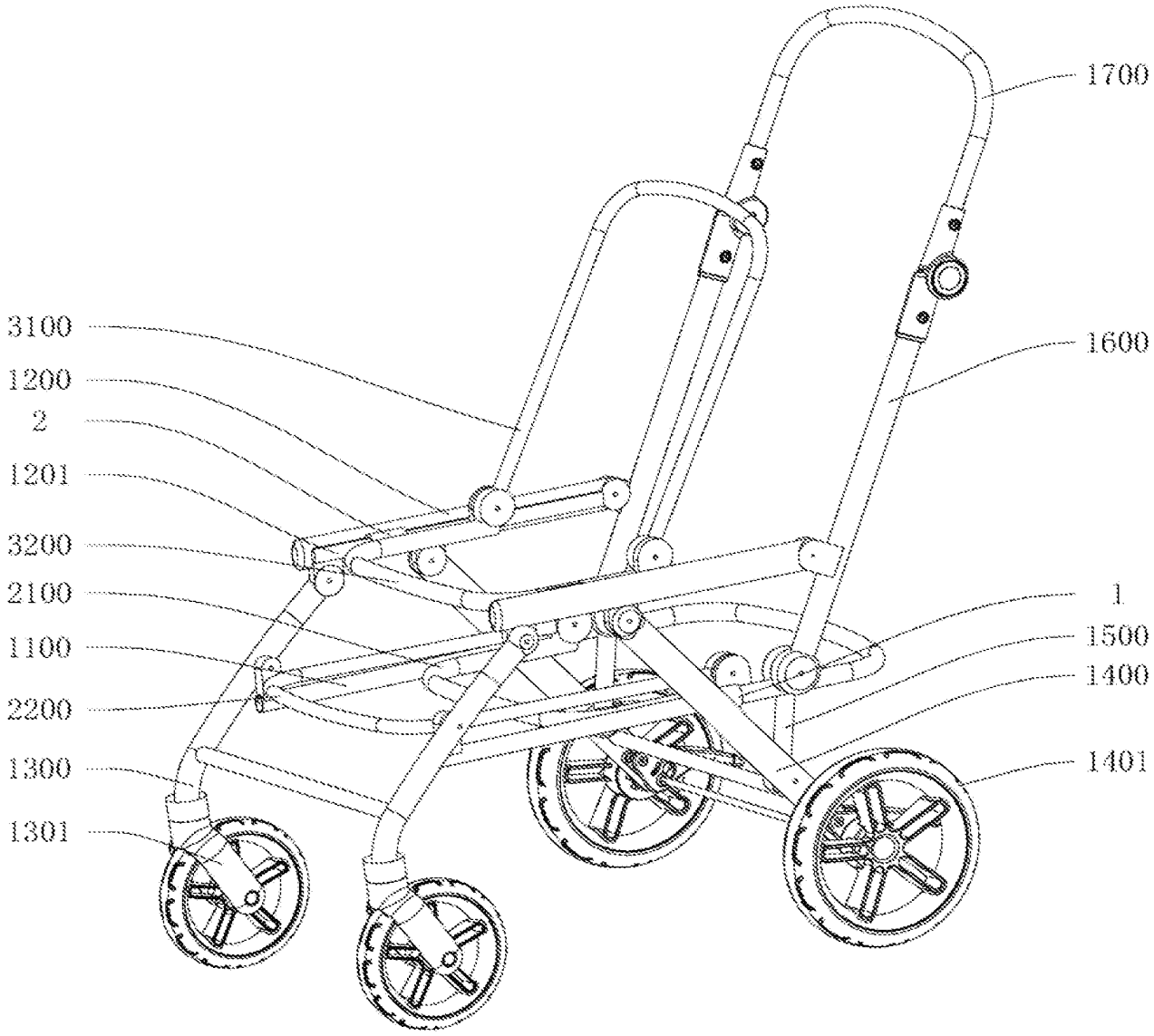
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图8

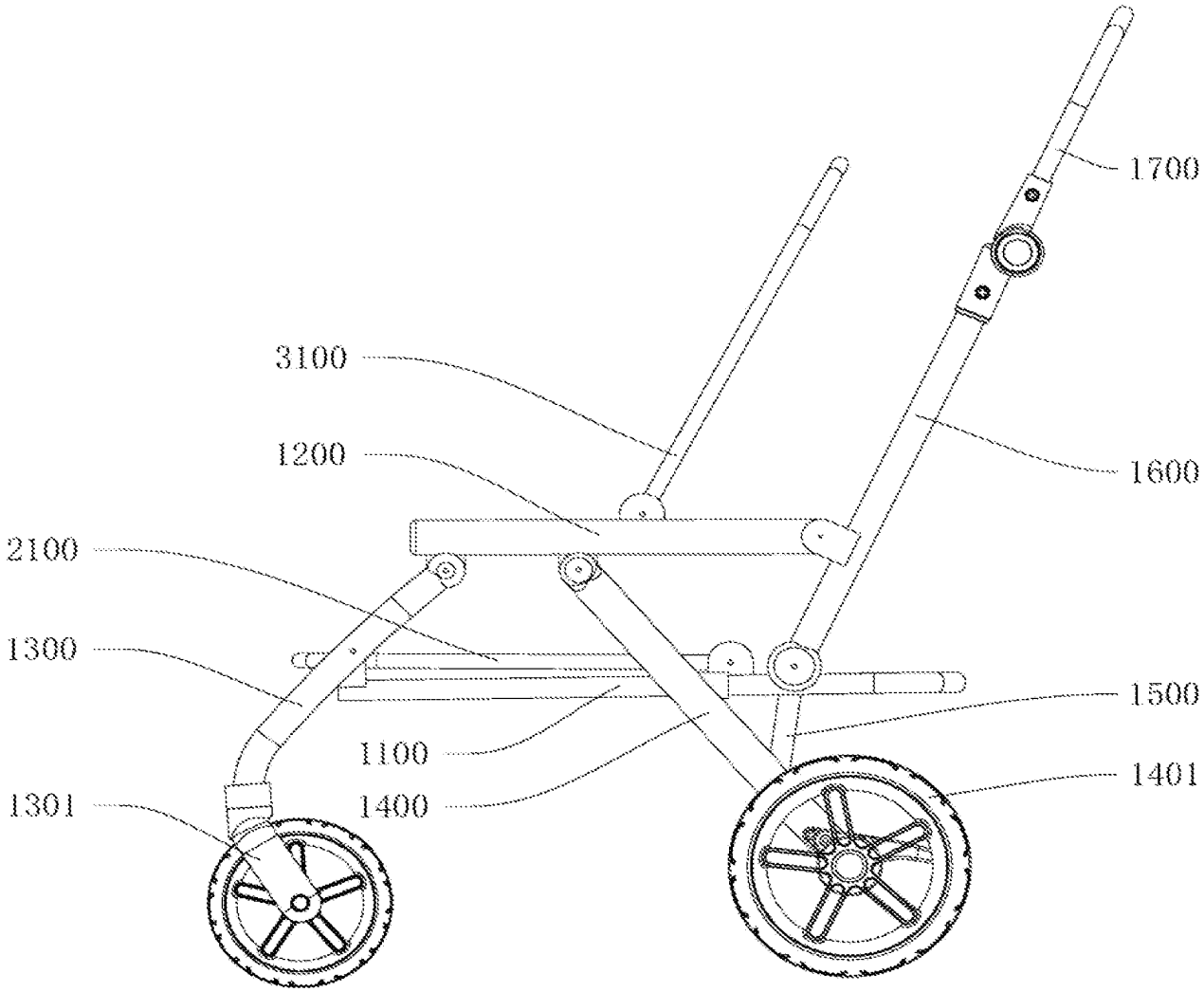

图9

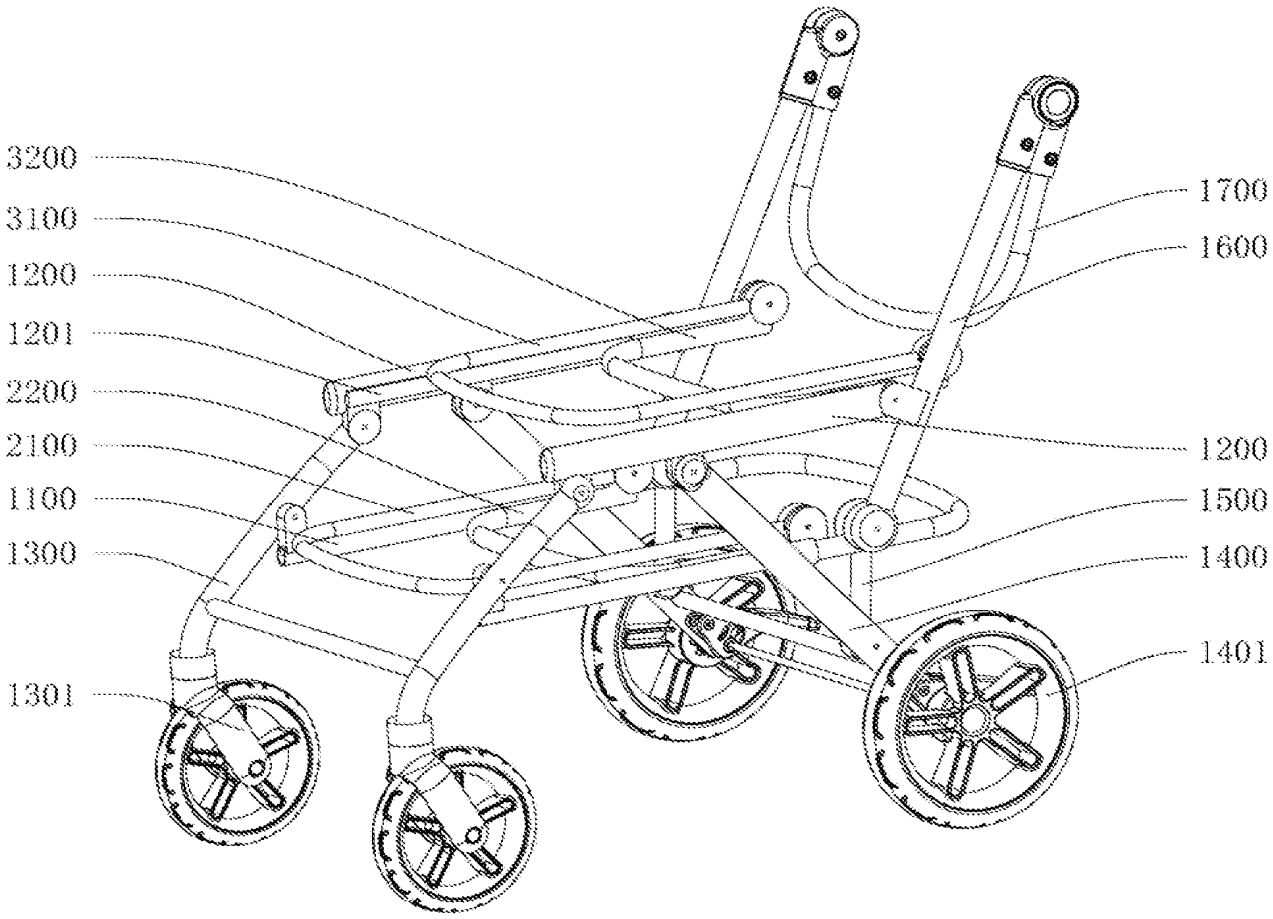
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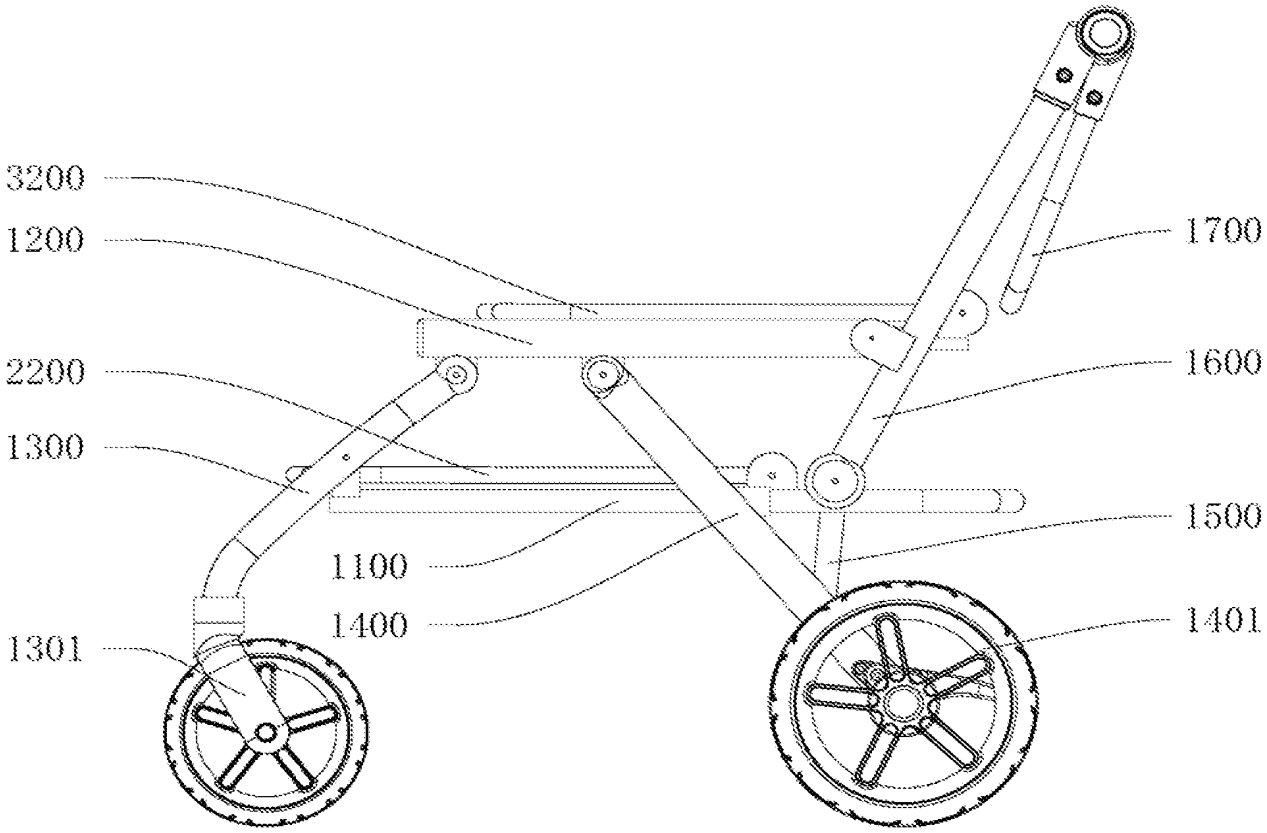
图10



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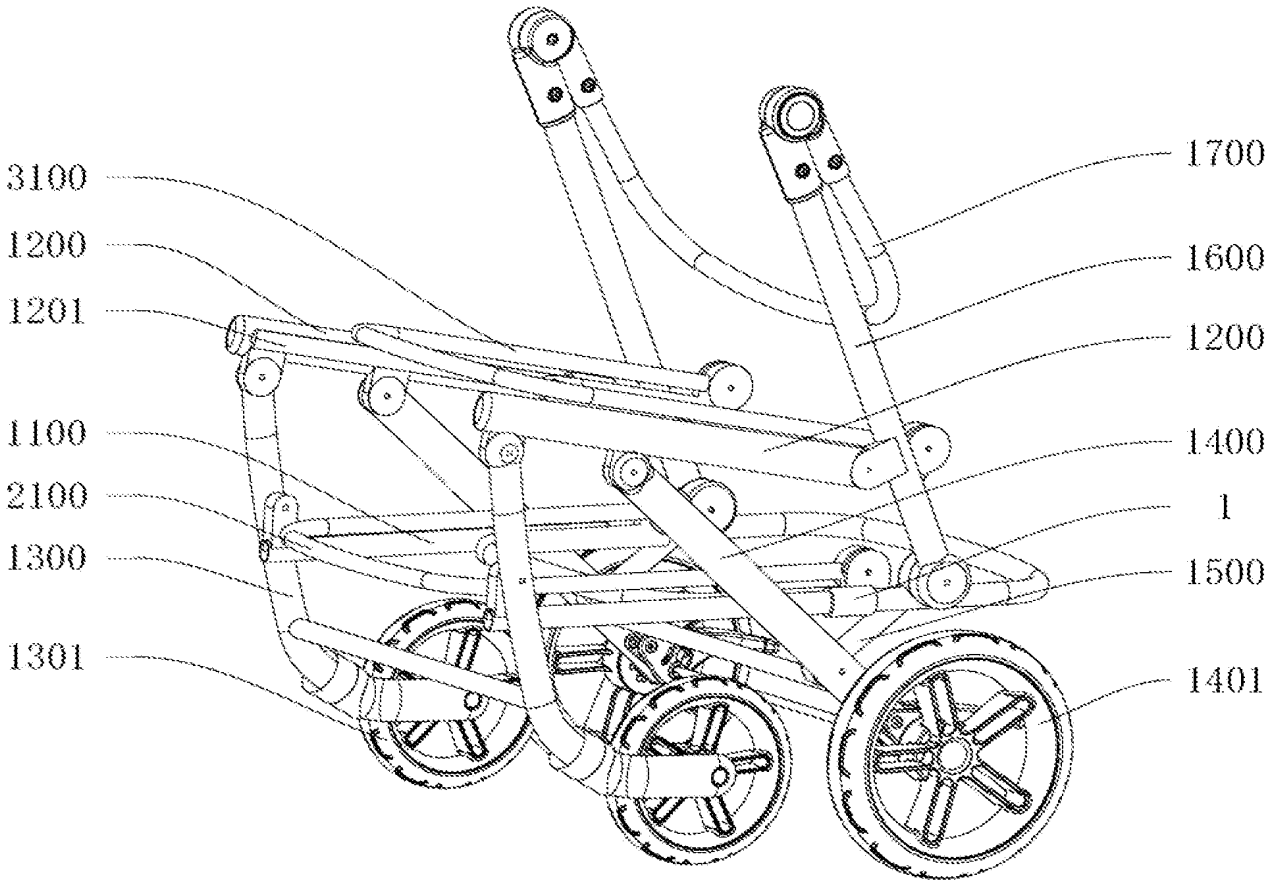
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图12

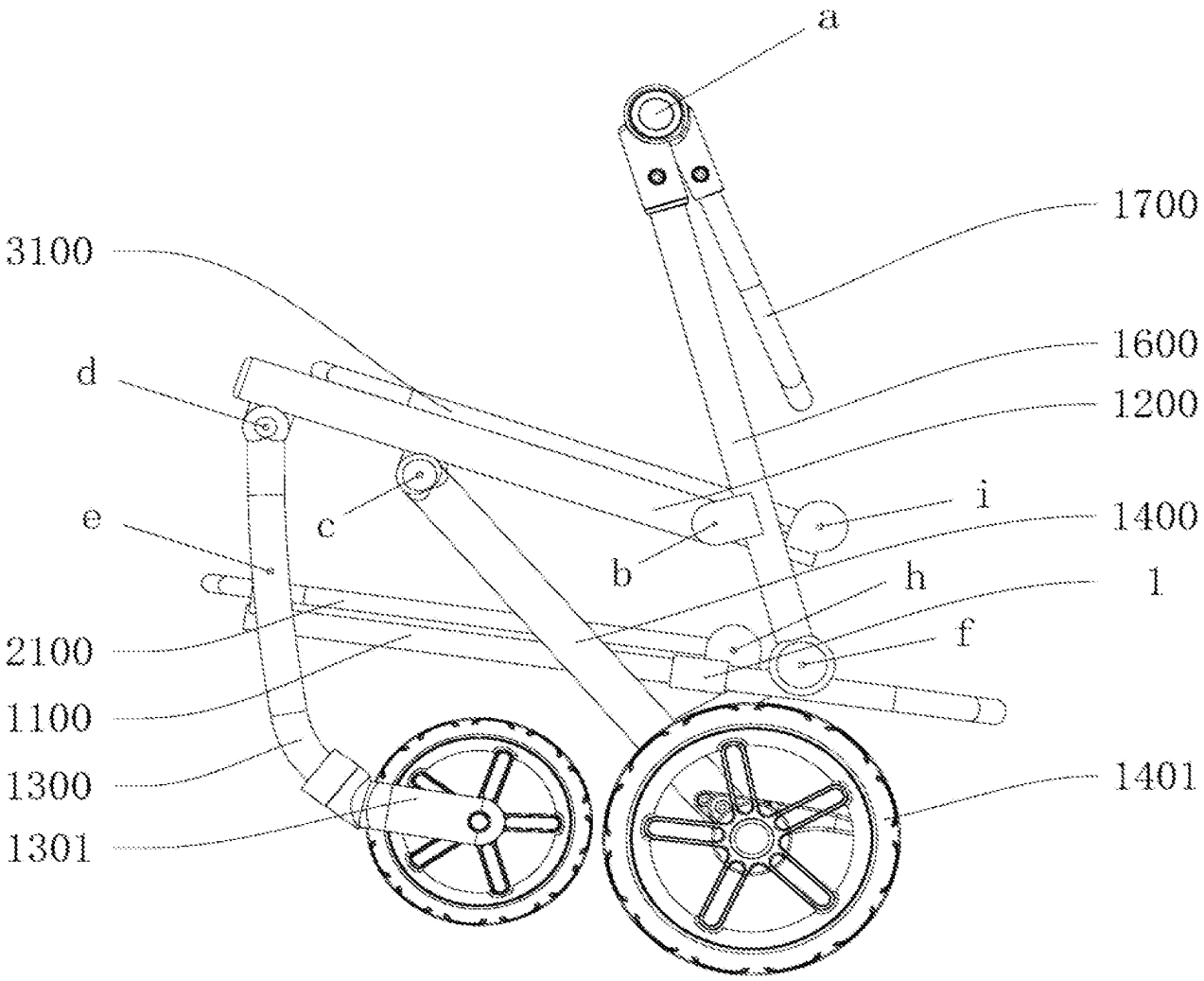

图13

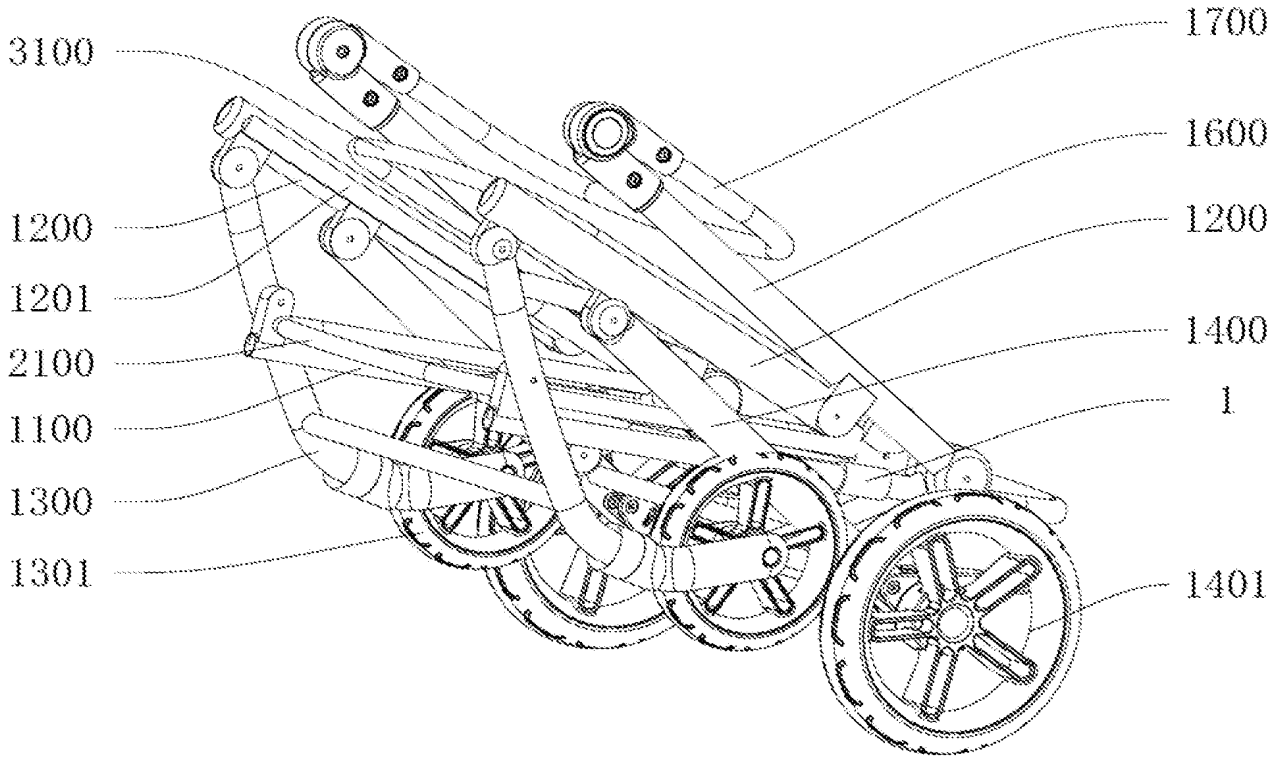

图14

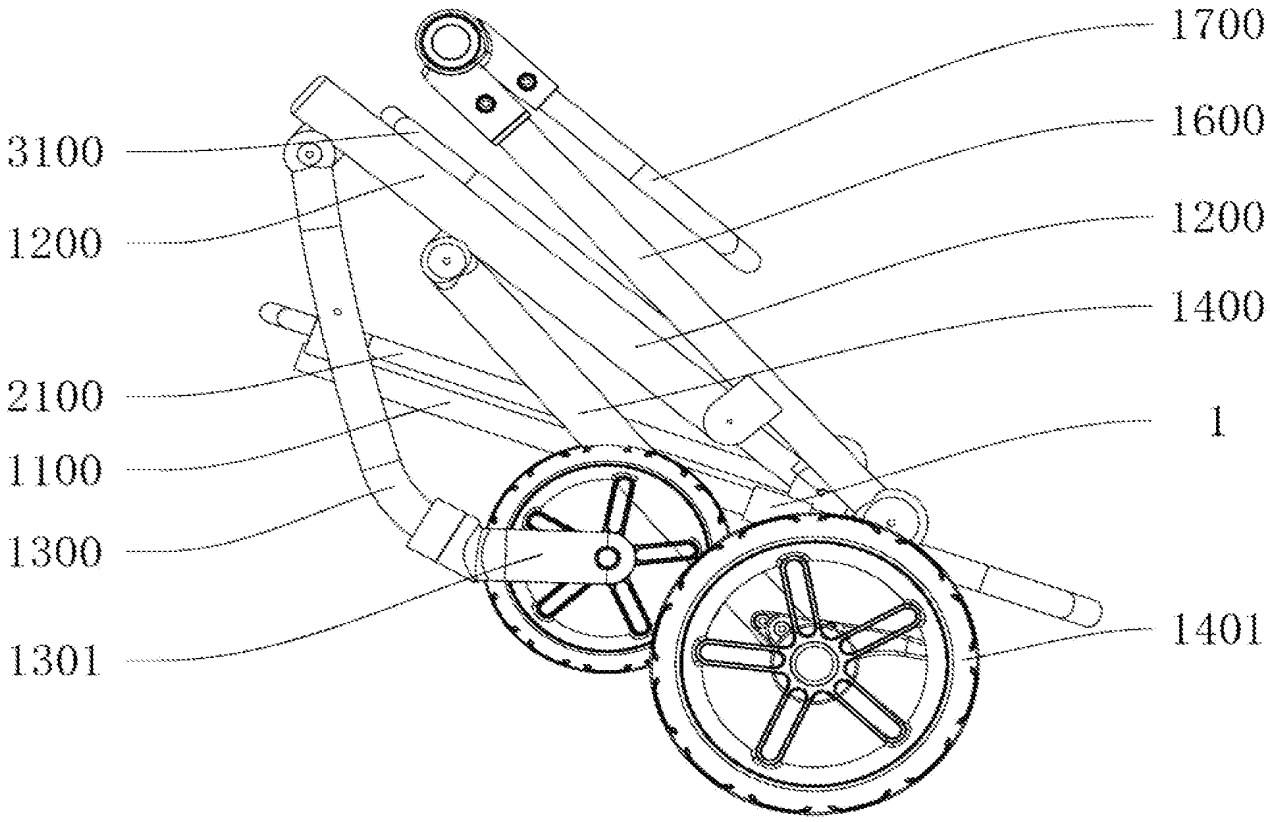

图15

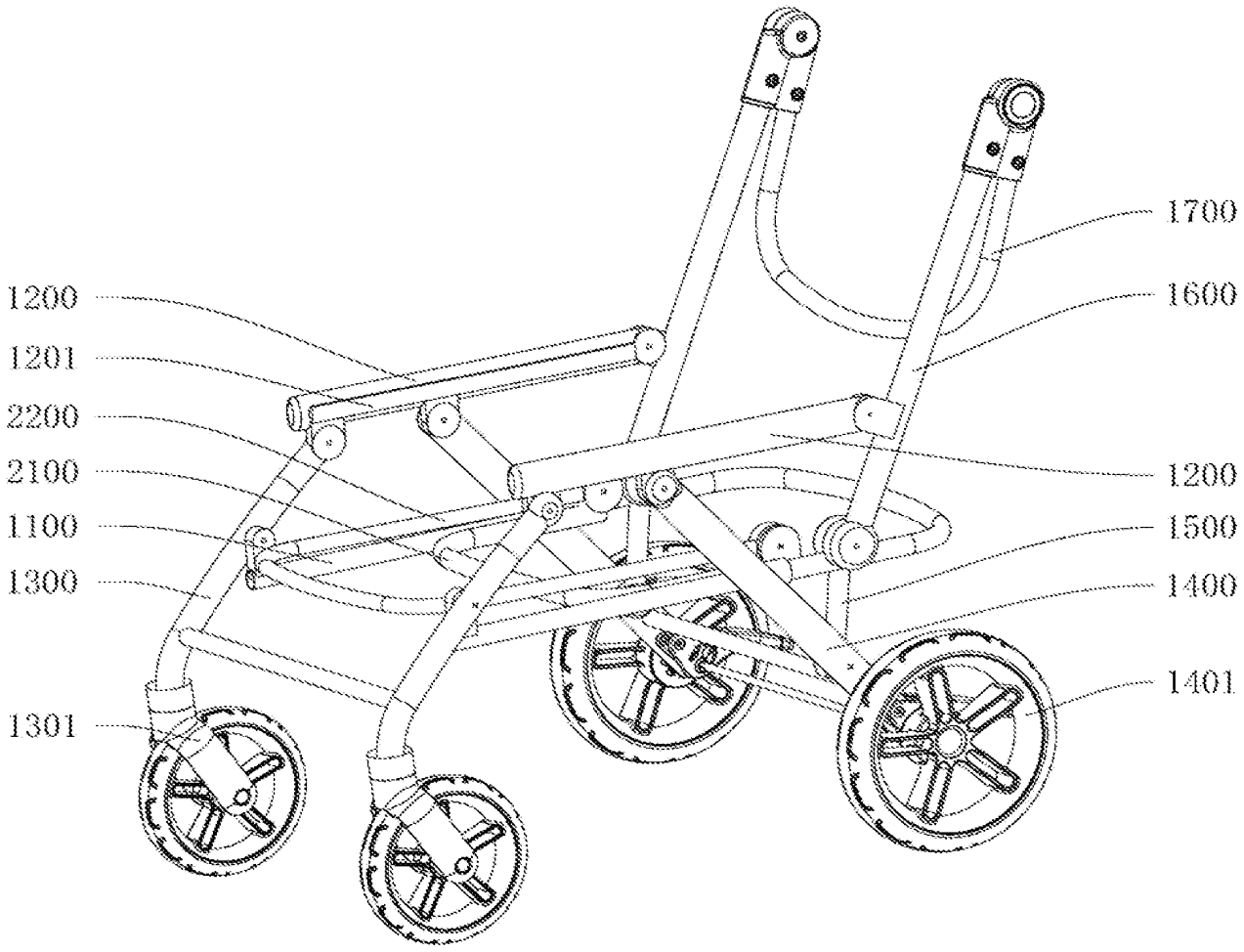
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图16

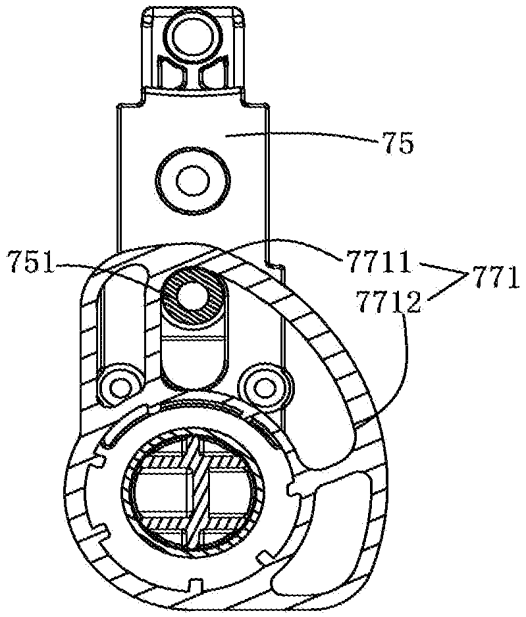

图7

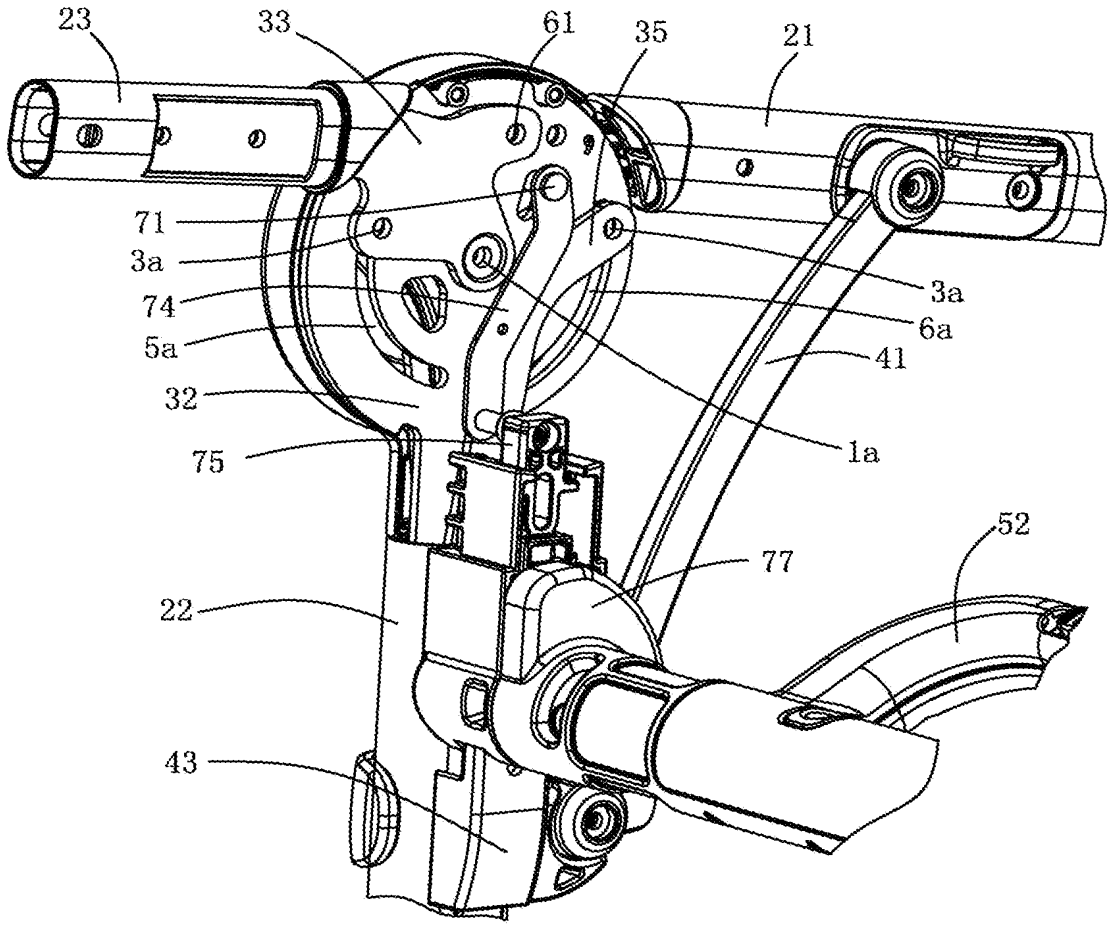

图8

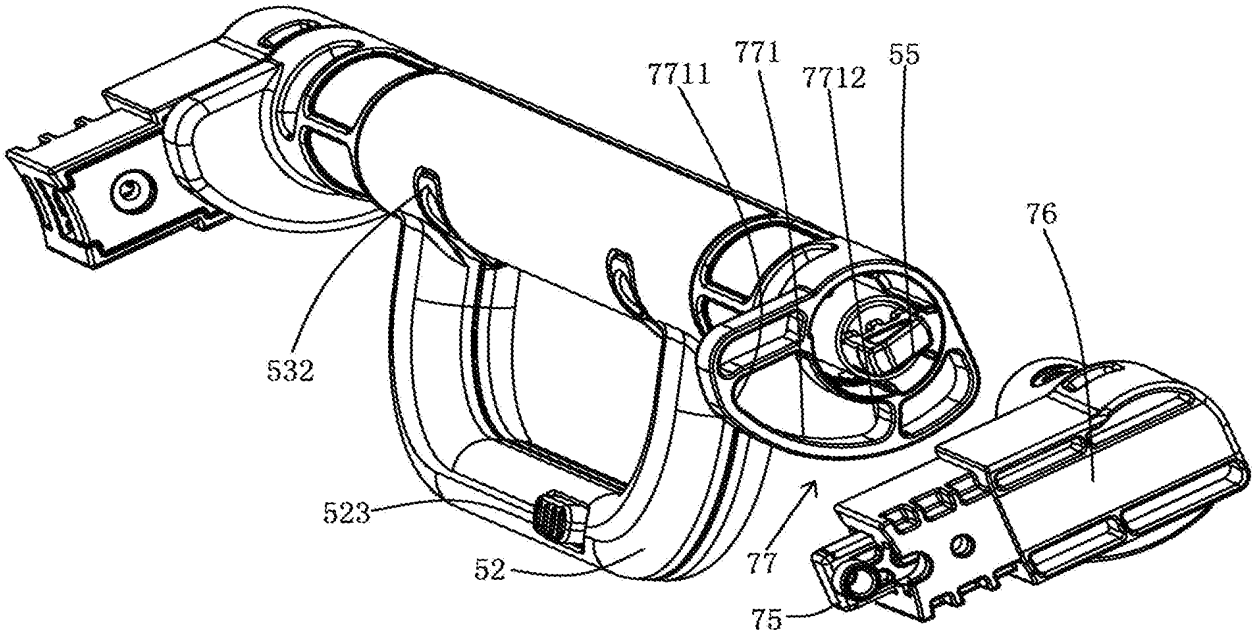
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图9

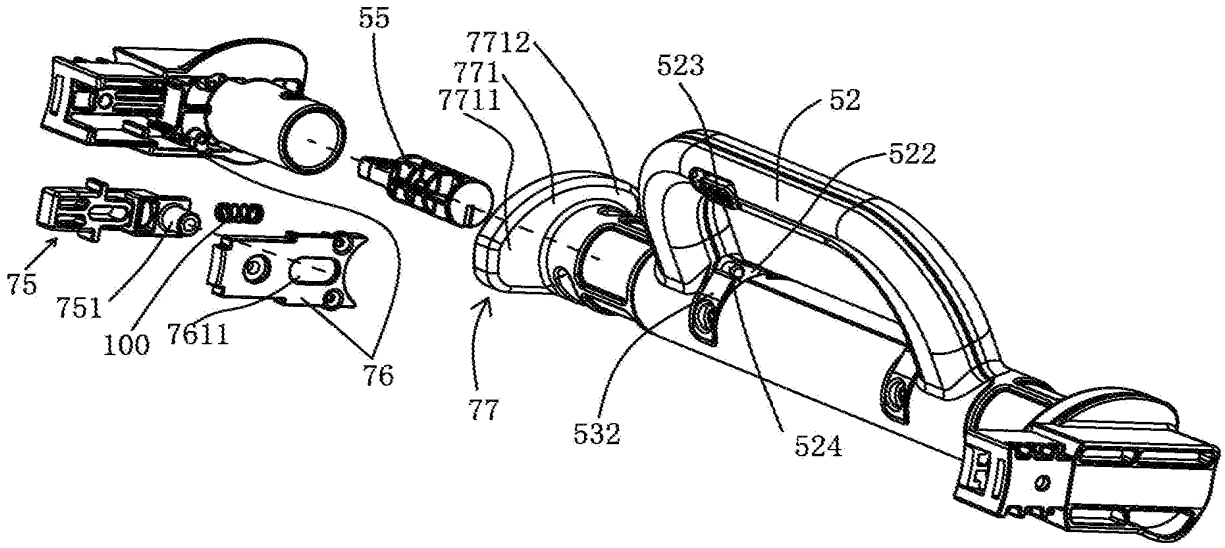
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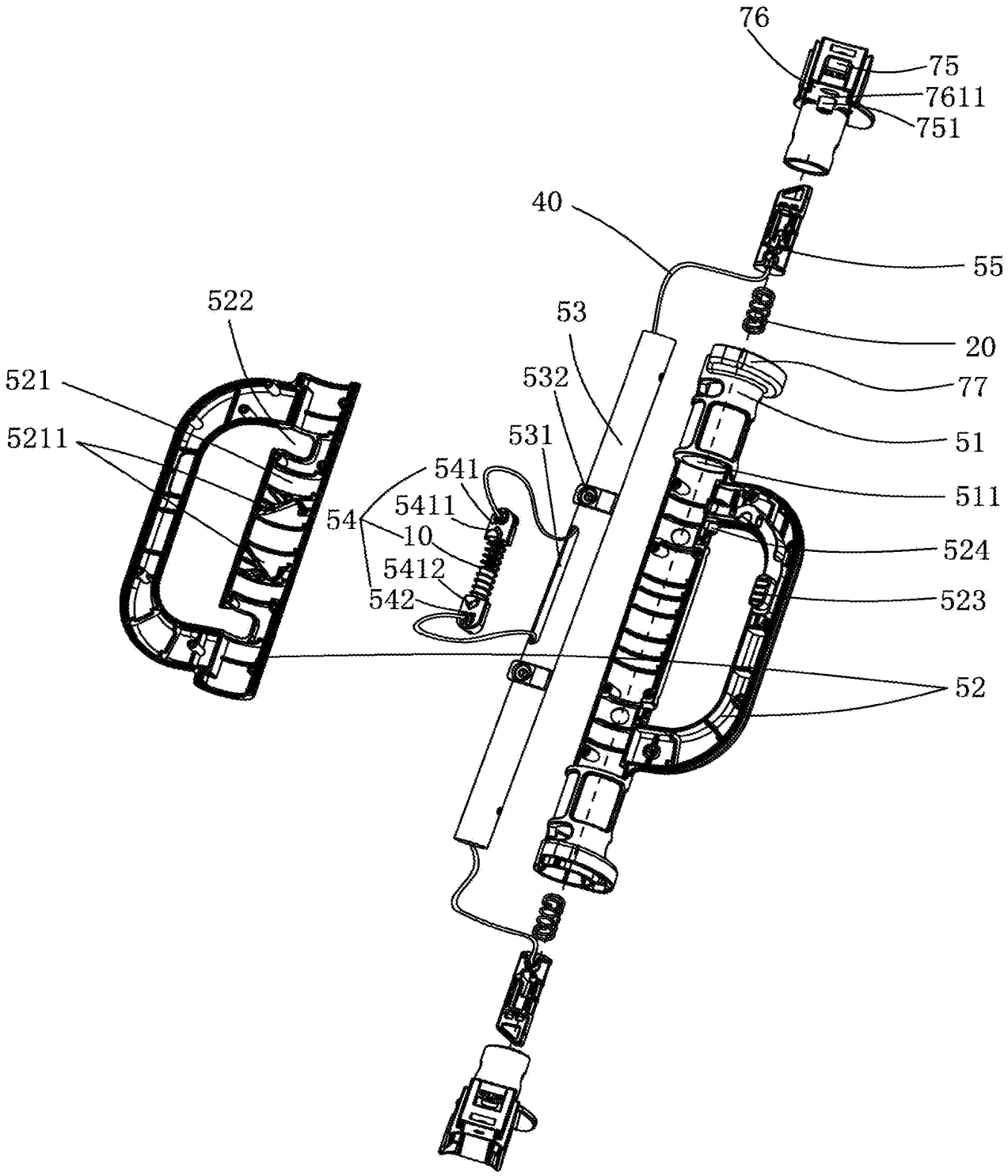
图10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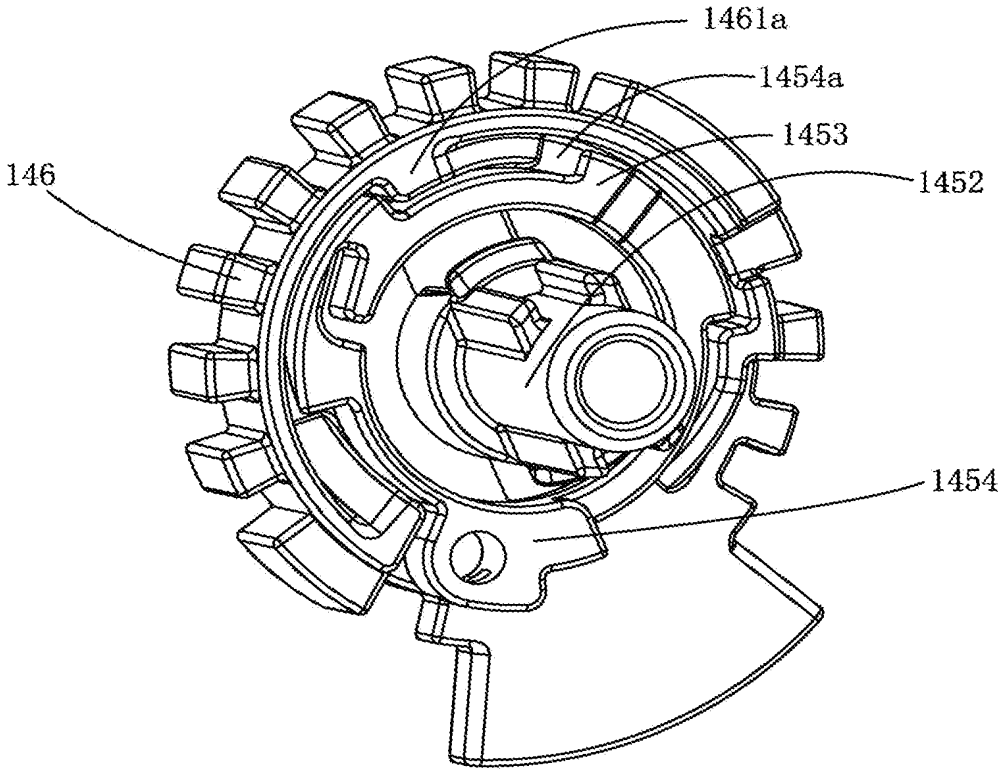
5412
542
523
52

图11



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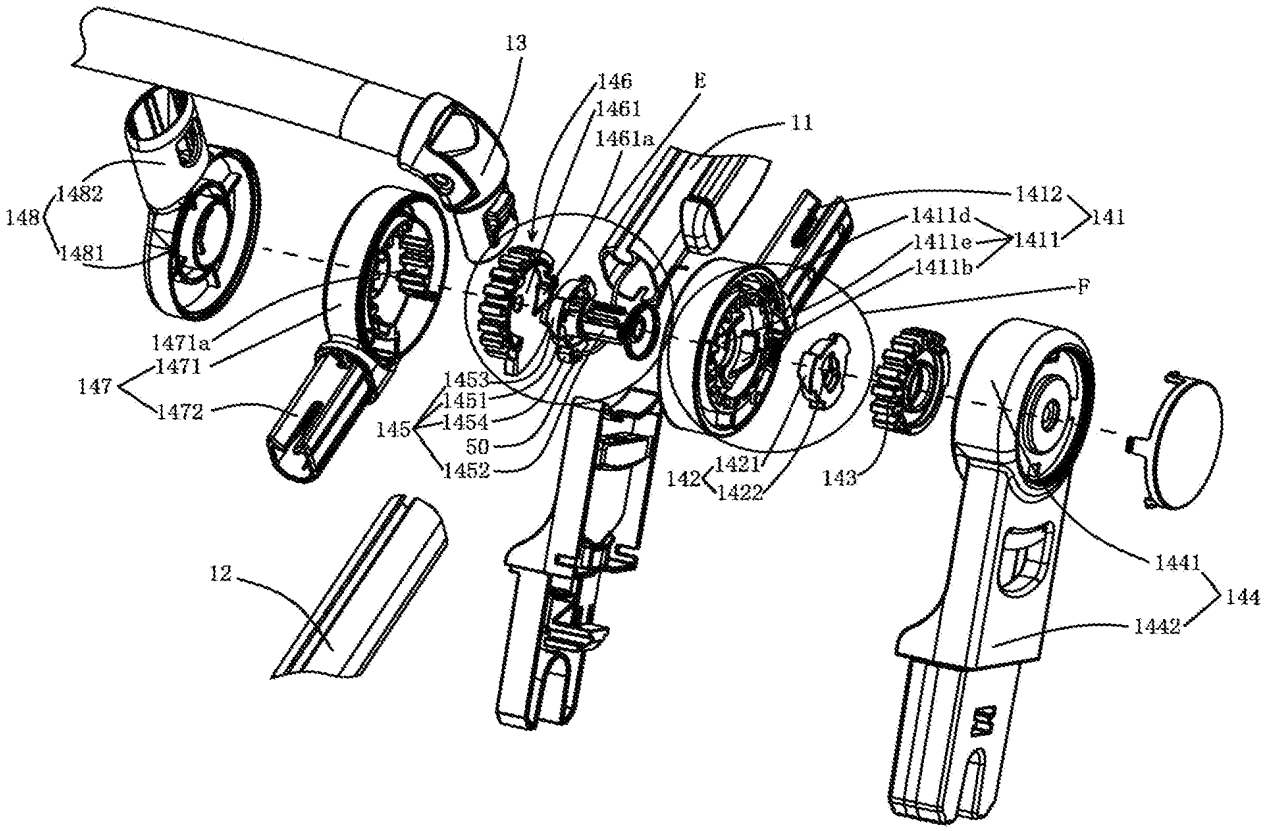
13
146
1461
1461a
E
11
1412
141
1411d
1411e
1411
1411b
F
148
1482
1481
1471a
1471
147
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1454
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1421
1422
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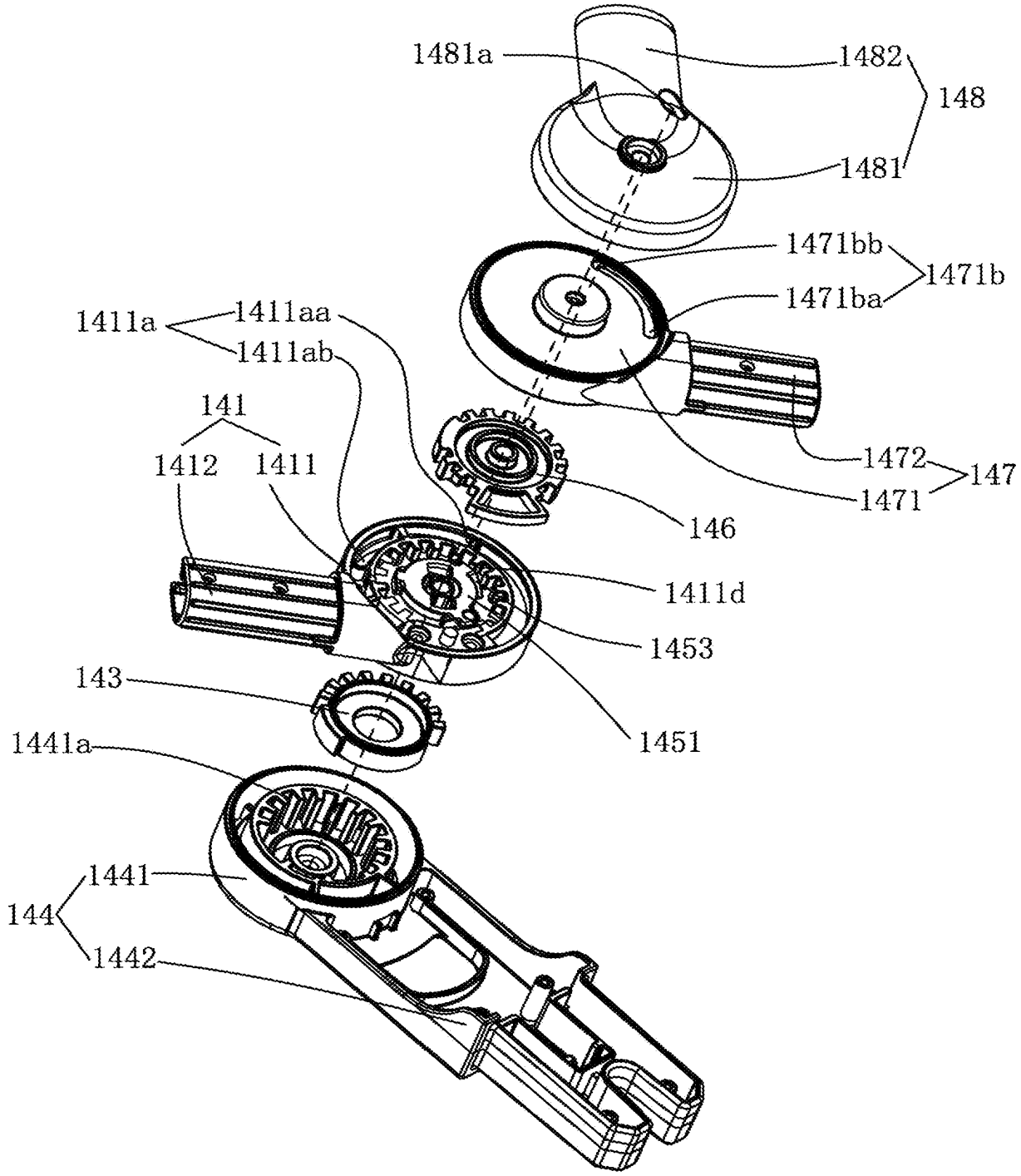
1441
144
1442
12

图13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1481
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1471b
1471ba
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1411aa
1411ab
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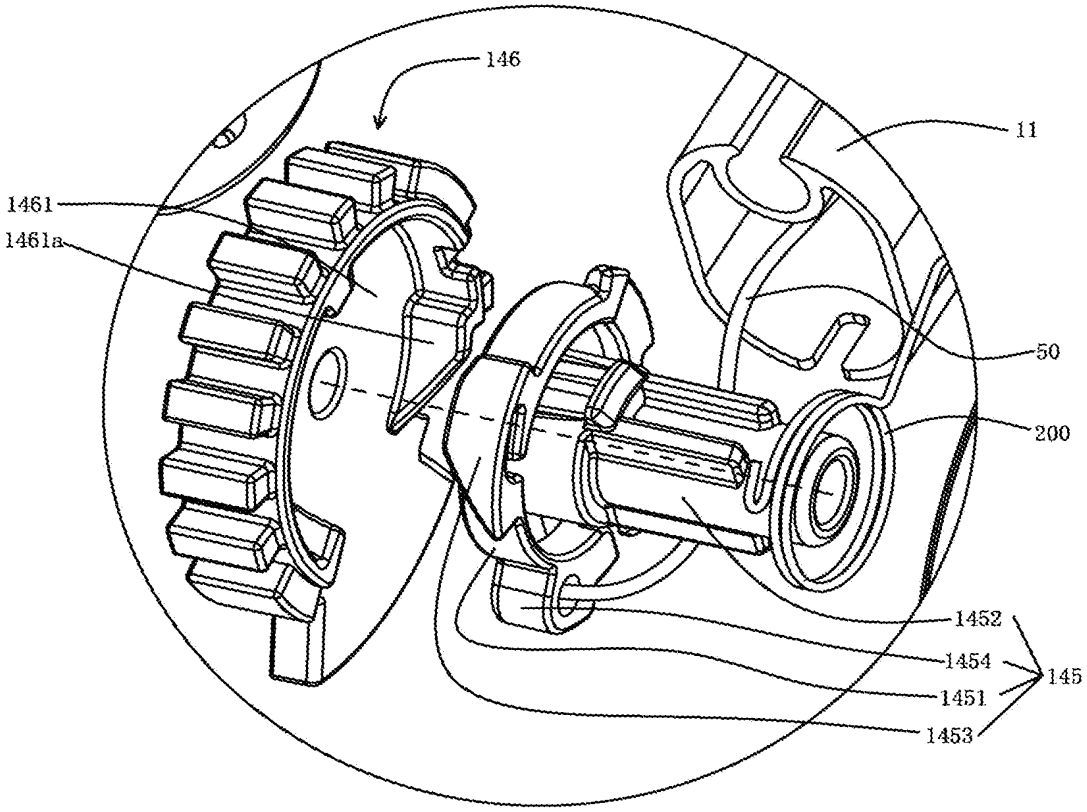
143
1451
1441a
1441
144
1442

图14



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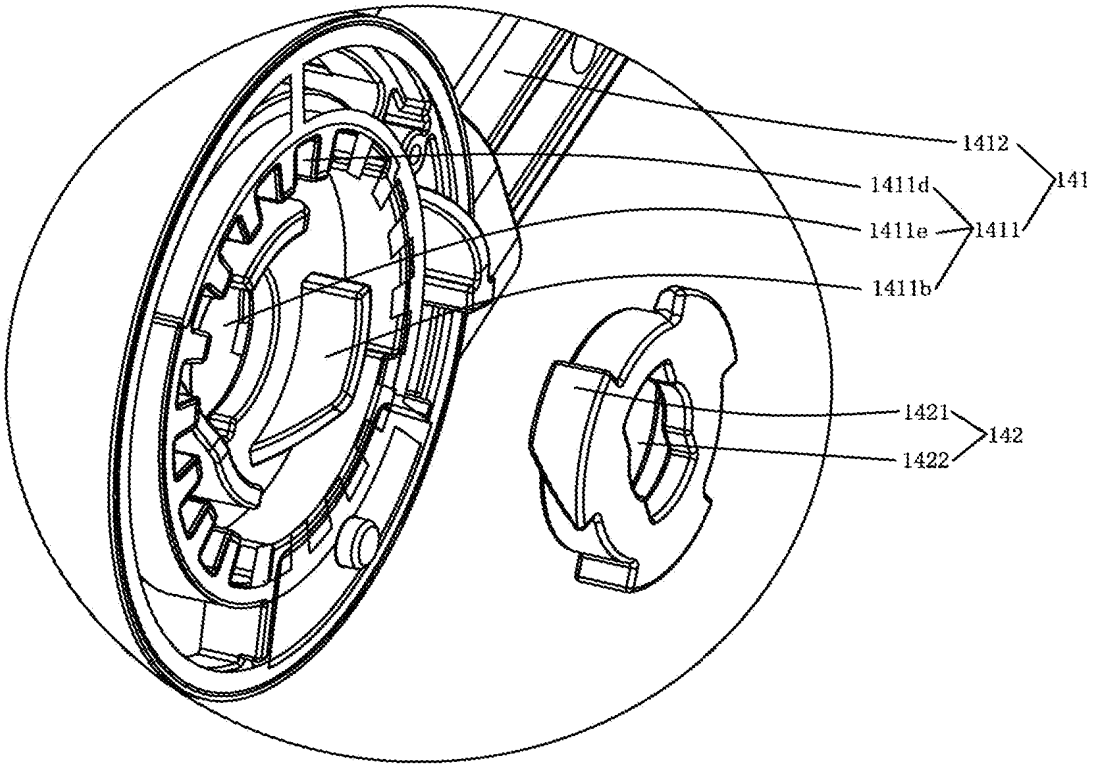

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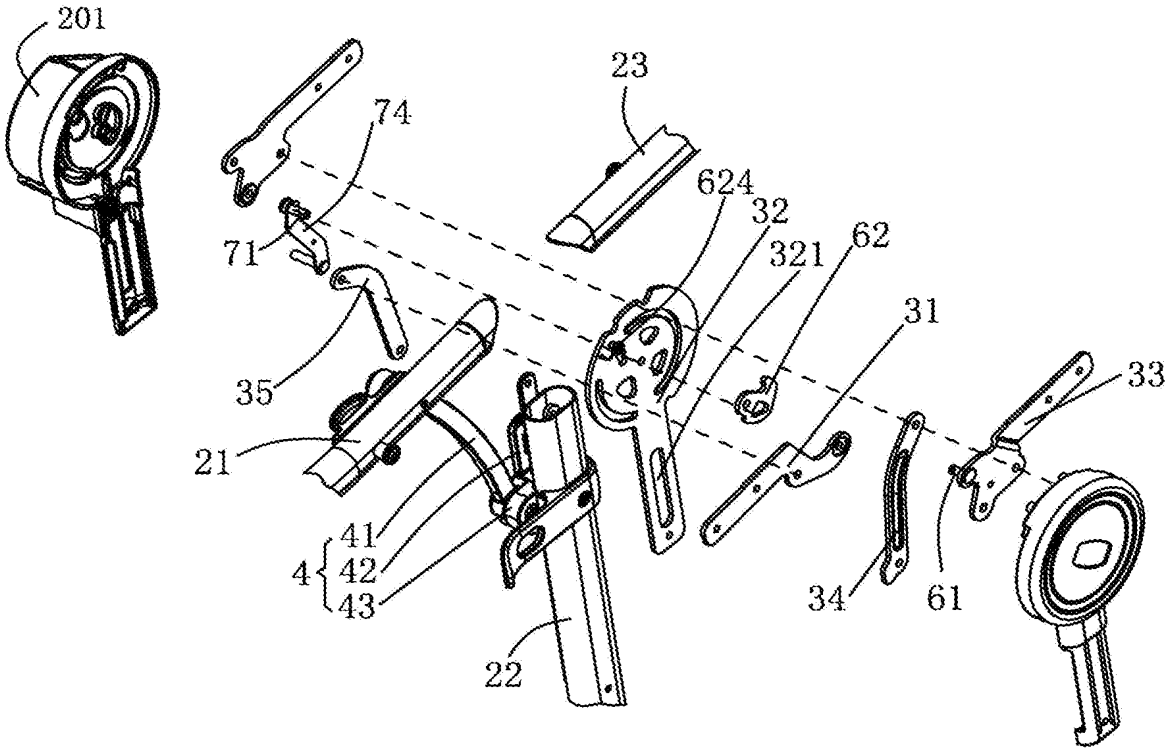

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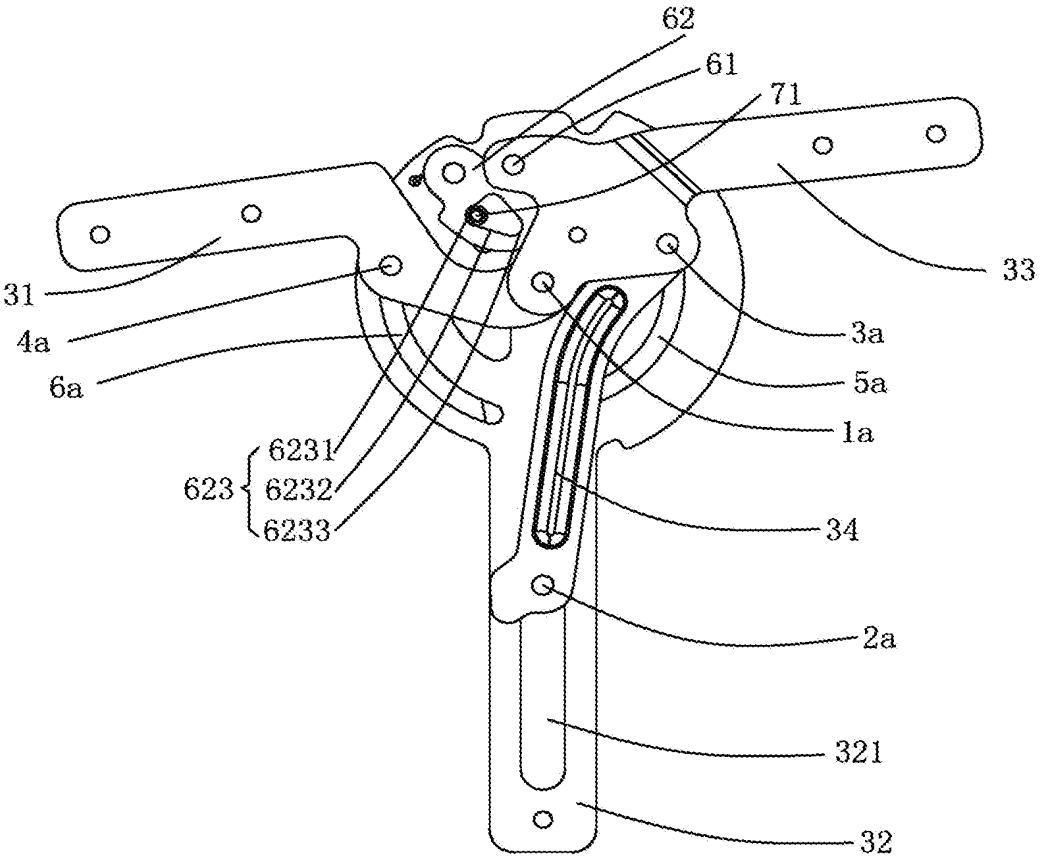

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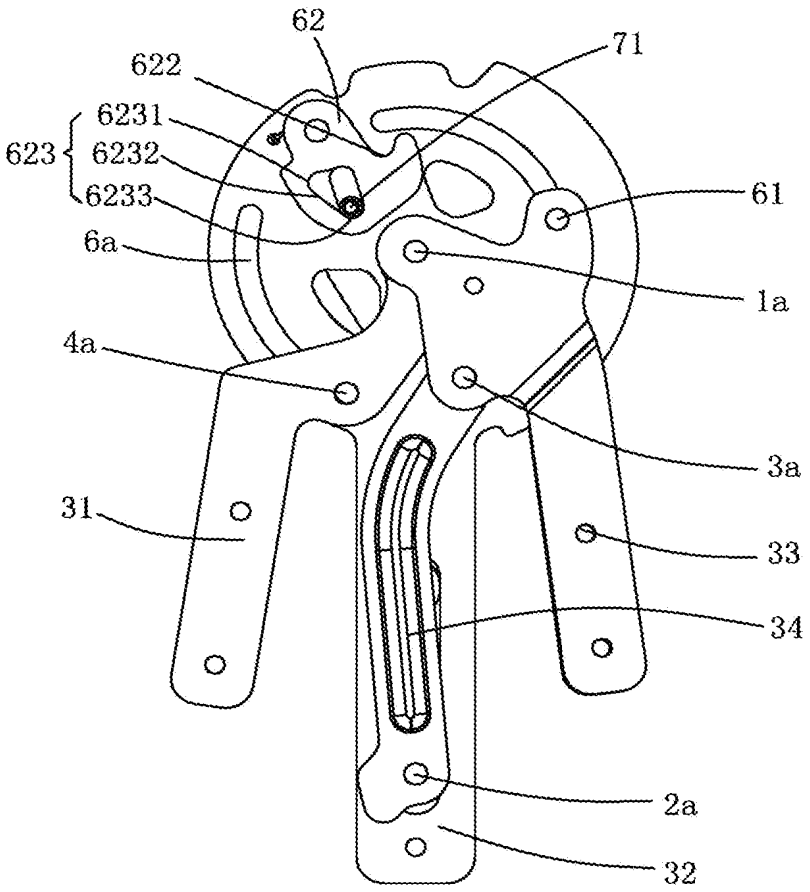

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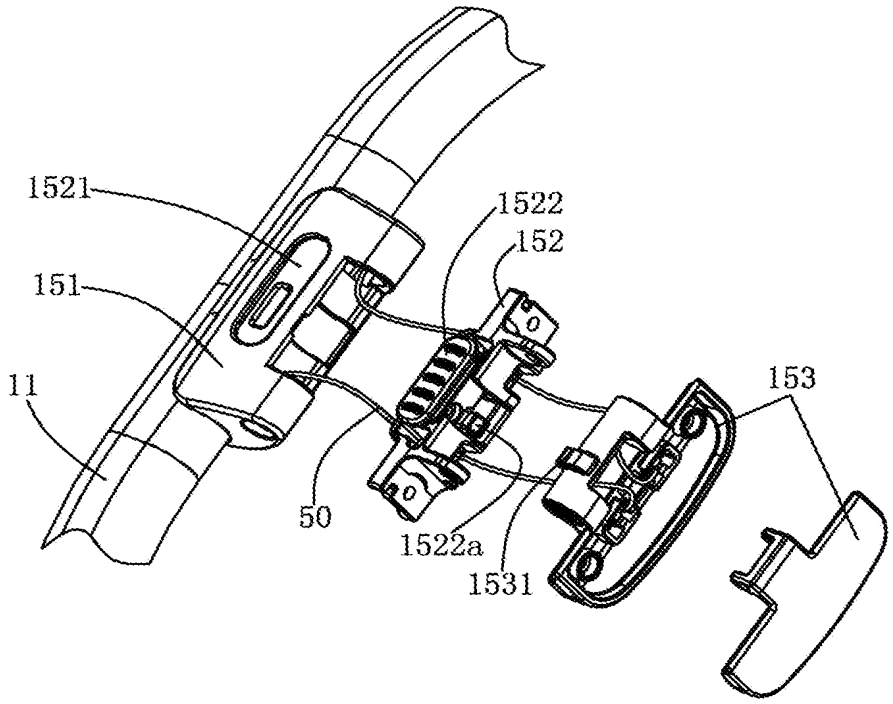

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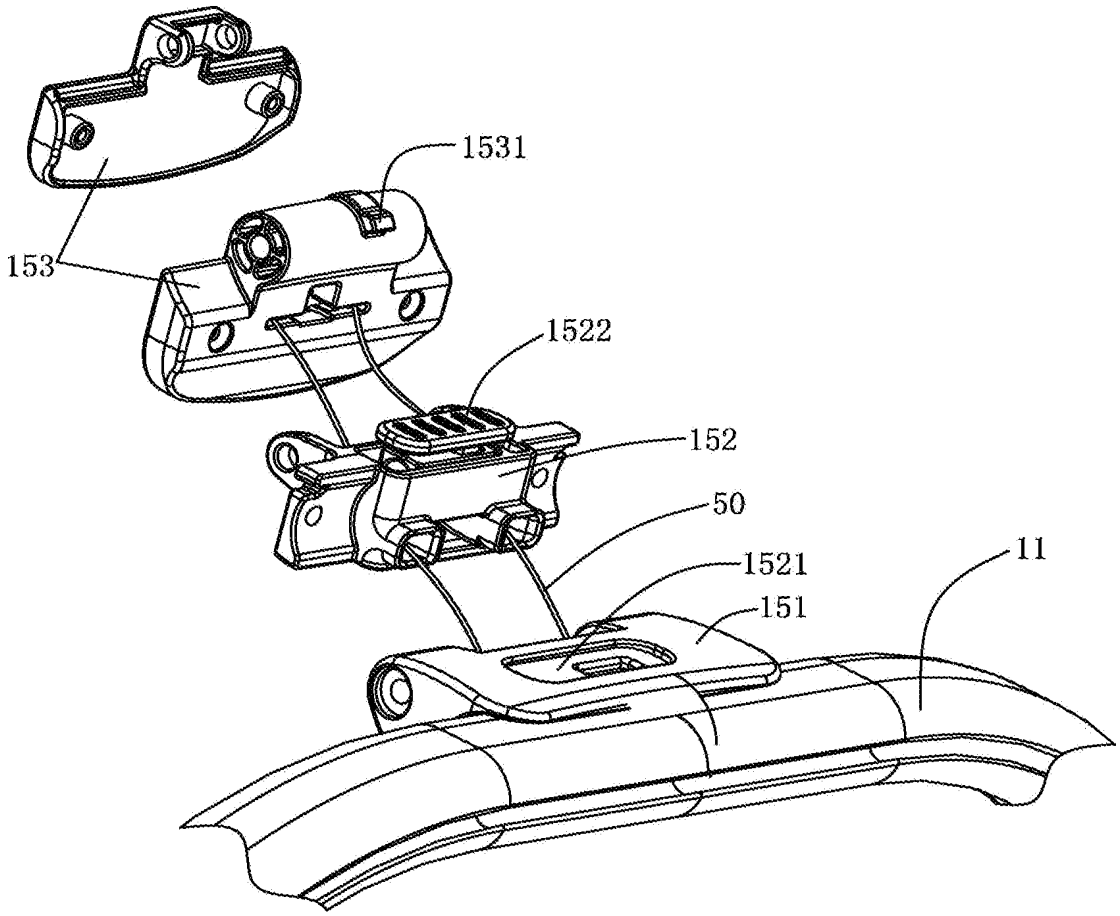
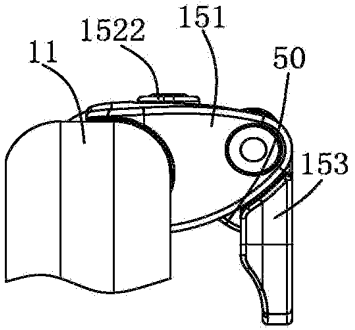


图21



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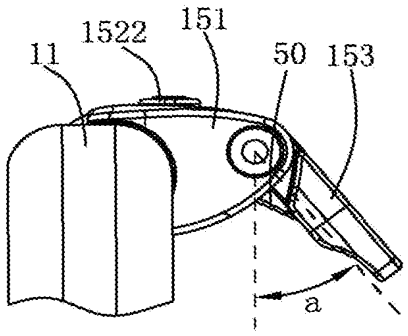

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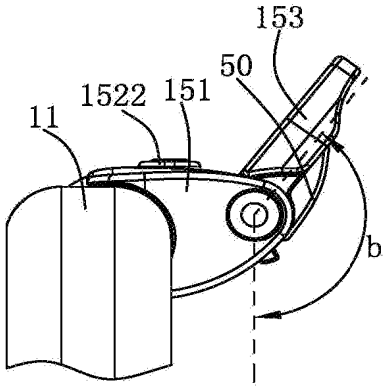

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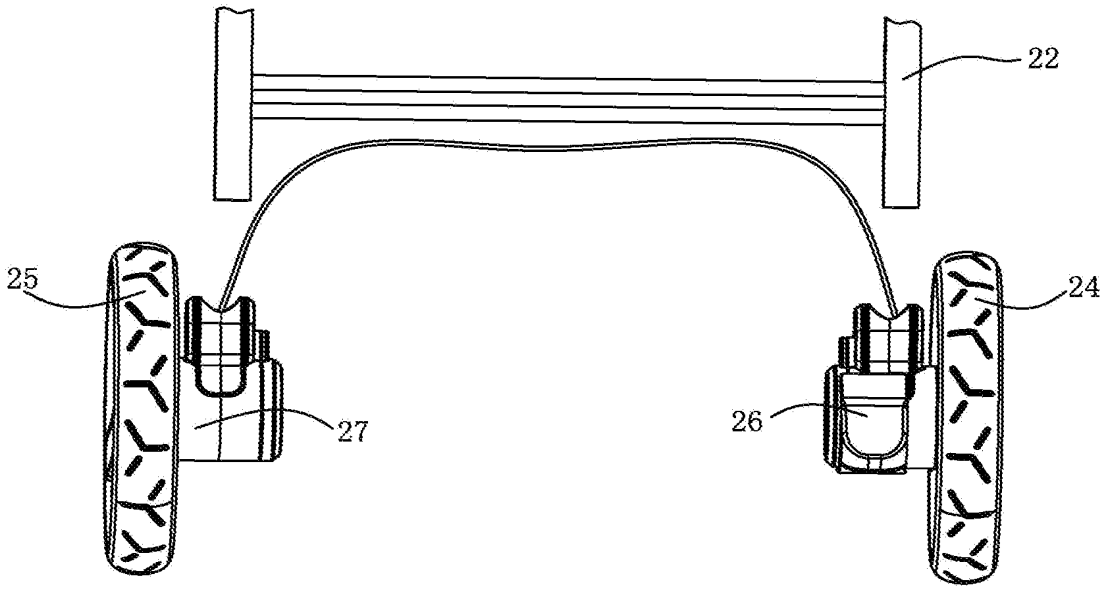
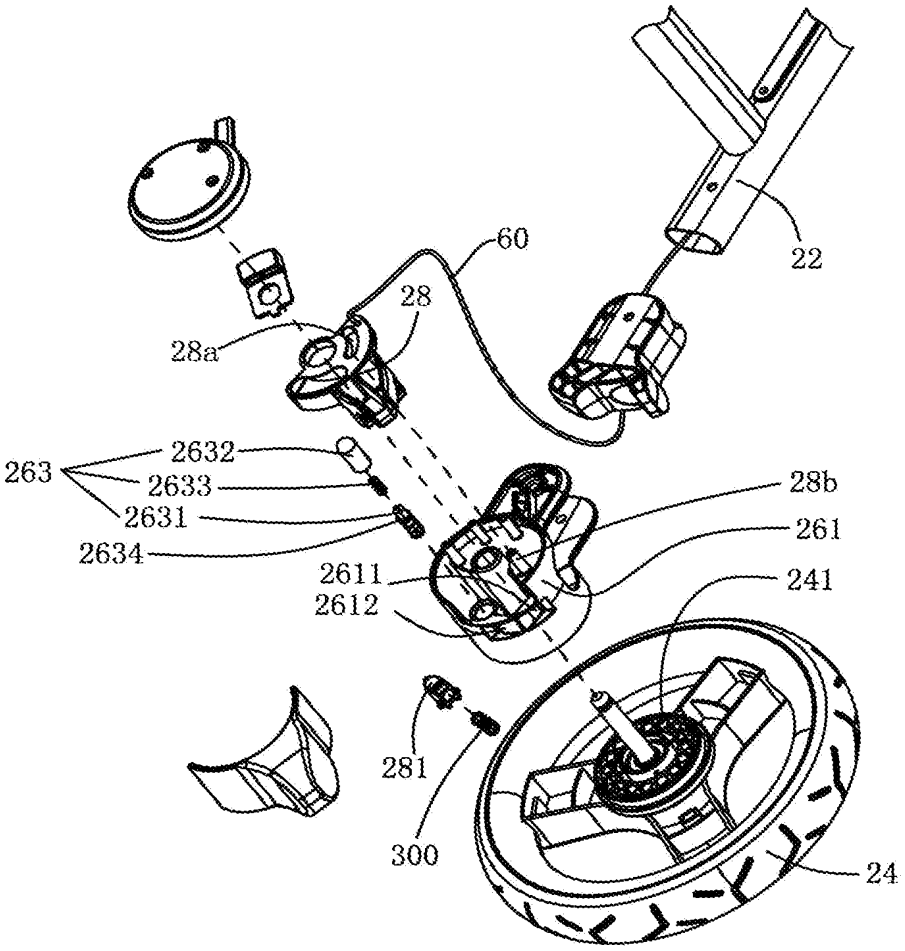


图25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22
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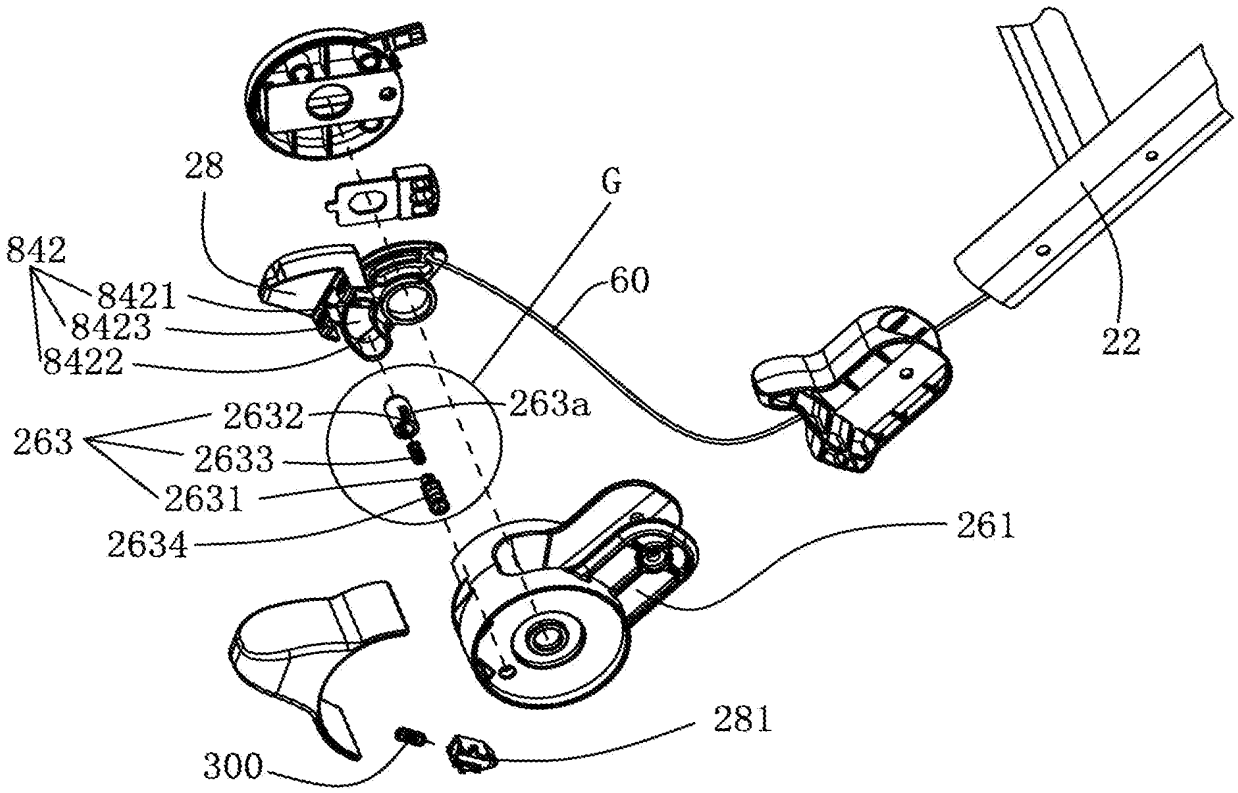
28a
263
2632
2633
2631
2634
28b
261
241
2611
2612
281
300
24

图26


28
G
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8423
8422
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2633
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261
281
300

图27

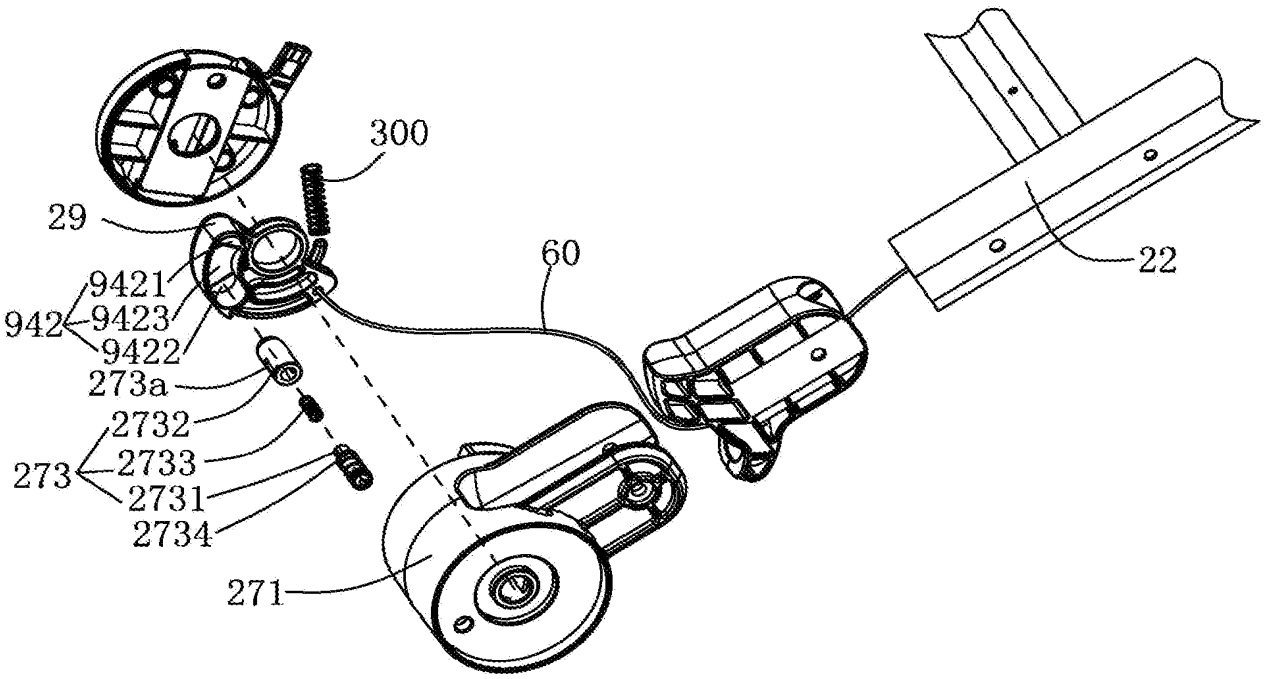
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图28

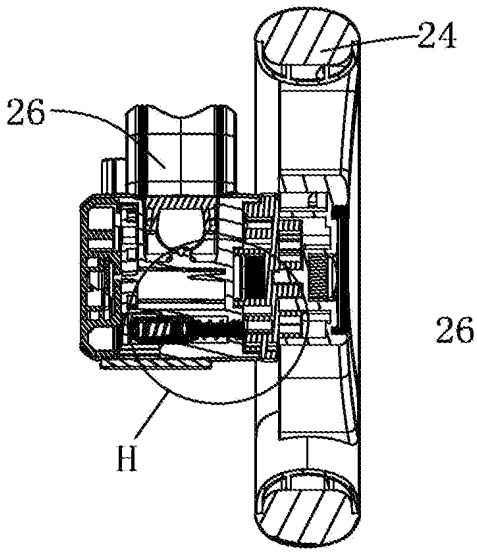


图 29

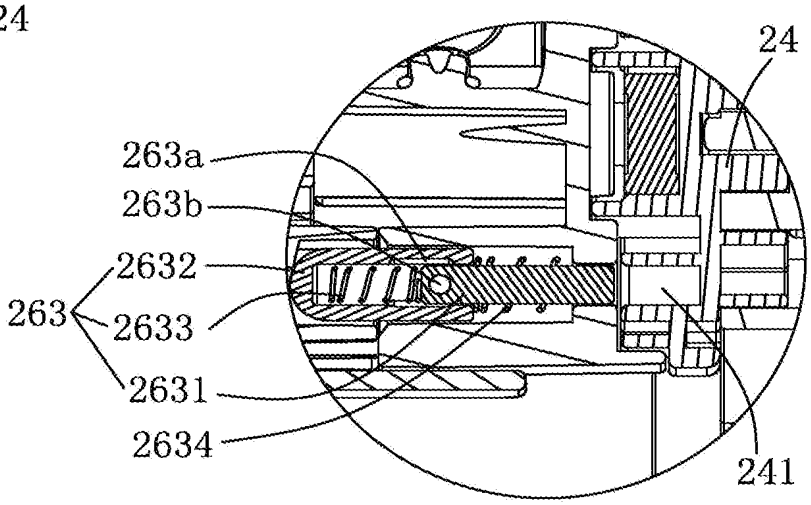
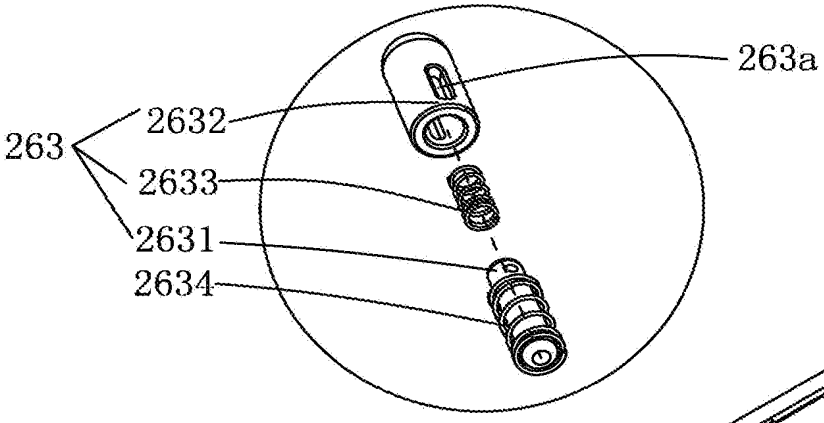


图 30


263a
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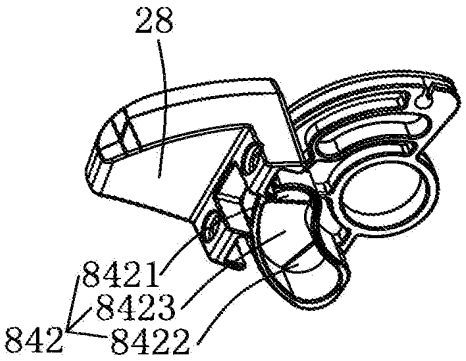
263
2633
2631
2634

图 31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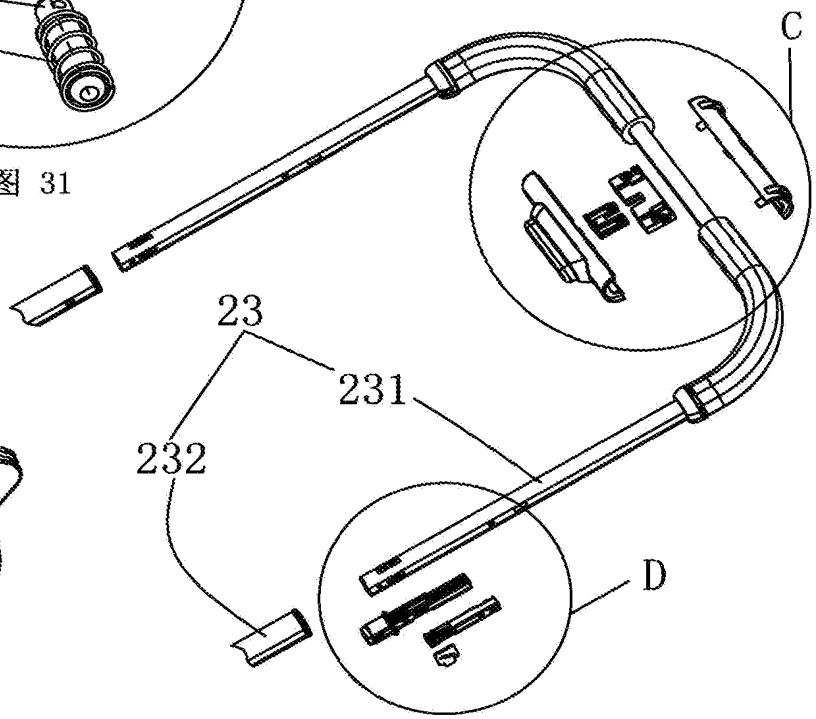
8422

图 32


C
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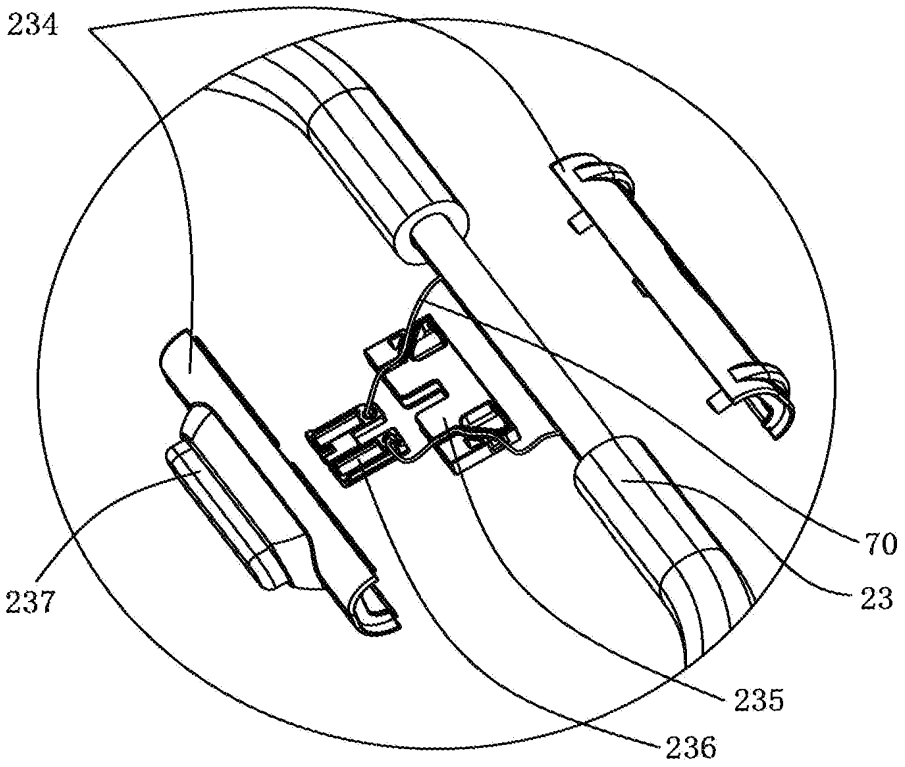
D

图 33



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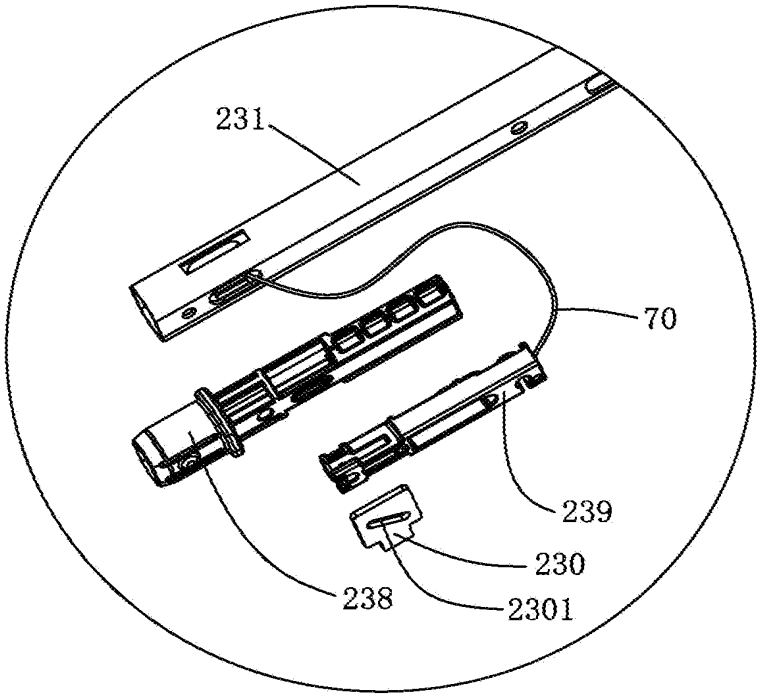

图35

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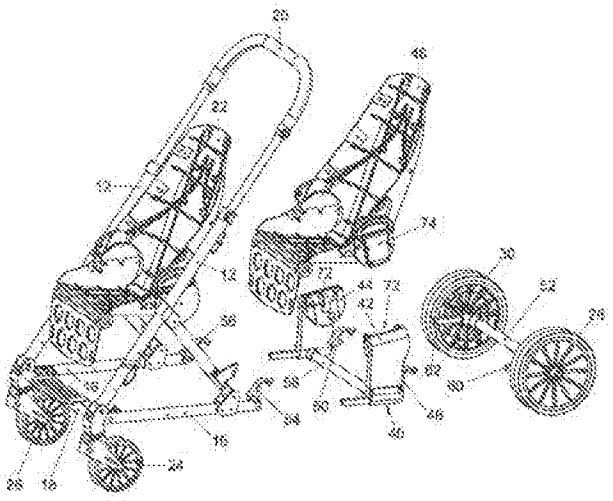

Fig. 6

(57) Abstract: A stroller (10) comprising a frame (12-20) which comprises a push bar (20), a seat (22) which is mounted on the frame, at least one front wheel assembly (24, 26) which is connected to the frame, at least two rear wheel assemblies (28, 30) which are connected to the frame, a distance between the front wheel assemblies and the rear wheel assemblies being referred to as first wheelbase. The rear wheel assemblies (28, 30) are detachably connected to the frame. The stroller (10) further comprises an adapter assembly (40) with at least one receiving unit (42, 44) for an accessory, such as a second seat, a cot, a car seat, a baggage box, a basket or a step up board. Rear wheel assemblies may be connected to the adapter assembly. The distance between the front wheel assemblies and the rear wheel assemblies connected to the adapter assembly is referred to as second wheelbase. The second wheelbase is greater than the first wheelbase.

WO 2014/042524 A1

Title: Stroller

FIELD

The invention relates to a stroller.

BACKGROUND OF THE INVENTION

Strollers are generally known and comprise a frame which comprises a push bar. Typically, a seat is mounted on the frame. Further, at least one front wheel assembly is connected to the frame. Most often, there are two front wheel assemblies which are pivotably connected to the frame. A front wheel assembly can comprise a single wheel or a pair of wheels arranged closely next to one another. The known strollers have at least two rear wheel assemblies which are connected to the frame. A rear wheel assembly also can comprise a single wheel or a pair of wheels arranged closely next to one another. In practice, a distance between a rotation axis of the at least one front wheel assemblies and a rotation axis of the rear wheel assemblies is referred to as the wheelbase. Often, for the purpose of putting the stroller in the trunk of a car, the rear wheel assemblies are detachably connected to the frame by means of a quick release, and the frame is collapsible, so that the stroller can be put away so as to take up relatively little space.

From practice, also strollers are known which comprise two seats. Variants are known where the seats, viewed in the driving direction, are arranged one behind the other (see to that end, for instance, EP 2 241 492 A2 and US 2010/0140902). US2010/0140902 mentions an additional frame with its own set of wheels, on which a second seat is fastened. The additional frame can be connected to the front of a normal stroller. In this condition, the known stroller has six wheels, which adversely affects the driving comfort and the maneuverability of the stroller. Moreover, it becomes practically impossible to get the thus extended stroller up onto a

sidewalk because the known stroller can hardly if at all be tilted backwards anymore. Other variants shown in that publication involve additional fastening brackets, which are already provided on the frame and with which a second seat can be mounted on the frame. However, this leads to a relatively unstable stroller as the frame is mainly dimensioned for use with one seat. Moreover, the additional fastening brackets lead to a higher cost price of the stroller which is not worthwhile when, in practice, it appears that no second seat needs to be attached, for instance because there will not be a second infant or because a second infant is born by the time the first infant is already able to walk.

For ES-2 253 093 and US2007/0045972, similar drawbacks hold true, i.e: (i) the driving comfort and the maneuverability of the stroller are not good due to the presence of six or eight wheel assemblies, and (ii) it is practically impossible to get the thus extended stroller up onto a sidewalk because the known stroller can hardly if at all be tilted backwards anymore. Moreover, the last-mentioned publications require the purchase of two strollers which are each independently useful for a single infant. Such a double purchase is of course costly and hence unfavorable from an economic viewpoint.

Also, a stroller is known where the seats, viewed in the driving direction, are arranged next to each other (see, to that end, for instance US2011/272925). It is true that with such a stroller the stability issues have improved compared to the variants known from US2010/0140902. With the stroller known from US2011/272925, the track width between the front wheel assemblies mutually and the rear wheel assemblies mutually can be increased in that the crossbars in the frame are of telescopic design. Such a construction is relatively costly. When it is uncertain whether there will be a second infant in the short term, the cost price of this stroller is a barrier. After all, there may not be a second infant or the second infant may be born by the time the first infant is no longer transported in a stroller. In those

circumstances a stroller with double seat is not needed and the telescopic provisions on the stroller remain unused. More than that, the telescopic provisions are then actually undesirable because they only add to the weight and the price of the stroller.

SUMMARY OF THE INVENTION

An object of the invention is to provide a stroller which is very suitable to be purchased for one infant, because its look, that is, the overall appearance, the weight, the dimensions, and the cost price substantially correspond to a normal single stroller. Another object of the invention is to provide a stroller which can be made suitable for fitting an accessory thereon, such as a second seat, so that, when there is a second infant, it can be transported with the same stroller. It is then envisaged that, also in the condition where two seats are provided, the stroller offers a good stability and also remains properly maneuverable and has a comfortable driving performance.

To that end, the invention provides a stroller comprising:

- a collapsible frame which comprises a push bar;
- a seat which is mounted on the frame;
- at least one front wheel assembly which is connected to the frame;
- at least two rear wheel assemblies which, in a first condition of the stroller, are connected to the frame, wherein a distance between a rotation axis of the at least one front wheel assembly and a rotation axis of the rear wheel assemblies is referred to as first wheelbase, wherein the rear wheel assemblies are detachably connected to the frame;
- an adapter assembly which is connectable to the frame when the rear wheel assemblies are detached from the

frame for bringing the stroller into a second condition, which adapter assembly comprises:

- a receiving provision for an accessory, such as a second seat, a cot, a car seat, a baggage box, a basket or a step up board;

and wherein the adapter assembly comprises:

- a fastening provision for the rear wheel assemblies; or:
- its own set of rear wheel assemblies,

wherein, in the second condition of the stroller, a distance between the rotation axis of the at least one front wheel assembly and a rotation axis of the rear wheel assemblies connected to the adapter assembly is referred to as second wheelbase, wherein the second wheelbase is greater than the first wheelbase and wherein the stroller in the condition where the adapter assembly is connected to the frame has only two rear wheel assemblies and one or two front wheel assemblies.

In this context, a front wheel assembly and a rear wheel assembly are understood to mean not only a single front wheel or a single rear wheel, respectively, but also one front wheel pair or one rear wheel pair, respectively. The wheels of a front wheel pair or rear wheel pair are arranged closely next to one another and always remain coaxial. When a front wheel pair or the rear wheel pair is pivotally connected to the frame, both wheels from the pair will pivot together.

Such a stroller has the advantage that initially it can be bought without adapter assembly in case of a first infant. In effect, a conventional stroller is then involved, albeit that the wheels, optionally in combination with the wheel crossbar, are detachable therefrom. The wheelbase and the track width of the thus purchased stroller are as is customary and the weight is also as is customary nowadays for a single stroller. The fact that the rear wheel assemblies are detachable is advantageous from a viewpoint

of space occupancy during storage of the stroller. This property is further enhanced in that the frame is collapsible in the usual manner. To the consumer, both in overall appearance and in cost price, the stroller without adapter assembly does not visibly differ from a normal stroller. When a second infant is born, or when a need arises to provide the stroller with an additional accessory, at a later stage, a cot, a car seat, a second seat, a baggage box and/or a basket can be purchased as accessories together with the adapter assembly. As the original rear wheel assemblies are removed from the stroller for placing the adapter set, and to the adapter set a replacement set of rear wheel assemblies is or will be connected, a stroller can be formed having a second wheelbase which is greater than the first wheelbase. This enlarged wheelbase provides the thus adapted stroller with additional stability against tilting in rearward direction. Further, the driving comfort remains particularly good because, as in conventional cases, only two rear wheel assemblies and one or two front wheel assemblies are involved. As, further, the adapter assembly and the accessory connected thereto are fastened behind the seat of the stroller that is already present, it remains possible to lift the front wheel assemblies with relatively little additional effort, so that the stroller can be brought with comparative ease from a lower level to a higher level, for instance from the roadway onto a sidewalk. Furthermore, the costs of an adapter assembly having, for instance, a second seat as an accessory can be kept considerably lower than the costs of a second stroller. At a relatively small investment – i.e. an investment that is considerably lower than that of a single stroller – a user can convert his originally normally priced single stroller into a double stroller with excellent driving properties and stability.

Further elaborations of the invention are described in the subclaims and will be further clarified in the following on the basis of an exemplary embodiment with reference to the drawing.

BRIEF DESCRIPTION OF THE FIGURES

Fig. 1 shows a perspective view of an exemplary embodiment of a stroller in a first condition;

Fig. 2 shows detail II of Fig. 1;

Fig. 3 shows the exemplary embodiment of Fig. 1 in exploded view;

Fig. 4 shows detail IV of Fig. 3;

Fig. 5 shows an exemplary embodiment of the adapter assembly;

Fig. 6 shows a perspective exploded view of the exemplary embodiment of the stroller of Fig. 1 with the adapter assembly and a second seat as accessory;

Fig. 7 shows the exemplary embodiment of Fig. 6 in assembled condition;

Fig. 8 shows the exemplary embodiment of Fig. 1 in side view without adapter assembly and without seat; and

Fig. 9 shows the exemplary embodiment of Fig. 7 in side view with adapter assembly and with seat.

DETAILED DESCRIPTION

In the following, various embodiments of the invention are described. Here, reference is made to the exemplary embodiment which is shown in the figures. In this exemplary embodiment, various embodiments of the invention are embodied. However, the embodiments can also be embodied in a different manner than represented in the example shown. Therefore, the exemplary embodiment which is represented in the drawing serves only for clarification and the invention is not limited to the exemplary embodiment described.

In the most general terms, the invention provides a stroller 10, comprising a frame 12-20 which includes a push bar 20. On the frame 12-20, a seat 22 is mounted. To the frame 12-20 is connected at least one front

wheel assembly 24, 26. In the exemplary embodiment shown, these are two front wheel assemblies 24, 26 pivotable about two vertical pivots. In an alternative embodiment, however, a single centrally positioned front wheel assembly is also an option. It is also possible that a single front wheel assembly 24, 26 comprises a pair of wheels which are arranged closely next to one another and coaxially. The stroller 10 further comprises at least two rear wheel assemblies 28, 30 which are connected to the frame 12-20. As is the case with the front wheel assemblies 24, 26, it is also possible that a single rear wheel assembly 24, 26 comprises a pair of wheels which are arranged closely next to one another and coaxially. A distance between a rotation axis $L_{front\ wheels}$ of the at least one front wheel assembly 24, 26 and a rotation axis $L_{rear\ wheels}$ of the rear wheel assemblies 28, 30 is hereinafter referred to with the terminology "first wheelbase W_1" (see Fig. 8). The rear wheel assemblies 28, 30 are detachably connected to the frame 12-20. Characteristic of the stroller 10 according to the invention is that it comprises an adapter assembly 40 which is connectable to the frame 12-20 when and after the rear wheel assemblies 28, 30 have been detached from the frame 12-20. Fig. 1 shows the exemplary embodiment of the stroller 10 when it is in the first condition, i.e. in a condition with one seat 22 and no accessory 46 mounted thereon. The adapter assembly 40 is not yet present therein either.

In Fig. 3, the rear wheel assemblies 28, 30 are detached from the frame 12-20.

Figs. 5 and 6 show an example of an embodiment of an adapter assembly 40. The adapter assembly 40 comprises at least one receiving unit 42, 44 for an accessory 46, such as a second seat, a cot, a car seat, a baggage box, a basket or a step up board. The adapter assembly 40 further comprises a fastening provision 48, 50 for the rear wheel assemblies 28, 30. In an alternative embodiment of the invention, the adapter assembly 40 can comprise its own set of rear wheel assemblies. In this latter case, the

removed rear wheel assemblies 28, 30 are not used when the adapter assembly 40 and the accessory 46 are part of the stroller 10. A distance between the rotation axis $L_{front\ wheels}$ of the at least one front wheel assembly 24, 26 and a rotation axis $L_{adapter\ wheels}$ of the rear wheel assemblies 28, 30 connected to the adapter assembly 40, is referred to as second wheelbase W2 (see Fig. 9). Characteristically, the second wheelbase W2 is greater than the first wheelbase W1. This clearly appears from a comparison of the two conditions of the exemplary embodiment which are shown in the side views in Figs. 8 and 9. As a result, also when the accessory 46, such as a second seat, a cot, a car seat, a baggage box, a basket or a step up board, is part of the stroller 10, an excellent stability is obtained. The risk of the stroller 10 tilting inadvertently backwards is considerably reduced in that also when two infants are transported in the stroller, the common center of gravity of the infants is between the front wheel assemblies 24, 26 and the rear wheel assemblies 28, 30. As the stroller 10 only has three or four wheel assemblies, proper driving performance and good maneuverability are maintained. Owing to the presence of the at least one receiving unit 42, 44, the same adapter assembly 40 can be used for mounting various accessories 46 thereon. In the exemplary embodiment shown, as an accessory, a second seat 46 is shown. As stated, the adapter assembly 40 can also serve for fastening thereto a cot, a car seat, a baggage box, a basket or a step up board.

Fig. 7 shows the second condition of the stroller 10 in which the adapter assembly 40 is connected to the frame 12-20 and in which the rear wheel assemblies 28, 30 are connected to the adapter assembly 40. Further, in Fig. 7, the accessory 46, in an embodiment as second seat, is placed on the adapter assembly 40. In particular in Fig. 9, it is clearly visible that the center of gravity of an infant in the first seat 22 and the center of gravity of an infant in the second seat 46 is between the front wheel assemblies 24, 26

and the rear wheel assemblies 28, 30. Even if the foremost infant were to step from his/her front seat 22, the stroller 10 does not tilt backwards.

In one embodiment, of which an example is shown in the figures, the rear wheel assemblies 28, 30 can be connected to a wheel crossbar 52, which wheel crossbar 52 is detachably connectable to the frame 12-20 by a first snap connection 54, 56.

In an alternative embodiment, the rear wheel assemblies 28, 30 could also be provided with axle stubs which can be inserted into bearing openings in the frame 12-20. The embodiment with wheel crossbar 52 has the advantage of a quicker assembly and disassembly of the rear wheel assemblies 28, 30 as both rear wheel assemblies 28, 30 can be connected to the frame 12-20 and be detached from the frame 12-20 in one operation. What is more, the wheel crossbar 52 provides the frame 12-20 with additional strength in that it forms a cross connection. In an alternative variant, it is also possible that the adapter assembly comprises two separate adapter parts which are connected to the frame 12-20 and that to these separate adapter parts rear wheel assemblies are, or are to be, connected. These adapter parts could also form the two receiving units in which the accessory can be placed. However, in this variant also, it is important that after the adapter parts are mounted the wheelbase W2 is greater than the wheelbase W1 in the first condition of the stroller 10 without adapter parts.

In one embodiment, of which an example is shown in the figures, the wheel crossbar 52 can be detachably connectable to the adapter assembly 40 by the fastening provision 48, 50 which is designed as a second snap connection 48, 50. This second snap connection is clearly visible in Figs. 5 and 6.

In one embodiment, of which an example is shown in the figures, the adapter assembly 40 can comprise at least one receiving unit 42, 44 which is connected to an adapter assembly crossbar 58. The adapter assembly crossbar 58 may then be detachably connectable to the frame

12-20 by a snap connection 54, 56. In the exemplary embodiment shown, the adapter assembly 40 comprises two receiving units 42, 44. However, a single receiving unit is also possible or more than two receiving units are also an option.

In one embodiment, of which an example is shown in the figures, the snap connection 54, 56 for detachably connecting the adapter assembly crossbar 58 to the frame 12-20 can be formed by the first snap connection 54, 56 which also serves for connecting the wheel crossbar 52 to the frame 12-20. This is simple and favorable from a viewpoint of costs. However, in an alternative embodiment, also a snap connection of a different type could be used. An alternative snap connection can be formed by generally known telescopically extensible and compressible, slideable tubes, the outer tube provided with a series of spaced apart openings and the inner tube provided with a compressible ball biased towards an outermost position, which can snap into the openings. The advantage of the exemplary embodiment shown is a great stability with which a virtually clearance free connection is obtained.

According to a further elaboration of the invention, of which an example is shown in the figures, the first snap connection 54,56 can comprise two brackets 54, 56 pivotably connected to the frame 12-20. Each bracket 54, 56 comprises a substantially hook-shaped end 54a, 56a which has some elasticity and which can be snapped over the wheel crossbar 52 when the rear wheel assemblies 28,30 are mounted to the frame 12, 20. The brackets 54, 56 can further be snapped in a corresponding manner over the adapter assembly crossbar 58 when the adapter assembly 40 is mounted on the frame 12-20. The first snap connection 54, 56 thus has a double function, i.e. detachably connecting the rear wheel assemblies 28, 30 to the frame 12-20 and detachably connecting the adapter assembly 40 to the frame 12-20.

In one embodiment, of which an example is shown in the figures, the wheel crossbar 52 can comprise two parallel mounting bars 60, 62 extending perpendicularly to the wheel crossbar 52, and which are slideably receivable in associated openings 64, 66 in the frame 12-20 and which are slideably receivable in associated openings 68, 70 in the adapter assembly 40. These mounting bars 60, 62 provide a sturdy, demountable connection between the wheel crossbar 52 and the frame 12-20. Furthermore, the mounting bars 60, 62 provide a sturdy demountable connection between the wheel crossbar 52 and the adapter assembly 40.

According to an embodiment of the invention, of which an example is shown in the figures, the second snap connection 48, 50 can comprise two brackets 48, 50 pivotably connected to the adapter assembly 40. These brackets 48,50 too can each comprise a substantially hook-shaped end 48a, 50a having some elasticity and being snappable over the wheel crossbar 52 when the rear wheel assemblies 28, 30 are mounted on the adapter assembly 40.

By designing the second snap connection 48, 50 similarly to the first snap connection 54, 56 the user can learn the operation of the stroller 10 with minimal effort.

According to a further elaboration of the invention, of which an example is shown in the figures, it is possible that the at least one receiving unit 42, 44 comprises a receiving slot 72 in which a support bracket 74 is slideably receivable, which support bracket 74 is connected to the accessory 46 to be mounted, such as a second seat, a cot, a car seat, a baggage box, a basket or a step up board.

In one embodiment, of which an example is shown in the figures, the configuration of the adapter assembly 40 with the accessory 46 is designed such that in mounted condition, the accessory 46 is located behind the first seat 22.

Figs. 1, 3, 6, and 7 show the successive steps of the conversion of the stroller 10 from the first condition with one seat 22 to the second condition with a seat 22 and an accessory 46, in this case a second seat 46. In Fig. 1, the wheel crossbar 52 is still connected to the frame 12-20. The brackets 54, 56 of the first snap connection are already folded up so that the rear wheel assemblies 28, 30 can be detached with the wheel crossbar 52 from the frame 12-20. Clearly, in normal use of the stroller 10 in the first condition, these brackets 54, 56 are folded down and the hook-shaped end 54a, 56a is in engagement with the wheel crossbar 52. In Fig. 3, the mounting bars 60, 62 are pulled from the associated openings 64, 66 in the frame 12-20 and the wheel crossbar 52 with the rear wheel assemblies 28, 30 connected thereto is taken from the frame 12-20. Fig. 6 shows the adapter assembly 40, the accessory 46 in the embodiment of the second seat, and the wheel crossbar 52 with mounting bars 60, 62 in a condition prior to mounting. Next, Fig. 7 shows the stroller 10 in the second condition in which the adapter assembly 40, the accessory 46 and the rear wheel assemblies 28, 30 with the wheel crossbar 52 are mounted. As already stated hereinabove, instead of a seat, the accessory 46 could also be formed by a cot, a car seat, a baggage box, a basket or a step up board.

With the invention, a stroller 10 is provided with relatively low initial purchase costs. In the first condition, the stroller 10 has the properties of a normal single stroller, also as regards appearance, design, weight and costs. At relatively low cost, the stroller 10 is expandable into a double stroller 10 which has first rate driving performance and excellent stability, which is of great importance from a viewpoint of safety.

While the invention has been represented and described in detail with reference to the drawing, this drawing and the description should be considered to be merely an example. The invention is not limited to the embodiments described. Features that are described in subclaims can be

mutually combined. Reference numerals in the claims should not be construed as limitations of the claims but serve merely for clarification.

Claims

1. A stroller (10) comprising:
   - a collapsible frame (12-20) which comprises a push bar (20);
   - a seat (22) which is mounted on the frame (12-20);
   - at least one front wheel assembly (24, 26) which is connected to the frame (12-20);
   - at least two rear wheel assemblies (28, 30) which, in a first condition of the stroller (10), are connected to the frame (10-20), wherein a distance between a rotation axis ($L_{front\ wheels}$) of the at least one front wheel assembly (24, 26) and a rotation axis ($L_{rear\ wheels}$) of the rear wheel assemblies (28, 30) is referred to as first wheelbase (W_1), wherein the rear wheel assemblies are detachably connected to the frame (12-20);

characterized by

   - an adapter assembly (40) which is connectable to the frame (12-20) when the rear wheel assemblies (28, 30) are detached from the frame (12-20) for bringing the stroller (10) into a second condition, which adapter assembly (40) comprises:
     - at least one receiving unit (42, 44) for an accessory (46), such as, for instance, a second seat, a cot, a car seat, a baggage box, a basket or a step up board;

   and wherein the adapter assembly (40) comprises
     - a fastening provision (48, 50) for the rear wheel assemblies (28, 30); or
     - its own set of rear wheel assemblies,

wherein, in the second condition of the stroller (10), a distance between the rotation axis ($L_{front\ wheels}$) of the at least one front wheel assembly (24,26) and a rotation axis ($L_{adapter\ wheels}$) of the rear wheel assemblies (28, 30) connected

to the adapter assembly (40) is referred to as second wheelbase (W_2), wherein the second wheelbase (W_2) is greater than the first wheelbase (W_1), and wherein the stroller (10) in both the first condition and the second condition has only two rear wheel assemblies and one or two front wheel assemblies.

2. The stroller according to claim 1, wherein the rear wheel assemblies (28, 30) are connected to a wheel crossbar (52), which wheel crossbar (52) is detachably connectable to the frame (12-20) by a first snap connection (54, 56).

3. The stroller according to claim 2, wherein the wheel crossbar (52) is detachably connectable to the adapter assembly (40) by the fastening provision (48, 50) which is designed as a second snap connection (48, 50).

4. The stroller according to claims 2 or 3, wherein the adapter assembly (40) comprises at least one receiving unit (42, 44) which is connected to an adapter assembly crossbar (58), which adapter assembly crossbar (58) is detachably connectable to the frame (12-20) by a snap connection (54, 56).

5. The stroller according to claim 4, wherein the snap connection (54, 56) for detachably connecting the adapter assembly crossbar (58) to the frame (12-20) is the first snap connection (54, 56).

6. The stroller according to claim 5, wherein the first snap connection (54, 56) comprises two brackets (54, 56) pivotably connected to the frame (12-20), which each comprise a substantially hook-shaped end (54a, 56a) which has some elasticity and which is snappable over the wheel crossbar (52) when the rear wheel assemblies (28, 30) are mounted on the

frame (12-20), and which is snappable over the adapter assembly crossbar (58) when the adapter assembly (40) is mounted on the frame (12-20).

7. The stroller according to any one of claims 2-6, wherein the wheel crossbar (52) comprises two parallel mounting bars (60, 62) extending perpendicularly to the wheel crossbar (52), and which are slideably receivable in associated openings (64, 66) in the frame (12-20) and which are slideably receivable in associated openings (68, 70) in the adapter assembly (40).

8. The stroller according to claim 7, wherein the stroller (10) also has the features of claims 3 and 4, wherein the second snap connection (48, 50) comprises two brackets (48, 50) pivotably connected to the adapter assembly (40) and which each comprise a substantially hook-shaped end (48a, 50a) which has some elasticity and which is snappable over the wheel crossbar (52) when the rear wheel assemblies (28, 30) are mounted on the adapter assembly (40).

9. The stroller according to any one of the preceding claims, wherein the at least one receiving unit (42, 44) comprises a receiving slot (72) in which a support bracket (74) is slideably receivable, which support bracket (74) is connected to the accessory (46) to be mounted, such as a second seat, a cot, a car seat, a baggage box, a basket or a step up board.

10. The stroller according to any one of the preceding claims, wherein the configuration of the adapter assembly (40) with the accessory (46) is designed such that the accessory (46) in mounted condition is located behind the first seat (22).

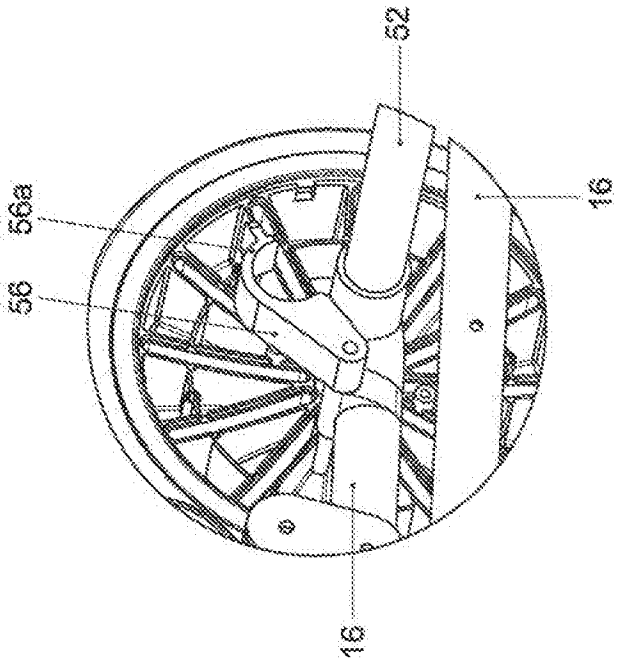

Fig. 2

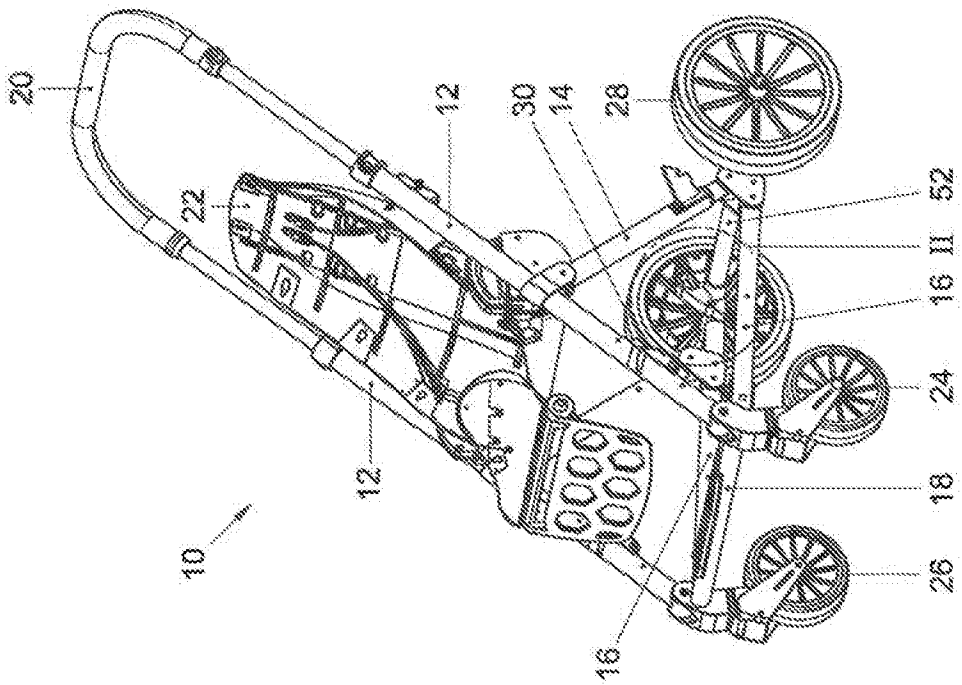

Fig. 1

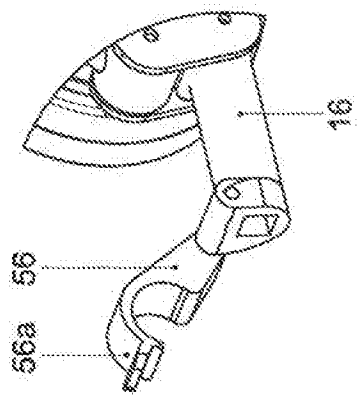

Fig. 4

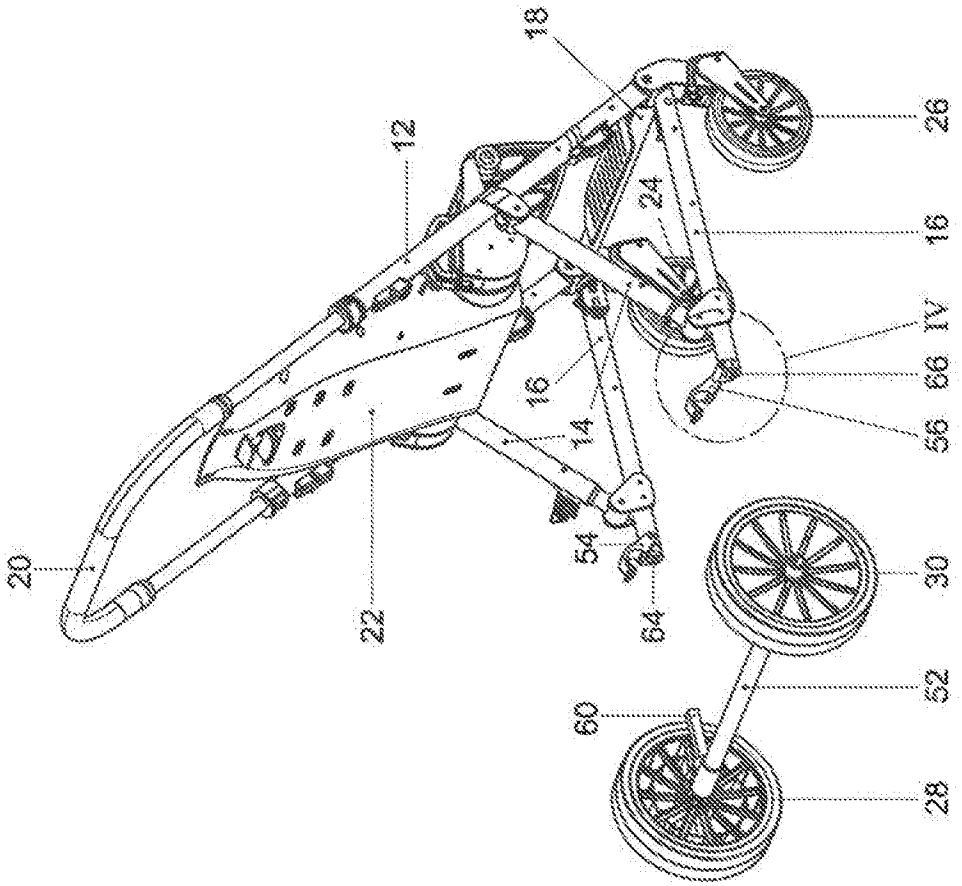

Fig. 3

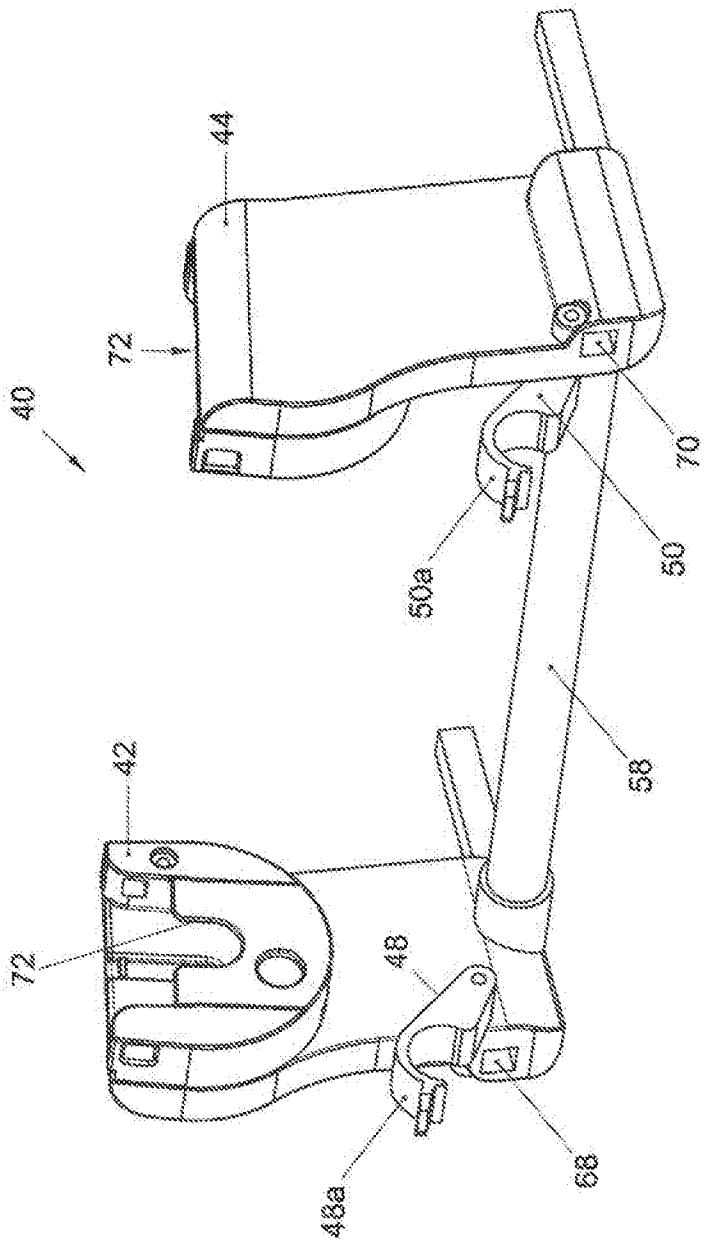

Fig. 5

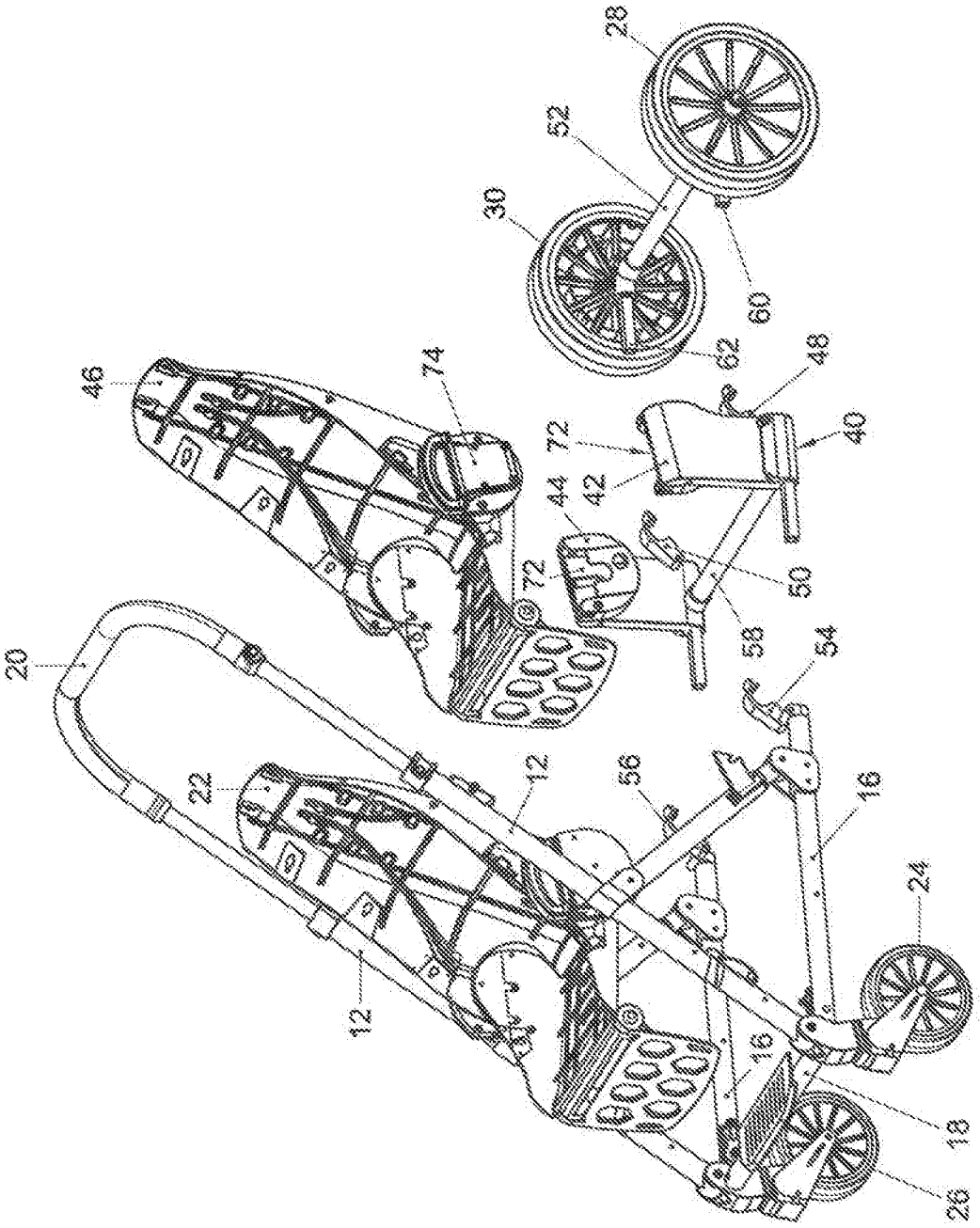
28
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Fig. 6

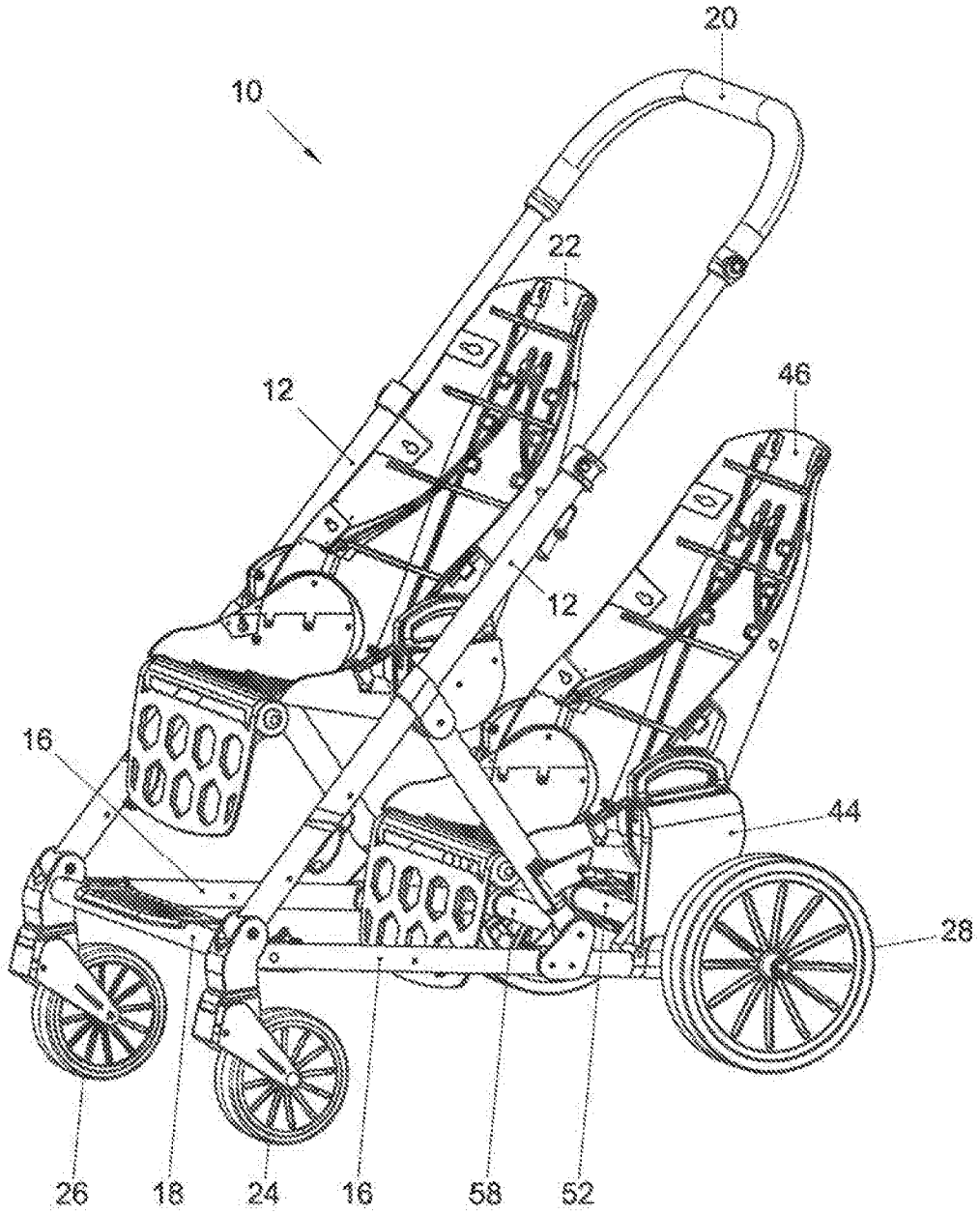

Fig. 7

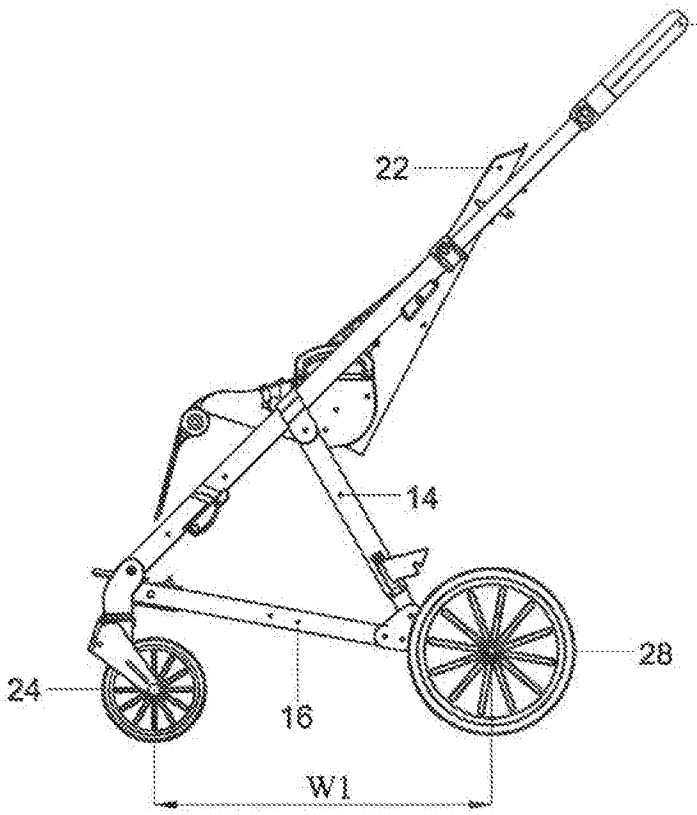

Fig. 8

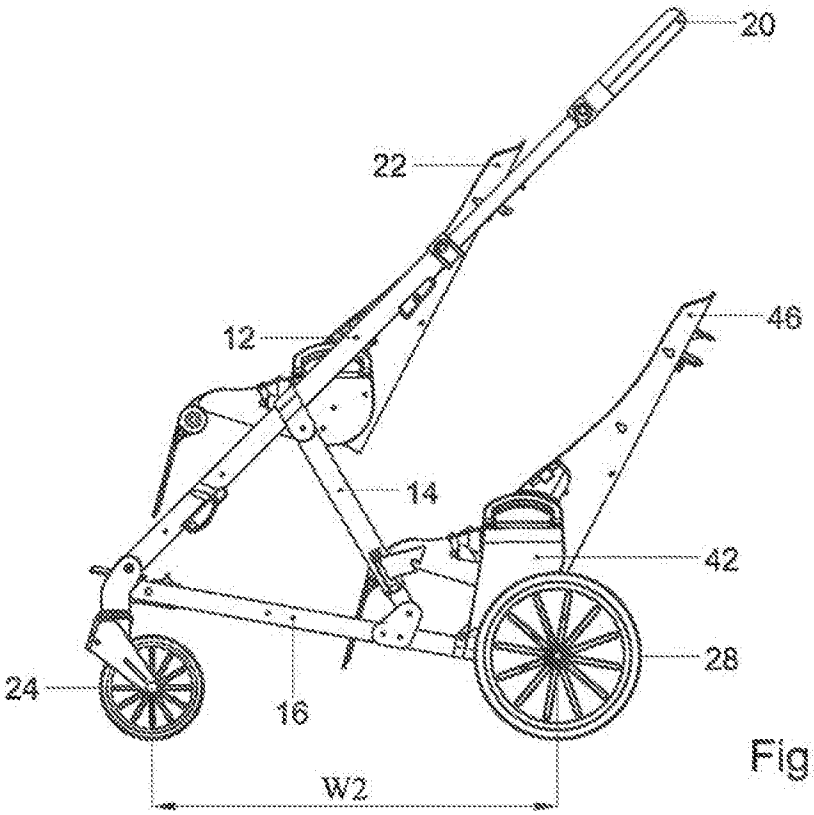

Fig. 9

INTERNATIONAL SEARCH REPORT

International application No
PCT/NL2013/050651

A. CLASSIFICATION OF SUBJECT MATTER
INV. B62B9/28 B62B9/12
ADD.

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

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
B62B

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

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	ES 2 253 093 A1 (PLAY SA [ES]) 16 May 2006 (2006-05-16)	1-5,7,9, 10
A	the whole document	6,8

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A	paragraph [0037] - paragraph [0038]; figure 3	2-9

X	WO 2008/135974 A2 (KATZ GEVA [IL]; LAZAROVICH ORON [IL]) 13 November 2008 (2008-11-13)	1,10
A	abstract; figures 7, 8, 13-16, 19	2-9

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[X] Further documents are listed in the continuation of Box C. [X] See patent family annex.

* Special categories of cited documents :

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

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

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

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"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
8 January 2014	15/01/2014

Name and mailing address of the ISA/	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Wochinz, Reinmar

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INTERNATIONAL SEARCH REPORT

International application No
PCT/NL2013/050651

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2008/179863 A1 (SCHONFELD JULIA DINAH [US]) 31 July 2008 (2008-07-31) paragraph [0008] - paragraph [0015]; figures 3-4c	1-10
A	US 6 443 467 B1 (BLACK DAVID A [US]) 3 September 2002 (2002-09-03) claims 1-13; figure 2	1-10
A	US 2008/315563 A1 (CRISP DAVID J [GB]) 25 December 2008 (2008-12-25) the whole document	1-10

Form PCT/ISA/210 (continuation of second sheet) (April 2005)

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/NL2013/050651

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		WO 2007049071 A2	03-05-2007

(19) Europäisches Patentamt
European Patent Office
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(11) EP 3 708 461 B1

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21.06.2023 Bulletin 2023/25

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(22) Date of filing: **03.03.2020**

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B62B 7/06 *(2006.01)* ***B62B 9/10*** *(2006.01)*

(52) Cooperative Patent Classification (CPC):
B62B 9/102; B62B 7/06; B62B 2205/22

(54) **DETACHABLE AND FOLDABLE SEAT**

ABNEHMBARER UND FALTBARER SITZ

SIÈGE AMOVIBLE ET PLIABLE

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

(30) Priority: **11.03.2019 CN 201920304541 U**

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(56) References cited:
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DE-U1-202018 104 948
GB-A- 2 516 906

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Description

[0001] The present invention relates generally to a seat that can be attached to and detached from the carriage frame, and more particularly to a seat structure which, upon folding, can drive the carriage frame to fold simultaneously, and in which, the seat back can be tilted and integrated into one body with the carriage frame, facilitating the operation of adjustment and folding. Detachable seats comprising a seat back frame, a handhold frame, a seat base and a frame connector, wherein the seat back frame, the handhold frame and the seat base are configured with pivot rotation parts to be linked with the frame connector through pivotal connection are known from DE 20 2018 104 948 U1.

[0002] Previously, in a baby carriage, the seat part and the frame part are fixed together. In later designs, the seat part is separated from the frame and can be attached to or detached from the frame as needed, and the seat can be attached to the frame facing forward or backward, so that the caregiver can take care of the baby more closely as needed.

[0003] Among the existing baby carriages with a detachable seat, some have a foldable seat and also a foldable carriage frame. However, before folding the carriage frame, the seat must be firstly detached from the frame. This not only causes inconvenient operation for the user, but also makes it inconvenient when putting away the seat and the frame.

[0004] Hence, some inventors proposed new designs for the combined carriage frame and seat to be folded together simultaneously. Examples are Patents No. CN104828119A, CN106541977A, CN207106577U etc. Although the final purpose of the various simultaneous folding methods disclosed in the above inventions are for the carriage frame and seat to be folded together simultaneously, they are operated differently due to different structural designs. In some designs, the structure is not stable enough during operation. While in some other designs, the structure is too complicated, resulting in difficulty in manufacturing and assembly. Moreover, in order for the seat back to be adjusted, an extra mechanism must be adopted. The adjustment of the seat back cannot be integrated with the folding of the carriage frame and seat. These problems will need to be solved.

[0005] DE 20 2018 104948 U1 discloses an easily portable stroller comprising a detachable seat and a seat folding device consisting of a seat holder, a rear plate connecting element, a handle connecting element and a lower plate connecting element. During daily use of the seat, the baby itself presses the lower plate of the seat, so that the lower plate cannot be rotated and the safety of the seat is ensured. The seat engages with the stroller frame through the seat holder located on both sides, so that the seat can be disassembled and turned over to meet all usage requirements.

[0006] CN 206 856 772 U discloses a foldable child stroller seat with armrests. The stroller comprises a backrest, a seat portion, an armrest, and the left and right sides of the backrest. The lower end is provided with a backrest rotating seat. The left and right rear ends of the seat part are provided with seat part rotating seats. The left and right rear ends of the armrest are provided with armrest rotating seats. The side seat swivel seat is disposed between the armrest swivel seat and the backrest swivel seat. The backrest swivel seat, the seat swivel seat, and the armrest swivel seat are pivotally connected to each other.

[0007] In order to overcome the problem of incomplete integration during the linked folding of the carriage frame and seat, this invention provides a detachable seat of the independent claim.

[0008] The beneficial efficacy of the present invention is as follows: through the pivot connection between the seat back frame, the handhold frame, the seat base and the frame connector, and through the linked movement of the unlocking driver, the seat clamping piece, the pivot rotation part of the handhold frame, as well as the pivot rotation part of the seat base, the seat can not only be operated independently, but also be folded together with the carriage frame. The folding operation becomes simpler and easier.

Fig.1 is an exploded perspective view of the present invention, showing connection between the carriage frame and the seat.

Fig.2 is a partial view of the linking position between the carriage frame and the seat of the present invention.

Fig.3 is a perspective view of the seat of the present invention.

Fig.4 is a partial exploded view of the present invention, showing the connection between the seat back frame, the handhold frame, the seat base and the frame connector of the seat.

Fig.5 is more detailed exploded view of the present invention, showing the connection between the seat back frame, the handhold frame, the seat base and the frame connector of the seat.

Fig.6 is a partial exploded view in another direction of the present invention showing the connection between the seat back frame, the handhold frame, the seat base and the frame connector of the seat.

Fig.7 is a more detailed exploded view in another direction of the present invention showing the connection between the seat back frame, the handhold frame, the seat base and the frame connector of the seat.

Fig.8 is a schematic view of the present invention,

with the pivot rotation part of the seat back frame of the seat housing an unlocking driver.

Fig.9 is a relational view of the present invention between the pivot rotation part of the seat base and the unlocking driver of the seat.

Fig.10 is a sectional view of the positions between the seat back frame, the handhold frame, the seat base and the frame connector of the seat of the present invention.

Fig.11 is a schematic view of the present invention when the inclination of the seat back frame needs adjustment.

Fig.12 is a schematic view of the present invention after the unlocking driver housed inside the pivot rotation part of the seat back frame is pulled.

Fig.13 is an operational view at the position of pivot rotation part of the seat base of the present invention after the unlocking driver is pulled.

Fig.14 is a state view of Fig.10 after the unlocking driver is pulled.

Fig.15 is a schematic view of the adjustment of the inclination of the seat back frame of the seat of the present invention.

Fig.16 is a schematic view of the present invention after the seat back frame moves close toward the handhold frame of the seat.

Fig.17 is an operational view of the handhold locker on the seat and the turning of the unlocking driver when the seat back frame of the present invention moves close to the handhold frame.

Fig.18 is a schematic view of the present invention showing the state between the handhold locker and the pivot rotation part of the handhold frame after sinking, as well as the relation between the unlocking driver and the seat clamping piece after turning.

Fig.19 is a schematic view of the present invention when the handhold frame is unlocked and is turned together with the seat back frame to join with the seat base.

Fig.20 is a schematic view of the present invention when the unlocking driver shown in Fig.18 is turned and its axial pressing surface pushes the seat clamping piece in the axial direction.

Fig.21 is a side view of the present invention when the seat back frame, the handhold frame and the seat base of the seat are folded together;

Fig.22 is a schematic view of the present invention showing folding of the seat together with the carriage frame.

Fig.23 is a schematic view of the present invention when the frame connector of the seat and the seat connector of the carriage frame are combined together.

Fig.24 is a schematic view of the present invention when the unlocking component on the frame connector extends out and drives the unlocking linkage component on the seat connector.

[0009] Referring to Figs.1 ~ 3, in the present invention, the two sides of the foldable frame A are configured with seat connectors 1 that are connected to a seat B. At corresponding positions, the two sides of the seat B are configured with frame connectors 25 that match and link the seat connectors 1. Thus, the seat B can be freely attached to or detached from the carriage frame A. The seat connector 1of the frame A is configured with an unlocking linkage component 11, which can sink under pressure and can unlock the frame A so that it can be folded. At the corresponding position, the frame connector 25 of the seat B is configured with an unlocking component 253 which can press the unlocking linkage component 11 to sink; the seat B mainly comprises a seat back frame 22, a handhold frame 23 and a seat base 24, which are fixed together through pivotal connection. At the middle position of the upper end of the seat back frame 22, a controlling member 220 is configured to control turning and folding of the seat B. When turning and folding the seat B, the controlling member 220 will pull a steel cable 222 (as shown in Fig.7 or Fig.8).

[0010] Further referring to Figs.4-10, the two sides of the seat back frame 22, the handhold frame 23 and the seat base 24 of the seat B are all configured with pivot rotation parts 221, 231, 241 matching each other and can be fixed through pivotal connection, and a pivot pin 21 is used to link the pivot rotation parts 221, 231, 241 and the frame connector 25 together. On the lower side of the inner side of the pivot rotation part 241 of the seat base 24 and at the position close to the outer periphery, a plurality of inclination fixing slots 242 are configured in continuous arrangements, and a folding guide groove 243 that continues to extend backward in the shape of an arc. Further, at the corresponding position on the side of the pivot rotation part 221 of the seat back frame 22, an unlocking driver 223 is housed, which slides linearly in the radial direction, and which can be automatically recovered under the pushing force from a spring 224. In the center part of the pivot rotation part 221, an axle portion 2210 is configured for said pivot pin 21 to go through and fix the components together. Said steel cable 222 goes from said controlling member 220, through the in-

side of the seat back frame 22 and to the pivot rotation part 221 and is connected to the unlocking driver 223. The terminal end of the unlocking driver 223 is configured with a tooth portion 2231, which can be embedded into the inclination fixing slot 242 or slide into the folding guide groove 243. In other words, when the steel cable 222 is pulled, the tooth portion 2231 of the unlocking driver 223 is released from the inclination fixing slot 242, so that the seat back frame 22 can be turned and be further embedded into a different inclination fixing slot 242 to reach a different inclination angle, or slide into the folding guide groove 243, so that the seat back frame 22 can be turned forward toward and join with the handhold frame 23.

[0011] Further, inside the pivot rotation part 221 of said seat back frame 22, a radial pressing surface 2211 is configured, extending with gradually reduced distance from the center and then further extending with an equal distance. On the outer side of the unlocking driver 223 and at a position close to the center, a gradually rising axial pressing surface 2232 is configured. On the pivot rotation part 241 of the seat base 24, and at the position corresponding to the starting point of said radial pressing surface 2211, a housing hole 244 is configured. Inside the housing hole 244, a handhold locker 245 is held, with its two ends sticking out, and which is pushed outward by a spring 248. On the outer side of the pivot rotation part 241 and at a position close to the outer periphery, a flange 246 is configured, which has a notch to form two stopping surfaces 2461. The pivot shaft portion 231 at the terminal end of the handhold frame 23 is trapped on the flange 246 through pivotal connection. On the inner side of the pivot shaft portion 231, a convex stopping portion 2311 is configured, which can press on the outer side of the handhold locker 245 and one side of the stopping surface 2461 (as shown in Fig.18) at the same time. When the handhold frame 23 is turned to the position on the opposite side, it can also press on the corresponding side of the other stopping surface 2461 (as shown in Fig. 19). The frame connector 25 configured on said seat B is also trapped on said flange 246 through pivotal connection and is capable of turning.

[0012] Further, on the end face of the outer side of the pivot rotation part 241 of the seat base 24, a plurality of positioning slots 247 are configured. On the internal end face of the frame connector 25, a plurality of guide holes 251 and convex guide portions 252 are configured. Further, a seat clamping piece 26 is provided between the pivot rotation part 241 of the seat base 24 and the frame connector 25. On the end face of the inner side of the seat clamping piece 26, a clasping convex portion 261 is configured, which can be embedded into said positioning slots 247. On the end face of its outer side, a convex guide portion 263 is configured, which can stick into said guide holes 251. At the position corresponding to the convex guide portion 252 configured on the end face of the inner side of the frame connector 25, the seat clamping piece 26 is configured with a guide hole 264 for it to stick in, so that the seat clamping piece 26 can have linear movement in the axial direction under the guide of the guide holes 251, 264 and the convex guide portions 252, 263; Moreover, on the end face of the inner side of the seat clamping piece 26 corresponding to the axial pressing surface 2232 of the unlocking driver 223, a convex pressing column 262 is configured, which can be pushed along the axial pressing surface 2232.

[0013] Further, on said frame connector 25, a locking member 250 is configured, which can be clasped with or released from the seat connector 1 of the frame A, and which is still housed inside the frame connector 25 and capable of linear sliding in the radial direction. Inside the frame connector 25, a spring 254 is provided, which can elastically push the unlocking component 253 to force it to withdraw. At the position corresponding to the top end of the inner side of the unlocking component 253, the seat clamping piece 26 is configured with a slant pressing surface 265, which is pressed on the unlocking component 253.

[0014] Thus, as shown in Figs.1 and 2, the seat B is locked on the carriage frame A through the frame connector 25, so that, using the frame connector 25 as the supporting component for pivotal rotation, the seat B can be turned and folded. When the user triggers the controlling member 220 on the upper end of the seat back frame 22, as shown in Figs.11~14, the steel cable 222 will be pulled upward, forcing the unlocking driver 223 to slide upward and the tooth portion 2231 on it will fall out of the inclination fixing slot 242 of the pivot rotation part 241 of the seat base 24, so that the seat back frame 22 can be turned up and down in the backward direction, as shown in Fig.15. During the turning, the tooth portion 2231 will further be embedded into the inclination fixing slots 242 at different positions. Thus, adjustment of different inclination angles of the seat back frame 22 can be made.

[0015] However, as shown in Fig.16, if the seat back frame 22 is turned further forward and approaches the handhold frame 23, the tooth portion 2231 on the unlocking driver 223 shown in Fig.17 will slide into the folding guide groove 243 of the pivot rotation part 241 of the seat base 24. Until the seat back frame 22 joins with the handhold frame 23, the following actions will simultaneously happen:

1. As shown in Fig.17, when the seat back frame 22 is turned forward, the end face of the inner side of the handhold locker 245 housed in the pivot rotation part 241 of the seat base 24 will be pushed along the radial pressing surface 2211 on the pivot rotation part 221 of the seat back frame 22. Thus, as shown in Fig.18, the handhold locker 245 will gradually sink and withdraw and its outer end will be released from the stopping portion 2311 of the pivot rotation part 231 of the handhold frame23. And then, as shown in Fig.19, the handhold frame 23 can be turned together with the seat back frame 22 toward the seat base 24.

2. When the seat back frame 22 is turned forward, as shown in Figs.18~20, the axial pressing surface 2232 configured on the end face of the unlocking driver 223 housed inside the pivot rotation part 221, which turns simultaneously, will push the pressing column 262 configured on the end face of the inner side of the seat clamping piece 26 in the axial direction, forcing the seat clamping piece 26 to slide outward in the axial direction. Subsequently, the clasping convex portion 261 on it will be released from the positioning slots 247 configured on the end face of the pivot rotation part 241 of the seat base 24. As shown in Figs.21 and 22, the seat base 24 can be further turned downward together with the handhold frame 23 and the seat back frame 22, and come close to the carriage frame A.

3. Further, as shown in Fig.20, when said seat clamping piece 26 slides outward along the axial direction, the slant pressing surface 265 configured on it will push the top end of the unlocking component 253 housed inside the frame connector 25, forcing the unlocking component 253 to move downward in the radial direction. As shown in Figs.23 and 24, its lower end will extend out from the frame connector 25, and be pushed toward the unlocking linkage component 11 on the seat connector 1 of the carriage frame A. When the unlocking linkage component 11 is pressed, the carriage frame A will be unlocked and can be folded.

[0016] Therefore, through the various components configured on the pivot rotation parts 221, 231, 241 that connect the seat back frame 22, the handhold frame 23 and the seat base 24 of said seat B through pivotal connection, the seat back frame 22 can be turned backward to reach different inclination angles. Moreover, when the seat back frame 22 is turned forward, the handhold frame 23 and the seat base 24 will move simultaneously toward the frame A and be folded. It will unlock the frame A for folding. That is to say, without detaching the seat B, the whole frame A of the baby carriage can be folded together. The operation of folding a baby carriage becomes simple and easy.

Claims

1. A detachable seat that is adapted to drive unlocking and folding of a baby carriage frame, the seat comprising a seat back frame (22), a handhold frame (23), a seat base (24) and a frame connector (25); the seat back frame (22), the handhold frame (23) and the seat base (24) are each configured with a pivot rotation part (221, 231, 241) to be linked with the frame connector (25) through pivotal connection;

the upper end of the seat back frame (22) is configured with a controlling member (220) that can be turned to pull a steel cable (222); the steel cable (222) goes through the inside of the seat back frame (22) and is extended to the pivot rotation part (221) of the seat back frame (22);

wherein at the position adjacent to the outer periphery of the pivot rotation part (221) of the seat back frame (22), a radial pressing surface (2211) is configured, extending with gradually reduced distance from the center and then further extending with an equal distance; inside the pivot rotation part (221) of the seat back frame (22), an unlocking driver (223) is configured, which is connected to the terminal end of the steel cable (222), and which is capable of elastic recovery and sliding in the radial direction; the side of the unlocking driver (223) is configured with a gradually rising axial pressing surface (2232) and its terminal end is configured with a tooth portion (2231);

on the side of the pivot rotation part (241) of the seat base (24) corresponding to the pivot rotation part (221) of the seat back frame (22) and at a position adjacent to the outer periphery, a plurality of inclination fixing slots (242) are configured in continuous arrangements for the tooth portion (2231) of the unlocking driver (223) to embed in, and continuously configured with a folding guide groove (243) for the tooth portion (2231) to slide in; on the side of the pivot rotation part (241) of the seat base (24) corresponding to the pivot rotation part (231) of the handhold frame (23), a flange (246) and a plurality of positioning slots (247) are configured; on the side of the pivot rotation part (241) of the seat base (24), a housing hole (244) is provided, wherein inside the housing hole (244), a handhold locker (245) is contained, with its two ends sticking out and capable of elastic rising and sinking;

the pivot rotation part (231) of the handhold frame (23) is sheathed on the flange (246); inside the pivot rotation part (231) of the handhold frame (23), a stopping portion is configured, which can press on the handhold locker (245) when it rises;

inside the frame connector (25), a seat clamping piece (26) is configured, which can slide linearly along the axial direction; on the end face of the inner side of the seat clamping piece (26), a clasping convex portion (261) is configured, which can be embedded into one of the positioning slots (247), and a pressing column is configured, which can press on the axial pressing surface of the unlocking driver (223); in the center of the lower end of the seat clamping piece (26), a slant pressing surface (265) is configured; at the position corresponding to the slant pressing surface (265), the frame connector (25)

is configured with an unlocking component (253), which can slide in the radial direction and is capable of elastic recovery; the upper end of the unlocking component (253) is pressed on the slant pressing surface (265) of the seat clamping piece (26);
the controlling member (220) on the seat back frame (22) can pull the unlocking driver (223) for adjustment of different inclination of the seat back frame (22) in the backward direction; through the controlling member (220), when the seat back frame (22) is turned forward to join with the handhold frame (23), the pivot rotation part (221) of the seat back frame (22) and the unlocking driver (223) will turn simultaneously, the radial pressing surfaces and the axial pressing surfaces on them will push the handhold locker (245) as well as the seat clamping piece (26), so that the seat back frame (22) will move together with the handhold frame (23) toward the seat base (24) and be folded together; the slant pressing surface (265) of the seat clamping piece (26) will push the unlocking component (253) and force it to stick out.

Patentansprüche

1. Ein abnehmbarer Sitz, der angepasst ist, um das Entriegeln und Zusammenklappen eines Kinderwagenrahmens zu steuern, wobei der Sitz einen Rückenlehnenrahmen (22), einen Haltegriffrahmen (23), eine Sitzfläche (24) und einen Rahmenverbinder (25) umfasst; wobei der Rückenlehnenrahmen (22), der Haltegriffrahmen (23) und die Sitzfläche (24) mit je einem Schwenkdrehteil (221, 231, 241) ausgestattet sind, um mit dem Rahmenverbinder (25) verbunden zu werden;

wobei das obere Ende des Rückenlehnenrahmens (22) mit einem Steuerelement (220) aufgebaut ist, das gedreht werden kann, um ein Stahlkabel (222) zu ziehen; wobei das Stahlkabel (222) durch das Innere das Rückenlehnenrahmens (22) verläuft und sich zu dem Schwenkdrehteil (221) des Rückenlehnenrahmens (22) hin erstreckt;
wobei an der Position neben dem Außenumfang des Schwenkdrehteils (221) des Rückenlehnenrahmens (22) eine radiale Druckfläche (2211) aufgebaut ist, die sich mit einem allmählich verringerten Abstand von der Mitte erstreckt und sich dann weiter mit einem gleichen Abstand erstreckt; wobei im Schwenkdrehteil (221) des Rückenlehnenrahmens (22) ein Entriegelungsmitnehmer (223) vorgesehen ist, der mit dem abschließenden Ende des Stahlkabels (222) verbunden ist und imstande ist, sich elastisch zurückzuziehen und in radialer Richtung zu gleiten; wobei die Seite des Entriegelungsmitnehmers (223) mit einer allmählich ansteigenden axialen Druckfläche (2232) ausgestattet ist und sein abschließendes Ende mit einem Zahnabschnitt (2231) konfiguriert ist;
wobei auf der Seite des Schwenkdrehteils (241) der Sitzfläche (24), die dem Schwenkdrehteil (221) des Rückenlehnenrahmens (22) entspricht, und an einer Position neben dem Außenumfang mehrere Neigungsfixierschlitze (242) in durchgehenden Anordnungen zum Einbetten des Zahnabschnitts (2231) des Entriegelungsmitnehmers (223) und durchgehend mit einer Faltführungsnut (243) zum Hineingleiten des Zahnabschnitts (2231) vorgesehen sind;
wobei auf der Seite des Schwenkdrehteils (241) der Sitzfläche (24), die zum Schwenkdrehteil (231) des Handgriffrahmens (23) passt, ein Flansch (246) und eine Vielzahl von Positionierungsschlitzen (247) konfiguriert sind; wobei auf der Seite des Schwenkdrehteils (241) der Sitzfläche (24) ein Aufnahmeloch (244) vorgesehen ist, wobei innerhalb des Aufnahmelochs (244) ein Haltegriffschloss (245) enthalten ist, dessen zwei Enden herausragen, die elastisch ansteigen und absinken können;
wobei das Schwenkdrehteil (231) des Handgriffrahmens (23) den Flansch (246) ummantelt;
wobei im Inneren des Schwenkdrehteils (231) des Handgriffrahmens (23) ein Arretierteil vorgesehen ist, das beim Anheben Druck auf das Handgriffschloss (245) ausüben kann;
wobei innerhalb des Rahmenverbinders (25) ein Sitzklemmstück (26) vorgesehen ist, das linear entlang der axialen Richtung gleiten kann; wobei an der Stirnseite der Innenseite des Sitzklemmstücks (26) ein klammernder konvexer Abschnitt (261) ausgebildet ist, der in einen der Positionierungsschlitze (247) einbettbar ist und wobei eine Drucksäule vorgesehen ist, die Druck auf die axiale Druckfläche des Entriegelungsmitnehmers (223) ausüben kann; wobei in der Mitte des unteren Endes des Sitzklemmstücks (26) eine schräge Druckfläche (265) ausgebildet ist; wobei an der Position, die der geneigten Druckfläche (265) entspricht, der Rahmenverbinder (25) mit einem Entriegelungsmitnehmer (253) vorgesehen ist, der in radialer Richtung gleiten kann und zu einer elastischen Rückstellung fähig ist; wobei das obere Ende des Entriegelungsmitnehmers (253) auf die schräge Druckfläche (265) des Sitzklemmstücks (26) gedrückt wird;
wobei das Steuerelement (220) an dem Rückenlehnenrahmen (22) den Entriegelungsmitnehmer (223) zum Einstellen unterschiedlicher Neigungen des Rückenlehnenrahmens (22)

nach hinten ziehen kann; wobei, wenn der Rückenlehnenrahmen (22) nach vorne gedreht wird, um sich mit dem Halterahmen (23) zu verbinden durch das Steuerelement (220) das Schwenkdrehteil (221) des Rückenlehnenrahmens (22) und der Entriegelungsmitnehmer (223) sich gleichzeitig drehen, wobei die radialen Druckflächen und die sich darauf befindenden axialen Druckflächen die Griffsperre (245) sowie das Sitzklemmstück (26) drücken, so dass sich der Rückenlehnenrahmen (22) zusammen mit dem Griffrahmen (23) in Richtung der Sitzfläche (24) bewegt und zusammengeklappt wird; wobei die schräge Druckfläche (265) des Sitzklemmstücks (26) auf den Entriegelungsmitnehmer (253) Druck ausübt und dazu zwingt herauszustehen.

Revendications

1. Siège amovible qui est conçu pour entraîner en déverrouillage et pliage un châssis de poussette, le siège comprenant un dossier de cadre de siège (22), un cadre de prise manuelle (23), une base de siège (24) et un connecteur de cadre (25) ; le dossier de cadre de siège (22), le cadre de prise manuelle (23) et la base de siège (24) sont chacun configurés avec une partie tournante pivotante (221, 231, 241) à relier au connecteur de cadre (25) à travers une connexion pivotante ;

   l'extrémité supérieure du dossier de cadre de siège (22) est configurée avec un élément de commande (220) qui peut être tourné pour tirer un câble en acier (222) ; le câble en acier (222) va à travers l'intérieur du dossier de cadre de siège (22) et est déployé jusqu'à la partie tournante pivotante (221) du dossier de cadre de siège (22) ;
   dans lequel une surface de pression radiale (2211) est configurée au niveau de la position située à côté de la périphérie extérieure de la partie tournante pivotante (221) du dossier de cadre de siège (22), ladite surface s'étendant avec une distance graduellement réduite par rapport au centre puis s'étendant encore avec une distance égale ; un entraîneur de déverrouillage (223) est configuré à l'intérieur de la partie tournante pivotante (221) du dossier de cadre de siège (22), ledit entraîneur étant relié à l'extrémité terminale du câble en acier (222) et étant capable d'une certaine reprise élastique et de coulisser dans la direction radiale ; le côté de l'entraîneur de déverrouillage (223) est configuré avec une surface de pression radiale (2232) augmentant graduellement et son extrémité terminale est configurée avec une partie dentée (2231) ;
   sur le côté de la partie tournante pivotante (241) de la base de siège (24) correspondant à la partie tournante pivotante (221) du dossier de cadre de siège (22) et au niveau d'une position située à côté de la périphérie extérieure, une pluralité de fentes de fixation d'inclinaison (242) sont configurées de façon à ce que des agencements continus pour la partie dentée (2231) de l'entraîneur de déverrouillage (223) s'encastrent dedans et sont configurées en continu avec une rainure de guidage de pliage (243) pour faire coulisser la partie dentée (2231) sur le côté de la partie tournante pivotante (241) de la base de siège (24); une bride (246) et une pluralité de fentes de positionnement (247) sont configurées sur le côté correspondant à la partie tournante pivotante (231) du cadre de prise manuelle (23) ; un trou de carter (244) est prévu sur le côté de la partie tournante pivotante (241) de la base de siège (24), un système de verrouillage de prise manuelle (245) étant contenu à l'intérieur du trou de carter (244), avec ses deux extrémités saillantes et capables de se soulever et de s'abaisser de façon élastique ;
   la partie tournante pivotante (231) du cadre de prise manuelle (23) est gainée sur la bride (246); une partie de butée est configurée à l'intérieur de la partie tournante pivotante du cadre de prise manuelle (23), ladite partie pouvant appuyer sur le système de verrouillage de prise manuelle (245) lorsque celui-ci se soulève ;
   une pièce de serrage de siège (26) est configurée à l'intérieur du connecteur de cadre (25), ladite pièce pouvant coulisser de façon linéaire le long de la direction axiale; une partie convexe de serrage (261) est configurée sur le côté d'extrémité du côté intérieur de la pièce de serrage de siège (26), ladite partie pouvant être encastrée dans une des fentes de positionnement (247) et une colonne de compression est configurée qui peut appuyer sur la surface de pression radiale de l'entraîneur de déverrouillage (223); une surface de pression inclinée (265) est configurée dans le centre de l'extrémité inférieure de la pièce de serrage de siège (26) ; au niveau de la position correspondant à la surface de pression inclinée (265), le connecteur de cadre (25) est configuré avec un élément de déverrouillage (253) qui peut coulisser dans la direction radiale et est capable de reprise élastique ; l'extrémité supérieure de l'élément de déverrouillage (253) est pressée sur la surface de pression inclinée (265) de la pièce de serrage de siège (26) ;
   l'élément de commande (220) sur le dossier de cadre de siège (22) peut tirer l'entraîneur de déverrouillage (223) pour le réglage des différen-

tes inclinaisons du dossier de cadre de siège (22) dans la direction arrière ; à travers l'élément de commande (220), lorsque le dossier de cadre de siège (22) est tourné vers l'avant pour joindre le cadre de prise manuelle (23), la partie tournante pivotante (221) du dossier de cadre de siège (22) et l'entraîneur de déverrouillage (223) tournent simultanément, les surfaces de pression radiales et les surfaces de pression radiales placées dessus poussent le système de verrouillage de prise manuelle (245) ainsi que la pièce de serrage de siège (26), de sorte que le dossier de cadre de siège (22) se déplace conjointement avec le cadre de prise manuelle (23) en direction de la base de siège (24) et qu'ils soient pliés ensemble ; la surface de pression inclinée (265) de la pièce de serrage de siège (26) pousse l'élément de déverrouillage (253) et le contraint à ressortir.

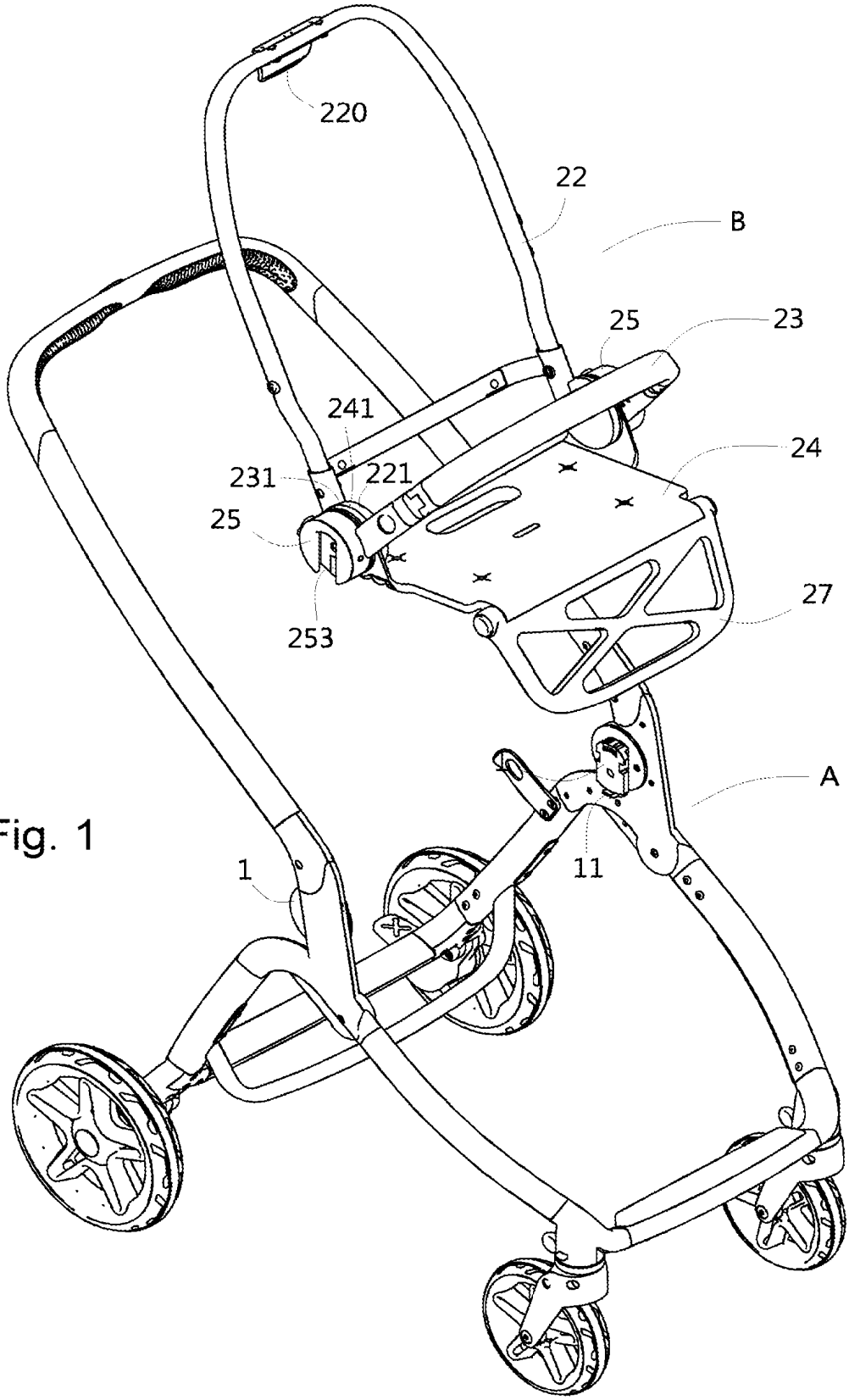

Fig. 1

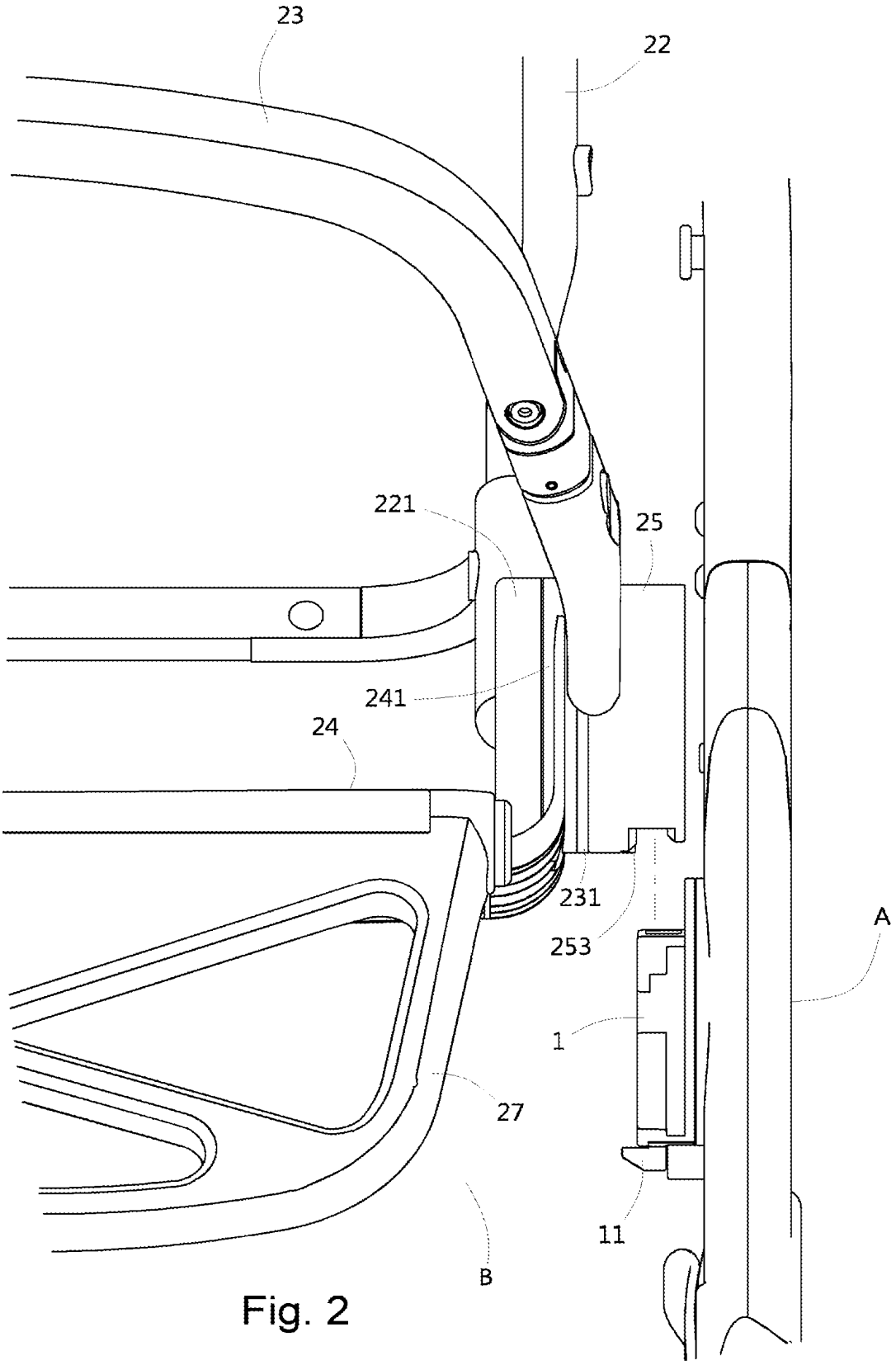

Fig. 2

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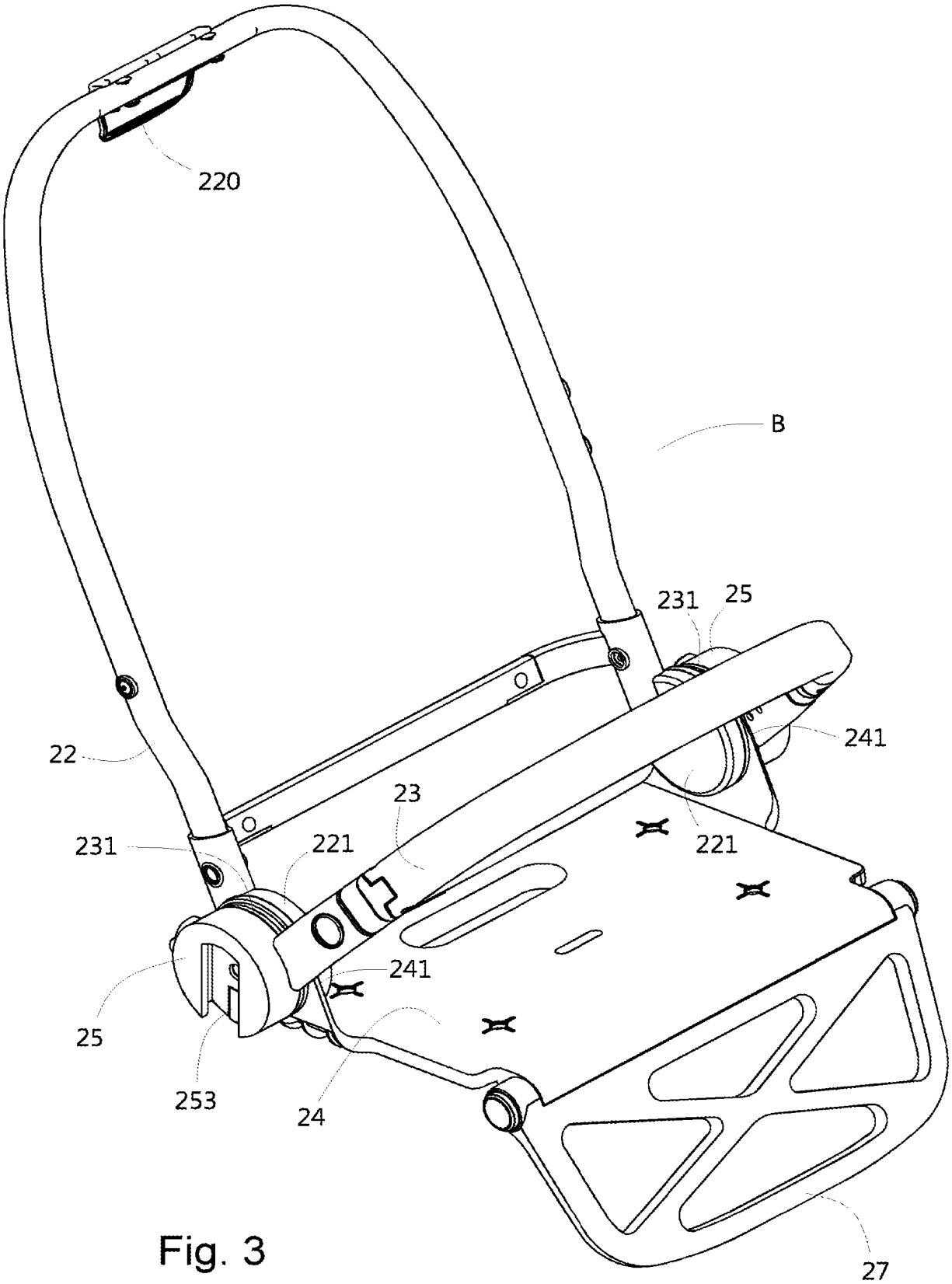
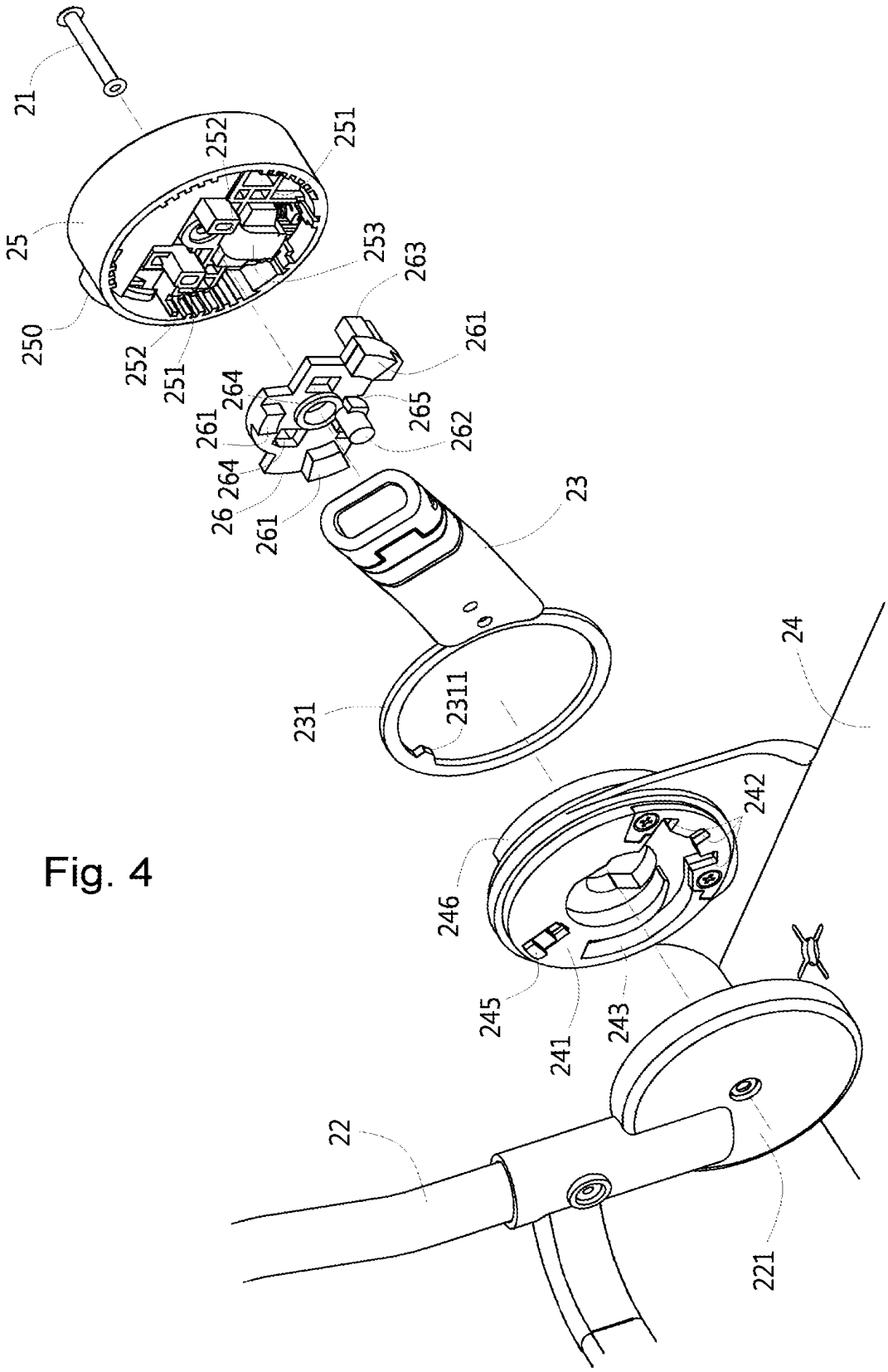


Fig. 3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23
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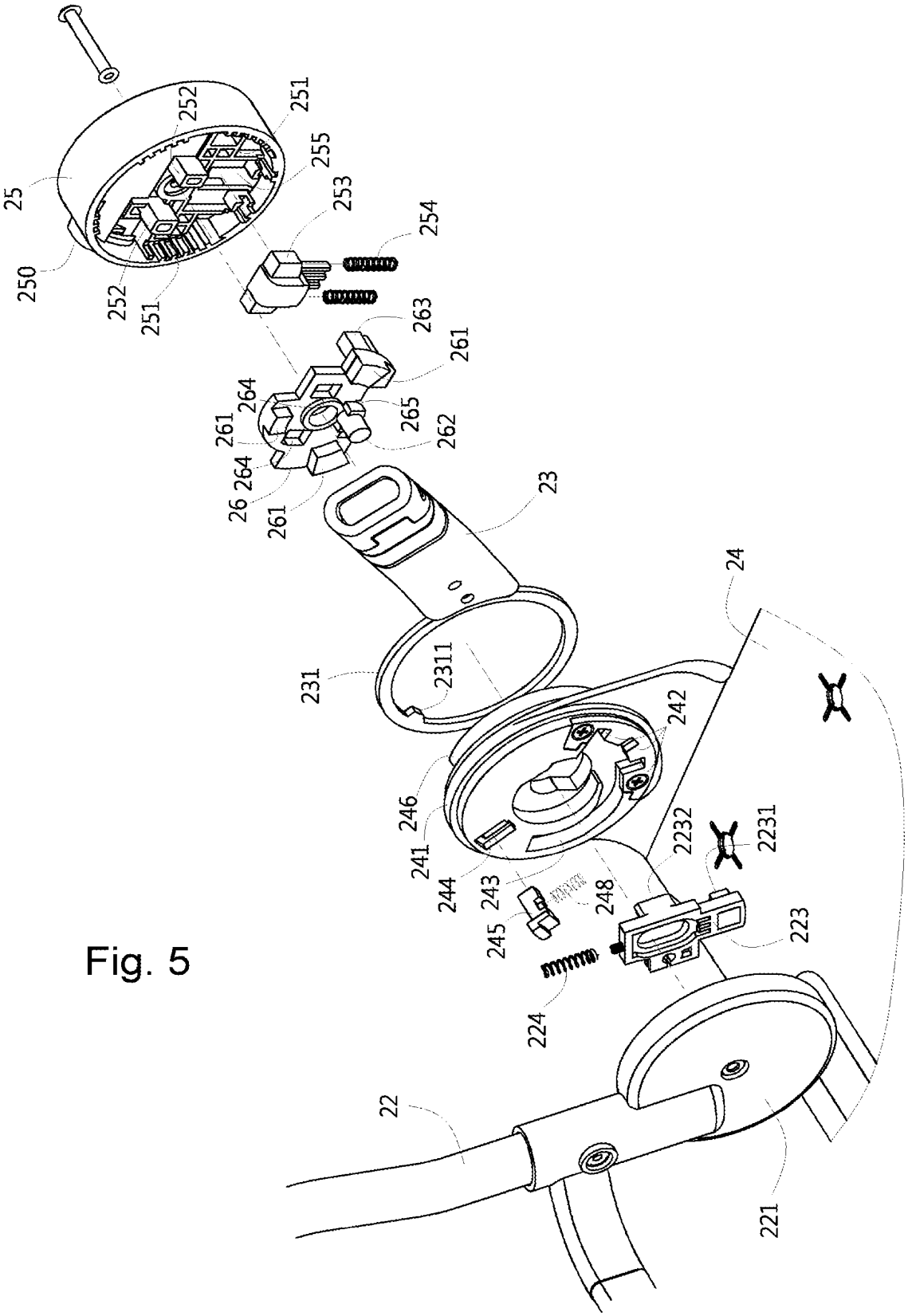
2311
242
246
245
241
243
22
221

Fig. 4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244
243
245
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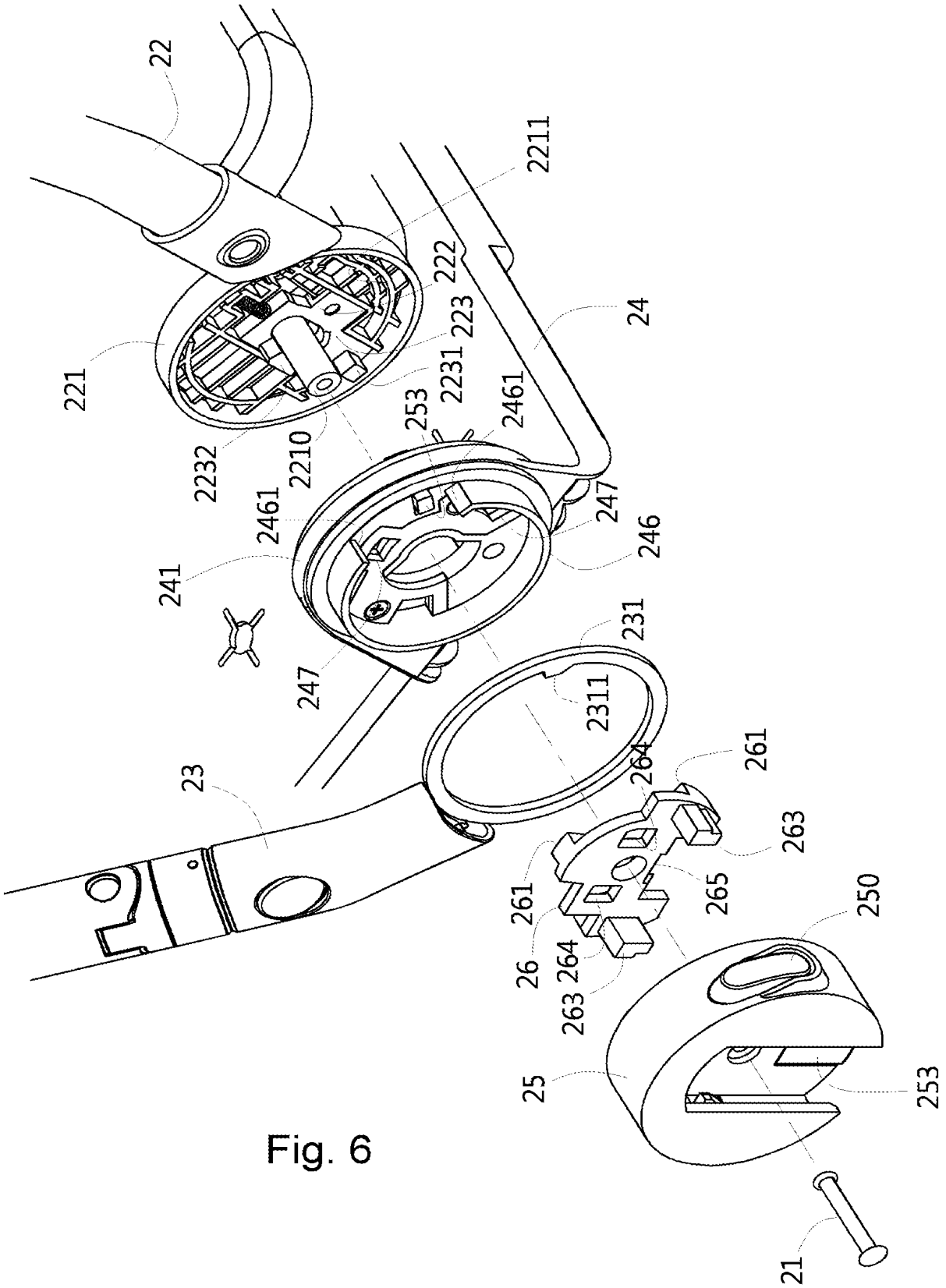
2232
2231
223
224
22
221

Fig. 5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2461
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261
264
263
261
265
250
26
264
263
25
253
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Fig. 6

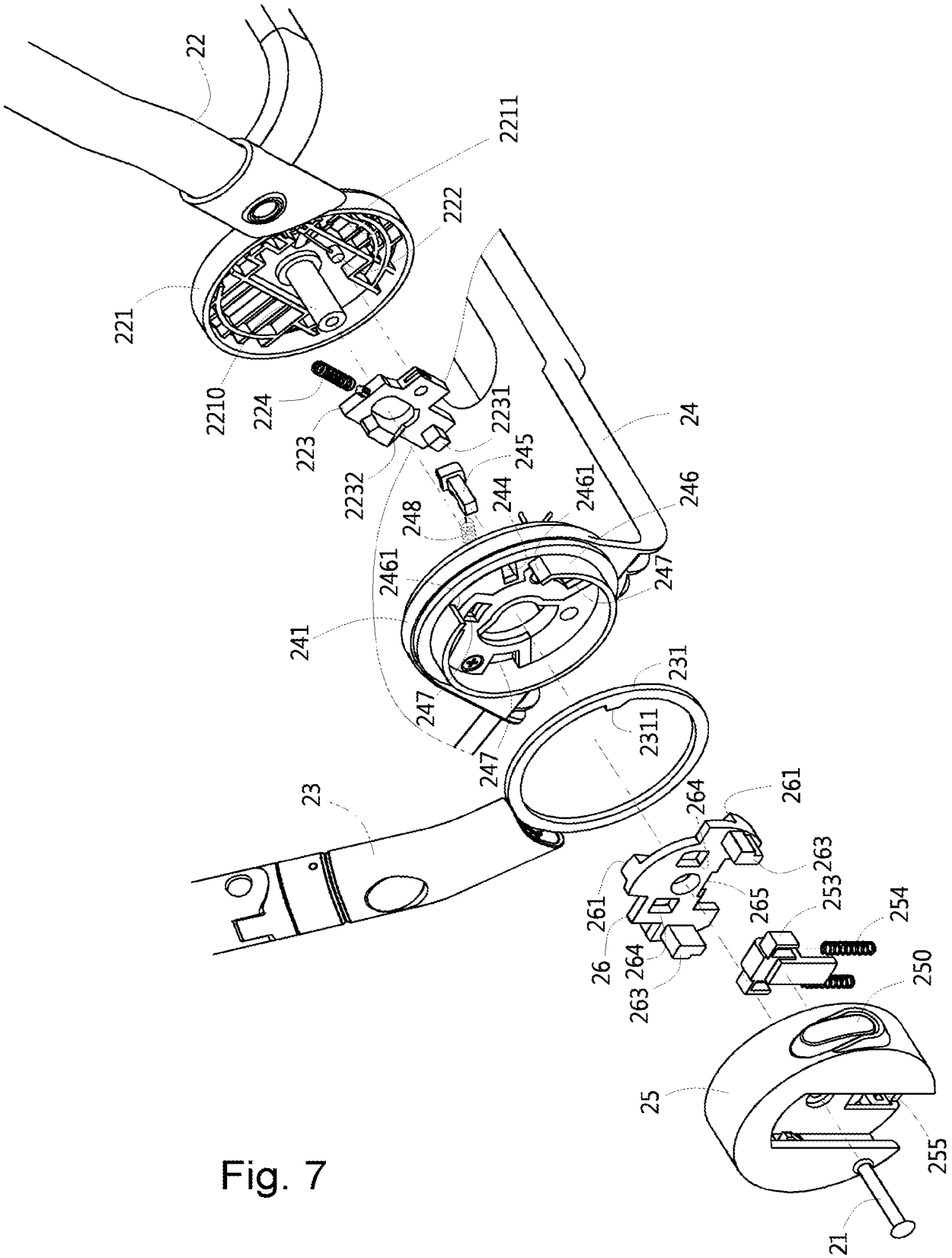
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Fig. 7

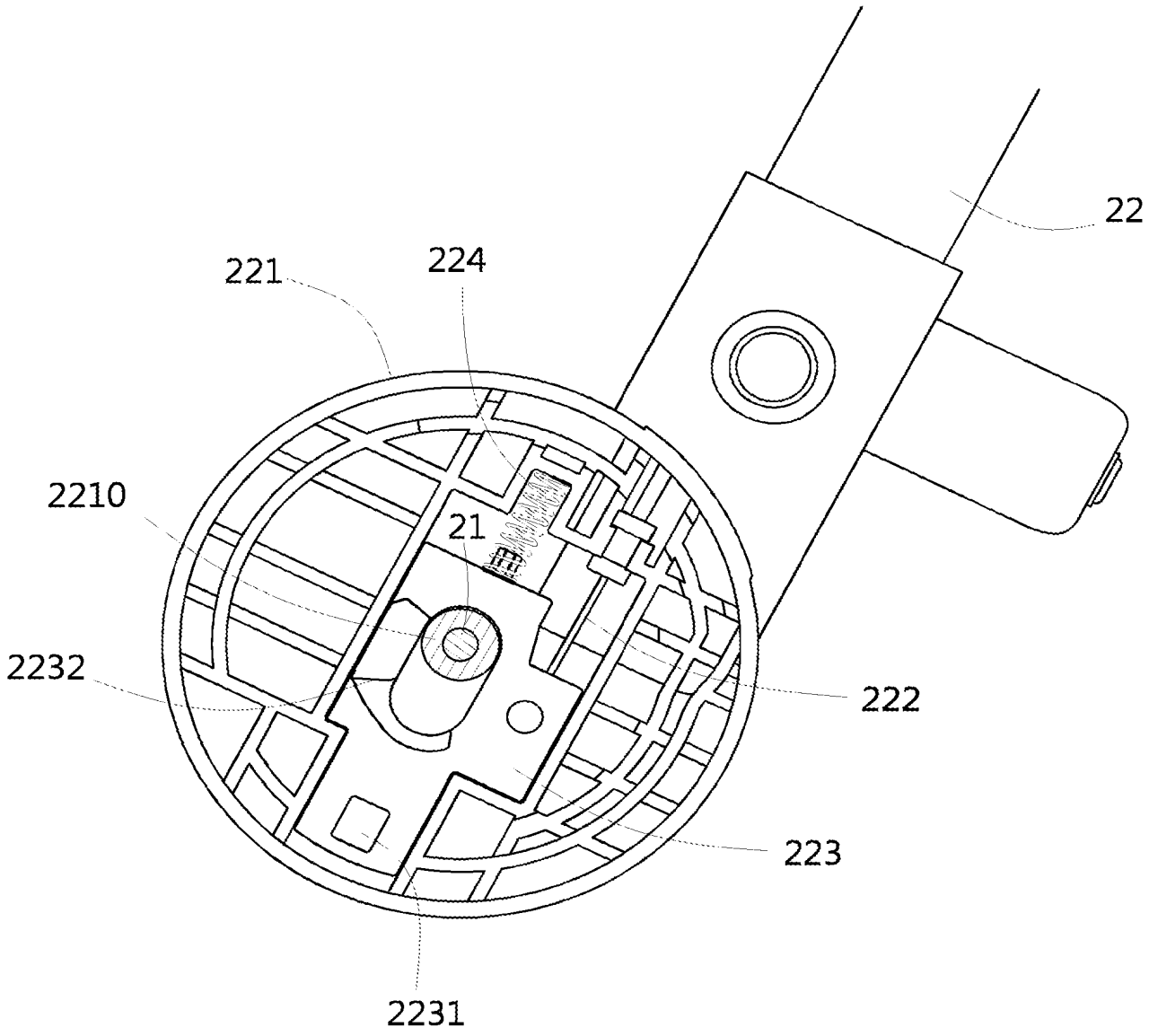

Fig. 8

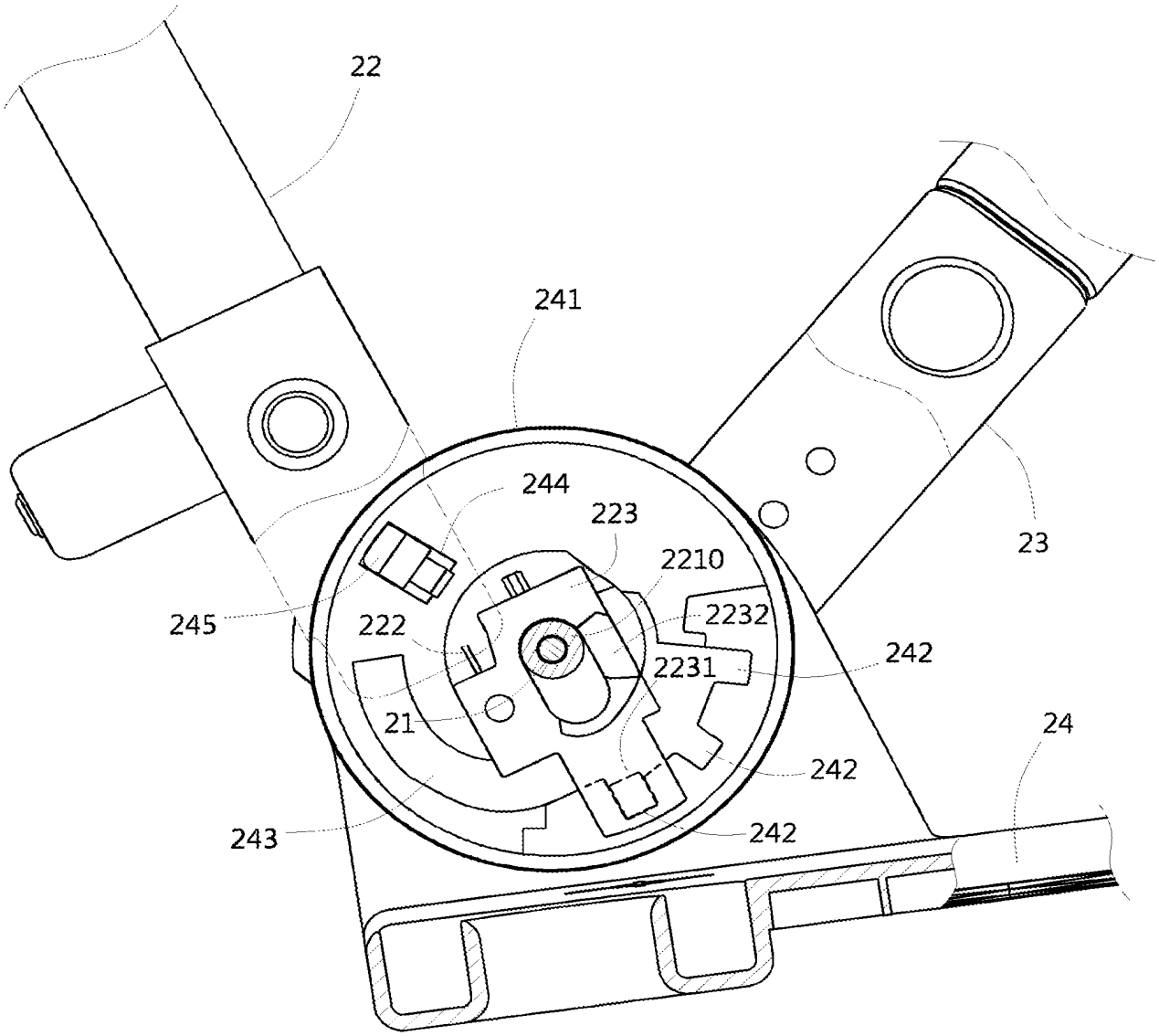

Fig. 9

17 UPPABABY ET AL. EX. 1068

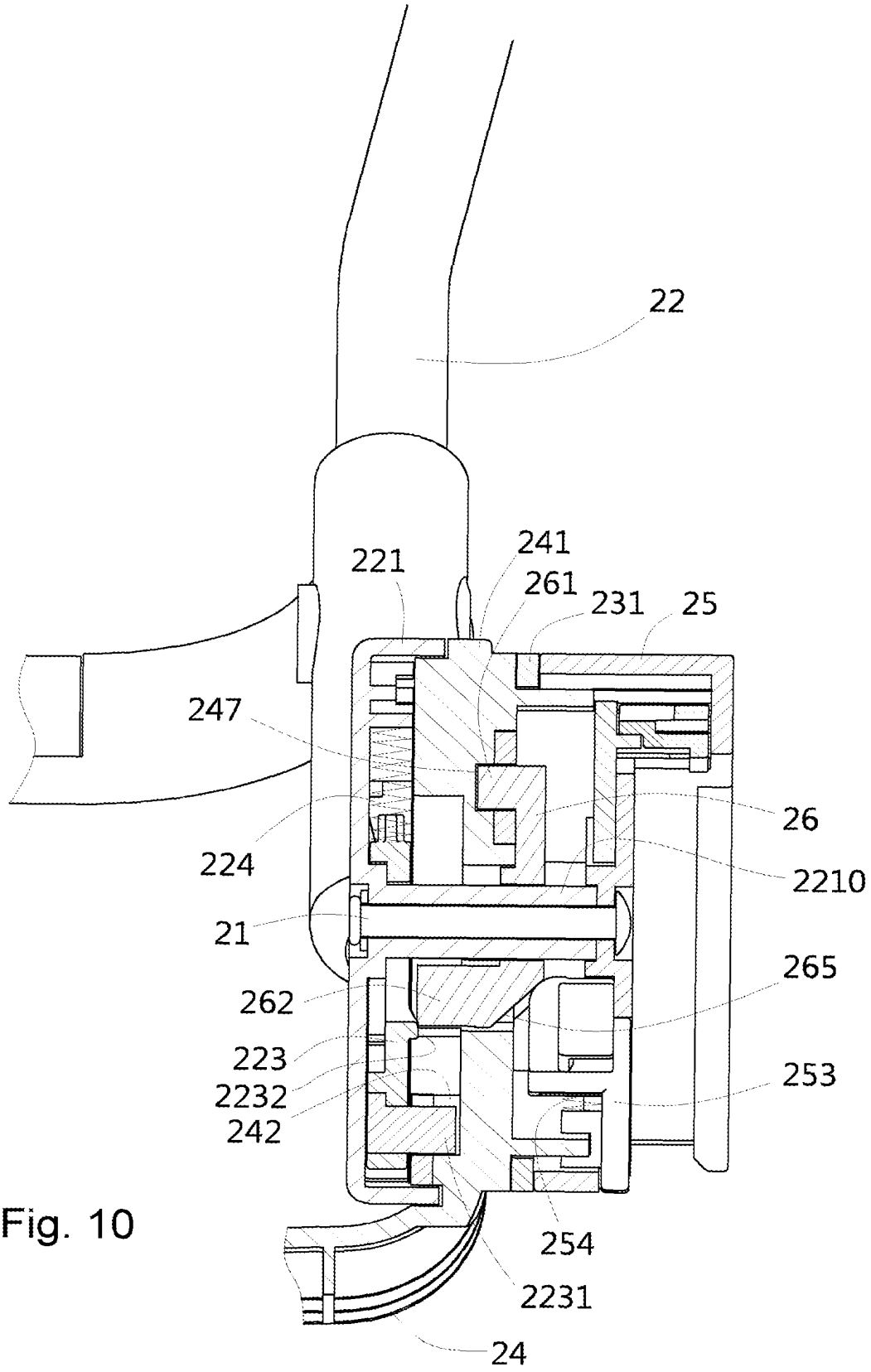
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Fig. 10

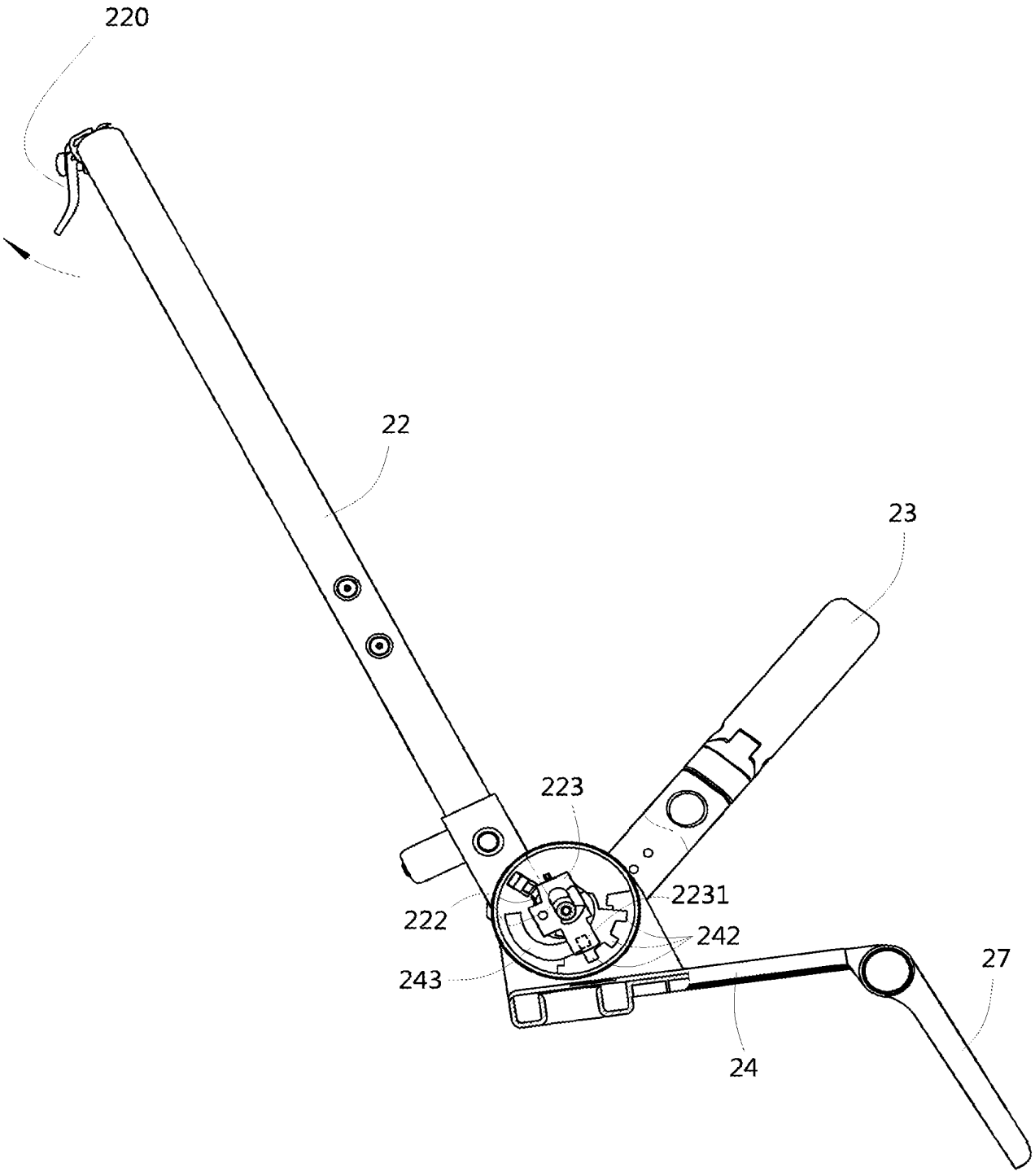

Fig. 11

[19] UPPABABY ET AL. EX. 1068

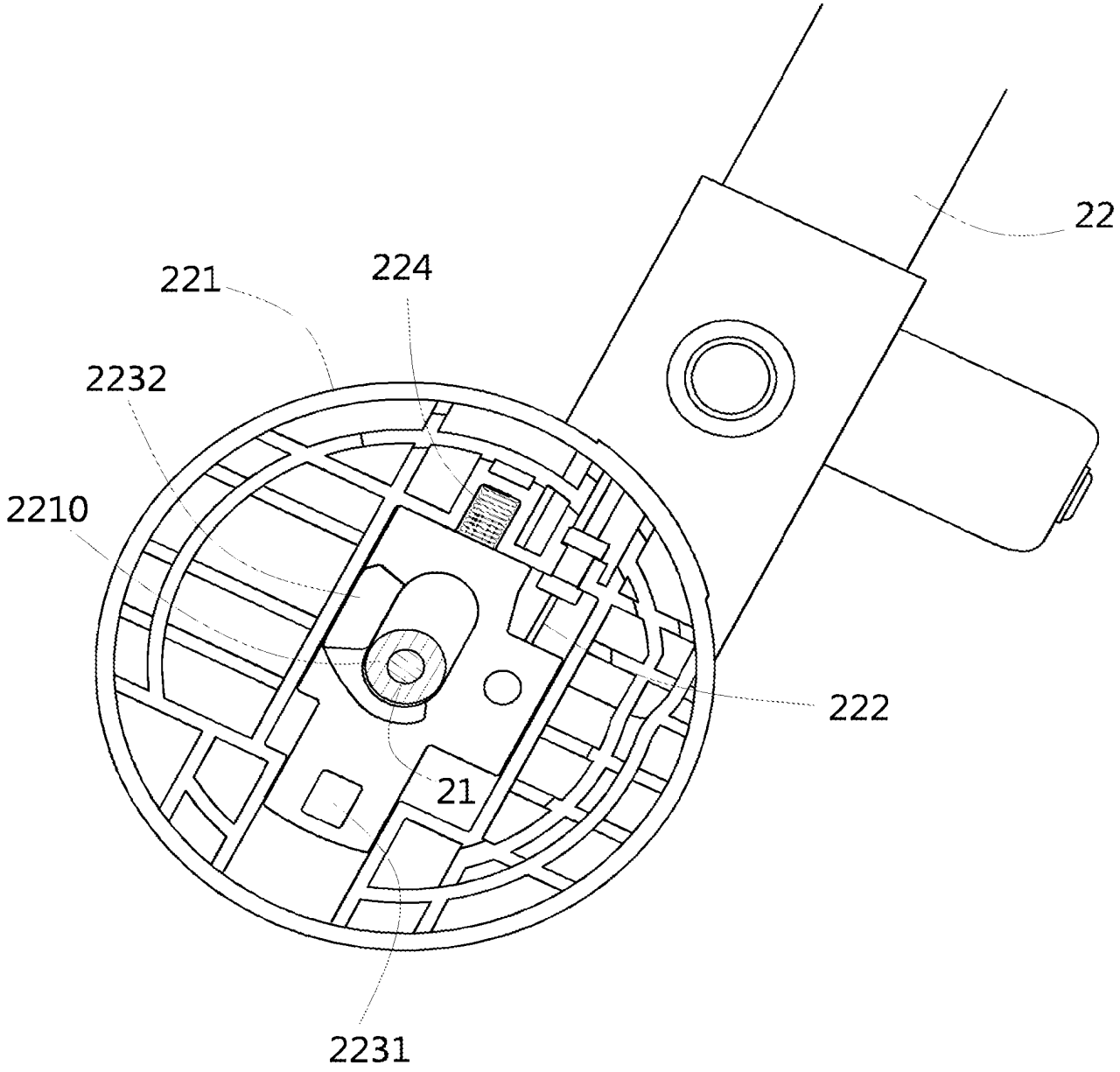

Fig. 12

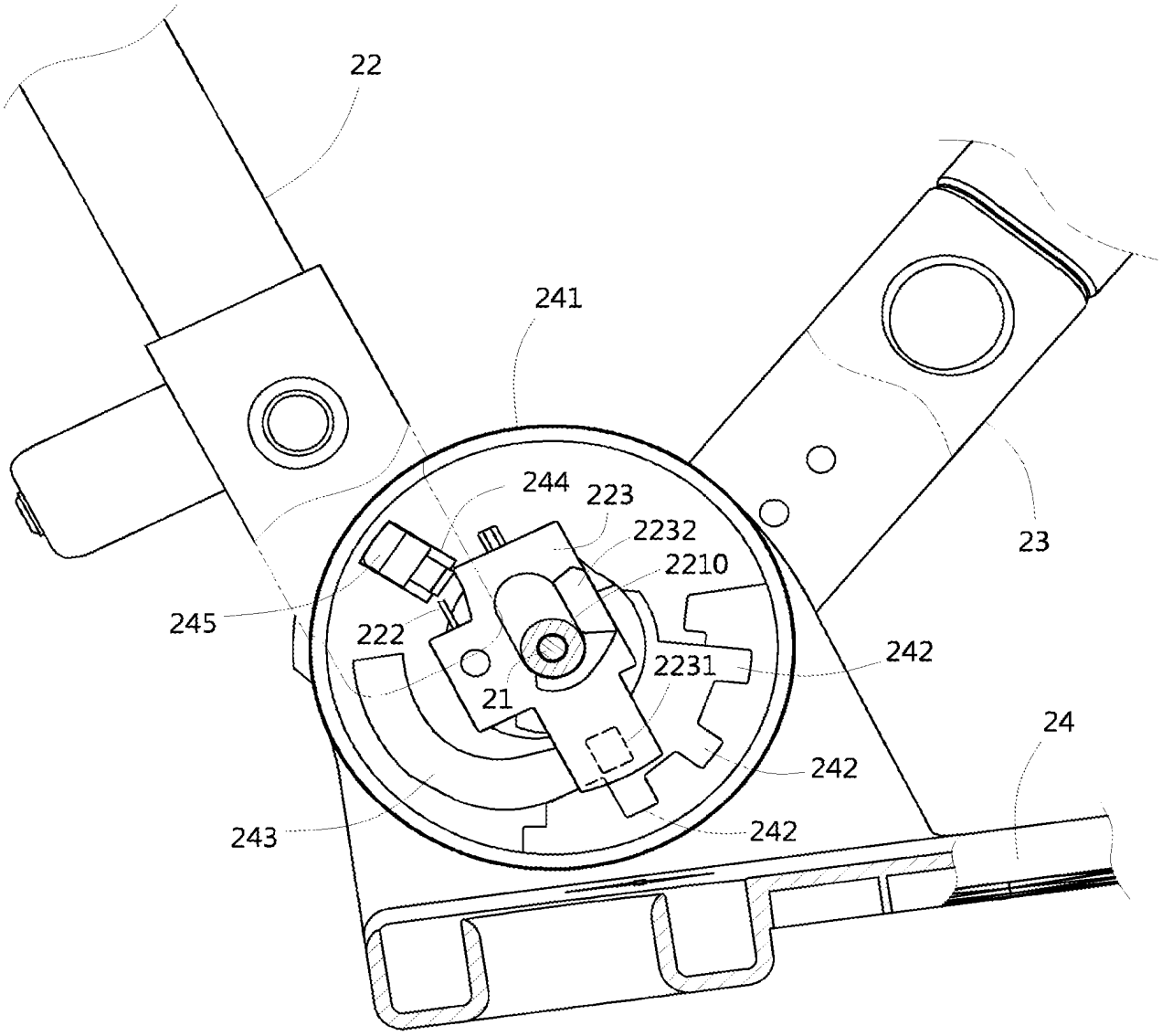

Fig. 13

[21] UPPABABY ET AL. EX. 1068

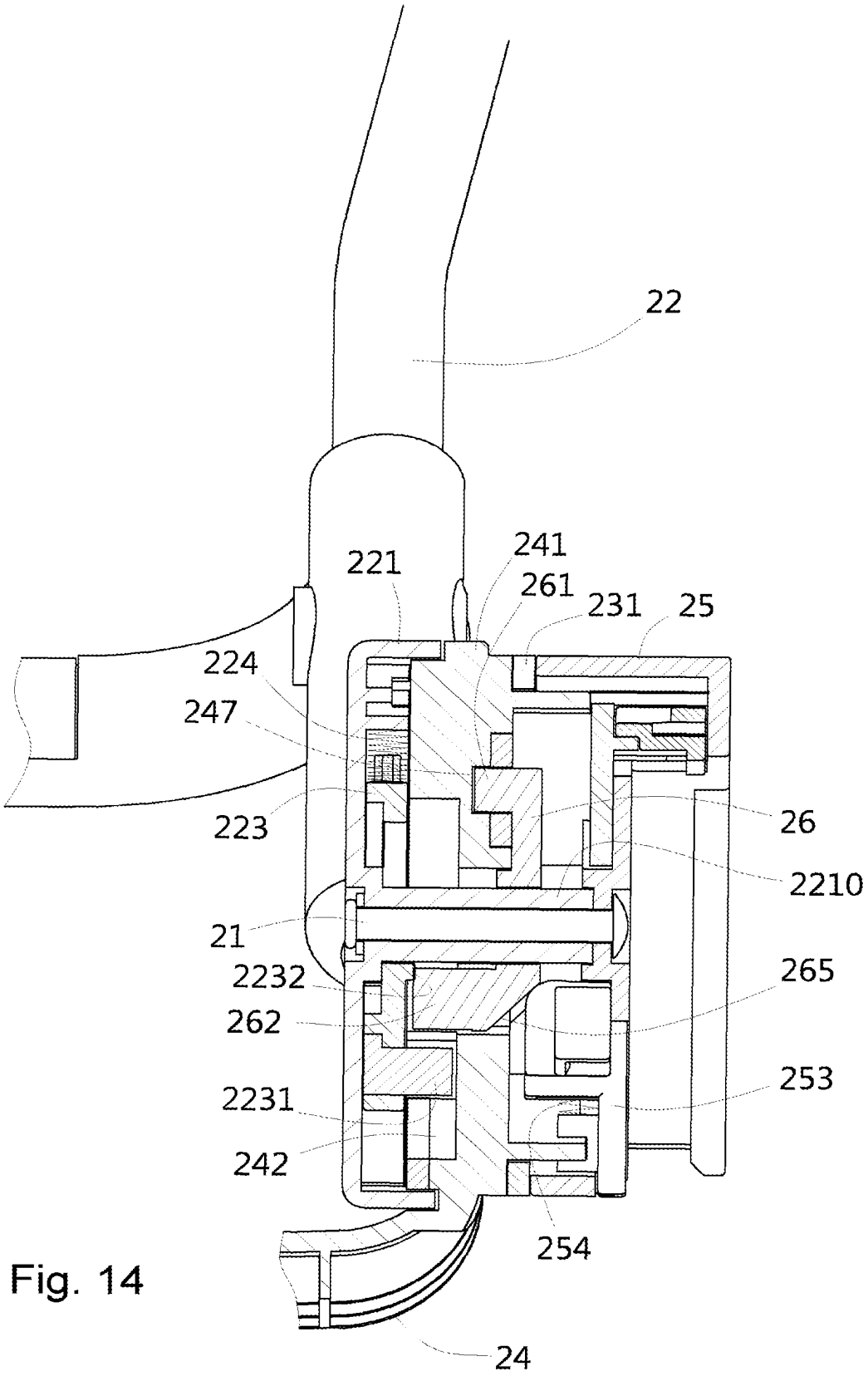
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Fig. 14

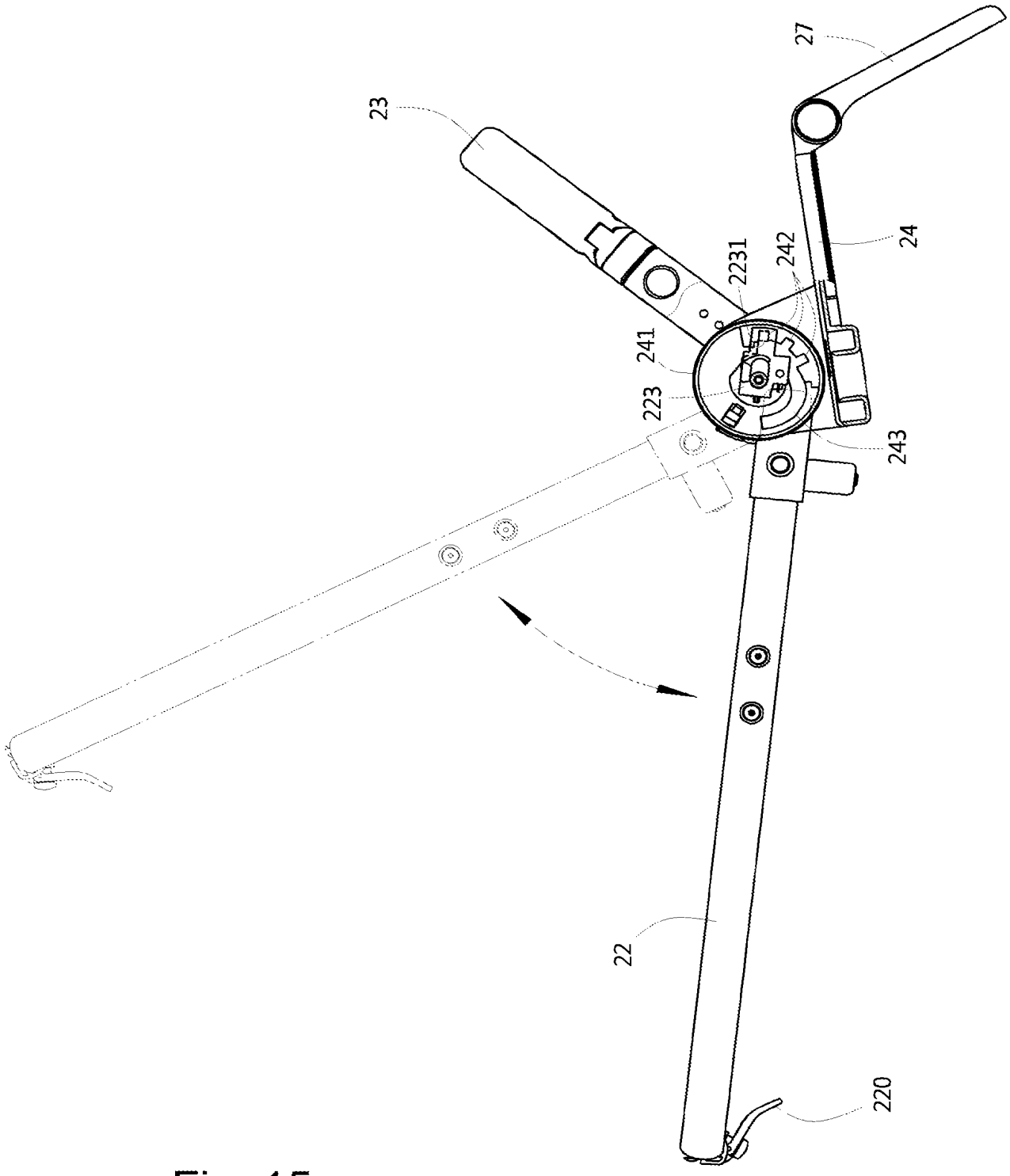

Fig. 15

[23] UPPABABY ET AL. EX. 1068

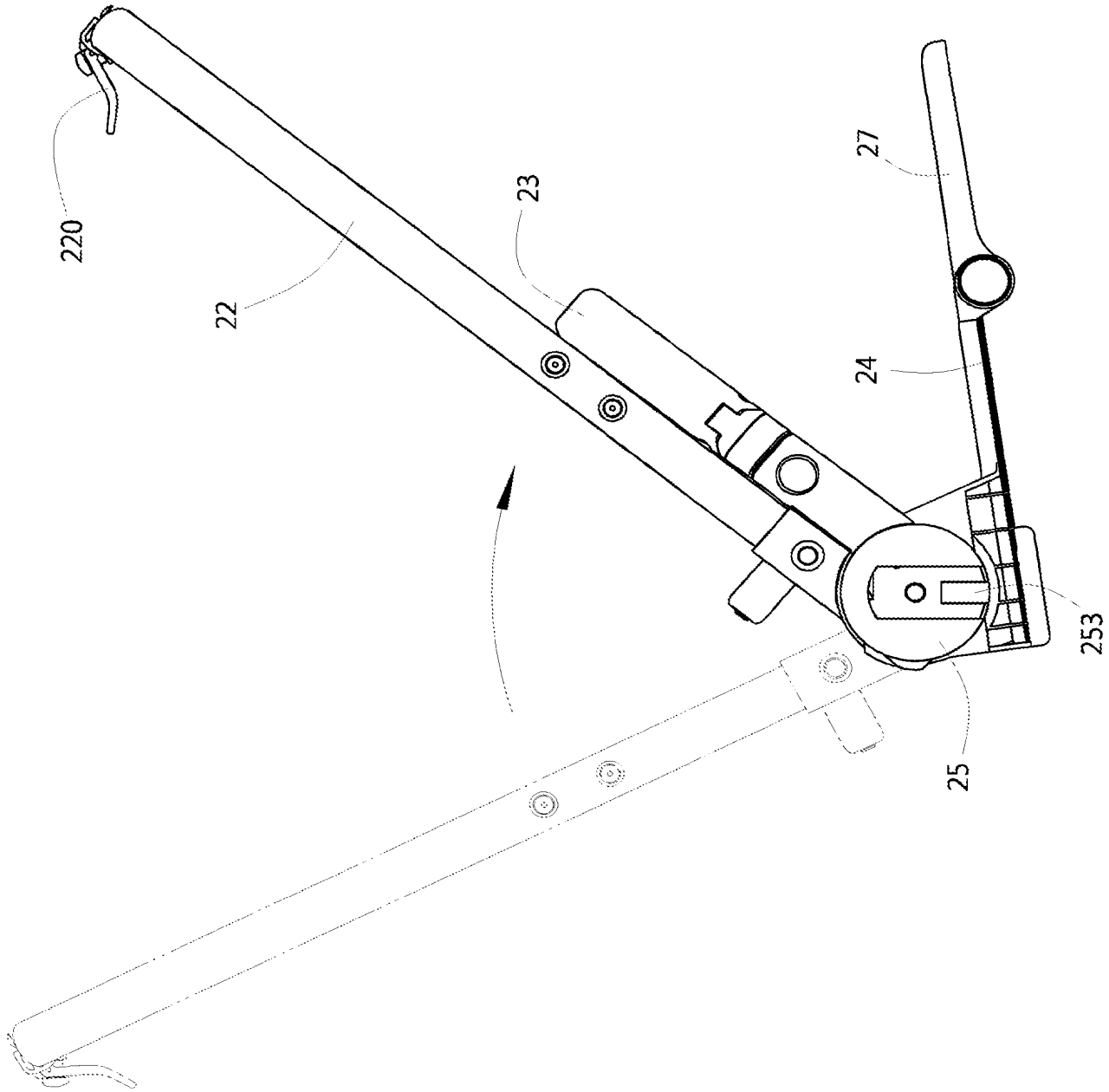

Fig. 16

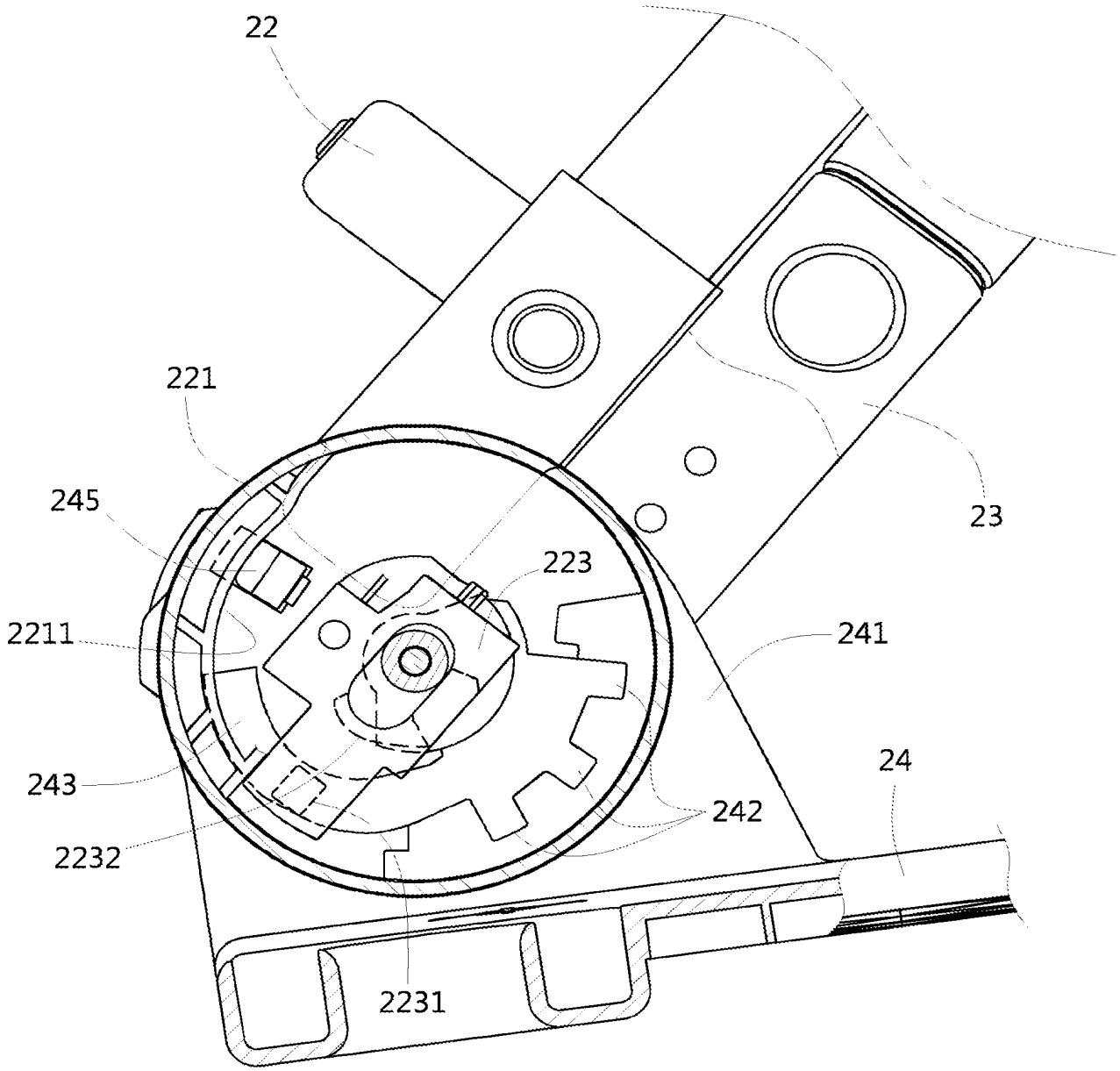

Fig. 17

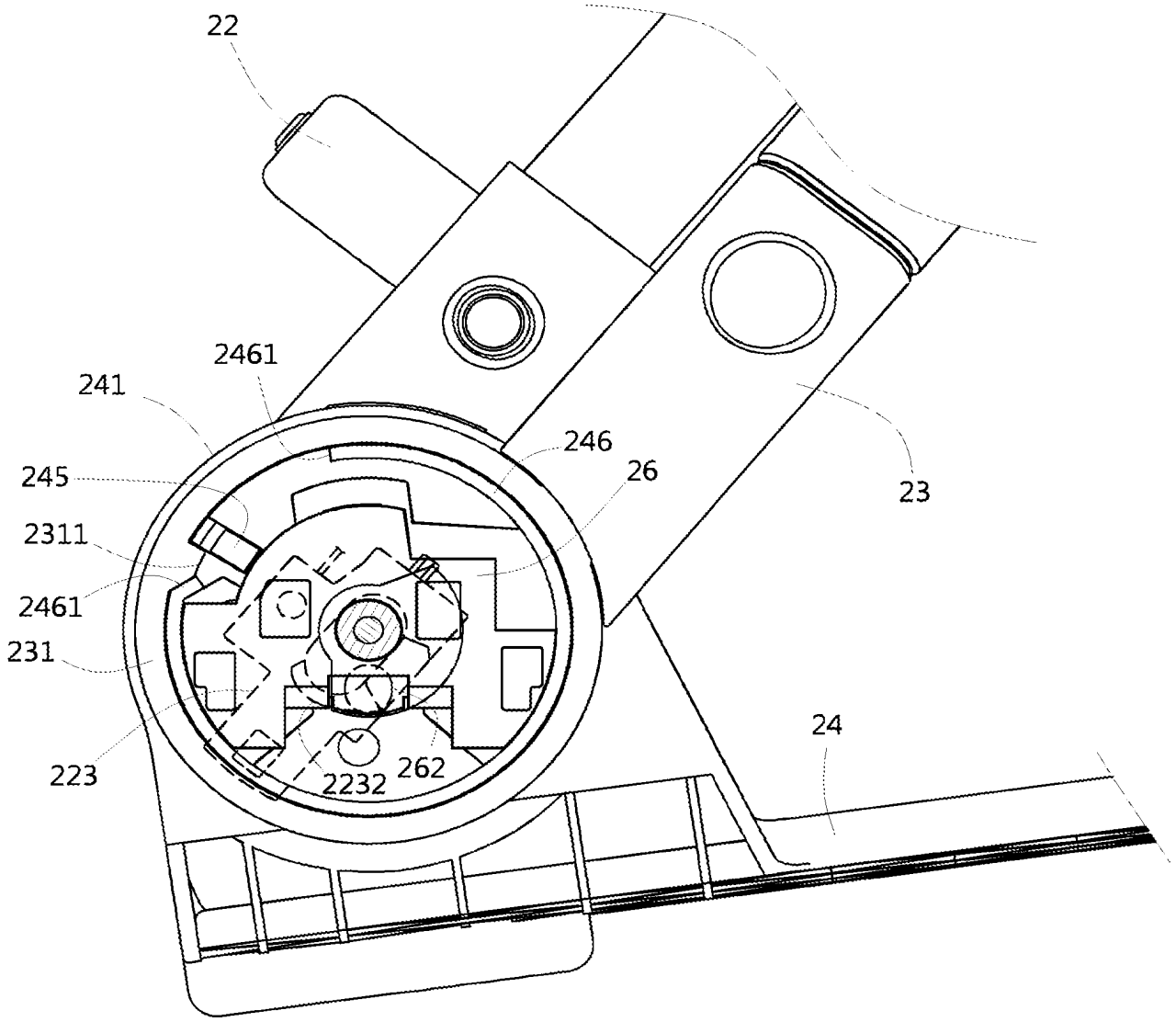

Fig. 18

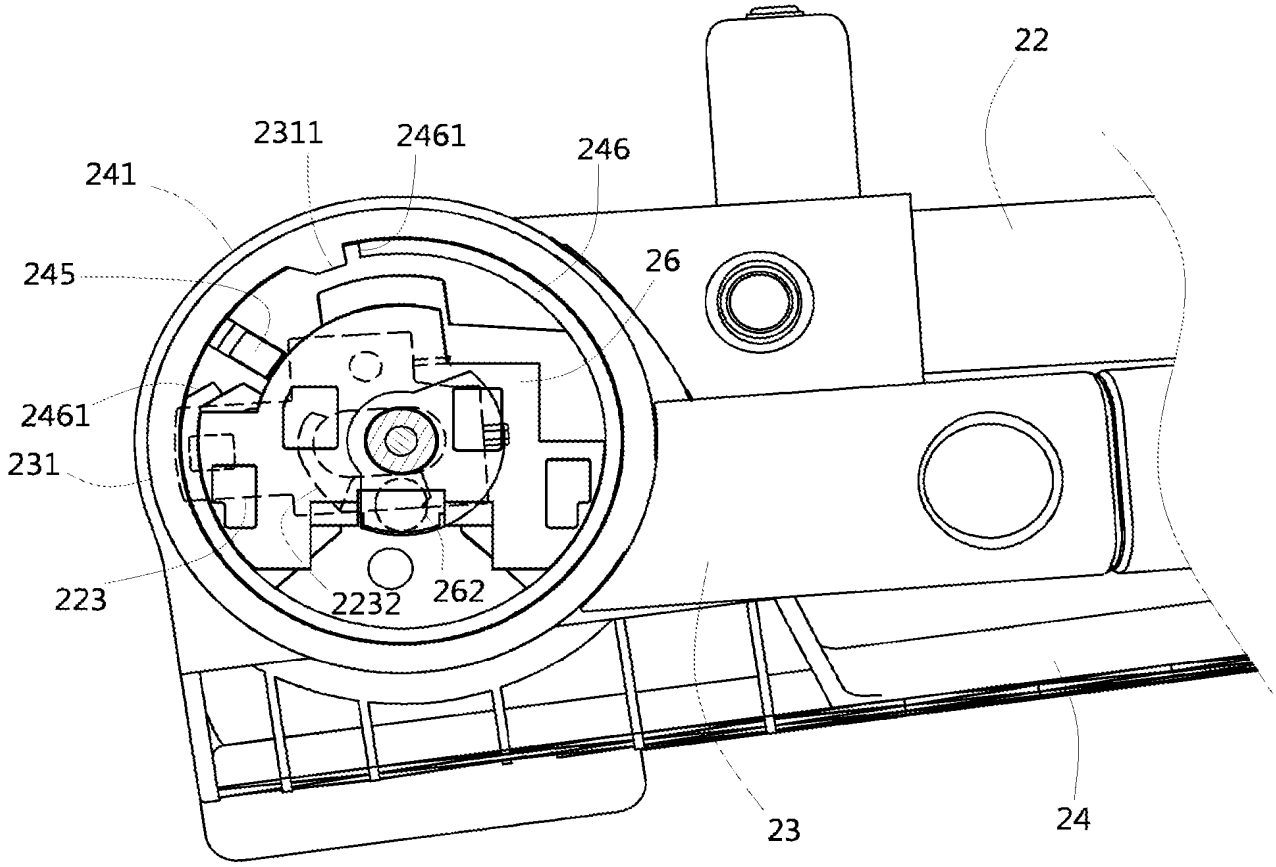

Fig. 19

[27] UPPABABY ET AL. EX. 1068

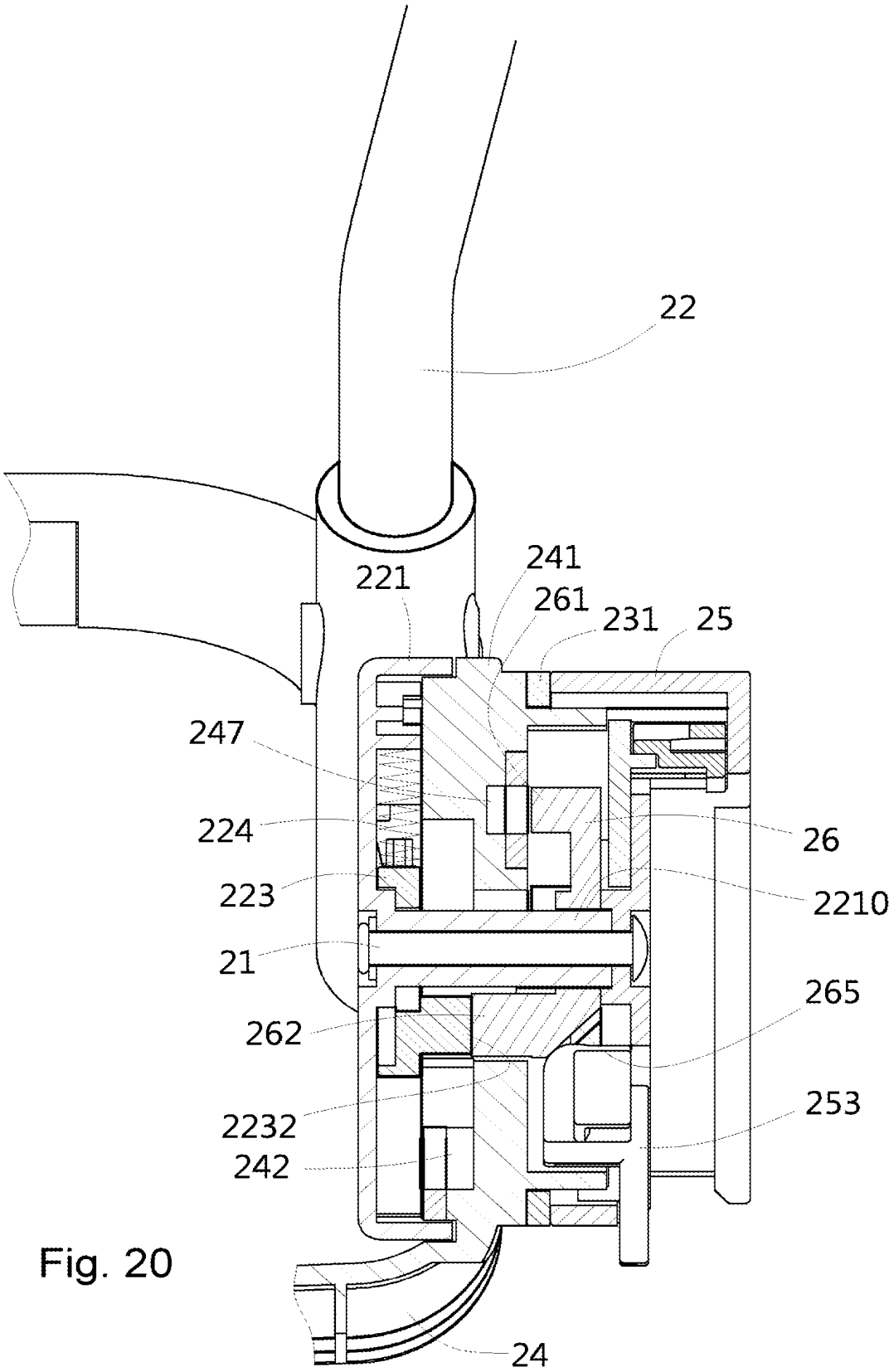

Fig. 20

[28] UPPABABY ET AL. EX. 1068

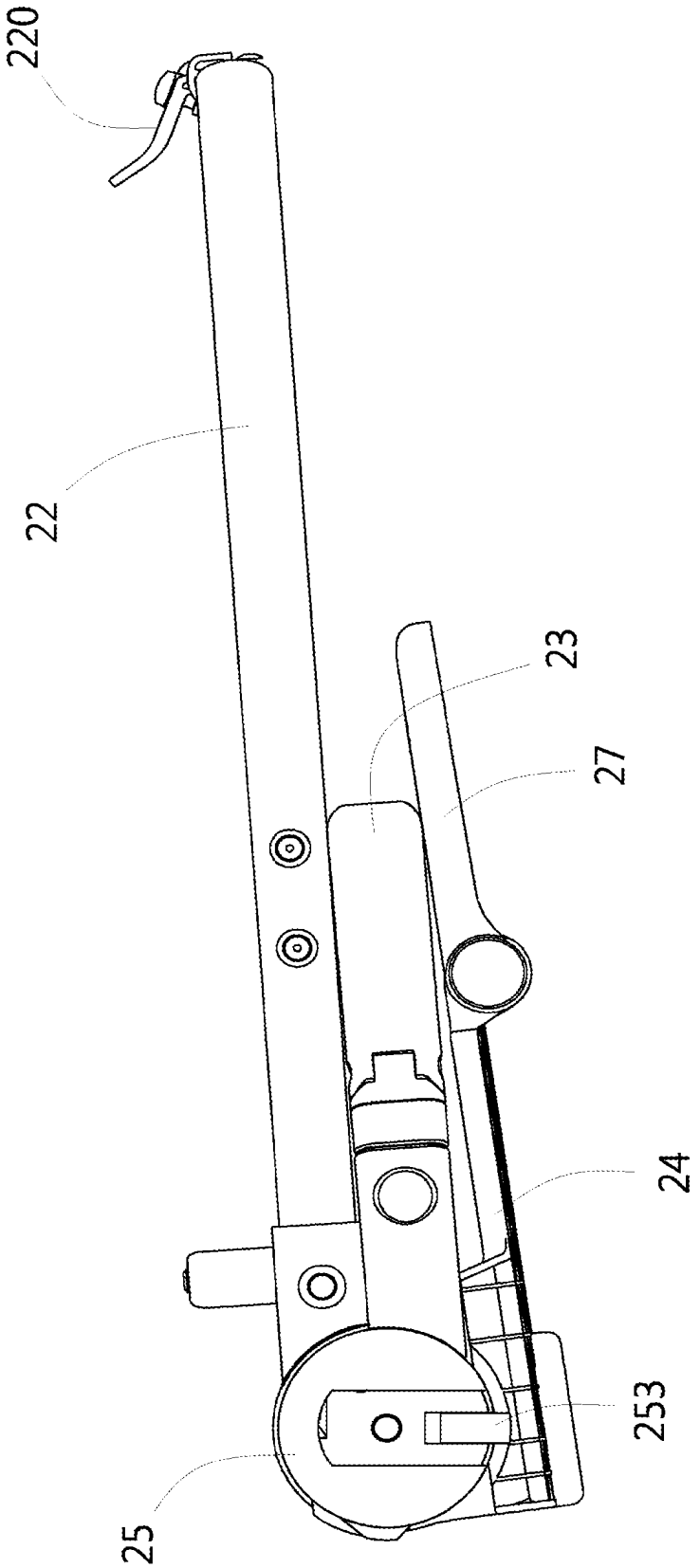

Fig. 21

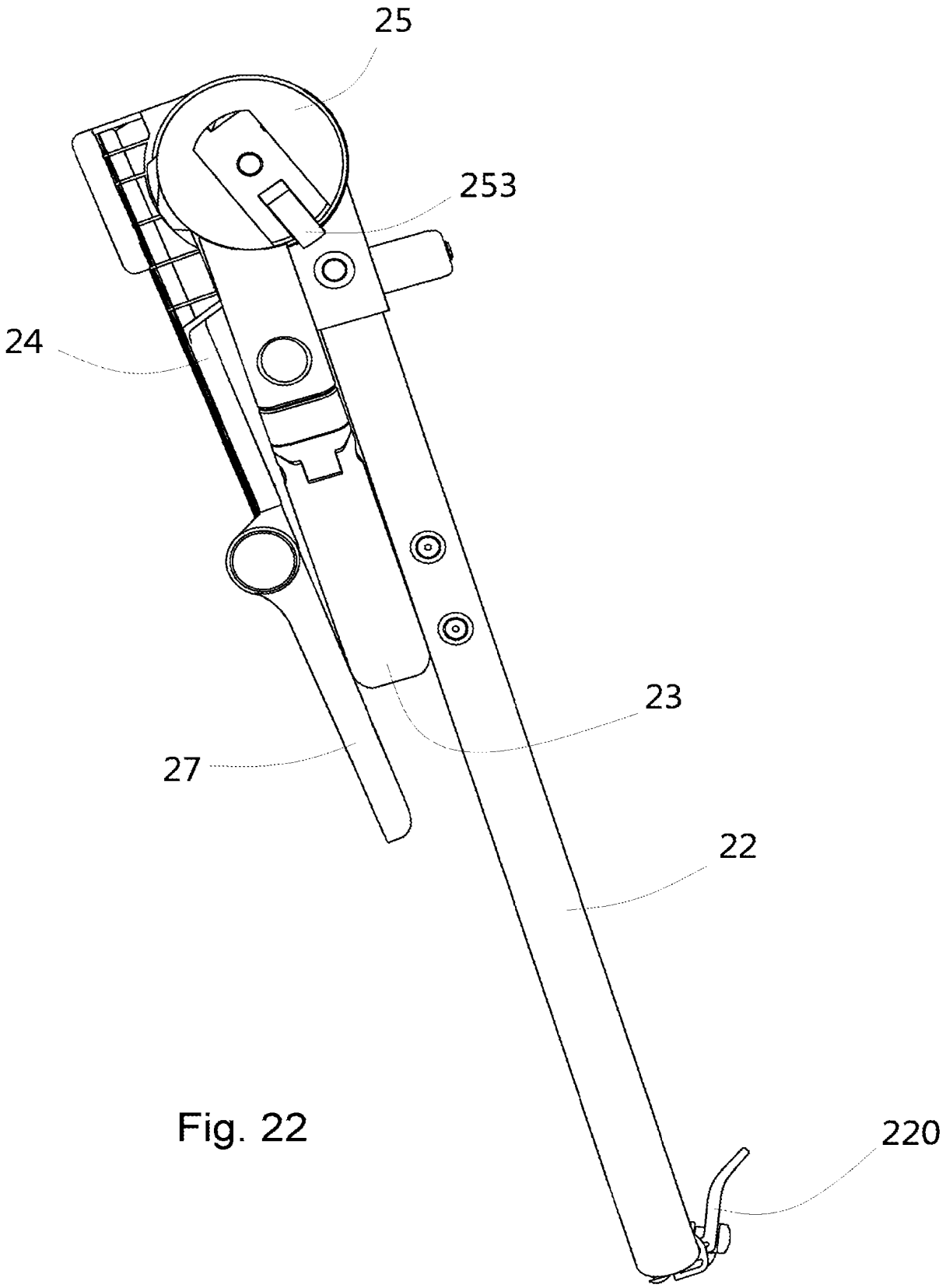

Fig. 22

30 UPPABABY ET AL. EX. 1068

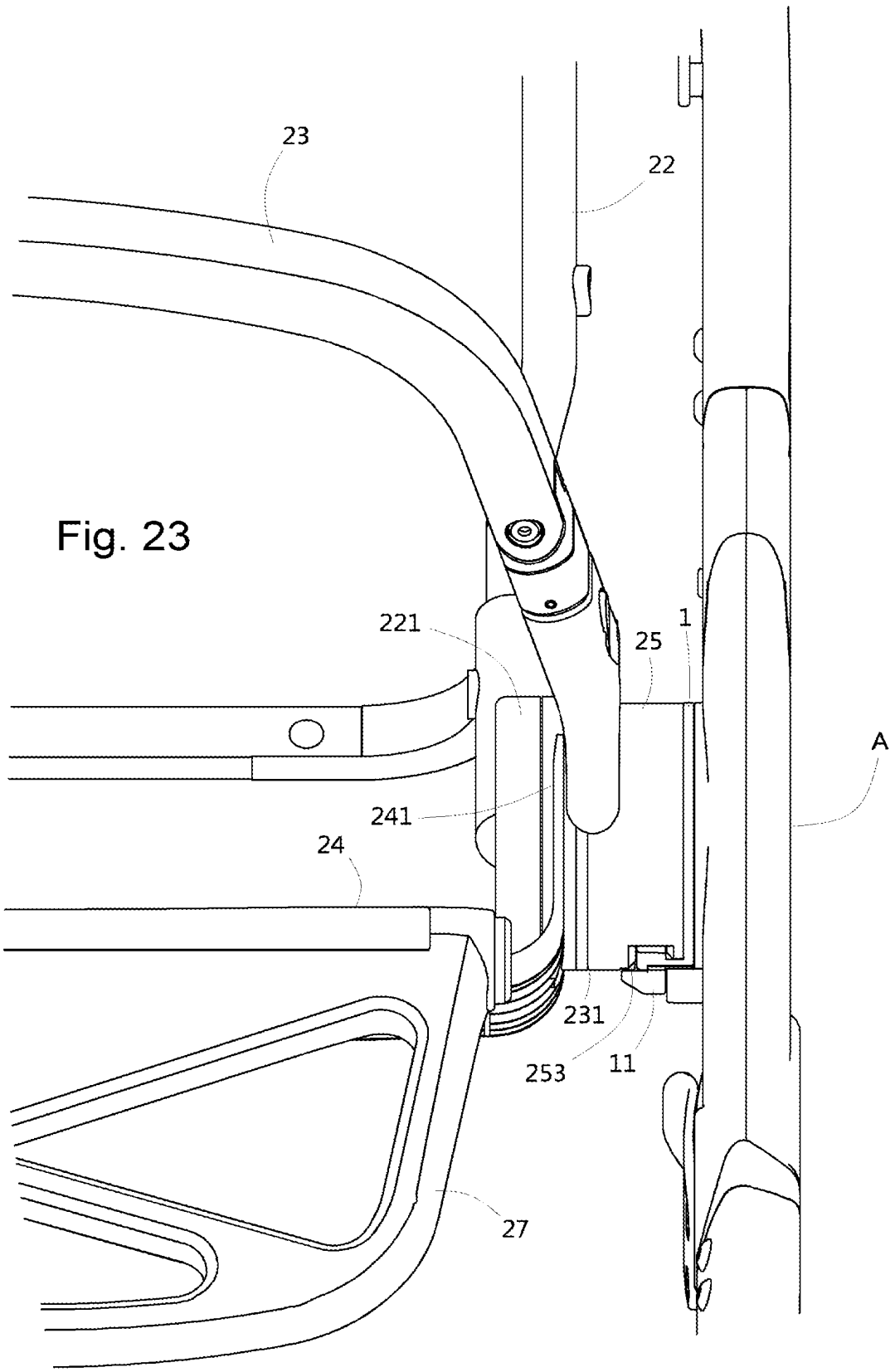

Fig. 23

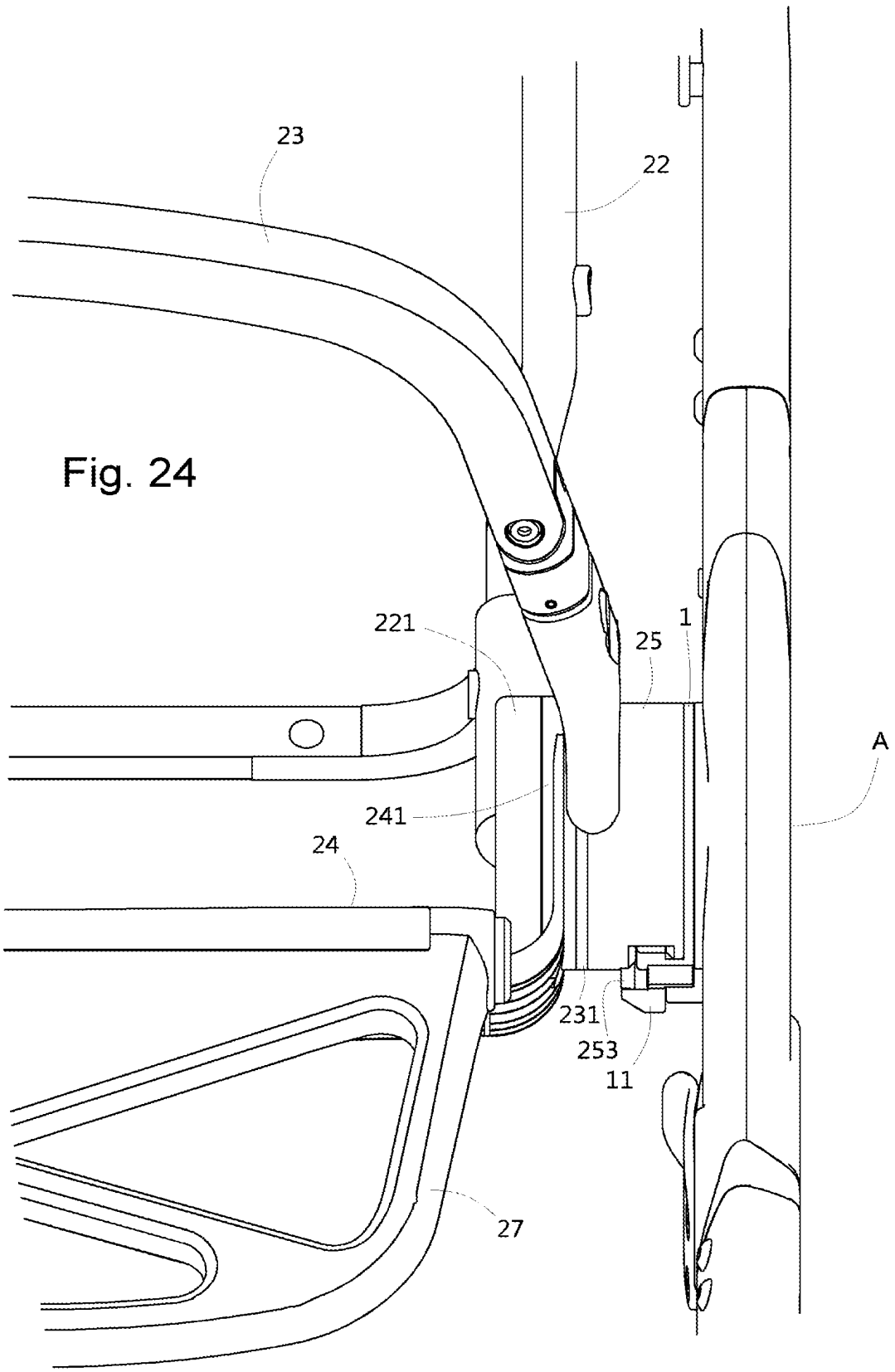

Fig. 24

REFERENCES CITED IN THE DESCRIPTION

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Espacenet

Bibliographic data: CN103909960 (A) — 2014-07-09

Maneuverable strollers

Inventor(s): ROLICKI PETER; IFTINCA LIVIU; THOMAS WES; BRETSCHGER TED ± (ROLICKI PETER, ; IFTINCA LIVIU, ; THOMAS WES, ; BRETSCHGER TED)

Applicant(s): KOLCRAFT ENTPR INC ± (KOLCRAFT ENTERPRISES, INC)

Classification: **- international:** ***B62B7/10***
- cooperative:

Application number: CN2014158323 20140106 Global Dossier

Priority number (s): US201361749728P 20130107 ; US201313828344 20130314

Also published as: CN103909960 (B)

Abstract of CN103909960 (A)

Maneuverable strollers are disclosed herein. An example stroller disclosed herein includes a frame having a front wheel and a rear wheel to support the frame. An intermediate wheel is positioned between the front wheel and the rear wheel. A carriage is coupled to the rear wheel, the intermediate wheel and the frame.

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B62B 7/10(2006.01)

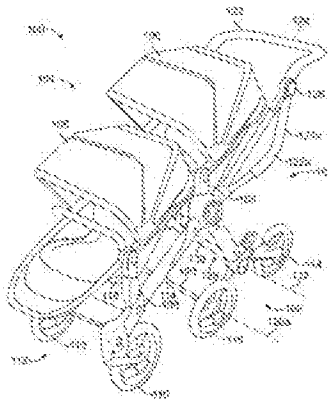
权利要求书2页 说明书10页 附图25页

(54)发明名称

容易操纵的婴儿车

(57)摘要

本文公开了一种容易操纵的婴儿车。在此公开的示例婴儿车包括框架，该框架具有前轮和后轮以支撑该框架。中间轮位于前轮和后轮之间。托架被连接至后轮、中间轮和框架。



CN 103909960 A

1. 一种婴儿车，该婴儿车包括：

框架；

用于支撑所述框架的前轮和后轮；

位于所述前轮和所述后轮之间的中间轮；以及

联接至所述后轮、所述中间轮和所述框架的托架。

2. 根据权利要求 1 所述的婴儿车，该婴儿车还包括在所述框架的第一侧面框架组件和第二侧面框架组件之间延伸的轮轴。

3. 根据权利要求 2 所述的婴儿车，其中，所述轮轴位于所述中间轮的旋转轴线与所述后轮的旋转轴线之间。

4. 根据权利要求 1 所述的婴儿车，其中，所述托架被枢转地安装至所述框架，以使得当向所述婴儿车的手柄施加向下力时所述婴儿车的所述前轮能够相对于所述中间轮和所述后轮被抬起。

5. 根据权利要求 4 所述的婴儿车，其中，当所述前轮相对于行进表面被抬起时，所述中间轮和所述后轮保持与所述行进表面接合。

6. 根据权利要求 1 所述的婴儿车，该婴儿车还包括悬架，当在所述后轮和所述中间轮位于地面上的情况下使所述婴儿车的前端向上枢转时，所述悬架提供反作用力。

7. 根据权利要求 6 所述的婴儿车，其中，所述悬架包括联接至所述婴儿车的轮轴的扭转弹簧。

8. 根据权利要求 1 所述的婴儿车，该婴儿车还包括一限制件，以限制所述框架绕所述婴儿车的轮轴枢转的旋转距离。

9. 根据权利要求 1 所述的婴儿车，其中，所述中间轮提供一转动枢转点，以在向所述婴儿车的手柄施加转动力时使所述婴儿车绕该转动枢转点来转动。

10. 根据权利要求 1 所述的婴儿车，其中，所述中间轮的中心与所述后轮的中心之间的距离小于所述中间轮的中心与所述前轮的中心之间的距离。

11. 一种婴儿车，该婴儿车包括：

框架，该框架具有第一侧面框架组件，该第一侧面框架组件与第二侧面框架组件横向间隔开，以在这些侧面框架组件之间限定座椅区域；

用于支撑所述框架的前端的前轮；

用于支撑所述框架的后端的后轮；

中间轮，该中间轮用于提供位于所述前轮和所述后轮之间的转动枢轴；以及

在所述第一侧面框架组件和所述第二侧面框架组件之间延伸的轮轴，该轮轴限定了这样的轴线，即：当所述前轮相对于所述后轮和所述中间轮升起时所述框架绕该轴线枢转，并且该轴线位于所述中间轮和所述后轮之间。

12. 根据权利要求 11 所述的婴儿车，该婴儿车还包括联接至所述轮轴的悬架，以当所述框架绕所述轮轴枢转时向所述框架提供增加的力。

13. 根据权利要求 12 所述的婴儿车，其中，所述悬架包括同轴地联接至所述轮轴或所述框架的扭转弹簧。

14. 根据权利要求 11 所述的婴儿车，该婴儿车还包括托架，该托架用于将所述中间轮和所述后轮安装至所述框架。

15. 根据权利要求 14 所述的婴儿车，其中，每个侧面框架组件都包括下框架支撑件、上框架支撑件和中间框架支撑件，所述下框架支撑件、所述上框架支撑件和所述中间框架支撑件经由位于该下框架支撑件、该上框架支撑件和该中间框架支撑件的相应的第一端处的枢转连接件而被枢转地联接。

16. 根据权利要求 15 所述的婴儿车，其中，当所述框架处于使用中的位置时，所述下框架支撑件与所述上框架支撑件基本上对齐或平行，并且所述中间框架支撑件相对于所述下框架支撑件和所述上框架支撑件基本上垂直。

17. 根据权利要求 15 所述的婴儿车，该婴儿车还包括邻近所述中间框架支撑件定位的悬架，该悬架具有联接至所述上框架支撑件的第一端和联接至所述托架的第二端。

18. 根据权利要求 17 所述的婴儿车，其中，所述悬架基本上平行于所述中间框架支撑件。

19. 根据权利要求 17 所述的婴儿车，其中，所述悬架、所述中间框架支撑件、所述上框架支撑件和所述托架限定一联动装置，当将所述婴儿车折叠至塌缩位置时，该联动装置使得所述托架绕所述轮轴旋转。

20. 一种制造婴儿车的方法，该方法包括：

将前轮安装至框架的前部；

将后轮和中间轮安装至所述框架，使得所述中间轮位于所述前轮和所述后轮之间；以及

在所述后轮和所述中间轮之间提供一枢转轴，以使得所述框架的所述前部能够相对于该框架的后部抬起。

21. 根据权利要求 20 所述的方法，其中，将所述后轮和所述中间轮安装至所述框架包括将所述中间轮和所述后轮安装至一托架并且在所述枢转轴处将所述托架安装至所述框架。

22. 根据权利要求 21 所述的方法，该方法还包括以可旋转的方式联接所述框架，从而相对于所述托架绕所述枢转轴旋转。

23. 根据权利要求 21 所述的方法，该方法还包括将悬架联接至所述托架，使得当所述框架绕所述枢转轴旋转时所述悬架提供增加的力。

24. 根据权利要求 21 所述的方法，该方法还包括通过以下步骤来形成所述框架：将下框架支撑件、上框架支撑件和中间框架支撑件联接至位于这些框架支撑件的相应的第一端处的枢转连接件，并且在所述中间框架支撑件的第二端处将所述中间框架支撑件以可旋转的方式联接至所述枢转轴。

25. 根据权利要求 24 所述的方法，该方法还包括将悬架安装至所述框架而与所述中间框架支撑件相邻，所述悬架具有联接至所述上框架支撑件的第一部分和联接至所述托架的第二部分，当所述框架绕所述枢转轴枢转时，所述悬架提供增加的力。

容易操纵的婴儿车

技术领域

[0001] 本公开大体上涉及一种儿童照顾装置，并且更具体地，涉及一种容易操纵的婴儿车。

背景技术

[0002] 在本领域中，婴儿车是已知的。典型地，已知的婴儿车包括可折叠框架、车轮以及用于支撑处于就坐、斜卧和/或平躺位置的儿童或婴儿的一个或多个座椅。婴儿车框架通常能沿至少一个方向折叠以允许所述婴儿车塌缩至折叠位置。

发明内容

[0003] 依照第一方面，提供了一种婴儿车，该婴儿车包括：框架；用于支撑所述框架的前轮和后轮；位于所述前轮和所述后轮之间的中间轮；以及联接至所述后轮、所述中间轮和所述框架的托架。

[0004] 依照第二方面，提供了一种婴儿车，该婴儿车包括：框架，该框架具有第一侧面框架组件，该第一侧面框架组件与第二侧面框架组件横向间隔开，以在这些侧面框架组件之间限定座椅区域；用于支撑所述框架的前端的前轮；用于支撑所述框架的后端的后轮；中间轮，该中间轮用于提供位于所述前轮和所述后轮之间的转动枢轴；以及在所述第一侧面框架组件和所述第二侧面框架组件之间延伸的轮轴，该轮轴限定了这样的轴线，即：当所述前轮相对于所述后轮和所述中间轮升起时所述框架绕该轴线枢转，并且该轴线位于所述中间轮和所述后轮之间。

[0005] 依照第三方面，提供了一种制造婴儿车的方法，该方法包括：将前轮安装至框架的前部；将后轮和中间轮安装至所述框架，使得所述中间轮位于所述前轮和所述后轮之间；以及在所述后轮和所述中间轮之间提供一枢转轴，以使得所述框架的所述前部能够相对于该框架的后部抬起。

附图说明

[0006] 图 1 是依照在此公开的教导而构造的示例婴儿车的立体图。

[0007] 图 2 是图 1 的示例婴儿车的左侧面视图。

[0008] 图 3 是图 1 和图 2 的示例婴儿车的右侧面视图。

[0009] 图 4 是图 1 至图 3 的示例婴儿车的侧面视图，示出了当示例婴儿车的全部车轮都与基本上平坦或水平的行进路径接触时示例婴儿车的枢转运动的示例范围。

[0010] 图 5A 是图 1 至图 4 的示例婴儿车的局部左侧面立体图。

[0011] 图 5B 是图 1 至图 4 的示例婴儿车的局部右侧面立体图。

[0012] 图 6 是图 1 至图 4、图 5A 和图 5B 的示例婴儿车的侧面视图，示出了示例婴儿车的前轮相对于示例婴儿车的后轮和中间轮而升高。

[0013] 图 7 是图 1 至图 4、图 5A、图 5B 和图 6 的示例婴儿车的侧面视图，示出了部分塌缩

的婴儿车。

[0014] 图 8 是图 1 至图 4、图 5A、图 5B、图 6 和图 7 的示例婴儿车的侧面视图，示出了完全塌缩的婴儿车。

[0015] 图 9A 和图 9B 示出了在此公开的示例座椅安装件。

[0016] 图 10 示出了在此公开的另一示例座椅安装件。

[0017] 图 11 示出了依照本公开的教导而构造的另一示例婴儿车。

[0018] 图 12 是依照该公开的教导而构造的另一示例婴儿车的侧面视图。

[0019] 图 13 是图 12 的示例婴儿车的示例手柄的顶视图。

[0020] 图 14 是图 12 和图 13 的示例婴儿车的处于部分塌缩状态的框架的一部分的侧面视图。

[0021] 图 15 是图 12 至图 14 的示例婴儿车的侧面视图，示出了完全塌缩的婴儿车。

[0022] 图 16 是依照在此公开的教导而构造的另一示例婴儿车的立体图。

[0023] 图 17 是图 16 的示例婴儿车具有柔软品的侧面视图。

[0024] 图 18 是图 16 和图 17 的示例婴儿车的顶视图。

[0025] 图 19 是图 16 至图 18 的示例婴儿车的左侧面视图，但是为了清楚起见而移除了柔软品。

[0026] 图 20 是图 16 至图 19 的示例婴儿车的右侧面视图。

[0027] 图 21 是图 16 至图 20 的示例婴儿车的侧面视图，示出了示例婴儿车的示例悬架装置。

[0028] 图 22A 至图 22D 示出了图 16 至图 21 的示例婴儿车的示例制动机构。

[0029] 图 23 是图 16 至图 21 的示例婴儿车的侧面视图，示出了部分塌缩的婴儿车。

[0030] 图 24 是图 16 至图 21 的示例婴儿车的侧面视图，示出了完全塌缩的婴儿车。

[0031] 图 25A 和图 25B 示出了图 16 至图 21 的示例婴儿车的示例锁闩释放机构。

[0032] 图 26 是依照本公开的教导而构造的又一示例婴儿车的侧面视图。

[0033] 图 27 是图 26 的示例婴儿车的侧面视图，示出了部分塌缩的婴儿车。

[0034] 图 28 是图 26 和图 27 的示例婴儿车的侧面视图，示出了完全塌缩的婴儿车。

[0035] 图 29 描述了在此公开的组装示例覆盖组件的示例方法的流程图。

具体实施方式

[0036] 在此公开的示例婴儿车相对于一些已知的婴儿车提高了婴儿车的稳定性、操纵性和 / 或转向控制，和 / 或提供了改进的震动吸收性。在此公开的示例婴儿车使得使用者能够在一紧密的转动半径内转动或枢转示例婴儿车。在一些示例中，婴儿车可以在其自身的总长度或包络尺寸内转动 360 度。为了能够这样转动，在此公开的示例婴儿车采用一个或多个中间的、能够枢转的和 / 或变大的车轮。在一些示例中，中间轮（例如，中央轮）被布置在支撑婴儿车框架的前部的一个或多个前轮和支撑婴儿车框架的后部的一个或多个后轮之间。前轮和后轮之间的距离基本上限定了婴儿车的总长度。在一些示例中，中间轮基本上位于前和后轮之间的中途，和 / 或基本上位于被使用的婴儿车的质量中心的下方（例如，正下方）。在一些示例中，为了进一步改进转向和 / 或操纵性，中间轮定位成与前轮相比更接近于后轮，使得中间轮的中心与后轮的中心之间的距离小于中间轮的中心与前轮的中

心之间的距离。在一些示例中，与前轮相比将中间轮定位得更接近于后轮在操纵婴儿车越过诸如路缘之类的障碍时，便于提升婴儿车的前端。

[0037] 为了在婴儿车的前端相对于婴儿车的后端被提升或抬高时（例如，当婴儿车的前端被提升、枢转或倾斜以前进通过路缘时）改进婴儿车的控制或操纵性，在此公开的示例婴儿车采用了枢轴或枢转轮轴。在一些示例中，枢轴位于后轮和中间轮之间。结果，这样的示例婴儿车包括框架，当婴儿车的前端相对于婴儿车的后端被提升时，该框架相对于中间轮和后轮枢转。一些这样的婴儿车采用壳体、托架或承载架来将中间轮和后轮联接至车架的侧面框架组件。在一些实例中，框架例如经由套管联接（例如，枢转联接）至枢轴。另选地，在此公开的一些示例婴儿车的框架被安装至枢转轮轴和托架，一些这样的示例经由套管被联接至枢转轮轴。在此公开的示例托架可以使得联接至该托架的中间轮和后轮绕由枢转轮轴或枢转轴提供的枢轴相对于框架枢转。

[0038] 此外或另选地，为了提供更大的稳定性、便于平衡和 / 或便于提升婴儿车的前端，在此公开的一些示例婴儿车采用悬架装置。在一些这样的示例中，当婴儿车的前端绕由枢转轴提供的枢轴向上或远离一表面枢转时，悬架装置提供朝向框架的前端的反作用力。结果，悬架装置降低（例如，显著降低或防止）朝向后轮转移婴儿车的重量。换句话说，当婴儿车的前端绕枢转轴枢转时，悬架装置将婴儿车的质量中心保持在由中间轮和后轮限定的周界内。当示例婴儿车的手柄移动或绕枢转轮轴枢转来提升婴儿车的前端时，一些这样的示例的悬架装置提供了朝向中间轮和 / 或后轮的反作用力（例如，增加的力）。结果，当婴儿车的前轮相对于后轮和中间轮被提升或抬高时，一些这样的示例的悬架装置帮助保持后轮和中间轮与行进路径或地面接合。当婴儿车的前端被提升时帮助保持中间轮和后轮与地面接合有助于防止婴儿车绕其中一个后轮倾翻。

[0039] 为了便于或有助于折叠婴儿车，在此公开的一些示例婴儿车提供了辅助框架构件或杆。在一些这样的示例中，框架构件与婴儿车的框架的折叠枢轴间隔开，以使得当示例婴儿车被折叠至塌缩位置时，托架和因而联接至该托架的中间轮相对于框架旋转至存放位置。

[0040] 改进了婴儿车的稳定性、操纵性和 / 或转向控制的一些示例婴儿车在国际专利申请序列号 PCT/US2011/062669 中公开，该国际专利申请的全部内容通过引用合并于此。

[0041] 图 1 是依照在此公开的教导而构造的示例婴儿车 100 的立体图。图 1 的示例婴儿车 100 包括框架 102，该框架限定了用于容纳或支撑一个或多个儿童和 / 或婴儿座椅 106 的座椅区域 104。为了支撑婴儿座椅 106，所示示例的框架 102 包括一个或多个婴儿座椅安装件 108。更具体地，婴儿座椅 106 借助由座椅 106 和座椅安装件 108 提供的接口（例如，锁扣件或连接件）以可移除的方式联接至座椅安装件 108。为了从座椅安装件 108 移除婴儿座椅 106，由所述接口限定的连接件经由一释放装置（例如，弹簧加载的推动按钮）而释放。附加地或另选地，座椅安装件 108 可沿着框架 102 被调整，从而相对框架 102 和 / 或相对于彼此调整婴儿座椅 106 的位置。

[0042] 所示示例的框架 102 由位于框架 102 前端 112 处的一个或多个前轮 110 和位于框架 102 的后端 116 处的一个或多个后轮 114 支撑。所示示例的框架 102 被组装形成这样的结构，该结构旨在在其使用和存放的所有阶段中都保持被组装。附加地，为了改进操纵性、转向控制和 / 或提供震动吸收性，所示示例的框架 102 采用被布置在前轮 110 和后轮 114

之间的一个或多个中间轮 118。为了向示例婴儿车 100 提供震动吸收性，所示示例的中间轮 118、前轮 110 和 / 或后轮 114 可实施为由橡胶构成的可充气轮。如在所示示例中所示的，中间轮 118 的直径基本上类似或等于前轮 110 和后轮 114 的直径。

[0043] 在图 1 的所示示例中，中间轮 118 被定位成与前轮 110 相比更接近后轮 114。然而，在其它示例中，中间轮 118 可以被布置在前轮 110 和后轮 114 之间的近似中点处。所示示例的每个中间轮 118 均限定了枢轴（例如，转动枢转点）提供结构，该枢轴提供结构被布置或定位在前轮 110 和后轮 114 之间。因此，在所示的示例中，每个中间轮 118 均提供了用于婴儿车 100 的枢转点，该枢转点从婴儿车 100 的后端 116 和 / 或后轮 114 偏离或横向间隔开。因此，当使用者在使所有车轮 110、114 和 118 都与地面或行进表面接触的情况下沿向右方向、向左方向和 / 或以 360 度的转或圈转动所示示例的婴儿车 100（例如，通过向婴儿车 100 施加侧向力）时，婴儿车 100 的前端 112 和婴儿车 100 的后端 116 都能够绕由其中一个相应的中间轮 118 提供的转动枢轴或枢转点沿弧形路径枢转或旋转。

[0044] 如在示出的示例中所示的，中间轮 118 经由轮轴 120 相互联接，并且绕公共的旋转轴线 120a 旋转。然而，在其它示例中，轮轴 120 可被移除以使得中间轮 118 相对于彼此独立地驱动或旋转。此外，虽然示例婴儿车 100 包括两个中间轮 118，但其它示例婴儿车可以仅采用一个中间轮 118 或两个以上的中间轮 118。例如，婴儿车 100 可以包括在轮轴 120 上布置在第一和第二中间轮 118 之间的第三中间轮。

[0045] 由于中间轮 118 基本上位于婴儿车 100 的座椅区域 104 的下方（例如，垂直地与该座椅区域对齐），因此中间轮 118 吸收由儿童坐在所示示例的婴儿车 100 的婴儿座椅 106 中所提供的负载的大部分。换句话说，在所示的示例中，当使用者转动所示示例的婴儿车 100 时，坐在座椅区域 104 中的儿童的负载或重量大部分由中间轮 118 承载。结果，由儿童提供的负载绕由其中一个中间轮 118 提供的枢转点旋转。以这样的方式，婴儿车 100 和婴儿车 100 中的儿童的组合负载或重量与在没有中间轮 118 的情况下类似组合重量的婴儿车和儿童所需要力（或转矩）小的力（或转矩）来转动或枢转婴儿车 100。由于所示示例的婴儿车 100 中的儿童的重量（或质量中心）接近中间轮 118 的枢转轴线或枢转点，因此当儿童坐在座椅区域 104 中时枢转或转动所示示例的婴儿车 100 所需的力或转矩相对低。结果，所示示例的婴儿车 100 可以在相对紧密的转动半径的情况下相对轻松地绕由任一中间轮 118 提供的枢转点转动。例如，图 1 的示例婴儿车 100 可以在其自身的长度内转动 360 度。

[0046] 为了使得使用者能够推动、转动和 / 或倾斜所示示例的婴儿车 100，框架 102 包括具有把手 124 的手柄 122，使用者可以握住该把手 124 来移动、控制和 / 或转向婴儿车 100。此外，所示示例的手柄 122 邻近后轮 114。所示示例的婴儿车 100 包括具有辅助把手 124a 的辅助手柄 122a，以使得儿童或成人在沿着婴儿车 100 行走时能够握住辅助把手 124a 来进行支撑。辅助手柄 122a 通常并不用于操纵婴儿车 100，而是可以将其用作其它一些使用目的。手柄 122 经由手柄关节毂或接头 126 联接至框架 102，该手柄关节毂或接头使得手柄 122 能够相对于框架 102 调整。

[0047] 如在下文更详细地描述的，为了当操纵婴儿车 100 越过路缘或其它障碍时进一步改进稳定性和 / 或便于平衡，所示示例的示例婴儿车 100 采用悬架装置 128。更具体地，当婴儿车 100 的前端 112 经由手柄 122 相对于框架 102 的后端 116 枢转或倾斜时（例如，前端 112 相对于支撑表面（例如，地面）沿向上方向被提升），图 1 的示例悬架装置 128 提供

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了稳定性和 / 或便于平衡。此外，如在下文结合图 2A、图 2B、图 3 和图 4 更详细地讨论的，示例婴儿车 100 采用轮轴 130，来使得当前端 112 相对于后轮 114 和中间轮 118 从行进表面被抬起、倾斜或升起时框架 102 能够围绕轮轴 130 的轴线 132 枢转。

[0048] 图 2 示出了婴儿车 100 的第一侧面视图或左侧面视图。图 3 示出了图 1 的示例婴儿车 100 的第二侧面视图或右侧面视图。参考图 2 和图 3，所示示例的框架 102 包括第一侧面框架组件 202a，该第一侧面框架组件与第二侧面框架组件 202b 横向间隔开而限定座椅区域 104。所示示例的第一侧面框架组件 202a 和第二侧面框架组件 202b 基本上类似或相同并且是对称的。所示示例的手柄 122 在侧面框架组件 202a、202b 之间延伸，并且可以由弯曲成大体 U 型的结构的单个管件形成。

[0049] 参考图 2 和图 3，所示示例的侧面框架组件 202a、202b 均包括下框架支撑件 204、上框架支撑件 206 和中间框架支撑件 208。在示出的示例中，框架支撑件 204、206 和 208 具有基本上线性的轮廓（例如，直的和 / 或平坦的轮廓）。然而，在其它示例中，框架支撑件 204、206 和 208 可以是任何形状的，包括大体上弯曲的形状或具有一个或多个弯曲和 / 或线性部分的形状。

[0050] 为了使得所示示例的婴儿车 100 沿至少一个方向折叠或塌缩，第一侧面框架组件 202a 的框架支撑件 204、206 和 208 经由第一枢转连接件或枢转接头 210a 被枢转地联接。更具体地，连接件或枢转接头 210a 由毂 212a（例如，T 形毂）限定，以接收第一侧面框架组件 202a 的每个框架支撑件 204、206 和 208 的相应端。所示示例的毂 212a 使得框架支撑件 204、206 和 208 能够相对彼此枢转，以例如如在下文更详细地讨论的塌缩婴儿车 100。相似地，第二侧面框架组件 202b 的框架支撑件 204、206 和 208 在第二枢转连接件或枢转接头 210b 处枢转地联接。更具体地，连接件或枢转接头 210b 由毂 212b（例如，T 形毂）限定，以接收第二侧面框架组件 202b 的每个框架支撑件 204、206 和 208 的相应端部。与毂 212a 一样，毂 212b 使得第二侧面框架组件 202b 的框架支撑件 204、206 和 208 能够相对于彼此枢转。

[0051] 参考图 3，所示示例的每个毂 212a、212b 均包括：第一腿或开口 214a，该第一腿或开口以接收下框架支撑件 204 的第一端 204a 或联接至该第一端 204a；第二腿或开口 214b，该第二腿或开口以接收上框架支撑件 206 的第一端 206a 或联接至该第一端 206a；以及第三腿或开口 214c，该第三腿或开口以接收中间框架支撑件 208 的第一端 208a 或联接至该第一端 208a。在这一示例中，毂 212a、212b 还包括第四腿或开口 214d，以接收辅助手柄 122a 的端部。腿 214a 至 214c 使得当毂 212a、212b 的锁定机构（例如，锁闩）处于释放或解锁状态时框架支撑件 204、206 和 208 能够绕相应的枢转连接件 210a、210b 相对于彼此枢转。当毂 212a、212b 的锁定机构处于解锁状态时，框架支撑件 204、206 和 208 不能绕相应的枢转连接件 210a、210b 相对于彼此枢转。毂 212a、212b 的锁定机构可经由释放致动器 216 移动至解锁状态，所述释放致动器位于可以由使用者致动的上框架支撑件上。

[0052] 参考图 2，当框架 102 直立时，第一侧面框架组件 202a 的下框架支撑件 204 和上框架支撑件 206 相对于彼此基本上对齐或平行，使得下框架支撑件 204 的轴线 218 基本上与上框架支撑件 206 的轴线 220 对齐。然而，在其它示例中，当框架 102 处于直立状态时，下框架支撑件 204 可以相对于上框架支撑件 206 定位在任意角度。例如，下框架支撑件 204 的轴线 218 与上框架支撑件 206 的轴线 220 之间的角度 222 可以在近似 100 度至 200 度之

间。

[0053] 所示示例的中间框架支撑件 208 从相应的毂 212a 和 212b 朝向后轮 114 伸出。为了使得框架 102 能够相对于中间轮 118 和 / 或后轮 114 枢转，中间框架支撑件 208 枢转地联接至轮轴 130（图 1）。更具体地，在示出的示例中，中间框架支撑件 208 的第二端 208b 经由连接件或套管 211 被联接至轮轴 130（图 1）。所示示例的套管 211（其包括轴向联接至轮轴 130 的部分）使得中间框架支撑件 208 且因此使和下框架支撑件 204 和上框架支撑件 206 能够绕轮轴 130 的轴线 132 枢转。

[0054] 当联接至相应的枢转接头 110a 和轮轴 130 时，所示示例的中间框架支撑件 208 基本上垂直于下框架支撑件 204 和上框架支撑件 206。换句话说，由中间框架支撑件 208 限定的轴线 224 相对于下框架支撑件 204 的轴线 218 和上框架支撑件的轴线 220 呈大致九十度的角度。然而，在其它示例中，中间框架支撑件 208 可以相对于下框架支撑件 204 和 / 或上框架支撑件 206 呈任何不同的角度。例如，中间框架支撑件 208 的轴线 224 和下框架支撑件 204 的轴线 218 之间的角度 226a 和 / 或中间框架支撑件 208 的轴线 224 和上框架支撑件 206 的轴线 220 之间的角度 226b 可以是小于九十度或大于九十度的任何其它合适的角度。

[0055] 参考图 2 和图 3，为了将所示示例的前轮 110 安装或附接至侧面框架组件 202a、202b 中的一者，所示示例的每个前轮 110 都包括前轮毂体 230。例如，前轮壳体 230 可以被联接或附接至下框架支撑件 204 件的一端。所示示例的每个前轮壳体 230 均包括以可旋转的方式安装至连接件 234 的叉或轮支撑件 232。每个前轮 110 均可以以可旋转的方式轴颈连接至轮支撑件 232，以使得每个前轮 110 都能够绕单独的旋转轴线 236a、236b（例如，相对于供定位婴儿车 100 的水平地面基本上水平的轴线）独立地旋转。附加地，为了改进转向，所示示例的每个前轮 110 都能够绕基本上垂直于对应的旋转轴线 236a、236b 的对应的基本上竖直的轴线 238a、238b 旋转、回转或枢转。在所示示例中，由于对应的轮支撑件 232 和对应的连接件 234 之间的枢转连接件，因此前轮 110 能够绕对应的竖直轴线 238a、238b 枢转。

[0056] 为了将后轮 114 和中间轮 118 安装或附接至相应的侧面框架组件 202a、202b，所示示例的每个侧面组件 202a、202b 都采用壳体或托架 240（例如，摇摆件）。所示示例的托架 240 是整体件或整体结构。更具体地，所示示例的托架 240 包括或限定了毂 242，该毂将后轮 114 和中间轮 118 附接或联接至框架 102。在示出的实例中，轮轴 130 轴颈连接在托架 240 上。示例托架 240 可相对于框架 102 和 / 或中间框架支撑件 208 枢转。所示示例的每个毂 242 都包括：第一部分或腿 242a，该第一部分或腿用于接收其中一个后轮 114 或者联接至其中一个后轮 114；以及第二部分或腿 242b，该第二部分或腿用于接收其中一个中间轮 118 或者联接至其中一个中间轮 118。

[0057] 例如，示例托架 240 的第一部分 242a 接收后轮壳体 244，该后轮壳体具有以可旋转的方式安装至连接件 248 的叉或后轮支撑件 246，所述连接件 248 安装至（例如，通过螺钉）托架 240 或与该托架一体地形成。每个后轮 114 都以可旋转的方式安装至后轮支撑件 246，以使得每个后轮 114 都能够绕单独的旋转轴线 250a、250b（它们中的每一个都是相对于供定位婴儿车的水平地面的基本上水平的轴线）独立地旋转。附加地，为了改进转向，所示示例的每个后轮 114 都能够绕基本上垂直于相应的旋转轴线 250a、250b 的基本上竖直的轴线 252a、252b 旋转、回转或枢转。在示出的实例中，后轮 114 由于位于对应的轮支撑件 246 和

/或托架 240 和对应的连接件 248 之间的枢转连接件而能够绕相应的竖直轴线 252a、252b 枢转。

[0058] 在示出的示例中，每个中间轮 118 都经由臂或框架构件 254 联接至相应的托架 240。在示出的示例中，臂 254 的第一端 254a 被联接或固定至托架 240 的第二部分 242b，并且臂 254 的第二端 254b 限定中间轮 118 的毂 256 或被联接至中间轮 118 的毂 256。臂 254 在被联接至托架 240 时沿远离后轮 114 且朝向前轮 110 的方向从托架 240 伸出，以在后轮 114 和前轮 110 之间定位中间轮 118。如在所示的示例中所示的，臂 254 将中间轮 118 定位得与前轮 110 相比更接近后轮 114。然而，在其它示例中，臂 254 可以被构造成将中间轮 118 定位在前轮 110 的旋转轴线 236a、236b 和后轮 114 的旋转轴线 250a、250b 之间的近似中点处。所示示例的臂 254 的中间轴线 258（图 2）相对于中间框架支撑件 208 的中心轴线 224 成角度 260（例如，基本上垂直）。如在下文中更详细地描述的，当中间框架支撑件 208 和/或框架 102 相对于托架 240 绕由轮轴 130 限定的轴线 132 枢转时，角度 260 发生改变。

[0059] 如上文注意到的，所示示例的中间轮 118 被安装在在侧面框架组件 202a、202b 之间延伸的轮轴 120 上（图 1）。因此，轮轴 120 以可旋转的方式联接中间轮 118。结果，所示示例的中间轮 118 绕轮轴 120 的旋转轴线 120a 旋转。然而，虽然所示示例的中间轮 118 能够绕旋转轴线 120a 旋转，但中间轮 118 被固定而不能在其它方向上回转或枢转（例如，与前轮 110 和后轮 114 不一样，中间轮 118 不能绕基本上垂直于相应的旋转轴线 120a 的基本上竖直的轴线 264a、264b 旋转）。结果，当婴儿车 100 在基本上直的路径中移动或被推动时，图 1 的示例婴儿车 100 的中间轮 118 阻止婴儿车 100 的横向漂移。然而，在其它示例中，中间轮 118 可以相对于框架 102 绕竖直轴线 264a、264b 旋转。

[0060] 如上文注意到的，所示示例的中间轮 118 限定了枢轴或枢转点，所示示例的婴儿车 100 可以绕这些枢轴或枢转点转动。换句话说，所示示例的每个中间轮 118 都限定布置于前轮 110 和后轮 114 之间的枢转点。例如，当相对于站在婴儿车之后且抓握手柄 122 的使用者的取向沿向左方向（例如，从婴儿车 100 的上方向下看的顺时针方向）向所示示例的婴儿车 100 的手柄 122 施加足够力时，婴儿车 100 绕第二框架组件 204b 的（右侧）中间轮 118 枢转，使得前轮 110 在朝向第二侧面框架组件 202b 的方向上沿着弧形路径移动，并且使得后轮 114 在朝向第一侧面框架组件 202a 的方向上沿着弧形路径移动。同样，当相对于抓握手柄 122 的使用者的取向沿向右方向（例如，从婴儿车 100 的上方向下看的逆时针方向）向婴儿车 100 的手柄 122 施力时，所示示例的婴儿车 100 绕第一框架组件 202a 的（左侧）中间轮 118 枢转，使得前轮 110 在朝向第一侧面框架组件 202a 的方向上沿着弧形路径移动，并且使得后轮 114 在朝向第二侧面框架组件 202b 的方向上沿着弧形路径移动。在一些示例中，婴儿车可以在其自身的总长或包络尺寸内转动 360 度。

[0061] 图 4 是图 1 至图 3 的示例婴儿车 100 的侧视图。在图 4 的所示示例中，第一侧面框架组件 202a 的托架 240 经由轮轴 130（图 1）的第一端被联接或安装至框架 102。第二侧面框架组件 202b 的托架 240 基本上与第一侧面框架组件 202a 的托架 240 相同，并且以与第一侧面框架组件 202a 的托架 240 相同的方式被安装至轮轴 130 的第二端。因此，下面的描述将集中于一个托架，来用作对两个托架 240 的说明。托架 240 以及因此附接至该托架的中间轮 118 和后轮 114 可以相对于中间框架支撑件 208（例如，经由套管）绕由轮轴 130 限定的轴线 132 枢转。结果，中间框架支撑件 208 和/或相应的左侧面框架组件 202a 和右

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侧面框架组件 202b 的托架 240 可以相对于彼此绕由轮轴 130 和 / 或轴线 132（图 1）限定的枢轴 404 枢转。例如，中间框架支撑件 208、框架 102 和 / 或托架 240 可以绕由轴线 132 限定的枢转点 404 在旋转方向 402 上枢转（例如，绕轴线 132 的顺时针和逆时针旋转）。虽然第一侧面框架组件 202a 的托架 240 可以相对于第二侧面框架组件 202b 的托架 240 绕由轮轴 130 限定的轴线 132 枢转，但在中间轮 118 之间延伸的轮轴 120（图 1）连接或联接每个托架 240 的相应的中间轮 118。结果，所示示例的第一侧面框架组件 202a 的托架 240 和第二侧面框架组件 202b 的托架 240 一起绕轴线 132 旋转或枢转。然而，在没有使用轮轴 120 的示例中，第一侧面框架组件 202a 的托架 240 可以绕轴线 132 相对于第二侧面框架组件 202b 的托架 240 和 / 或中间框架支撑件 208 独立地旋转或枢转。

[0062] 所示示例的枢转点 404 位于中间轮 118 和后轮 114 之间。具体地，枢转点 404 位于中间轮 118 的旋转轴线 120a 和后轮 114 的旋转轴线 250a、250b 之间。同样，在这一示例中，枢轴 404 相对于旋转轴线 120a 和 250a、250b 偏移（例如，至少在上方定位）。结果，中间轮 118 和后轮 114 可以相对框架 102 枢转，以移动和 / 或跟随轮廓行进表面。因此，可以导致前端 112 相对于后端 116 提升或抬起（或另选地，下降）的在行进表面中的一些轮廓变化将不导致中间轮 118 和 / 或后轮 114 分离或抬离行进表面。例如，图 4 的所示示例的婴儿车 100 被示出为从通过虚线示出的初始位置 408 移动或移位至第一位置 406。换句话说，随着框架 102 绕枢轴 404 枢转或倾斜，臂 254 的轴线 258 和中间框架支撑件 208 的轴线之间的角度 260 在当框架 102 处于初始位置 408 时的第一角度 410 和当框架 102 处于第一位置 406 时的第二角度 412 之间改变。

[0063] 为了限制中间框架支撑件 208 可以相对于托架 240 枢转的角度 260（例如，在中间框架支撑件 208 与臂 254 之间的角度），所示示例的婴儿车 100 采用一个或多个行进限制件。在示出的示例中，行进限制件是物理障碍件（例如，止动件），这些物理障碍件借助中间框架支撑件 208 和 / 或臂 254 接合，以阻挡沿相应方向的进一步旋转运动。所示示例的婴儿车 100 采用位于轮轴 130 上的行进限制件 403，以限制中间框架支撑件 208 可以相对于托架 240 或臂 254 在第一旋转方向 404a（例如，顺时针方向）上可以枢转的角度 260。例如，中间框架支撑件 208 的轴线 224 与臂 254 之间的角度 260 可以被限制至近似 0 至 120 度。在其它示例中，行进限制件 403 可以位于托架 240 和 / 或中间框架支撑件 208 上。在一些示例中，可以使用两个行进限制件来限制中间框架支撑件 208 可以相对于托架 240 或臂 254 枢转的角度 260。在其它示例中可以采用行进限制件的其它位置，构件和 / 或构造。

[0064] 图 5A 和图 5B 示出了相应的侧面框架组件 202a、202b 的局部后部立体图。参考图 5A 和图 5B，当框架 102 绕枢轴 404 枢转时为了进一步帮助支撑框架 102，所示示例的婴儿车 100 采用悬架装置 128。所示示例的示例悬架装置 128 是联接至轮轴 130、中间框架支撑件 208 和 / 或套管 211 的扭转弹簧 502。例如，图 5A 的第一侧面框架组件 202a 包括第一扭转弹簧 502，并且图 5B 的第二侧面框架组件 202b 具有第二扭转弹簧 502。每个扭转弹簧 502 都具有由中间框架支撑件 208 联接或接合的第一部分 502a 以及联接或固定至轮轴 130 的第二部分 502b。结果，中间框架支撑件 208 绕轴线 132 在方向 402a 上的旋转导致每个扭转弹簧 502 的第一部分 502a 相对于扭转弹簧 502 的第二部分 502b 移动，因而增加了由每个扭转弹簧 502 提供的张力或力。在其它示例中，扭转弹簧 502 是整体弹簧，该整体弹簧沿着轮轴 130 的长度延伸，轮轴 130 的相应端部联接至第一侧面框架组件 202a 和第二侧面框架

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组件 202b（例如，中间框架支撑件 208、托架 240 等）。在其它示例中，悬架装置 128 可以是联接至轮轴 130 的板簧和 / 或扭转杆，位于上框架支撑件 206 和托架 240 之间的流体缸，和 / 或当婴儿车 100 的手柄 122 绕枢轴 404 朝向后轮 114 移动或枢转时提供反作用力或增加的力的任何其它悬架装置。

[0065] 所示示例的示例托架 240 还支撑制动装置的一部分。示例婴儿车 100 的制动装置可在防止或限制相应在的中间轮 118 和 / 或后轮 114 旋转的锁定位置和使得中间轮 118 和 / 或后轮 114 能够旋转的解锁位置之间选择性地移动。为了在锁定和解锁位置之间移动制动装置，所示示例的婴儿车 100 采用由托架 240 支撑的制动杆或脚踏板 504。所示示例的制动杆 504 可以相对于托架 240 被按压，从而摩擦性地接合或阻碍相应的后轮 114 绕它们的旋转轴线 250a、250b 旋转。

[0066] 图 6 是图 1 至图 4、图 5A 和图 5B 的示例婴儿车 100 的侧面视图，框架 102 的前端 112 相对于框架 102 的后端 116 被向上提升或倾斜。更具体地，图 6 的所示示例中的前轮 110 相对于供定位中间轮 118 和后轮 114 的表面 604 位于升高表面 602 上。在示出的示例中，升高表面 602 可以是路缘 606 或台阶的顶面。此外，如上面结合图 4 所注意到的，用于限制中间框架支撑件 208 可以绕轮轴 130 枢转的旋转距离（例如，五度的旋转）的行进限制件 403 足以使得在中间轮 118 和后轮 114 保持在下表面 604 上的情况下婴儿车 100 的前端 112 能够克服（例如，到达其顶部）路缘 606（例如 5 英寸的高度）。

[0067] 当框架 102 的前端 112 绕枢轴 404 向上枢转（例如，绕枢轴 404 在顺时针方向上）时，悬架装置 128 朝向前端 112 提供反作用转矩或力（例如，增加的力）来增强稳定性。为了增强稳定性，悬架装置 128 通常减缓或分散在侧面框架组件 202a、202b 之间施加至手柄 122 的向下力，并且支撑婴儿车 100 的重量，在当婴儿车 100 的前端 112 被提升、枢转或倾斜（例如，为了前进经过路缘或台阶 606）时中间框架支撑件 208 绕枢轴 404 在方向 608 上移动时，该重量否则可以朝向框架 102 的后端 116 移位（例如，远离中间轮 118）。例如，当框架 102 的前端 112 绕枢轴 404 枢转或倾斜时，由悬架装置 128 提供的反作用力或转矩阻止（例如，显著降低或防止）婴儿车 100 的质量中心（例如，婴儿车和 / 或位于座椅区域 104 中的儿童的重量）远离中间轮 118 且朝向后轮 114 移位。换句话说，反作用力将婴儿车 100 的质量中心保持或定位成基本上对齐和 / 或邻近中间轮 118。为了当婴儿车 100 的前端 112 相对于框架 102 的后端 116 向上倾斜时便于控制婴儿车 100，悬架装置 128 帮助将婴儿车 100 的质量中心保持或定位在后轮 114 的旋转轴线 250a、260b 和中间轮 118 的旋转轴线 120a 之间。

[0068] 结果，除了由座椅区域 104（图 1）中的儿童提供的负载之外，悬架装置 128 向中间轮 118 和 / 或后轮 114 提供有效的向下偏压力。以这一方式，当前轮 110 相对于后轮 114 和中间轮 118 被抬高或提离表面 604 时，悬架装置 128 通过帮助保持中间轮 118 和 / 或后轮 114 与行进路径或表面 604（例如，地面）保持接合和 / 或接触而便于平衡婴儿车 100 和 / 或改进婴儿车 100 的稳定性。当婴儿车 100 的前端 112 被提升时保持中间轮 118 和后轮 114 与表面 604 接触帮助防止婴儿车 100 绕其中一个后轮 114 倾翻（例如，向侧面的施加转矩）。如果没有悬架装置 128，则当婴儿车 100 的前端 112 相对于后端 116 被提升（例如，在向上方向上）时，使用者将需要施加较大的力来平衡婴儿车 100 且保持中间轮 118 和后轮 114 与地面接触。

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[0069] 所示示例的中间轮 118 基本上没有增加婴儿车 100 的总体包络尺寸。具体地，中间轮 118 没有显著地影响所示示例的婴儿车 100 塌缩为紧凑轮廓的能力。图 7 和图 8 示出了图 1 的示例婴儿车 100 被从图 1 至图 6 中所示的使用中的未折叠位置折叠成图 8 中所示的塌缩，折叠或存放位置 800。如上文注意到的，侧面框架组件 202a、202b 构造得使得所示示例的整个婴儿车 100 可在延伸、展开、使用位置（图 1 至图 6）与塌缩，折叠或存放位置 800（图 8）之间选择性地移动。当婴儿车 100 处于塌缩位置 800 时，所示示例的婴儿车 100 具有低轮廓或紧凑的包络尺寸。当婴儿车 100 处于展开位置（图 1 至图 6）和 / 或折叠位置 800（图 8）时，所示示例的中间轮 118 没有显著地增加所示示例的婴儿车 100 的总体包络尺寸。此外，中间轮 118 不干涉将婴儿车 100 折叠至折叠位置 800。

[0070] 为了保持婴儿车 100 处于使用或展开位置，所示示例的婴儿车 100 的每个毂 212a、212b 都包括锁闩机构。所示示例的锁闩机构包括由棘爪、锁、弹簧和 / 或其它任何机构固定的锁闩盘，以将所示示例的框架 102 锁定并保持在使用位置。任何已知的锁闩可被用于这一角色。所采用的锁闩机构对于这一公开是不重要的。锁闩机构将毂 212a、212b 以及固而将框架支撑件 204、206 和 208 保持在锁定状态，以防止框架支撑件 204、206 和 208 相对彼此旋转（以由此防止婴儿车 100 塌缩）。为了塌缩所示示例的婴儿车 100，释放装置 216 被致动（例如，被滑动和 / 或按压），以解锁锁闩机构并且使得毂 212a、212b 的相应部分 214a 至 214c 能够相对于彼此旋转。更具体地，在解锁状态下，框架支撑件 204、206 和 / 或 208 不相对于彼此绕由枢转连接件 210a、210b 提供的枢轴 704 旋转或枢转。在示出的示例中，所示示例的下框架支撑件 204 和上框架支撑件 206 沿由各箭头 706 和 708 示出的方向朝向中间框架支撑件 208 枢转到图 7 和 8 中示出的构造。此外，当将婴儿车 100 折叠至折叠位置 800 时，所示示例的托架 240 也在由箭头 710 表示的方向上朝向中间框架支撑件 208 旋转。托架 240 沿箭头 710 的方向的旋转没有被上面讨论的行进限制件 403 阻碍。相反地，如上面注意到的，行进限制件 403 限制托架 240 在方向 403a 上的旋转，该方向 403a 是箭头 710 的相反方向。

[0071] 如图 8 所示，在完全塌缩、折叠或存放位置 800 中，所示示例的婴儿车 100 具有相对低的轮廓或包络尺寸以及相对小的轮廓。在折叠位置 800 中，后轮壳体 244 的轴线 802 相对于中间框架支撑件 208 的轴线 244 基本上对齐（例如，稍微偏离）。虽然示出了可塌缩的框架 102，但在一些示例中，婴儿车并不塌缩。

[0072] 在一些示例中，座椅安装件 108 可以在婴儿车 100 处于折叠位置 800 之前或之后相对于框架 102 被折叠。例如，图 9A 和图 9B 示出了相对于框架 102 折叠的示例座椅安装件 108。所示示例的座椅安装件 108 被枢转地联接或附接至婴儿车 100 的连接件或壳体 902 和 / 或框架 202。所示示例的每个座椅安装件 108 都相对于连接件 902 或框架 202 绕枢转点 904 在第一竖立或使用位置 906 和第二或下降折叠位置 908 之间枢转。在图 9B 的所示示例中，在第一位置 906，座椅安装件 108 的锁闩 910（例如，伸出构件或突出部）接合框架 202 中的开口或凹部 912，以锁定或限制座椅安装件 108 相对于框架 202 和 / 或连接件 902 绕枢转点 904 旋转。为了折叠座椅安装件 108，将锁闩 910 从凹部 912 移动或撤回，以使得座椅安装件 108 能够相对于框架 202 和 / 或连接件 902 旋转。在折叠位置 908，锁闩 910 接合第二凹部 914 以防止当婴儿车 100 处于塌缩状态 800 时座椅安装件 108 意外地或无意地绕枢转点 904 枢转。

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[0073] 在一些示例中，座椅安装件 108 可以在婴儿车 100 处于折叠位置 800 之前或之后相对于框架 102 被移除。例如，图 10 示出了被从连接件 902 或框架 202 的开口或凹口 1002 移除的示例座椅安装件 108。为了从连接件 902 和 / 或框架 102 移除座椅安装件 108，将座椅安装件 108 固定至连接件 902 和 / 或框架 102 的锁或锁闩机构被释放，并且将座椅安装件 108 从开口 1002 移除。

[0074] 图 11 示出了另一示例婴儿车 1100。图 11 的示例婴儿车 1100 基本上类似或等同于图 1 至图 8 的婴儿车 100。然而，不同于图 1 的婴儿车 100，图 11 的示例婴儿车 1100 仅具有一个婴儿座椅 106。在一些示例中，图 1 的婴儿车 100 可被构造或转换为图 11 的婴儿车 1100。例如，图 1 的其中一个座椅 106 可以被从框架 102 移除，并且与被移除的婴儿座椅 106 相关联的座椅安装件 108 可以被从框架 102 移除。在图 1 至图 11 的示例中，座椅安装件 108 是卡口型安装件。

[0075] 图 12 示出了另一示例婴儿车 1200。基本上类似或等同于上面描述的图 1 至图 8 的示例婴儿车 100 的部件、并且具有基本上类似或等同于那些部件的功能的示例婴儿车 1200 的那些部件在下文将不再详细地描述。相反地，感兴趣的读者将参考上文的相应描述。为了便于这一过程，对于相似结构的将使用相似的附图标记。例如，在图 12 的所示示例中，示例婴儿车 1200 包括框架 1202，该框架具有用于支撑该框架 102 的前端 112 的一个或多个前轮 110 以及用于支撑该框架 102 的后端 116 的一个或多个后轮 114。所示示例的框架 1202 包括彼此横向间隔开的第一侧面框架组件和第二侧面框架组件，以容纳在这些侧面框架组件之间延伸的一个或多个婴儿座椅 106。每个侧面框架组件都包括绕由枢轴连接件 210 提供的枢轴 704 枢转地联接的下框架支撑件 204、上框架支撑件 206 和中间框架支撑件 208。托架或壳体 240 绕由在框架 1202 的侧面框架组件之间延伸的轮轴 130 提供的枢转点 404 枢转地连接中间轮 118 和后轮 114。

[0076] 图 12 的示例婴儿车 1200 具有框架 1202，该框架 1202 基本上类似或等同于图 1 至图 8 的示例婴儿车 100 的框架 102。然而，图 12 的所示示例的婴儿车 1200 具有不同的手柄 1222。手柄 1222 可以相对于上框架支撑件 206 活动连接在第一或上部位置 1204 和第二或下部位置 1206 之间。为了使得手柄 1222 能够相对于上框架支撑件 206 活动连接，示例婴儿车 1200 采用枢转接头或活动连接毂 1208。毂 1208 采用锁闩机构，以将手柄 1222 锁定或保持在上部位置 1204 和下位置 1206 之间的位置。为了释放锁闩机构以使得手柄 1222 能够在上部位置 1204 和下部位置 1206 之间活动连接，框架 1202 包括释放装置 1210（例如，推动按钮）。

[0077] 图 13 是联接至图 12 的上框架支撑件 206 的示例手柄 1222 的平面图。如在图 13 的所示示例中所示的，示例婴儿车 1200 采用锁闩释放装置 1302 来塌缩所示示例的婴儿车 1200。为了起动锁闩释放装置 1302，该释放装置的一个或多个触发器 1304a、1304b 相对于上框架支撑件 206 移动（例如，拉动、推动、扭动、滑动等），以解锁由枢转连接件 210 提供的闩锁或锁定。此外，当被起动时，锁闩释放装置 1302 还释放毂 1208 的锁闩机构，以使得手柄 1222 能够相对于上框架支撑件 206 旋转。

[0078] 图 14 和图 15 示出了图 12 的示例婴儿车 1200，该婴儿车从图 12 中所示的使用中的展开位置被折叠到图 15 中所示的塌缩、折叠或存放位置 1500。更具体地，在未被锁定的情况下，框架支撑件 204、206 和 / 或 208 相对彼此而枢转。参考图 14，当锁闩释放装置 1302

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被起动时，手柄 1222 绕毂 1208 朝向上框架支撑件 206 在图 14 的取向中沿绕毂 1208 的逆时针方向枢转，然后手柄 1222 和上框架支撑件 206 朝向中间框架支撑件 208 枢转。

[0079] 下框架支撑件 204 和上框架支撑件 206 相对于中间框架支撑件 208 绕枢轴 704 旋转。如图 15 所示，在完全塌缩、折叠或存放位置 1500 中，所示示例的婴儿车 1200 具有相对低的轮廓或包络尺寸。

[0080] 图 16 示出了依照在此公开的教导构造的另一示例婴儿车 1600。基本上类似或等同于上面描述的示例婴儿车 100 的部件、并且具有基本上类似或等同于那些部件的功能的示例婴儿车 1600 的那些部件在下文将不再详细地描述。相反地，感兴趣的读者将参考上文的相应描述。为了便于这一过程，对于相似的结构将使用相似的附图标记。

[0081] 图 16 是示例婴儿车 1600 的立体图。在图 16 的所示示例中，示例婴儿车 1600 包括框架 1602，该框架 1602 限定了用于接收一个或多个婴儿座椅 106 的座椅区域 104。所示示例的框架 1602 采用座椅安装件 108 来将婴儿座椅 106 接收或联接至框架 1602。在一些示例中，安装件 108 可被相对于框架 1602 调整。为了使得使用者能够推动、转动和 / 或倾斜所示示例的婴儿车 1600，框架 1602 包括手柄 1622。所示示例的手柄 1622 可相对于框架 1602 沿方向 1622a 被伸缩性地调整。

[0082] 所示示例的框架 1602 由位于框架 1602 的前端 112 处的一个或多个前轮 110 和位于框架 1602 的后端 116 处的一个或多个后轮 114 支撑。所示示例的框架 1602 被组装形成这样的结构，该结构旨在在其使用和存放的全部阶段中保持组装。此外，为了改进操纵性、控制转向和 / 或为了提供震动吸收性，所示示例的框架 1602 采用布置在前轮 110 和后轮 1114 之间的一个或多个中间轮 118。为了向示例婴儿车 1600 提供震动吸收性，所示示例的中间轮 118、前轮 110 和 / 或后轮 114 可以被实施为由橡胶组成的可充气车轮。

[0083] 此外，所示示例的中间轮 118 的直径大于相应的前轮 110 和后轮 114 的直径。在这一示例中，相应的前轮 110 和后轮 114 的直径基本上是相同的。因此，前轮 110 和后轮 114 以比中间轮 118 相对较小的部分或接触面积接合行进表面。结果，由于与中间轮 18 的接合行进表面的接触面积相比，相应的前轮 110 和 / 或后轮 114 的接合行进表面的接触面积相对较小，因此前轮 110 和 / 或后轮 114 的滚动摩擦降低。此外，中间轮 118 的较大直径允许所示示例的婴儿车 1600 滚过粗糙或不平坦表面而没有困难。然而，在其它示例中，中间轮 118 的直径基本上类似或等同于前轮 110 和 / 或后轮 114 的直径。

[0084] 图 17 是示例婴儿车 1600 的侧面视图，该婴儿车具有柔软品 1702 来限定一个或多个存放区域 1704。在图 17 的所示示例中，示例婴儿车 1600 的中间轮 118 位于前轮 110 和后轮 114 之间的近似中点。所示示例的每个中间轮 118 都限定布置在前轮 110 和后轮 114 之间的枢转点。换句话说，每个中间轮 118 都提供了用于婴儿车 1400 的枢转点，该枢转点偏离婴儿车 1400 的后端 116 和 / 或后轮 114 或者与婴儿车 1400 的后端 116 和 / 或后轮 114 横向间隔开。当侧向或基本上水平的力被施加至手柄 1422 时，由中间轮 118 提供的枢转点使得婴儿车 1400 能够相对轻松地向左或向右转动。

[0085] 图 18 是图 14 的示例婴儿车 1400 的顶面视图。如图 18 所示，由中间轮 118 提供的偏移枢转点使得婴儿车 1400 的前端 112 和婴儿车 1400 的后端 116 二者都能够相对于由其中一个中间轮 118 提供的转动枢轴以弧形路径枢转或旋转。例如，使用者可以向手柄 1622 施加转动力 1802，以绕由其中一个中间轮 118 提供的枢转点转动所示示例的婴儿车 1600。

结果，所示示例的婴儿车 1600 可以相对紧密的旋转半径且相对轻松地绕由任一个中间轮 118 提供的枢转点转动。例如，婴儿车 1600 可以基本上在其自身长度内以完全 360 度的弧形路径转动，如由图 18 中的圆圈 1800 所反映的。

[0086] 在所示示例中，框架 1602 限定了第一侧面框架组件 1802a 和与该第一侧面框架组件 1802a 横向间隔开的第二侧面框架组件 1802b，从而限定了座椅区域 104。所示示例的中间轮 118 经由在侧面框架组件 1802a、1802b 之间延伸的轮轴 120 而彼此联接。然而，在其它示例中，可以不使用公共轮轴 120 并且中间轮 118 因此可以不相对于彼此独立地驱动或旋转。

[0087] 此外，为了当框架 1602 的前端 112 相对于框架 1602 的后端 116 被升起、提升、倾斜或以其它方式抬高时（例如，向手柄 1622 施加垂直于转动力 1802 的向下力）提供枢转轴线 132，所示示例的示例婴儿车 1600 采用轮轴 130。在所示的示例中，枢转轴线 132 位于中间轮 118 与后轮 114 之间。换句话说，枢转轴线 132 相对于中间轮 118 的旋转轴线 120a 与后轮 114 的相应旋转轴线 250a、250b 偏移。

[0088] 为了改进稳定性和 / 或便于在具有很小干涉或没有干涉的情况下塌缩婴儿车 1400，所示示例的中间轮 118 相对于前轮 110 偏移（水平）距离 1804 且相对于后轮 114 偏移距离 1806。更具体地，当婴儿车 1600 沿直线移动时，所示示例的中间轮 118 沿着路线或路径 1808 行进，所述路线或路径 1808 在前轮 110 下降或行进所沿的路线或路径 1810 的外侧以及在后轮 114 下降或行进所沿的路线或路径 1812 的外侧延伸。虽然所示示例的中间轮 118 比起前轮 110 和后轮 114 与婴儿车 1600 的纵向中心线 1814 间隔开更远的距离，但在其它示例中，中间轮 118 可以与前轮 110 和后轮 114 对齐，可以向前轮 110 和后轮 114 的内侧偏移（也就是，更接近于纵向中心线 1814），和 / 或可以向前轮 110 和后轮 114 中的第一者的外侧和向前轮 110 和后轮 114 中的不同的第二者的内侧偏移。在一些示例中，当婴儿车 1400 沿直线向前移动时，前轮 110 和后轮 114 沿着相同路线或行进路径下降。

[0089] 为了塌缩婴儿车 1600，所示示例的框架 1602 包括锁闩释放机构 1816。为了起动锁闩释放机构 1816，所示示例的锁闩释放机构 1816 包括手柄 1818。手柄 1818 支撑在延伸穿过侧面框架组件 1802a、1802b 的横杆或管 1820 上。手柄 1818 定位或位于座椅安装件 108 或上框架支撑件 206 的附近，在座椅区域 104 的婴儿座椅 106 的正下方。这一定位便于在从座椅安装件 108 移除婴儿座椅 106 时进行接近。

[0090] 图 19 是图 16 至图 18 的示例婴儿车 1600 的侧面框架组件 1802a 的左侧视图。图 20 是图 16 至图 18 的示例婴儿车 1600 的侧面框架组件 1802b 的右侧视图。参考图 19 和图 20，每个侧面框架组件 1802a、1802b 都包括绕枢转连接件 210a、210b 或毂 212a、212b 枢转地联接的下框架支撑件 204、上框架支撑件 206 和中间框架支撑件 208。

[0091] 为了将前轮 110 联接至框架 1602，侧面框架组件 1802a、1802b 采用前轮壳体 230。前轮壳体 230 使得每个前轮 110 都能够绕单独的（例如水平的）旋转轴线 236a、236b 独立地旋转，并且使得每个前轮 110 都能够绕竖直轴线 238a、238b 回转或枢转。

[0092] 为了将后轮 114 和中间轮 118 安装或附接至相应的侧面框架组件 1802a、1802b，所示示例的每个侧面框架组件 1802a、1802b 都采用壳体、毂或托架 1940（例如，摆动件）。所示示例的每个托架 1640 都包括：毂、腿或端口 1642a，以接收安装有后轮 114 的后轮壳体 244；以及毂、腿或端口 1642b，以接收联接至中间轮 118 的臂或部分 254。

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[0093] 由于左和右托架 1640 是基本上相同的，因此下面的描述将集中于一个托架 1640，来用作对于两个托架 1640 的描述。

[0094] 所示示例的后轮壳体 244 使得每个后轮 114 都能够绕单独的旋转轴线 250a、250b 独立地旋转，并且使得每个后轮 114 都能够绕基本上垂直于相应的旋转轴线 250a、250b 的基本上竖直的轴线 252a、252b 回转或枢转。托架或壳体 1940 相对于中间框架支撑件 208 绕由轮轴 130 提供的枢转轴线 132 而枢转地联接相应的一对中间轮 118 和后轮 114。

[0095] 为了当操纵婴儿车 1600 越过路缘或其它障碍物时改进稳定性和 / 或便于平衡，所示示例的示例婴儿车 1600 采用悬架装置 1928。当婴儿车 1600 的前端 110 相对于框架 1602 的后端 112 绕枢转轮轴 130 枢转或倾斜（例如相对于支撑表面（例如，地面）的向上方向）时，所示示例的悬架装置 1928 提供稳定性和 / 或便于平衡。当婴儿车 1600 被沿着一路径推动和 / 或绕枢转轴线 132 倾斜或枢转时，所示示例的悬架装置 1928 帮助防止中间轮 118 和 / 或后轮 114 分离和 / 或抬离行进表面（例如，地面）。例如，为了相对于婴儿车 1600 的后端 112 枢转或提升前轮 110，向手柄 1622 施加向下力。该向下力 1902 具有基本上垂直于施加至手柄 1622 的转动力 1802 的分量，以绕其中一个中间轮 118 转动或枢转婴儿车 1600。结果，当婴儿车 1600 的前端 110 围绕枢转轴线 132 被提升时，悬架装置 1928 帮助保持中间轮 118 和后轮 114 与行进路径接合。

[0096] 在示出的示例中，悬架装置 1928 定位成邻近于且平行于中间框架支撑件 208。在示出的实例中，悬架装置 1928 包括附接或联接至上框架支撑件 206 的第一端 1904 以及附接或联接至托架 1940 的第二端 1906。在所示的示例中，通过紧固件 1908（例如，销等）将第一端 1904 联接（例如，固定或枢转地联接）至上框架支撑件 206 并且将第二端 1906 联接（例如，固定或枢转地联接）至托架 1940。上框架支撑件 206、托架 1940、悬架装置 1928 和中间框架支撑件 208 限定了四杆式联动装置 1910。当折叠婴儿车 1600 时，该联动装置 1910 帮助辅助托架 1940 的旋转，如在下文更详细讨论的。在所示的示例中，联动装置 1910 限定了平行四边形。然而，在其它示例中，联动装置 1910 可以具有任何其它合适的形状和 / 或构造。

[0097] 图 21 是图 14 至图 20 的示例婴儿车 1600 的侧视图，其中具有示例悬架装置 1928 的局部剖切视图。所示示例的示例悬架装置 1928 是压缩弹簧 2102。为了在婴儿车 1600 的前端 112 绕枢转轴线 132 或枢轴 404 相对于婴儿车 1600 的后端 116 倾斜或提升时使得压缩弹簧 2102 能够压缩，压缩弹簧 2102 包括以可滑动的方式联接至第二部分 2106 的第一部分 2104。更具体地，第一部分 2104 被固定或联接（例如，枢转地联接）至上框架支撑件 206 并且第二部分 2106 被固定或联接（例如，枢转地联接）至托架 1940。第一部分 2104 包括销或滑块 2108，该销或滑块沿着形成在第二部分 2106 中的槽 2110 滑动或移动。因此，当婴儿车 1600 的前端 112 绕由轮轴 130 提供的枢转轴线 132 被提升时，压缩弹簧 2102 的第一部分 2104 相对于第二部分 2106 在槽 2110 中滑动，以压缩 / 解压位于弹簧筒 2112 中的弹簧。

[0098] 图 22A 至图 22D 示出了示例婴儿车 1600 的示例制动机构 2200。所示示例的制动机构 2200 由中间轮的共用轮轴 120 支撑，并且示例制动机构 2200 的制动杆或脚踏板 2202 由轮轴 130 支撑。如图 22B 和图 22C 中分别所示的，所示示例的制动杆 2202 能够绕轮轴的枢转轴线 132 在用于限制或防止中间轮 118 旋转的锁定位置 2204 与用于使得或便于中间

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轮 118 旋转的解锁位置 2206 之间选择性地移动或旋转。所示示例的制动杆 2202 包括视觉指示器 2208（例如，色彩指示器），以表示制动杆 2202 处于锁定位置 2204 和解锁位置 2206。

[0099] 还参考图 22D，所示示例的制动杆 2202 被致动或相对于轮轴 130 旋转，以起动柱塞 2210a、2210b，所述柱塞能够相对于中间轮 118 的锁定接口 2212a、2212b（例如，毂上的多个突起）移动。为了相对于中间轮 118 的相应的锁定接口 2212a、2212b 移动柱塞 2210a、2210b，所示示例的制动机构 2200 采用致动器 2214。所示示例的致动器 2214 是齿条和小齿轮组件，其中在齿轮 2220 之间定位有两个齿条 2216、2218。所示示例的齿条 2216 致动柱塞 2210b，并且所示示例的齿条 2218 致动柱塞 2210b。为了致动齿条 2216、2218，所示示例的制动机构 2200 采用线缆 2222。更具体地，线缆 2222 的第一端被附接至齿条 2216 并且线缆 2222 的第二端被附接至制动杆 2202。所示示例的线缆 2222 通过托架 1640 的臂 254 被布线至制动杆 1922。图 22D 示出了处于锁定状态的制动机构 2200。为了解锁中间轮 118，而将所示示例的制动杆 2202 旋转至解锁位置 2206（图 22）。结果，线缆 2222 朝向齿条 2218 移动（例如，拉动）齿条 2216，并且使得柱塞 2210b 与接口 2212b 分离。同时，随着齿条 2216 朝向齿条 2218 移动，齿条 2218 通过齿轮 2220 而朝向齿条 2216 移动，因而使得柱塞 2210a 与接口 2212a 分离。所示示例的致动器 2214 采用偏压元件 2224 来偏压或帮助移动齿条 2216、2218。所示示例的致动器 2214 包括由轮轴 120 联接或支撑的壳体 2226。

[0100] 图 23 和图 24 示出了图 14 至图 18 的示例婴儿车 1400 从图 14 至图 21 和图 22A 至图 22D 所示的使用中的展开位置被折叠至图 24 所示的塌缩、折叠或存放位置 2400。如上面注意到的，侧面框架组件 1802a、1802b 被构造得使得所示示例的整个婴儿车 1600 都能够在延伸、展开、使用中的位置（图 14 至图 18 和 22A 至图 22D）与塌缩、折叠或存放的位置 2400（图 24）之间选择性地移动。

[0101] 图 25A 和图 25B 示出了图 18 的锁闩释放机构 1816。参考图 23 至图 24 和图 25A 至图 25B，为了塌缩所示示例的婴儿车 1600，枢转连接件 210a、210b 的闩锁或锁定通过锁闩释放机构 1816 被释放。在解锁位置中，所示示例的枢转连接件 110a、110b 使得框架支撑件 204、206 和 / 或 208 能够相对于彼此绕由枢转连接件 210a、210b 提供的枢轴 704 旋转或枢转，所示示例的锁闩释放机构 1816 被起动。为了解锁枢转连接件 210a、210b，在婴儿座椅 106 已经被从座椅安装件 108 移除之后，所示示例的手柄 1818 首先远离框架 1602 被提升（例如，向上）。在手柄 1818 被提升之后，示例锁闩释放机构 1816 的触发器 2502 由使用者致动（例如，按压），以使得框架 1602 能够塌缩。当被起动时，所示示例的锁闩释放机构 1816 通过任何合适装置（例如，开关、锁定释放装置、拉绳等）移出与枢转连接件 210a、210b 的锁定接口的接合，以使得框架支撑件 204、206 和 208 能够相对彼此绕枢轴 704 枢转。所示示例的触发器 2502 经由位于锁闩释放机构 1816 的壳体或管 1820 中的线缆或条带而被联接至柱塞。示例锁闩机构 1818 使得能够单手操作来塌缩婴儿车 1600。

[0102] 在图 23 的所示示例中，所示示例的下框架支撑件 204 和上框架支撑件 206 沿由各箭头 2304 和 2306 所示的方向朝向中间框架支撑件 208 枢转。附加地，当向折叠位置 2400 折叠婴儿车 1600 时，所示示例的托架 1940 还沿由箭头 2308 表示的方向朝向中间车间支撑件 208 旋转。

[0103] 具体地，随着上框架支撑件 206 朝向中间框架支撑件 208 枢转，悬架装置 1928 通过沿箭头 2310 的方向朝向后轮 114 移动而作为杠杆，以使得托架 1940 沿箭头 2312 的方向

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绕枢转轴线 132 枢转。结果，随着上框架支撑件 206 朝向中间框架支撑件 208 枢转，悬架装置 1928 使得中间轮 118 同时朝向中间框架支撑件 208（经由托架 1940）枢转。

[0104] 如图 24 所示，在完全塌缩、折叠或存放位置 2400 中，所示示例的婴儿车 1600 具有相对低的轮廓和包络尺寸。如图 24 所示，悬架装置 1928 不干涉将婴儿车 1600 塌缩至折叠位置 2400。虽然示出了可塌缩框架 1602，但一些示例婴儿车可以不进行塌缩。

[0105] 在一些示例中，悬架装置 1928 由联接至轮轴 130 的扭转弹簧来实施。此外，所示示例的压缩弹簧 2102 可以由辅助框架构件或杆代替，以帮助塌缩示例婴儿车 1600。

[0106] 图 26 至图 28 示出了依照在此公开的教导而构造的另一示例婴儿车 2600。基本上类似或等同于上面描述的示例婴儿车 100 或 1600 的部件、并且具有基本上类似或等同于那些部件的功能的示例婴儿车 2600 的那些部件在下文将不再详细地描述。相反地，感兴趣的读者将参考上文的相应描述。为了便于这一过程，对于相似的结构将使用相似的附图标记。

[0107] 所示示例的示例婴儿车 2600 采用由一个或多个前轮 110、一个或多个后轮 114 和一个或多个中间轮 118 支撑的框架 2602。前轮壳体 230 将前轮 110 联接至框架 2602。托架或承载件 240 相对于框架 2602 枢转地联接中间轮 118 和后轮 114。例如，托架 240 限定了枢轴 404，中间轮 118 和后轮 114 可以相对框架 2602 围绕该枢轴 404 枢转。

[0108] 所示示例的框架 2602 限定了横向间隔开的侧面组件，以限定座椅区域 104。每个侧面组件都包括下框架支撑件 204、上框架支撑件 206 和中间框架支撑件 208。中间框架支撑件 208 经由连接件 2604（例如，毂）联接至上框架支撑件 206。与上文描述的框架 102 和 1602 不同，上框架支撑件 206 经由枢转连接件 2606 被联接至下框架支撑件 204。更具体地，连接件 2606 沿着上框架支撑件 206 的长度定位，使得连接件 2604 与枢转连接件 2606 间隔开由一部分上框架支撑件 206 限定的距离 2608。所示示例的枢转连接件 2606 提供了枢转点 2610，以使得下框架支撑件 204 能够相对于上框架支撑件 206 枢转，并且所示示例的连接件 2604 提供了枢转点 2612，以使得当婴儿车 2600 被折叠时，上框架支撑件 206 能够相对于中间框架支撑件 208 枢转。因此，中间框架支撑件 208 定位成与由枢转连接件 2606 提供的枢转点 2610 相邻或与该枢转点 2610 间隔开。图 26 中所示的示例婴儿车 2600 没有采用悬架装置。然而，在其它示例中，示例婴儿车 2600 包括悬架装置（例如，在此公开的悬架装置 128 或 1928）。

[0109] 为了便于塌缩或折叠婴儿车 2600，所示示例的框架 2602 采用辅助框架构件或杆 2614。所示示例的辅助框架构件 2614 具有联接或附接连接件 2606 的第一端以及附接或联接至托架 240 的臂 254 的第二端。所示示例的辅助框架构件 2614 基本上平行于中间框架支撑件 208。所示示例的辅助框架构件 2614 通过枢转连接件 2606 被枢转地联接至下框架支撑件 204 和上框架支撑件 206。

[0110] 图 27 和图 28 示出了图 26 的示例婴儿车 2600 从图 26 所示的使用中的展开位置折叠至图 28 所示的塌缩、折叠或存放位置 2800。框架 2602 构造得使得所示示例的整个婴儿车 2600 能够在延伸、展开、使用中的位置（图 26）与塌缩、折叠或存放的位置 2800（图 28）之间选择性地移动。为了塌缩所示示例的婴儿车 2600，通过任何合适的装置（例如，开关、锁定释放装置、拉绳等）来起动锁闩释放装置，以解锁锁闩机构，并且使得框架支撑件 204、206 和 / 或 208 和辅助框架构件 2614 能够相对于彼此绕由枢转连接件 2606 提供的枢轴 2610 和由连接件 2604 提供的枢轴 2612 旋转或枢转。在示出的示例中，下框架支撑件 204

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沿箭头 2702 的方向朝向中间框架支撑件 208 枢转，并且上框架支撑件 206 沿箭头 2704 的方向朝向中间框架支撑件 208 枢转。

[0111] 更具体地，上框架支撑件 206 绕连接件 2604 枢转，使得上框架支撑件 206 的在连接件 2604 和 2606 之间延伸的部分 2608 作为杠杆。随着上框架支撑件 206 绕枢轴 2612 朝向中间框架支撑件 208 枢转，上框架支撑件 206 使得辅助框架构件 26148 沿箭头 2708 的方向（例如，向上方向）移动。继而，辅助框架构件 2614 使得或拉动使得托架 240 的臂 254 沿由箭头 2710 所示的方向朝向中间框架支撑件 208 枢转。结果，当将婴儿车 2600 折叠至折叠位置 2800 时，所示示例的托架 240 沿由箭头 2710 表示的方向朝向中间框架支撑件 208 绕枢轴 140a、404 旋转。框架 2602 的手柄 2722 可以沿箭头 2714 的方向绕枢轴 2712 朝向上框架支撑件 206 旋转。

[0112] 如图 28 所示，在完全塌缩、折叠或存放位置 2800 中，所示示例的婴儿车 2600 具有相对低的轮廓或包络尺寸。虽然示出了可塌缩框架 2602，但一些示例婴儿车可以不进行塌缩。

[0113] 图 29 是示例方法 2900 的流程图，该方法可被用于制造示例婴儿车，例如图 1 至图 8、图 9A、图 9B 和图 10 的示例婴儿车 100、图 11 的示例婴儿车 1100、图 12 至图 15 的示例婴儿车 1200、图 16 至图 21、图 22A 至图 22D、图 23、图 24、图 25A 和图 25B 的示例婴儿车 1600 以及图 26 至图 28 的示例婴儿车 2600。虽然示出了制造示例覆盖组件的示例方式，但在图 29 中示出的一个或多个块和 / 或过程可被组合、分割、再排列、省略、消除和 / 或以其他任何方式而实施。仍进一步的，图 29 的示例方法可以包括除了图 29 中所示的过程和 / 或块之外或作为图 29 中所示的过程和 / 或块代替物的一个或多个过程和 / 或块，和 / 或可以包括多于所示的过程和 / 或块中的任意一个或全部的过程和 / 或块。此外，虽然参考图 29 所示流程图描述了示例方法 2900，但可以另选地使用制造覆盖组件的很多其它方法。

[0114] 为了开始图 29 的示例组装过程，将前轮安装至框架的前部（块 2902）。例如，在此公开的所示示例的前轮 110 经由前轮壳体 230 被安装至下框架支撑件 204。

[0115] 将后轮和中间轮也安装至框架（块 2904）。更具体地，将中间轮定位在后轮和前轮之间，并且该中间轮和后轮 114 经由第一托架 240、1940 被安装至第一侧面框架组件 202a、1202a、1802a、2602a，并且第二组中间轮 118 和后轮 114 经由第二托架 240、1940 被安装至第二侧面框架组件 202b、1202b、1802b、2602b。

[0116] 在后轮和中间轮之间提供枢转轴，以使得后轮和中间轮能够绕枢转轴线枢转（块 2808）。例如，由在第一和第二侧面框架组件 202a、202b ；1202a、1202b ；1802a、1802b ；2602a、2602b 之间延伸的轮轴 130 来提供枢转轴线 132。具体地，托架 240、1640 安装至轮轴 130 的每一端，以将托架 240、1640 枢转地安装至婴儿车的框架。更具体地，中间轮 118 经由臂 254 被安装至托架 240、1640，并且后轮经由后轮壳体 244 被安装至托架 240、1640。在一些示例中，第一和第二侧面框架组件 202a、202b ；1202a、1202b ；1802a、1802b ；2602a、2602b 的中间轮 118 经由轮轴 120 被以可旋转的方式联接在一起。

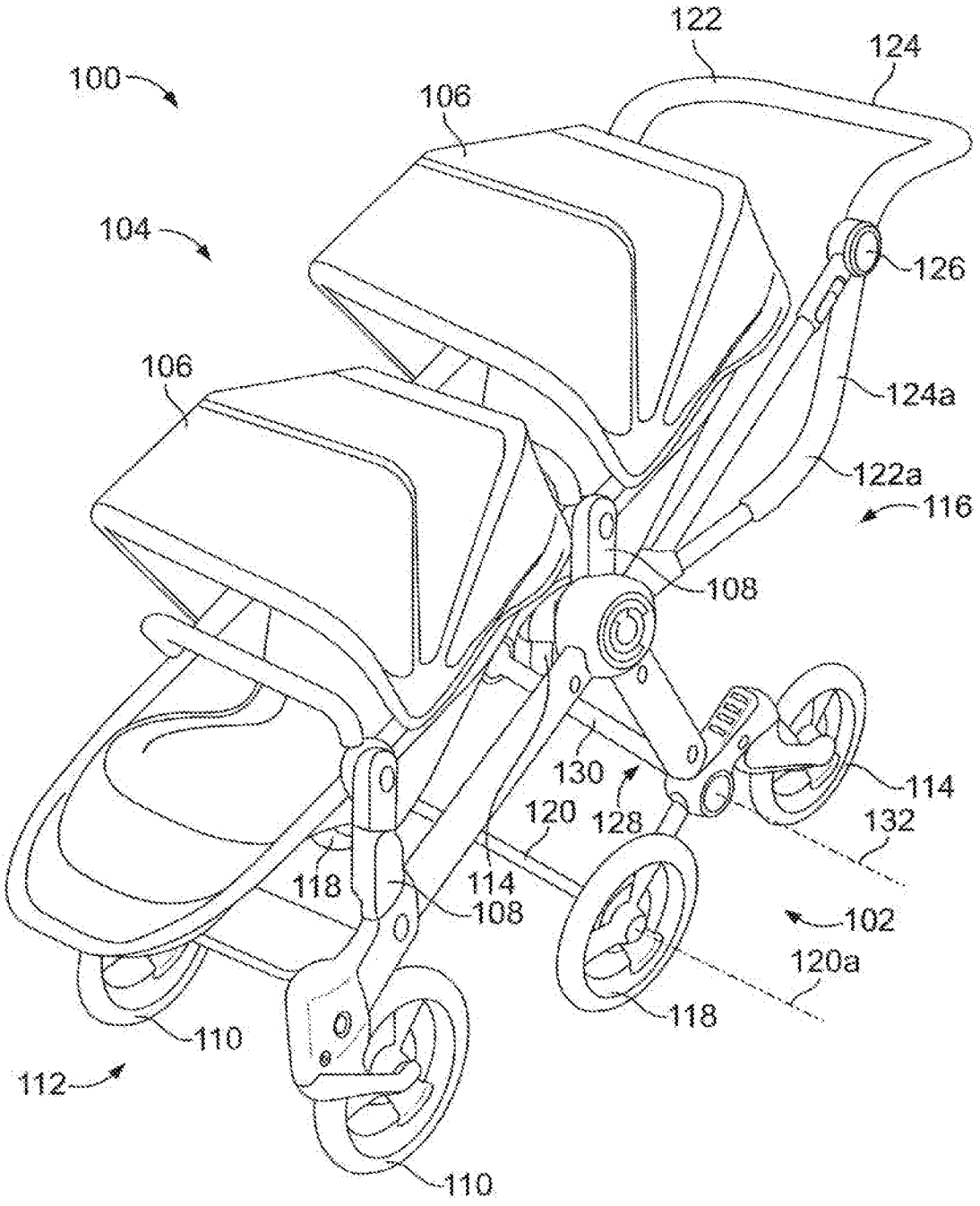
[0117] 在一些示例中，示例婴儿车可构造有悬架，当婴儿车绕枢转轴线 132 旋转时该悬架提供增加的力，以相对于后端 116 提升婴儿车的前端 112。例如，在此公开的示例婴儿车可构造有悬架装置 128、1928。例如，悬架装置 128 被联接或附接至轮轴 130 或枢转轴线 132 以及中间框架支撑件 208。另选地，悬架 1928 被附接至上框架支撑件 206 和托架 240、1940，

而邻近中间框架支撑件 208。

[0118] 虽然已经在此描述了一些示例方法、装置和制造环节，但该专利的覆盖范围并不限于此。相反地，该专利覆盖了直接落入本专利的权利要求的范围内的全部方法、装置和制造环节。

[0119] 相关申请的交叉引用

[0120] 本申请要求于 2013 年 1 月 7 日提交的名为“容易操纵的婴儿车 (Maneuverable Strollers)”的、序列号为 61/749,728 的美国临时专利申请的优先权，该专利申请的全部内容通过引用并入本文。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110

图 1

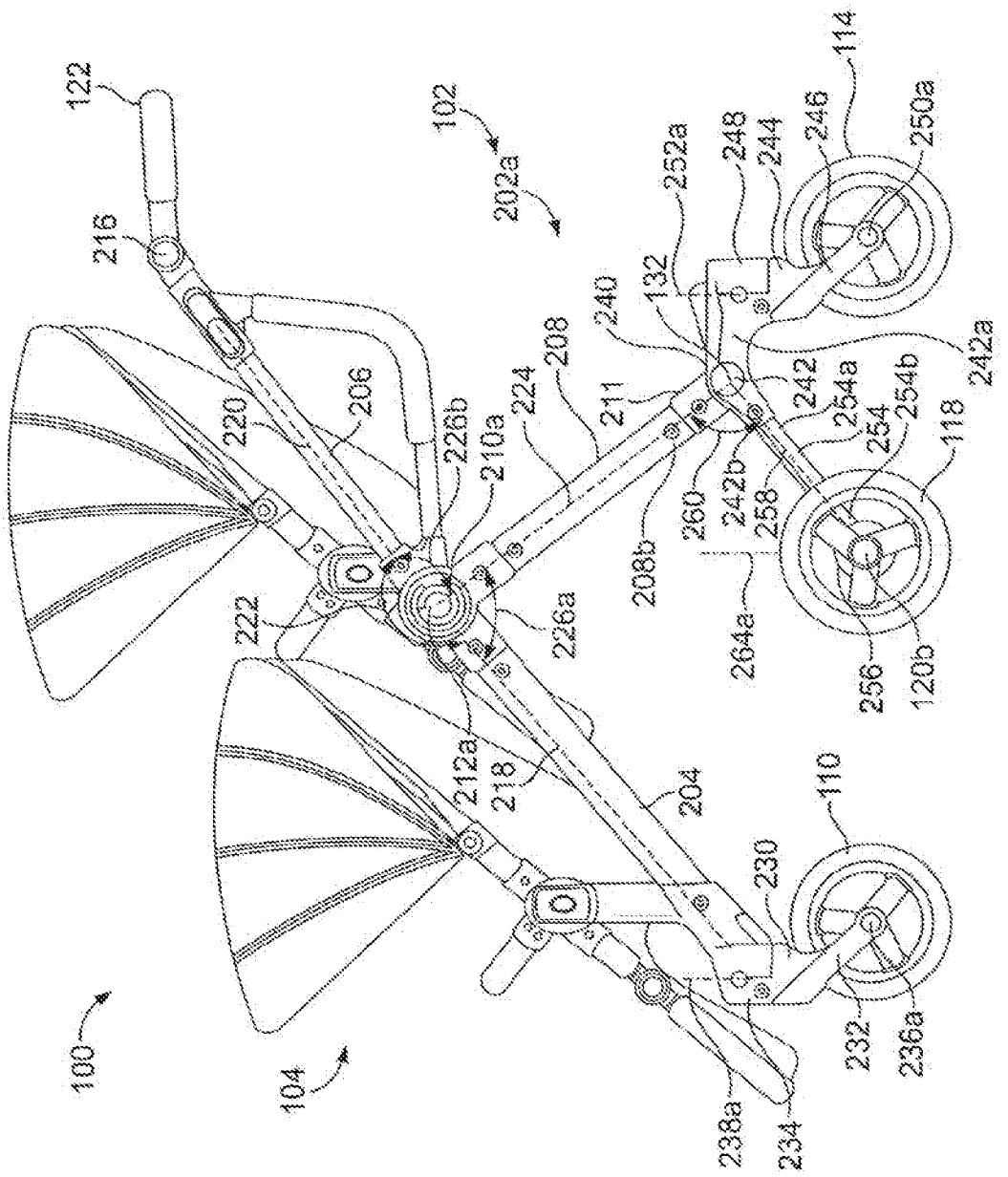
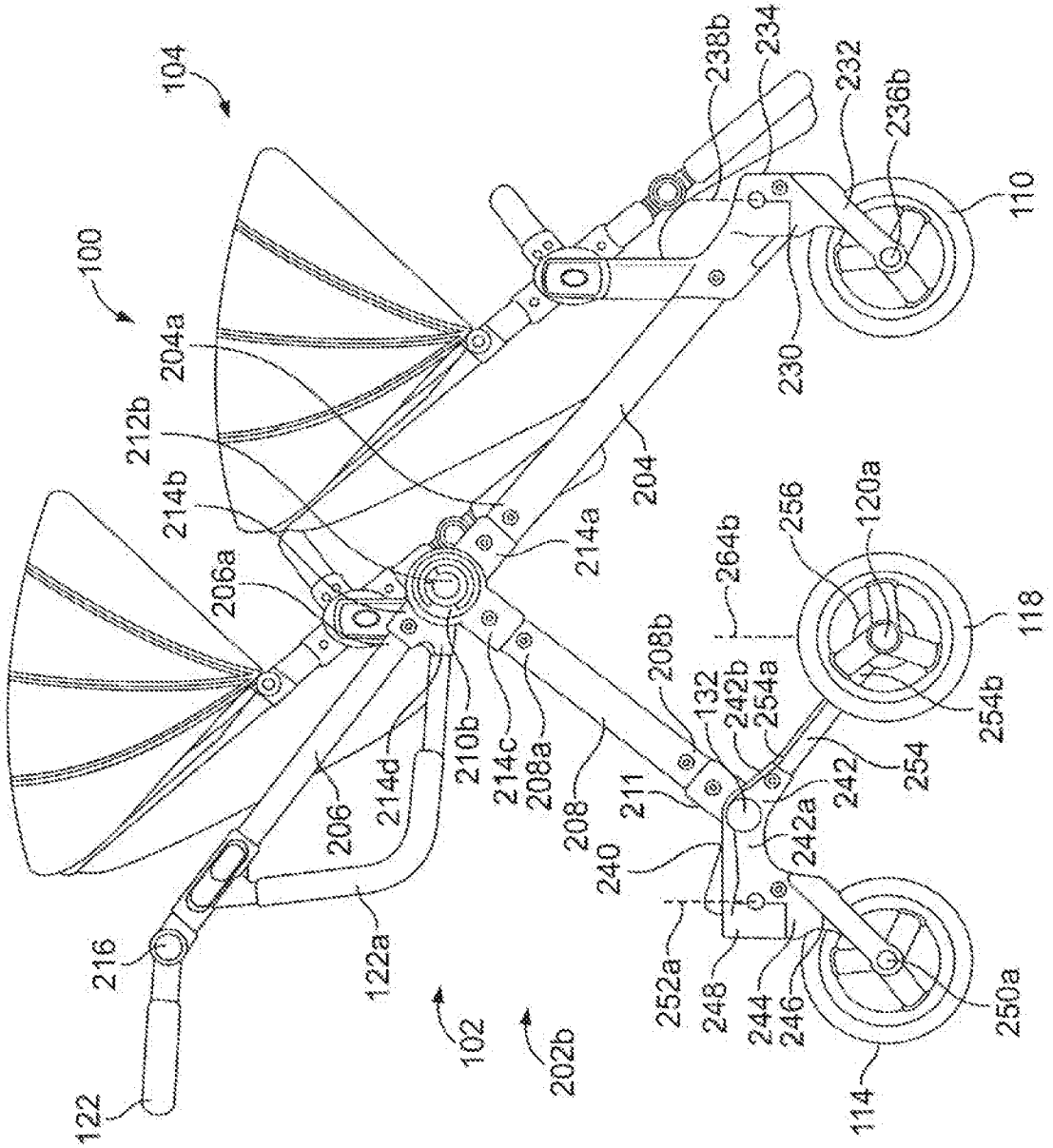

100
102
104
110
114
118
120b
122
202a
204
206
208
208b
210a
211
212a
216
218
220
222
224
226a
226b
230
232
234
236a
238a
240
242
242a
242b
244
246
248
250a
252a
254
254a
254b
256
258
260
264a
132

图 2


104
100
238b
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236b
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206a
204
214a
256
120a
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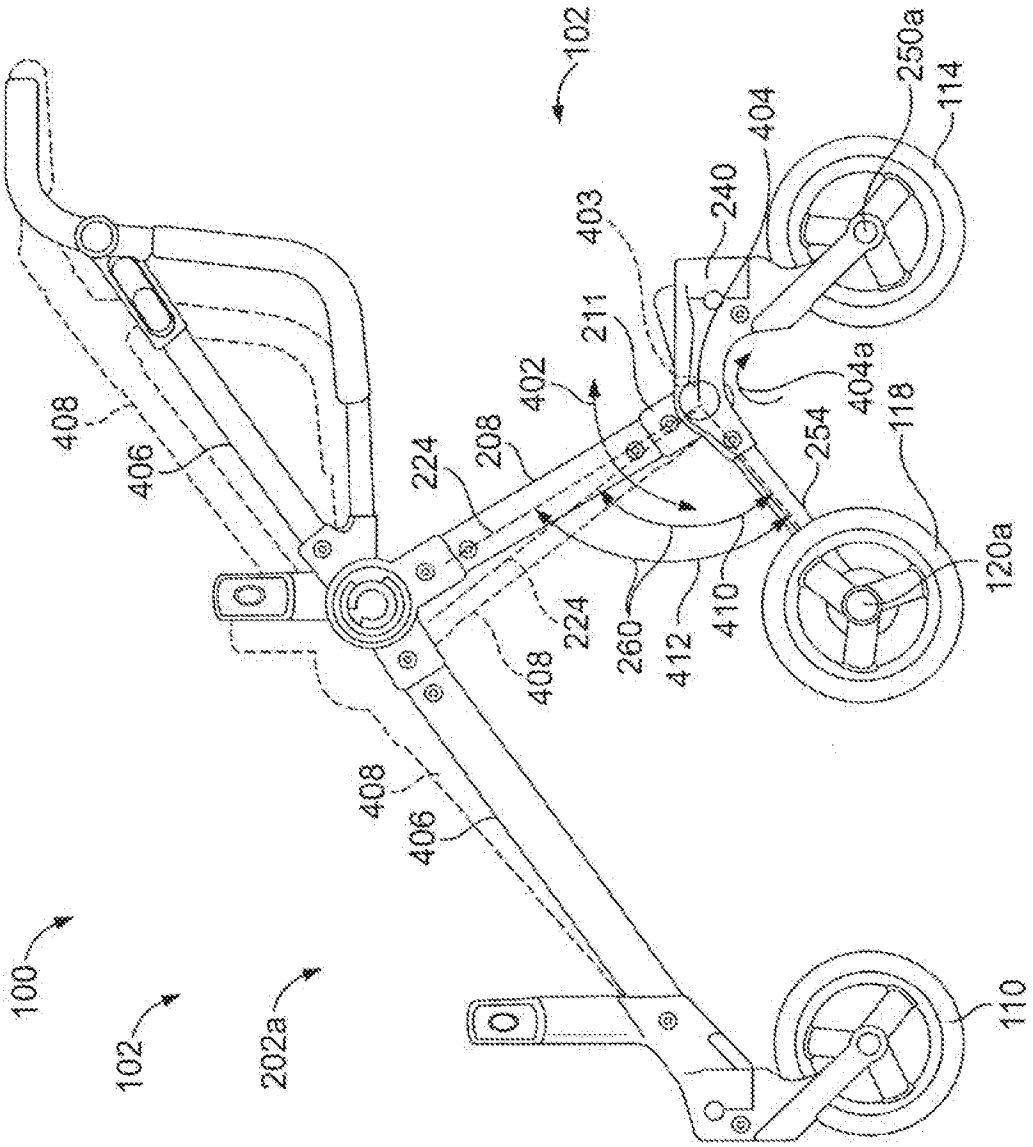
118
208b
132
242b
254a
254b
254
242
242a
211
208
214c
208a
210b
214d
206
240
252a
248
244
246
250a
114
216
122a
122
102
202b

图 3


102
250a
114
404
240
403
211
402
404a
118
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224
408
406
120a
410
412
260
224
408
408
406
100
102
202a
110

图 4

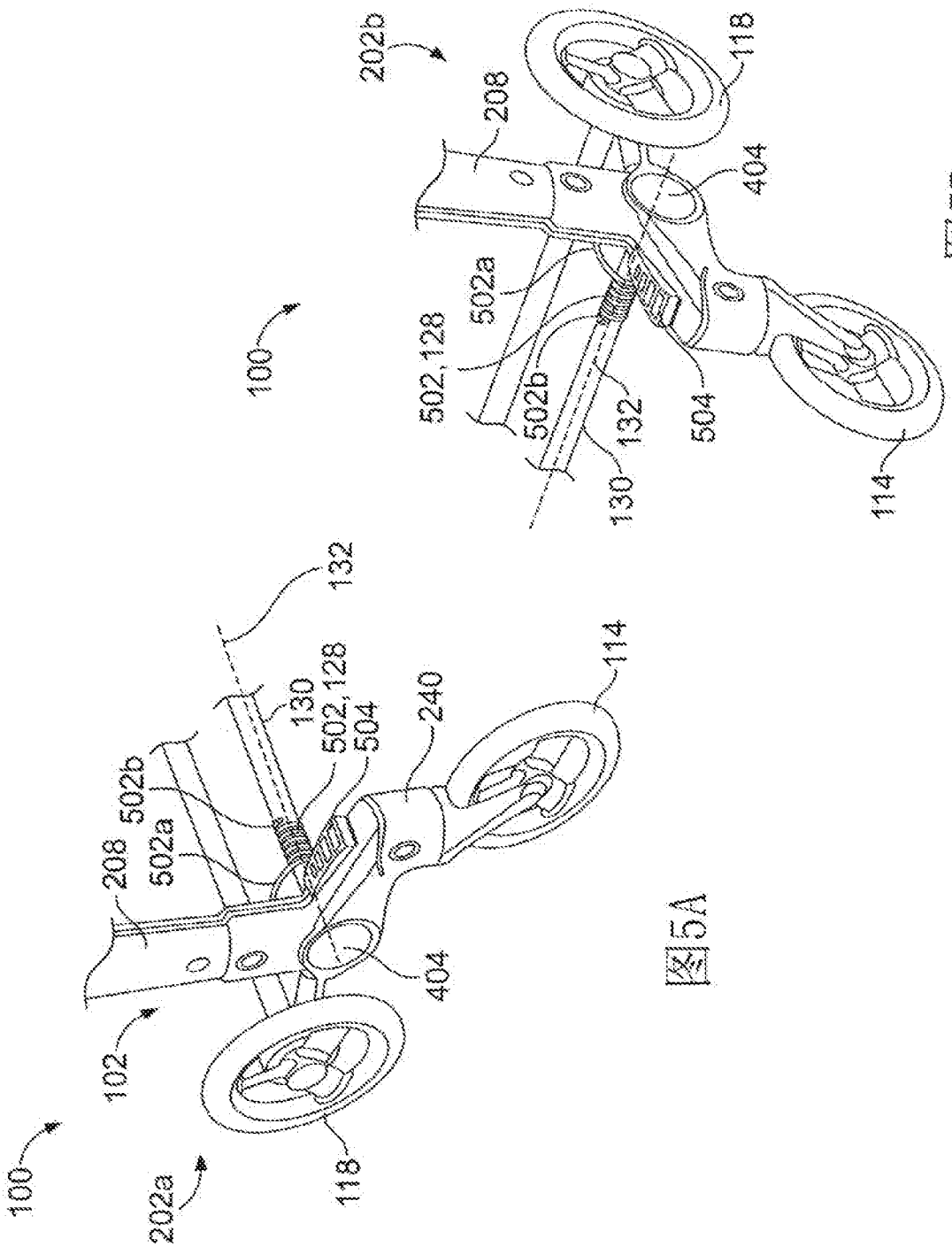
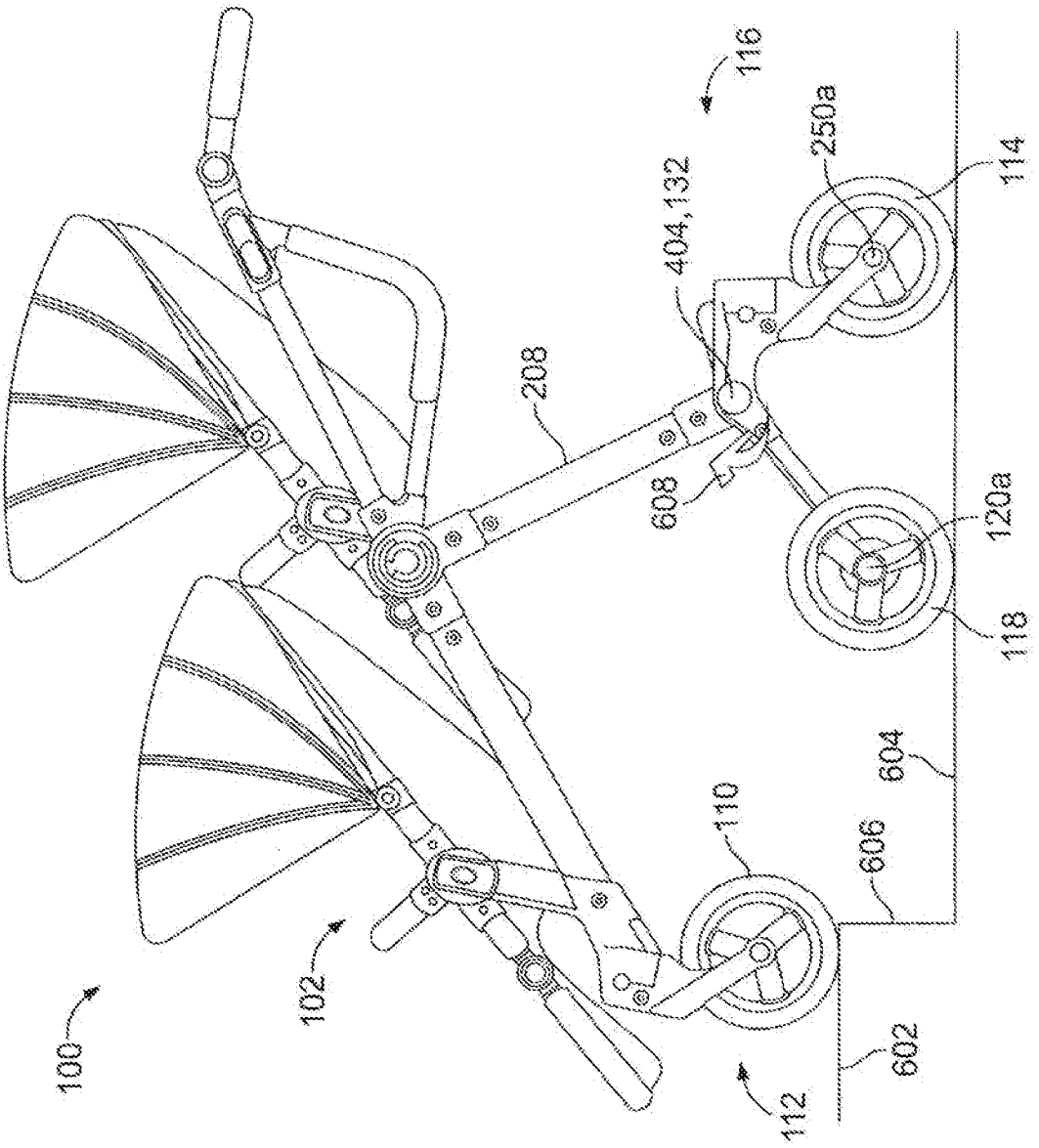

100
102
202a
118
208
502b
502a
132
130
502,128
504
240
114
404
202b
118
208
404
502a
502,128
502b
132
504
130
114

图5A

图5B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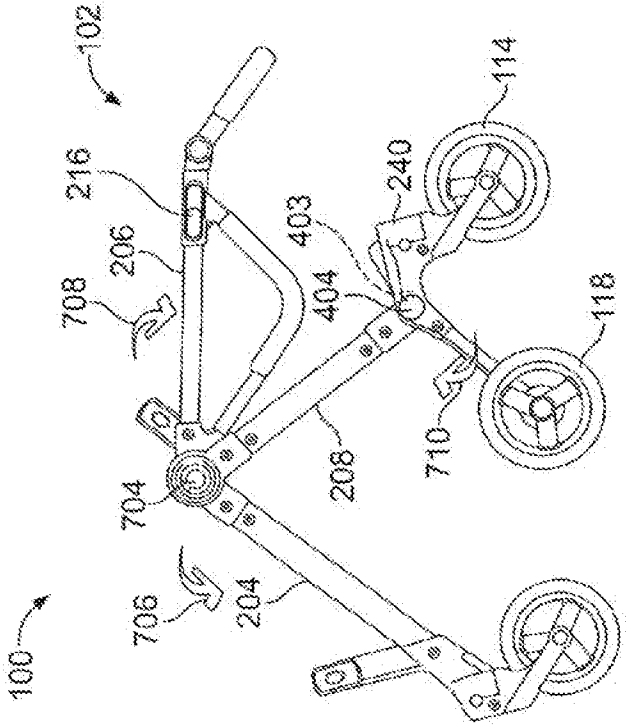
250a
114
404,132
208
608
120a
118
604
110
606
102
100
602
112

图 6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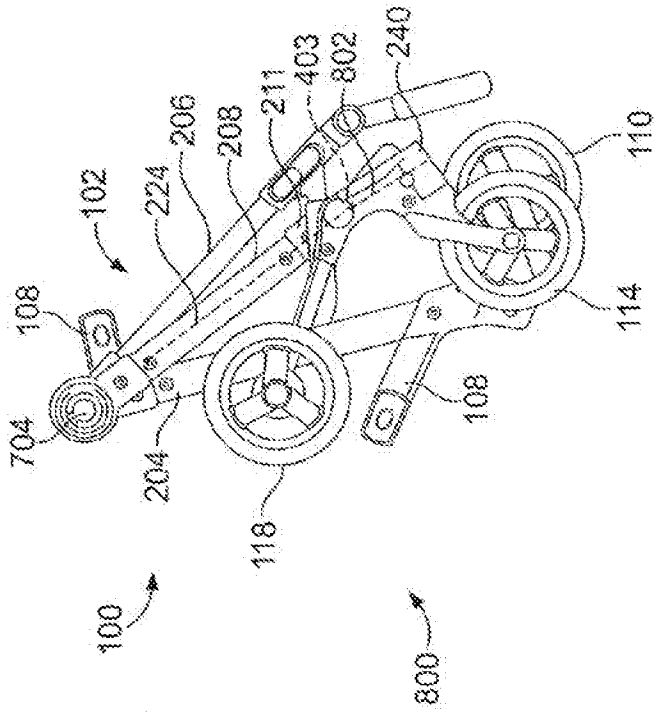
216
206
708
403
404
240
114
118
208
710
704
706
204
100

图7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802
403
211
206
208
224
102
110
108
704
204
118
114
108
100
800

图8

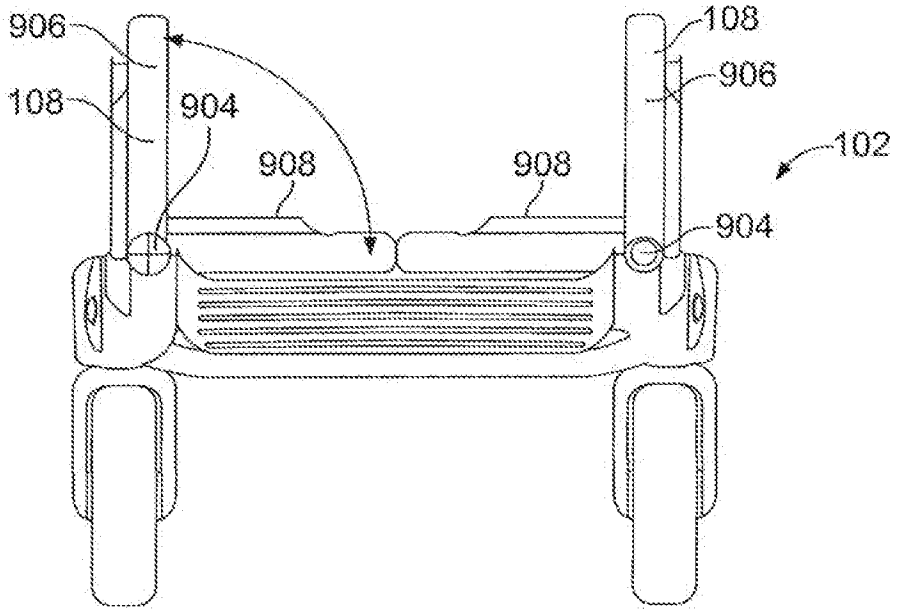


图 9A

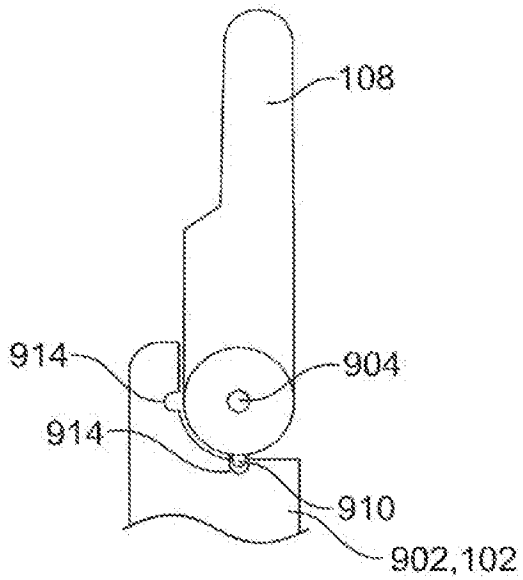


图 9B

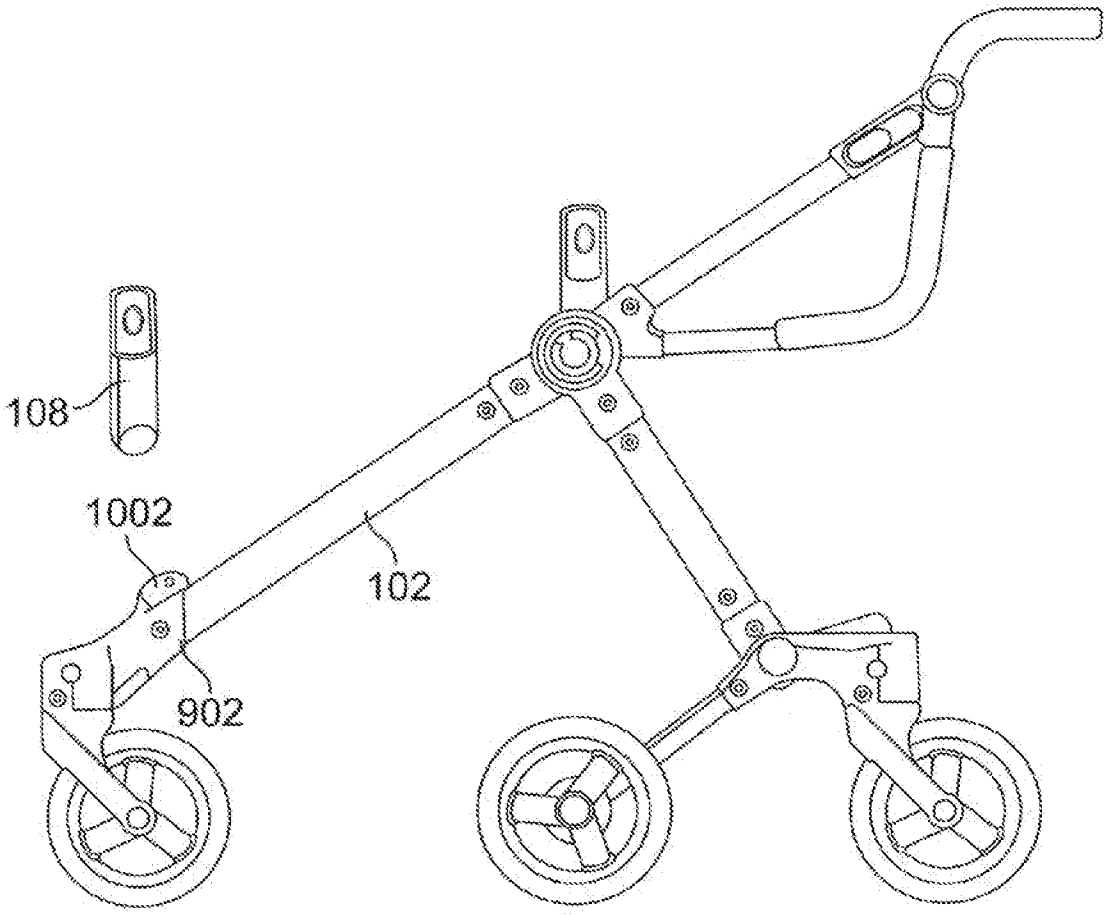


图 10

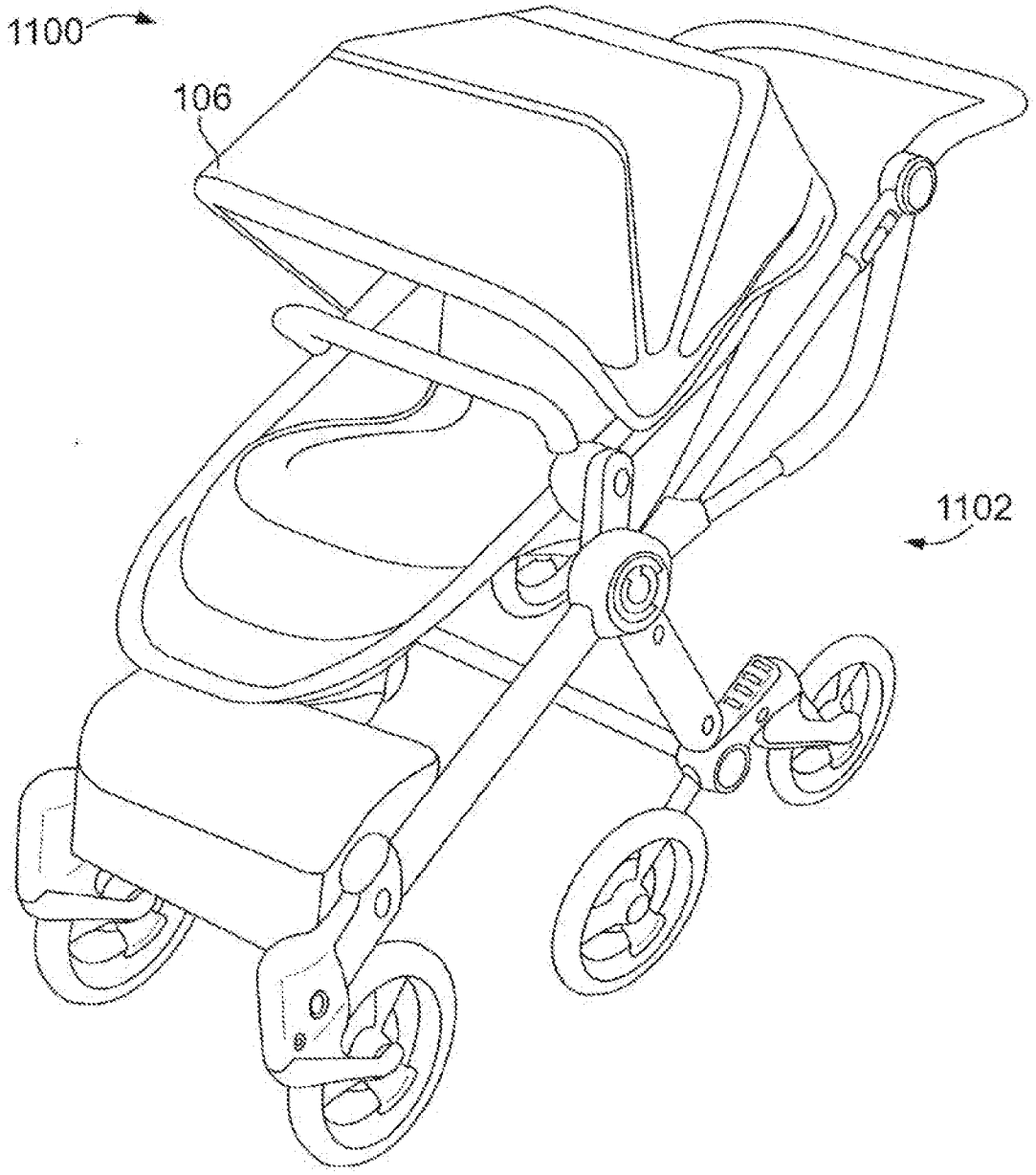


图 11

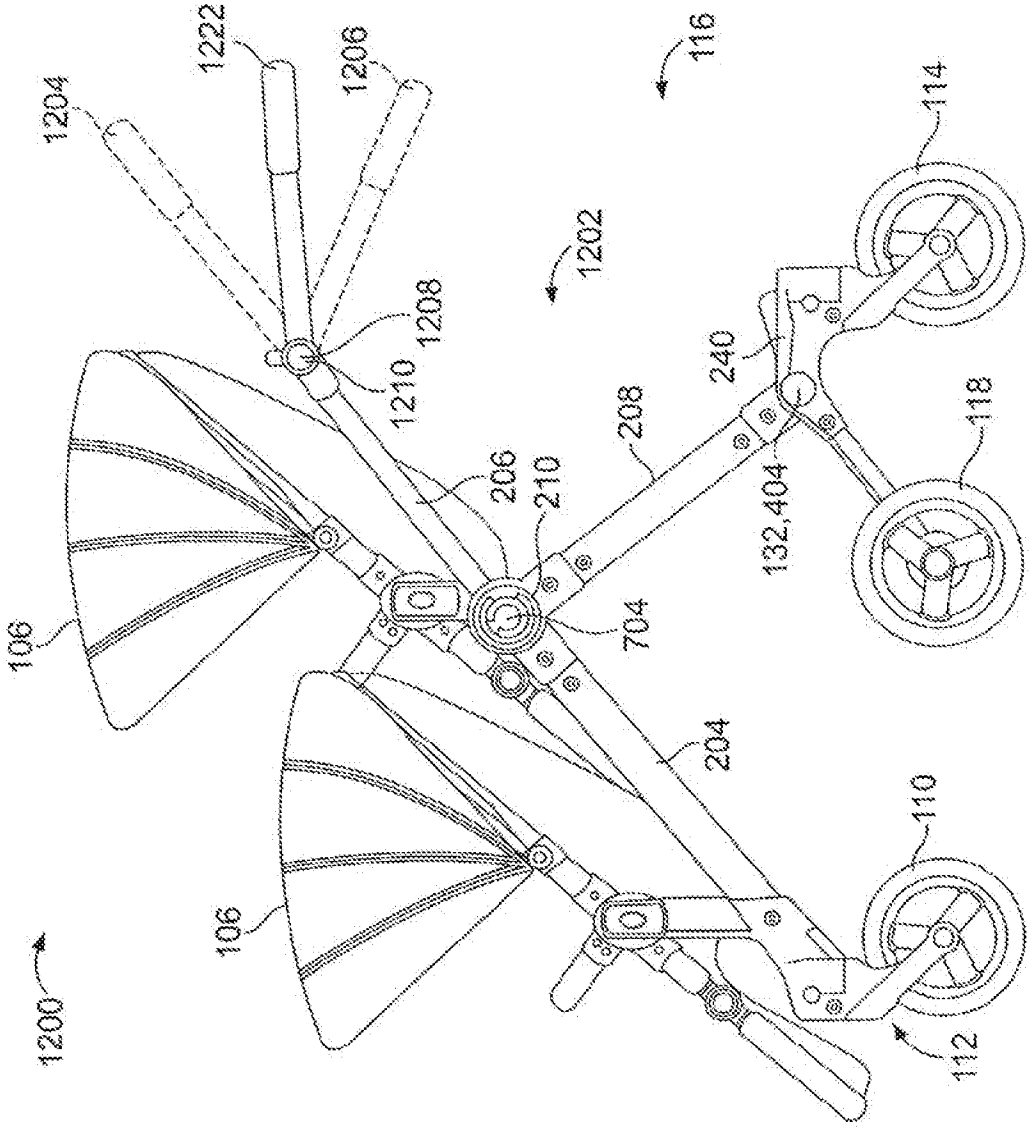
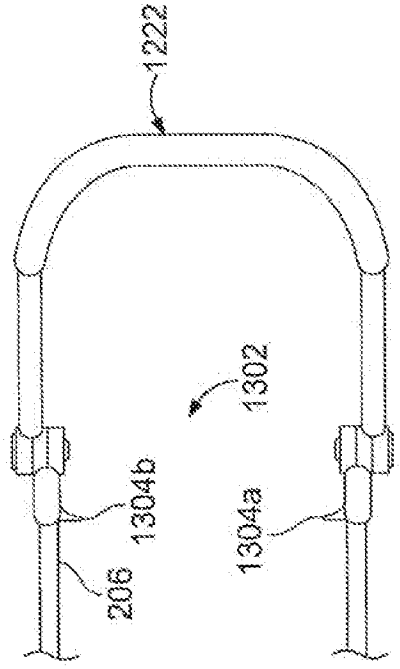

1222
1206
1204
116
114
1202
1208
1210
240
208
206
210
118
132,404
704
106
204
110
106
1200
112

图 12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1302
1304b
1304a
206

图 13

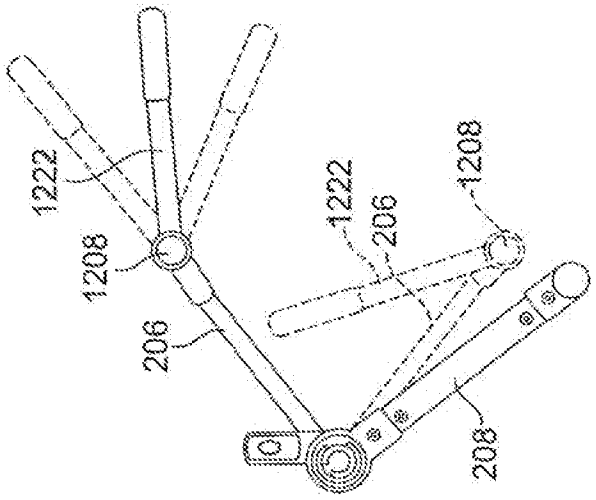

1222
1208
206
1222
206
1208
208

图 14

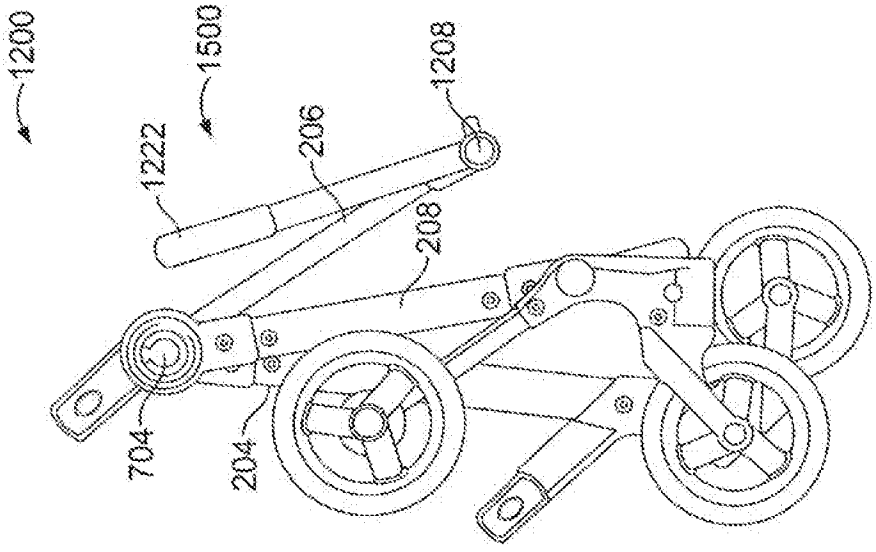

1200
1500
1208
1222
206
208
704
204

图 15

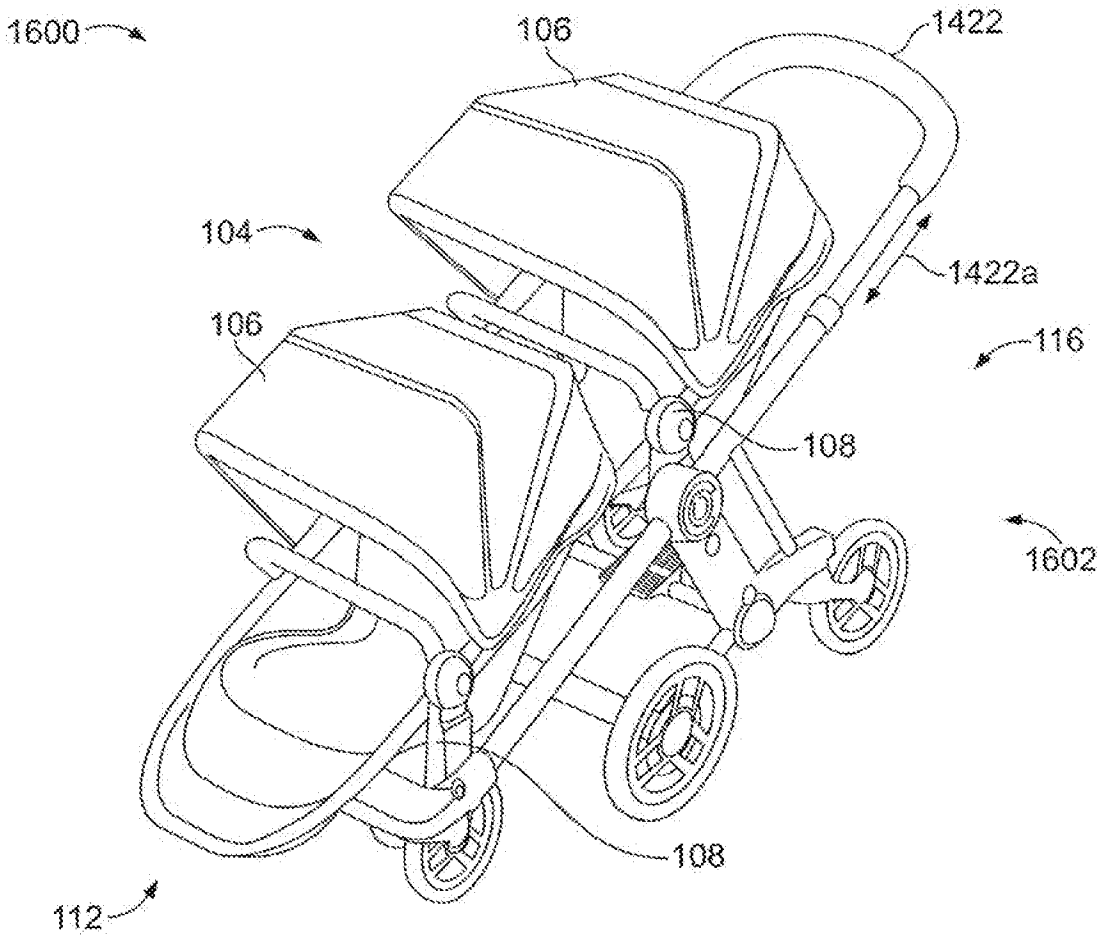


图 16

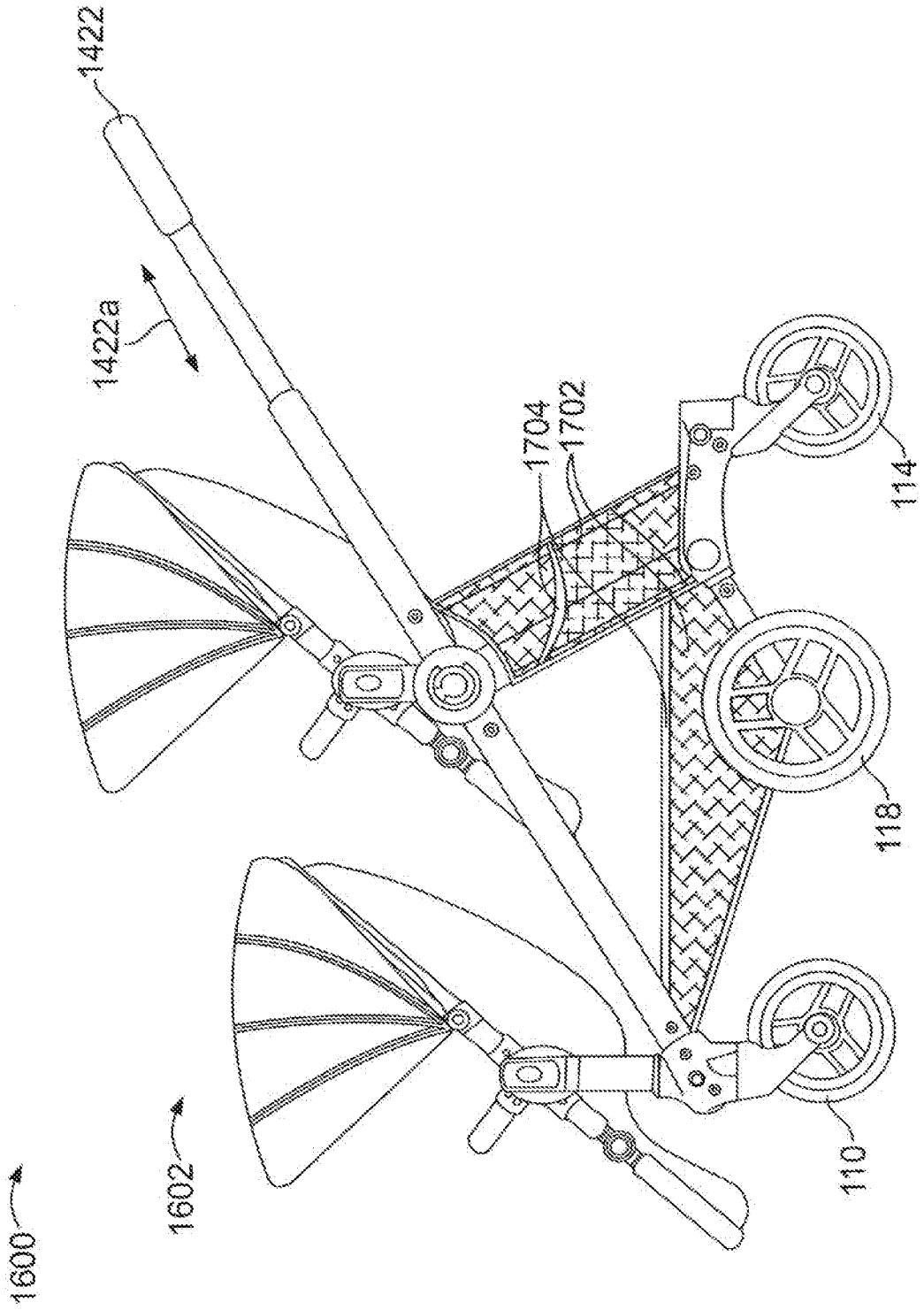


图 17

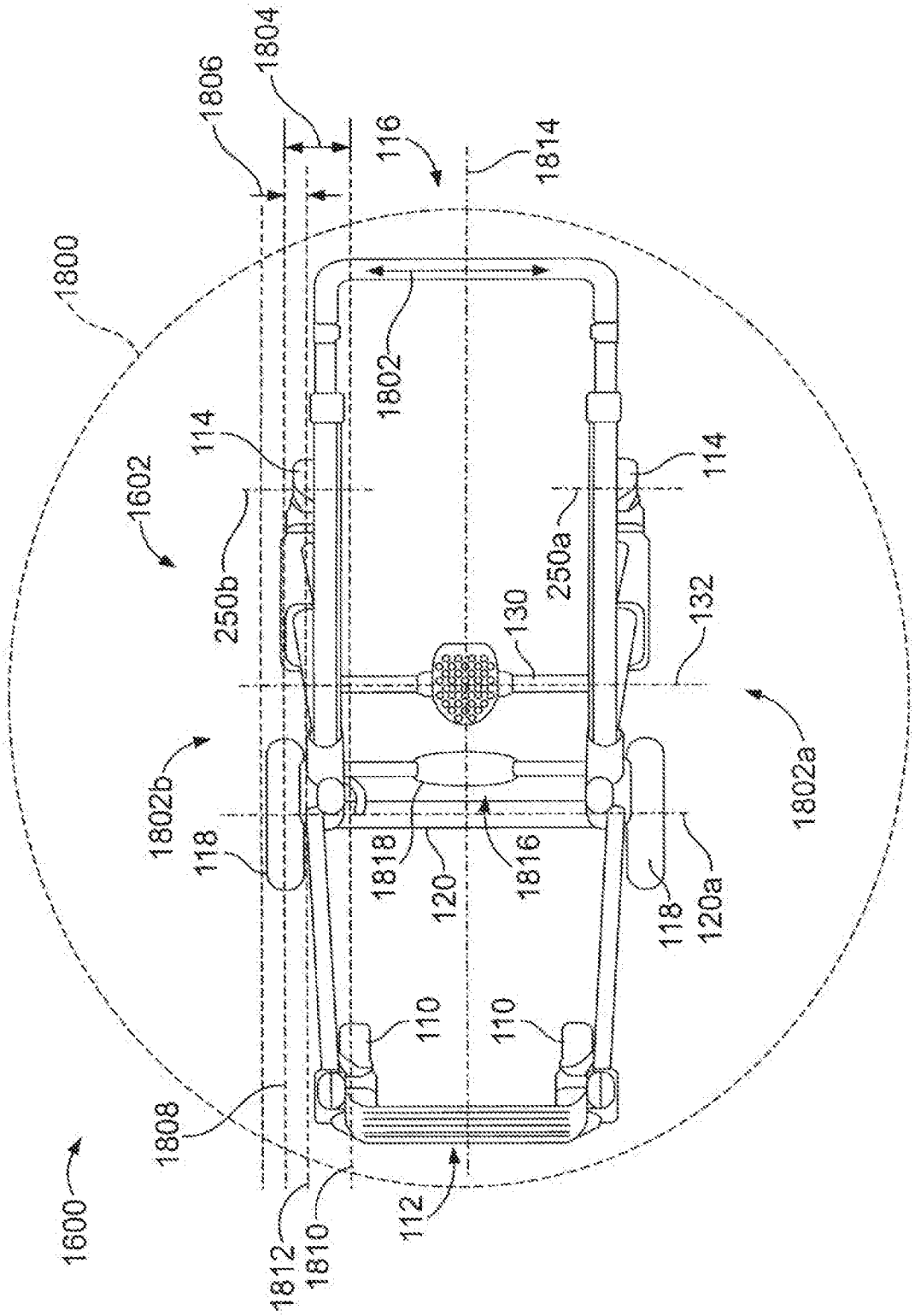

1804
1806
116
1814
1800
1802
114
1602
250b
250a
114
130
132
1802b
1802a
118
1818
120
1816
118
120a
110
110
1808
1600
112
1812
1810

图 18

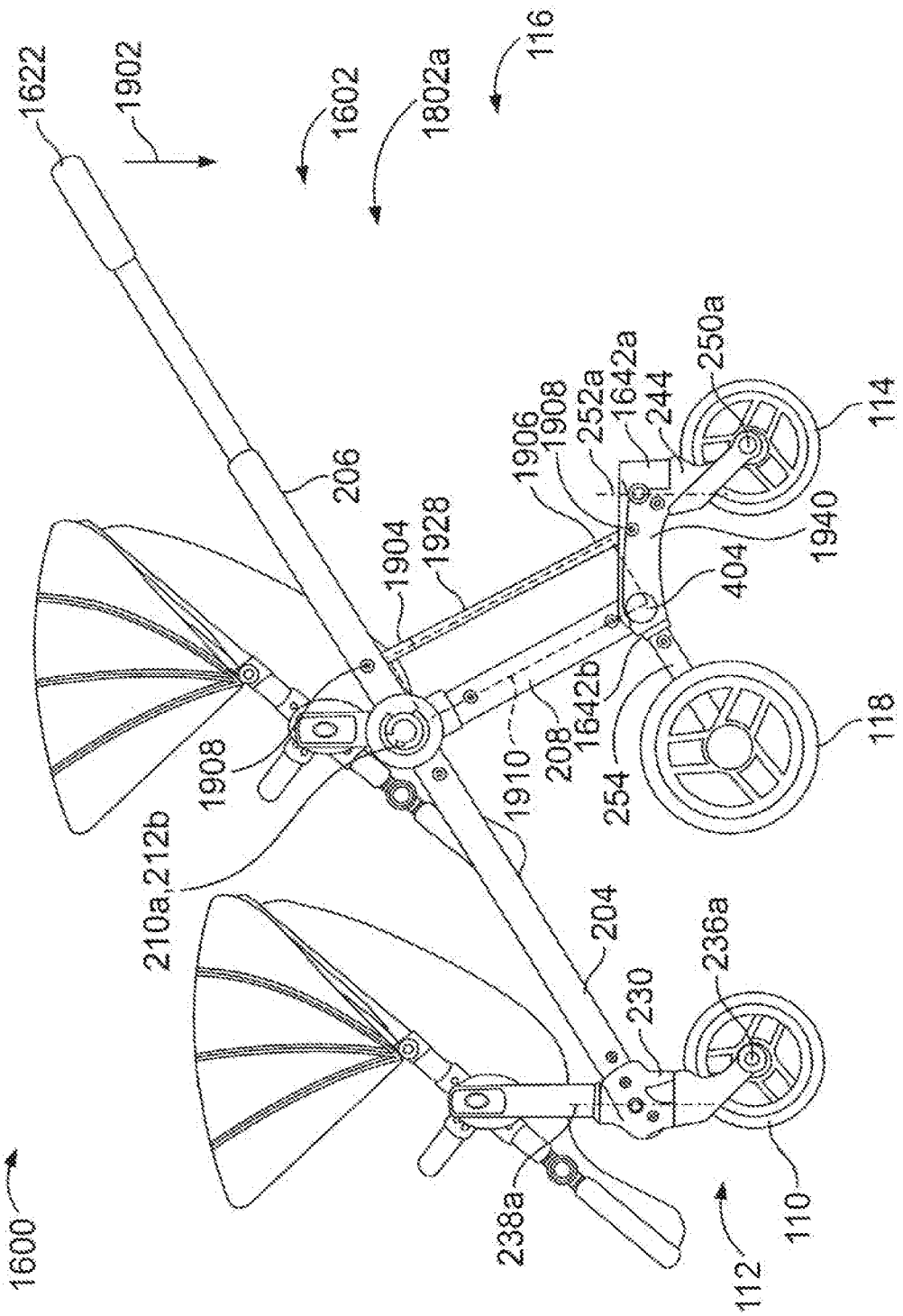

1622
1902
1602
1802a
116
206
1904
1928
1906
1908
252a
1642a
244
250a
114
1940
404
1642b
208
1910
254
118
1908
210a,212b
204
230
236a
238a
1600
112
110

图 19

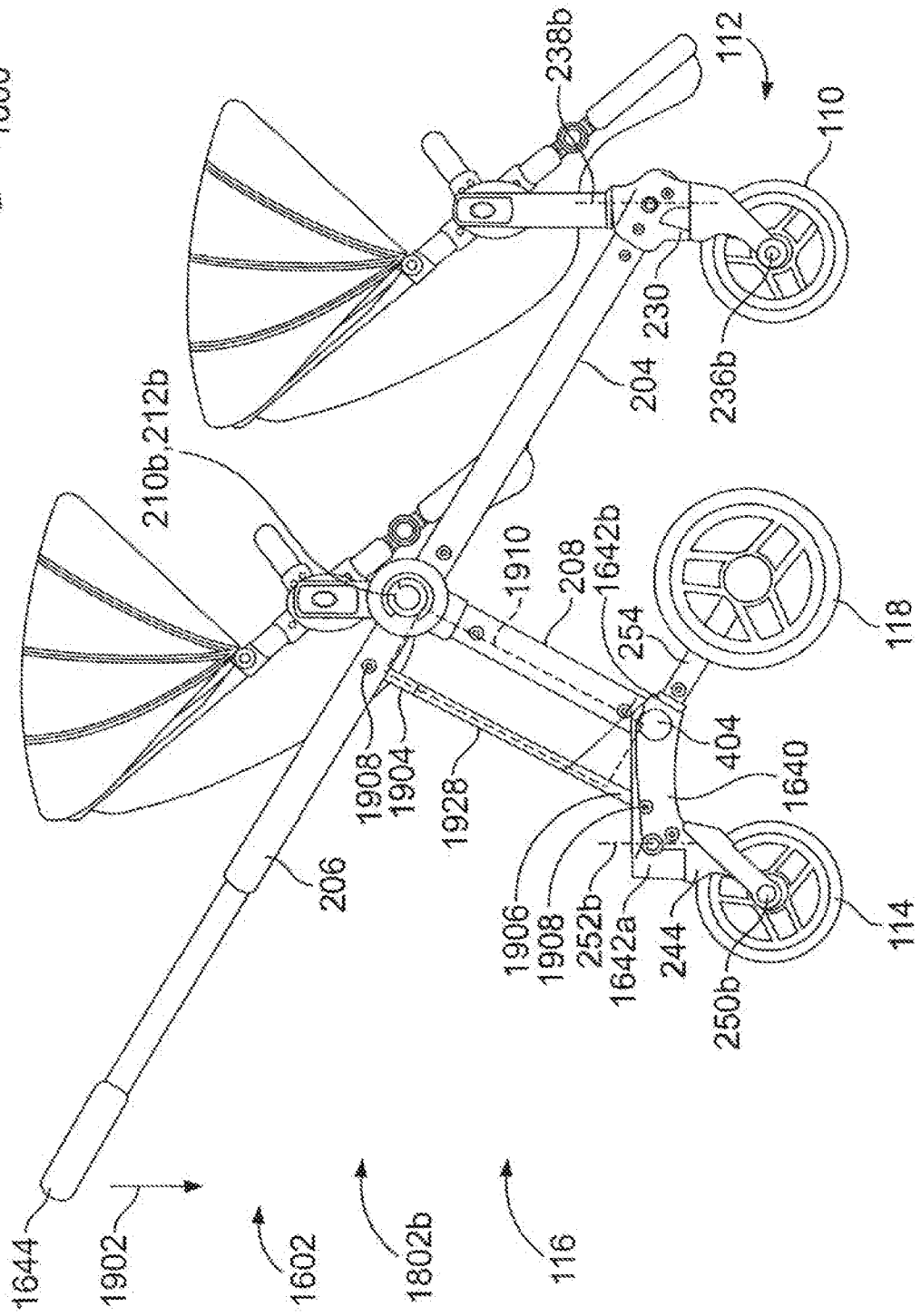

1600
238b
112
110
230
204
236b
210b,212b
1910
208
1642b
254
118
404
1640
1908
1904
1928
206
1906
1908
252b
1642a
244
250b
114
1644
1902
1602
1802b
116

图 20

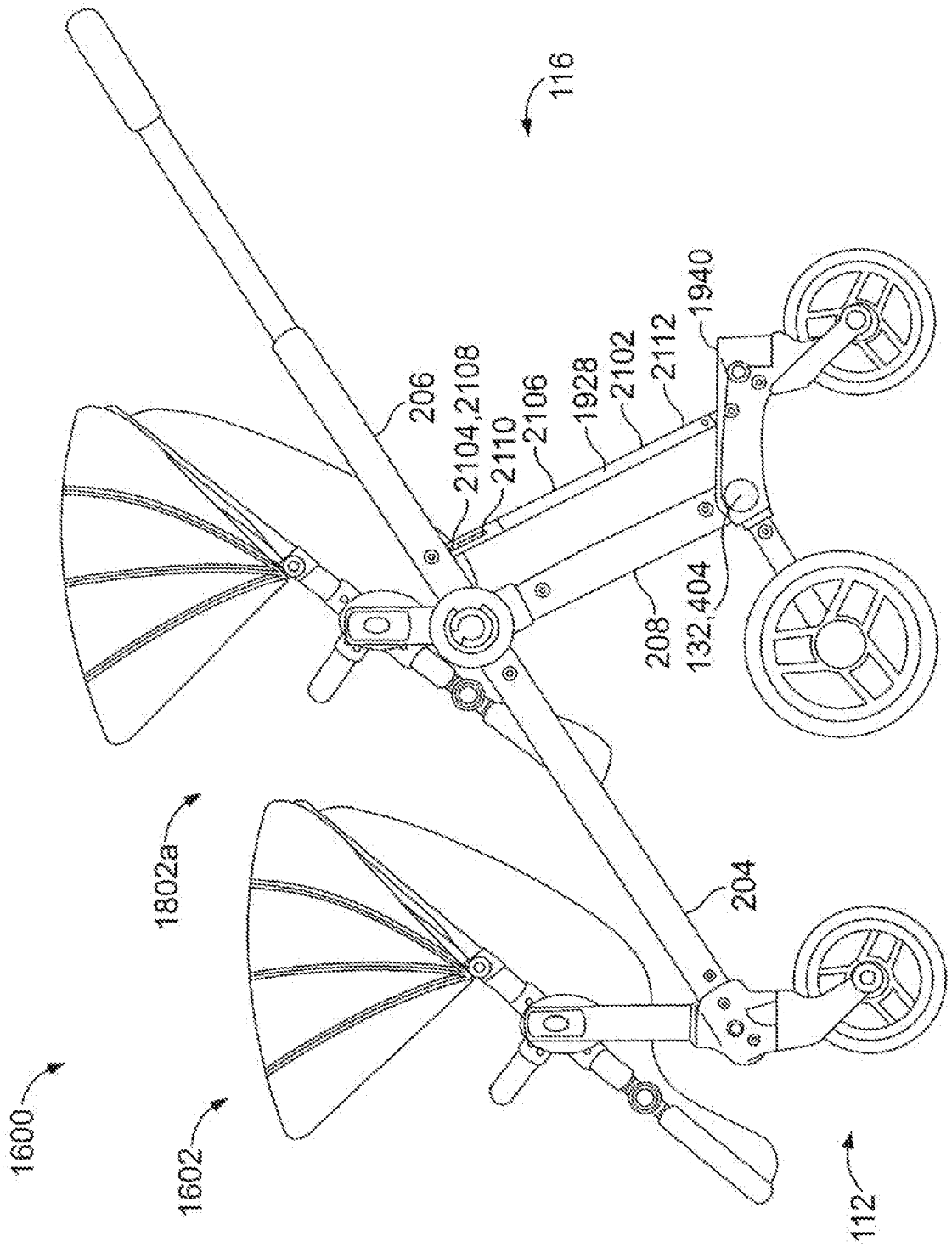

116
206
2104,2108
2110
2106
1928
2102
2112
1940
208
132,404
204
1802a
1600
1602
112

图 21

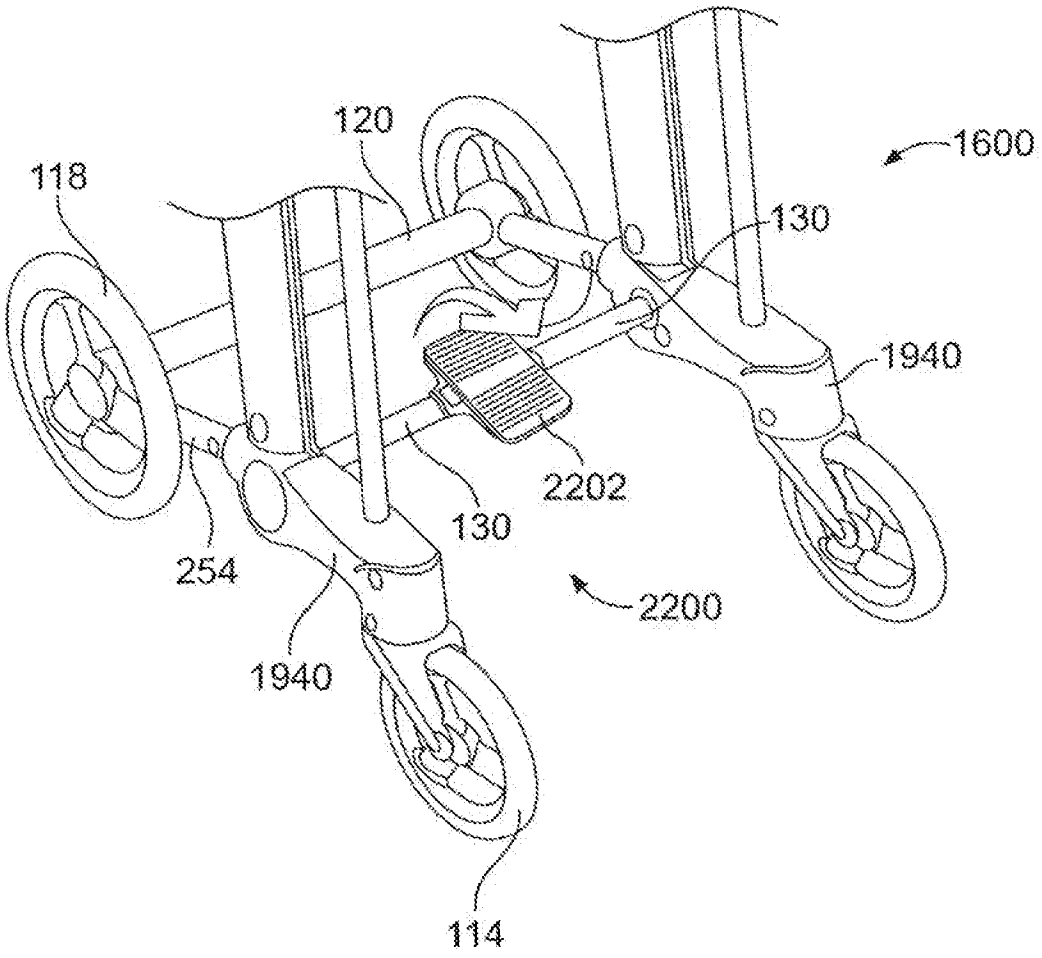


图 22A

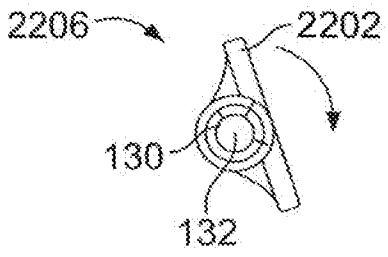


图 22B

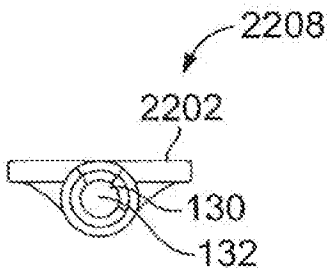


图 22C

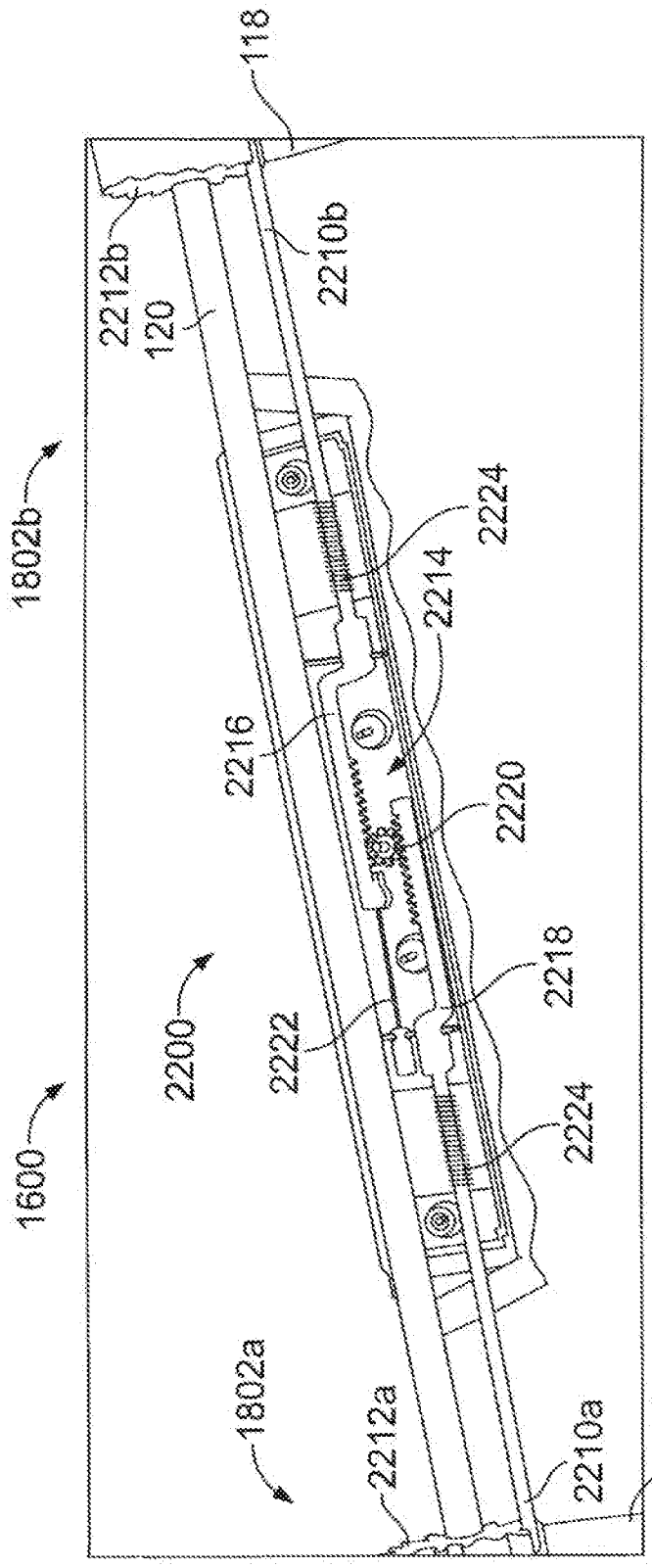
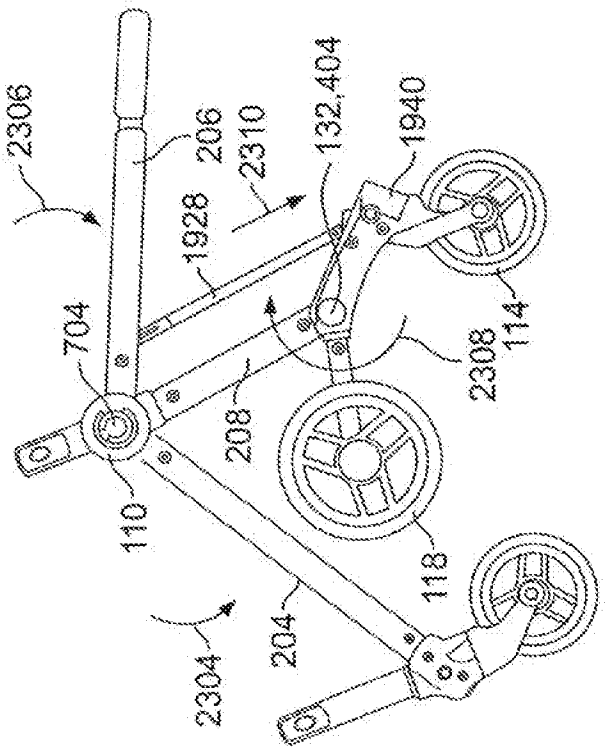

118
2212b
2210b
120
1802b
2224
2214
2216
2220
2218
2200
2222
2224
1600
1802a
2212a
2210a
118

图 22D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206
2310
132,404
1940
1928
704
208
2308
114
110
118
204
2304

图 23

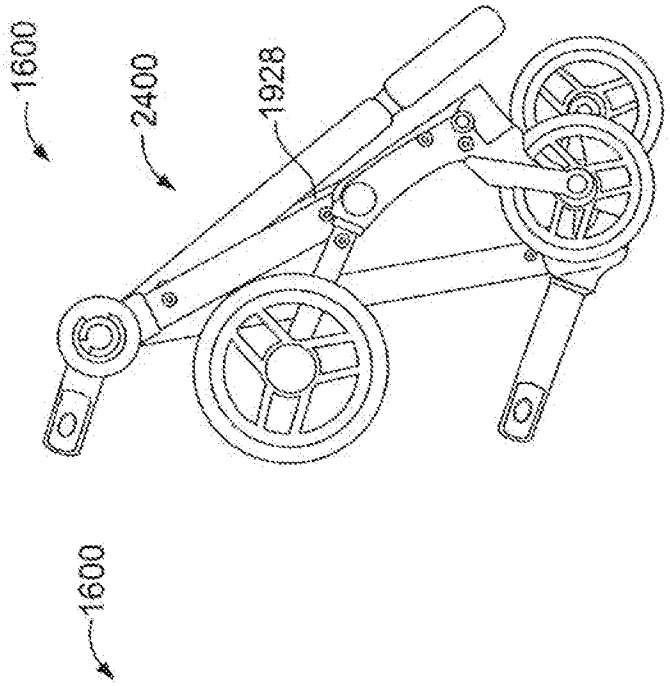
1600
2400
1928
1600

图 24

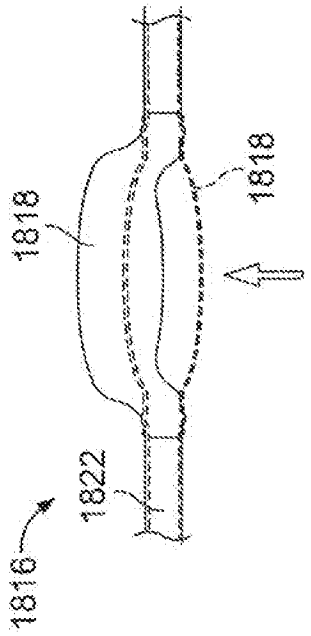
1818
1818
1822
1816

图 25A

图 25B

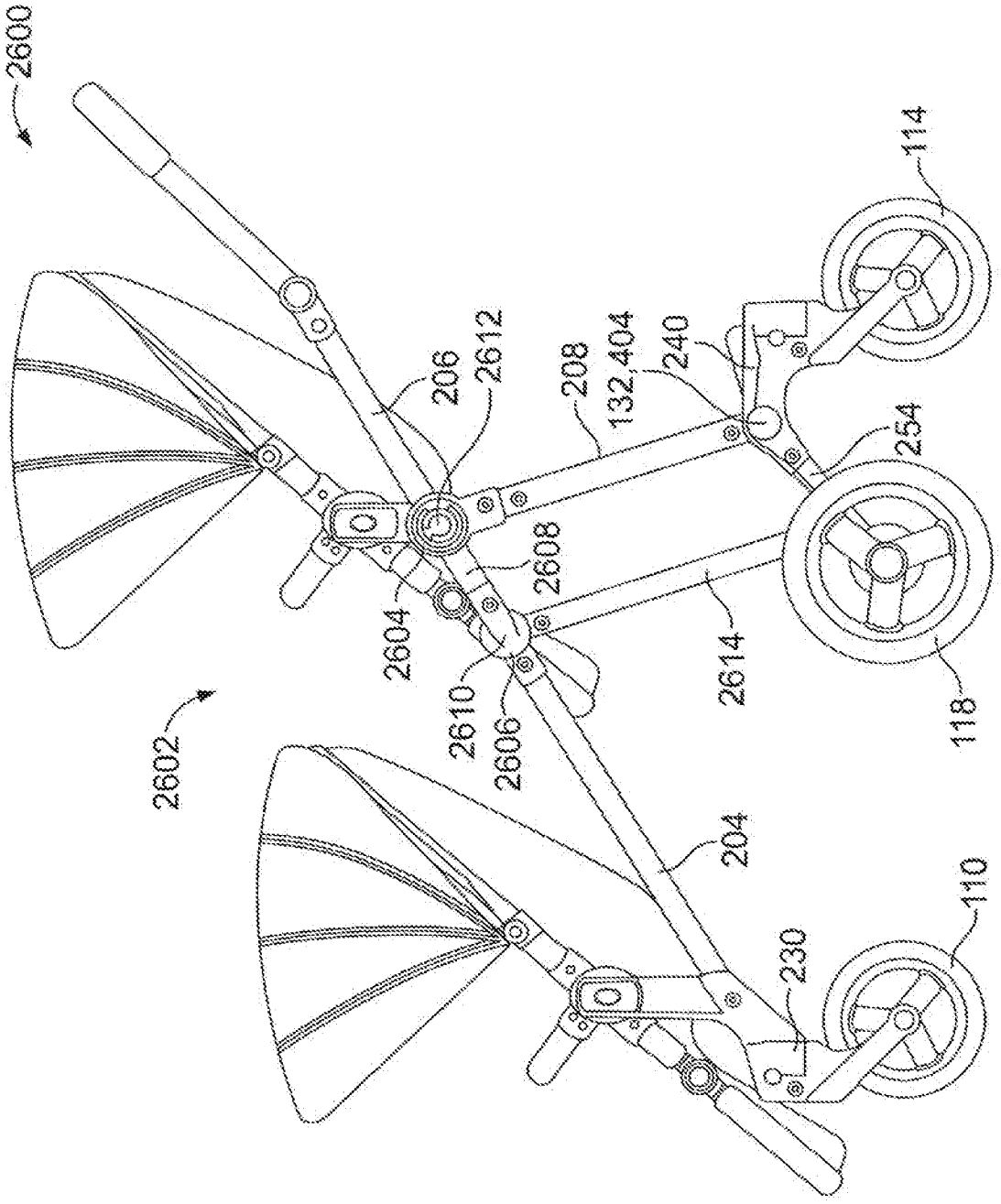
2600
114
206
2612
208
132,404
240
254
2608
2604
2610
2606
2614
118
2602
204
110
230

图 26

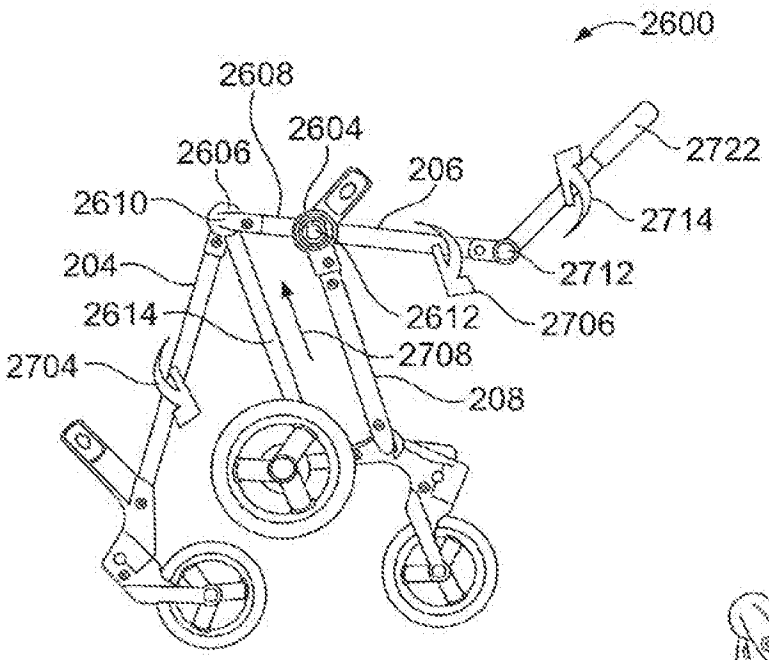
2600
2608
2604
2606
206
2722
2610
2714
204
2712
2614
2612
2706
2708
2704
208

图27

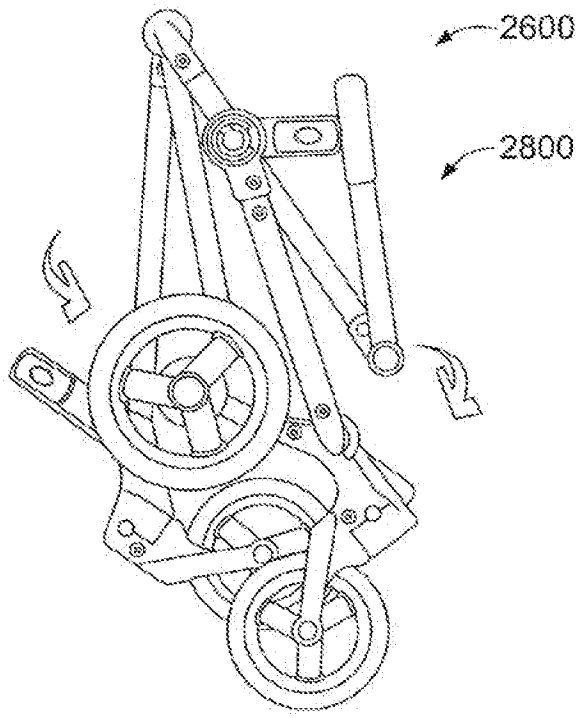
2600
2800

图28

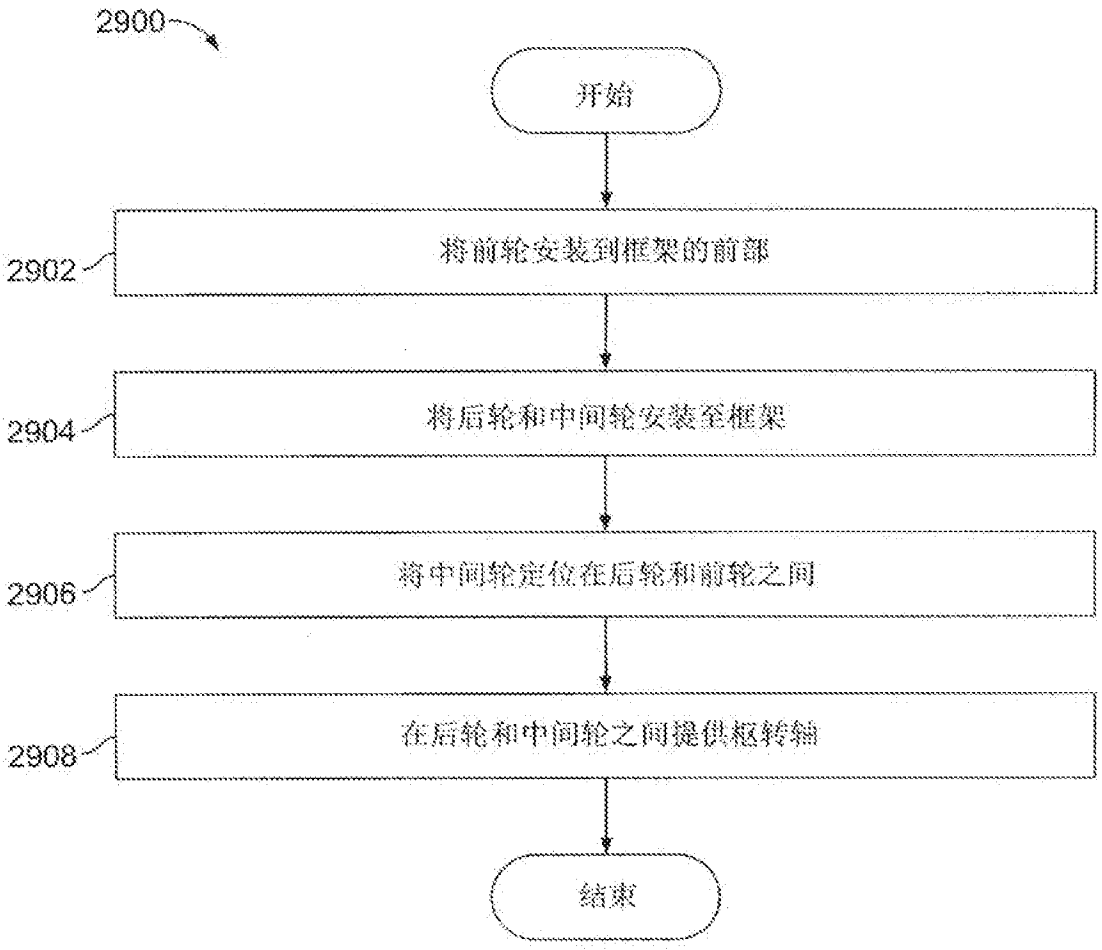
2900
开始
2902
将前轮安装到框架的前部
2904
将后轮和中间轮安装至框架
2906
将中间轮定位在后轮和前轮之间
2908
在后轮和中间轮之间提供枢转轴
结束

图 29

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(74) Agents: **GREY, Ian** et al.; Venner Shipley LLP, 20 Little Britain, London EC1A 7DH (GB).

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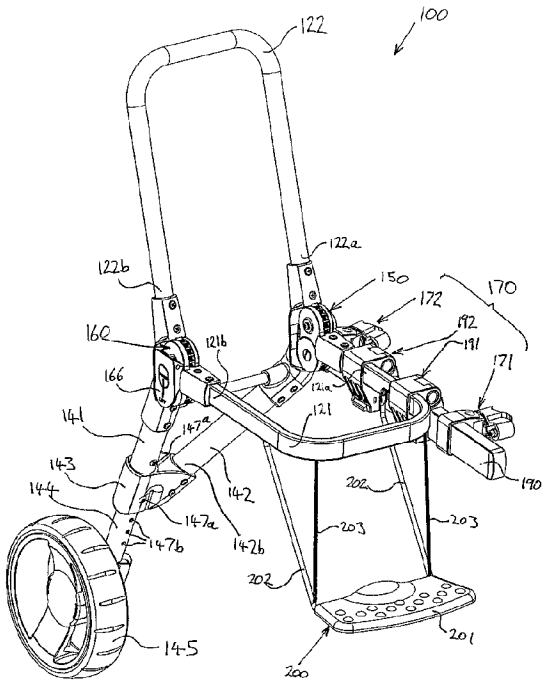
(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: AUXILIARY PUSHCHAIR SEAT



(57) Abstract: An auxiliary seat (1) attachable to a pushchair (2) to enable it to accommodate two children seated side-by-side. The seat comprises a frame (10) having a backrest (22) and a base (21) and a wheel (30) in contact with the ground in an operative position. A child seated on the base is supported with their back against the backrest (22). The frame (10) is configured so that the backrest (22) and the base (21) fold substantially flat when the auxiliary seat is not in use. The auxiliary seat (1), including the base (21) and backrest (22), can pivot relative to the pushchair (2) to be folded against the side thereof in a storage position with the wheel (30) off the ground, once the base (21) and backrest (22) of the seat have been folded substantially flat.

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Published:
— *with international search report*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Auxiliary Pushchair Seat

Description

The present invention relates to a pushchair, and more specifically, to an add-on seating device for pushchairs.

It is often the case with parents having more than one child that the age gap between the children is such that the older child is not fully able to walk by the time the second child is born or is reluctant to do so for an extended period of time. During the first child's initial years, the parents will most probably have bought a single-seat pushchair to transport the child around in until it learns to walk properly. Modern pushchairs can be an expensive outlay, and perhaps difficult to afford, especially for young couples or those on low income. Therefore, when the second child is born, the parents find themselves requiring another pushchair so that both children can be transported together. Therefore, they must either buy another single-seat pushchair in addition to the first, which means having to use two pushchairs each time both children are taken out together or, buy a new double-seat pushchair, which means the original single-seat pushchair is then redundant. In either case, it involves another significant financial outlay for the parents.

One solution to this problem is to provide an add-on device that can be attached to the existing single-seat pushchair to adapt it to be able to carry both children simultaneously. Recently, pushchair add-on products have become commercially available and one such device comprises a wheeled platform that attaches to the rear of the pushchair, on which the elder child can stand whilst the younger child is seated.

However, this platform type of device has a number of disadvantages. Firstly, as the device is a platform and not a seat, it requires the elder child to remain standing, which can quickly tire them out and become uncomfortable for them. This has a safety implication as well, since the elder child is not provided with a harness to stop them falling off the device. Secondly, the device is positioned at the rear of the

pushchair between the pushchair and the parent. This means that the parent has to lean forward and stoop over and/or around the standing child in order to push the pushchair, and this can quickly cause backache and stiffness, and is generally uncomfortable over anything but the shortest distances. Thirdly, the wheels of the platform are positioned behind the rear wheels of the pram, which means that it can be difficult to push the pushchair up or down kerbs, as the device hinders the ability of the pushchair to be pivoted about the rear wheel axle. This device can also unbalance the pushchair and cause it to tip over very easily

It is therefore an object of the present invention to provide an add-on pushchair seating device that substantially alleviates or overcomes the problems mentioned above.

Accordingly, the present invention provides an auxiliary seat attachable to a pushchair to enable it to accommodate two children seated side-by-side, the seat comprising a frame having a backrest and a base and a wheel in contact with the ground in an operative position to support a child seated on the base with their back against the backrest, wherein the frame is configured so that the backrest and the base fold substantially flat when the auxiliary seat is not in use and wherein the auxiliary seat, including the base and backrest, can pivot relative to the pushchair to be folded against the side thereof in a storage position with the wheel off the ground, once the base and backrest of the seat have been folded substantially flat.

In a preferred embodiment, the base and the backrest are pivotable relative to one another such that they are collapsible from the erect operative position to the collapsed folded position by means of a scissor-like mechanism, and the scissor-like mechanism preferably includes at least one sliding joint to enable the base and backrest to be erected and collapsed.

Conveniently, the backrest is attached to one end of a first support strut and the base is attached to one end of a second support strut, and in which said first and second support struts are pivotable relative to each other and the end of the first support strut remote from the backrest is connected to the at least one sliding joint.

A locking mechanism is preferably provided to retain the seat in the erect operative position, and preferably, a locking mechanism locks the at least one sliding joint in place and may comprise a latch extending from the at least one sliding joint, operable to lock onto a fixed shaft on the frame. The latch is preferably located at one end of an arm, the arm rotatably mounted to the at least one sliding joint and operable to move from a first locked position in which the latch snags on the fixed shaft, to a second unlocked position in which the latch is clear of the fixed shaft to allow movement of the at least one sliding joint.

In an alternative embodiment of the invention, the backrest and the base are pivotably connected to one another by hinge joints to be pivotable from the erect operative position to the collapsed storage position in which the backrest lies flat against the base.

The base conveniently comprises a base frame and a seat covering attached thereto, and the backrest preferably comprises a backrest frame with a backrest covering attached thereto.

In a preferred embodiment, the wheel is secured to the frame by a pivotable wheel mechanism which can pivot from an extended operative position to a folded storage position in which the wheel mechanism lies substantially flat against the frame.

The wheel mechanism preferably includes a telescopic strut to allow the distance of the wheel from the frame to be telescopically adjusted independently of the pivoting of the wheel mechanism from the operative position to the storage position, and the telescopic strut conveniently includes a locking mechanism to lock the strut in the desired position.

In a preferred embodiment, in the storage position, the wheel mechanism lies flat against the base on the opposite side thereto to the backrest.

The wheel mechanism is preferably connected to the frame at said hinge joints, and the backrest and the wheel mechanism are advantageously mechanically connected to one another to be moveable from their respective operative positions to their folded storage position together.

At least one hinge joint preferably includes a locking means to lock the backrest, and preferably also the associated wheel mechanism, in the operative position or in the storage position. The locking means preferably includes a pair of ratchet plates operated by a cam lever to move from a locked position in which the ratchets of each plate engage with each other, to an unlocked position in which the ratchets of each plate are out of engagement with each other to allow the backrest and/or wheel mechanism to pivot about the hinge joints.

The frame may be attached to the pushchair by a first clamping means extending from one side of the frame, and the first clamping means may be attached to a first support strut which is hingedly attached to the frame. The frame is preferably further attached to the pushchair by a second clamping means extending from said one side of the frame and the second clamping means is conventiently hingedly attached to the frame. The first and second clamping means are preferably attachable to a supplementary pushchair frame bar which includes further attachment means operable to fix the bar and seat attached thereto, to the conventional pushchair. Alternatively, the first and second clamping means may be attachable to a replacement pushchair frame bar which can be fitted in place of an existing section of frame of a conventional pushchair to fix the seat thereto.

The auxiliary seat may include at least one clamp to secure the add-on seat to a frame of a pushchair, and the at least one clamp is preferably attached to a connection bar, and the frame is attached to the connection bar by at least one hinge connector to be pivotable relative to the connection bar. The at least one clamp and/or the at least one hinge connector are preferably slidable relative to the connection bar allow the position of the frame to be adjusted relative to the pushchair. The frame and connection bar are advantageously releasably attached to

the connection bar. At least one hinge connector preferably includes a locking mechanism to lock the auxiliary seat in the operative position.

The auxiliary seat of the invention is preferably releasably attachable to said pushchair. A preferred embodiment of the invention includes a locking mechanism to secure the auxiliary seat in the storage position.

In a preferred embodiment, the at least one wheel is detachable, and the at least one wheel is preferably positioned such that when the auxiliary seat is mounted on the pushchair in an operative position, the at least one wheel is in alignment with a rear wheel of the pushchair, and more preferably, coaxial with an axle of a rear wheel of the pushchair.

The seat conveniently includes a safety harness to retain a child in position thereon, and may also include a rain cover attached to the seat to at least partially surround a child sitting on the seat. A sunshade may also be attached to the seat to shade a child sitting on the seat, and a toy steering wheel or a toy hobby-horse style attachment may be positionable in front of a child sitting on the seat.

Preferred embodiments of the present invention will now be described, by way of examples only, with reference to the accompanying drawings, in which:

Figure 1 shows a perspective view of a pushchair add-on device according to a first embodiment of the invention, in an erected operative position;
Figure 2 shows the pushchair add-on device of Figure 1 in a collapsed position;
Figure 3 shows a side view of the pushchair add-on device of Figure 1;
Figure 4 shows a side view of the pushchair add-on device of Figure 2;
Figure 5 shows a rear perspective view of the pushchair add-on device of Figures 1 and 3;
Figure 6 shows the pushchair add-on device in the erect position attached to a conventional pushchair;
Figure 7 shows the pushchair add-on device in the collapsed position attached to a conventional pushchair, and folded up in a storage position;

Figure 8 is a perspective view of a second embodiment of a pushchair add-on device according to the invention, in an operative position with the base and backrest removed;

Figure 9 is a plan view from above of the seat of Figure 8;

Figure 10 is a side view of the seat of Figures 8 and 9;

Figure 11 is a front view of the seat of Figures 8 – 10;

Figure 12 is a perspective view of the seat of Figures 8 – 11 in a collapsed position;

Figure 13 is a plan view from above of the seat of Figure 12;

Figure 14 is a side view of the seat of Figures 12 and 13;

Figure 15 is a front view of the seat of Figures 12 – 14;

Figure 16 is a perspective view of the seat of Figures 8 – 15, collapsed and folded up in a storage position;

Figure 17 is a plan view from above of the seat of Figure 16;

Figure 18 is a side view of the seat of Figures 16 and 17;

Figure 19 is a front view of the seat of Figures 16 – 18;

Figures 20A – 20B are side views of the left hinge bracket;

Figure 21 is an exploded perspective view of the left hinge bracket of Figures 20A and 20B;

Figures 22A – 22E are various perspective views of the right hinge bracket showing the locking mechanism;

Figure 23 is an exploded perspective view of the right hinge bracket of Figures 22A – 22E;

Figure 24 is an exploded perspective view of a frame clamp;

Figure 25 is a plan view from above of an assembled frame clamp of Figure 24;

Figure 26 is a side view of the frame clamp of Figure 25;

Figure 27 is an exploded perspective view of a hinged frame clip;

Figure 28 is an end view of an assembled frame clip of Figure 27;

Figure 29 is a side view of the frame clip of Figure 28;

Figure 30 is an exploded perspective view of the wheel; and

Figure 31 is a perspective view of the seat of Figures 8 – 19 with the base and backrest covers in place.

Referring now to Figures 1 – 7 of the drawings, a pushchair add-on device 1, for attachment to any type of conventional pushchair 2 (see Figures 6 and 7), is shown, comprising a chassis frame 10, a seat portion 20 and a wheel 30. The chassis 10 comprises first and second generally curved L-shaped tubular chassis members 11, 12 arranged so that long sides 11a, 12a of each member 11, 12 are parallel to one another, and short sides 11b, 12b are parallel to one another. Each end of each chassis member 11, 12 is connected to a correspondingly opposite end of the other member so as to form a generally rectangular chassis frame 10.

The seat portion 20 comprises a base 21 and a backrest 22. It can also include a seat harness (not shown) comprising a strap extending from either side of the backrest 22 and one extending from the middle of the base 21 at the front thereof, in which all three straps meet in a 'T' – shaped clasp.

The chassis frame 10 includes two collars, 14a, 15a, one slideably received on each of the long sides 11a, 12a of the L-shaped chassis members 11, 12. Each collar 14a, 15a includes a pivot joint integrally formed therewith, and a backrest support stanchion 14, 15 is pivotably attached to each of the collar pivot joints 14a, 15a respectively, and extends therefrom. The backrest 22 is attached at either side to the backrest support stanchions 14, 15 and the backrest 22 is thereby pivotable about the collar pivot joints 14a, 15a.

The chassis 10 also includes a seat support stanchion 16 pivotably attached at one end by a pivot joint 16a to the short side 11b of the first L-shaped chassis member 11 at the rear of the chassis frame 10. The base 21 is rigidly secured to the other end of the seat support stanchion 16 and a lug 23 extends from the rear of the base 21. A hinge rod 23a extends through the lug 23 and each end of the hinge rod 23a extends through the backrest support stanchions 14, 15 respectively. The base 21 is thereby pivotable relative to the backrest support stanchions 14, 15 about said hinge rod 23a and lug 23.

The mechanism described above allows the seat portion 20 to be moveable from a collapsed position shown in Figures 2 and 4 in which the base 21 and backrest 22 lie

substantially flat against the chassis frame 10, to an operative position as shown in Figures 1, 3, 5 and 6 in which the seat portion 20 is erected and the plane of the base 21 is substantially at right angles to the plane of the backrest 22. The arrangement of the components is such that the backrest support stanchions 14, 15 and the seat support stanchion 16, are moveable relative to one another in a scissor-like action, wherein the central pivot point of the scissor action is the hinge rod 23a and the lug 23 on the base 21. The end of the seat support stanchion 16 remote from the base 21 is only pivotable relative to the chassis member 11, and is not moveable laterally relative to it. Therefore, to enable the scissor-action mentioned above, the collar pivot joints 14a, 15a, to which the backrest support stanchions 14, 15 are attached, slide along a section L_{11}, L_{12} of the chassis members 11, 12 respectively as the seat portion 20 is moved from the erect position to the collapsed position.

The chassis 10 further includes a horizontal axle shaft 31 that extends from the long side 11a of the first chassis member 11 through the long side 12a of the second chassis member 12 and protrudes a short distance out of the other side of the second chassis member 12. A section of the protruding end of the axle shaft 31 is threaded in order to receive a retaining nut 32. The wheel 30 includes a central aperture through which the protruding end of the axle shaft 31 can be received. The retaining nut 32 can then be screwed onto the threaded end of the axle shaft 31 to retain the wheel 30 in place whilst allowing it to be freely rotatable about the axle shaft 31. The wheel 30 is therefore easily removable from the axle shaft 31 by removal of the retaining nut 32. It will be appreciated that other such retaining means may be used instead of a screw thread and retaining nut, for example, a snap-fit retaining cap.

A clamp strut 17 is attached at one end to the first chassis member 11 and extends outwardly therefrom away from the second chassis member 12. An attachment clamp 18 is disposed on the other end of the clamp strut 17 and is operable to detachably clamp onto a frame of a conventional pushchair 2. Furthermore, a second attachment clamp 19 is disposed at the end of the short side 12b of the second chassis member 12, and, as with the first attachment clamp, is operable to

detachably clamp onto a frame of a conventional pushchair 2. The two attachment clamps 18, 19 together can thereby secure the device 1 of the invention to the side of the conventional pushchair 2. Each attachment clamp 18, 19 is pivotable relative to the clamp strut 17/chassis member 12 respectively, for reasons which will become apparent from the description hereafter.

The device 1 includes a locking mechanism 40 to enable the seat portion 20 of the device 1 to be retained in the erected operative position (see Figures 5 and 6). The locking mechanism 40 comprises a locking shaft 41 that extends between the slidable collar pivot joints 14a, 15a and is rotatable about its axis relative to the collar pivot joints 14a, 15a. The locking shaft 41 therefore restricts the movement of one collar pivot joint 14a relative to the other 15a, so they can only be moved together and in the same direction. Two locking arms 42, 43 are rigidly secured to the locking shaft 41 and extend rearwardly therefrom, substantially parallel to the long sides 11a, 12a of the chassis members 11, 12. Each arm 42, 43 includes a latch portion 42a, 43a at an end distal from the locking shaft 41. A fixed shaft 44 extends between the chassis members 11, 12 and parallel to the locking shaft 41, and is positioned rearwardly of the locking shaft 41 such that the latch portions 42a, 43a of the arms 42, 43 are just able to be clipped over the fixed shaft 44 and held in this locked position hooked over the fixed shaft 44 by friction therewith. Therefore, when the arms 42, 43 are in this locked position, the collar pivot joints 14a, 15a are prevented from sliding along sections L_{11}, L_{12} of the chassis members 11, 12 respectively, and thereby retain the seat portion 20 in the erect operative position.

As described above, the locking mechanism 40 enables the seat portion 20 of the device 1 to be locked in the erected operative position, and thereby capable of supporting a child thereon in a sitting position next to a child sitting in the pushchair 2 so that they are both facing in the same direction. When the device 1 is not in use, the locking mechanism 40 can be released by unclipping the latch portions 42a, 43a from the fixed shaft 44 and rotating the arms 42, 43 downwards. This can be done by pushing lever release tabs 42b, 43b which are formed on the end of the rotating arms 42, 43 perpendicular thereto and at the end distal from the latch portions 42a, 43a. This will allow the collar pivot joints 14a, 15a to freely slide

along sections L_{11}, L_{12} of the chassis members 11, 12 respectively. The base 21 and seat stanchion 16 can then pivot downwards about the pivot joint 16a, and the backrest 22 and backrest stanchions 14, 15 can pivot downwards about the collar pivot joints 14a, 15a, the backrest stanchions 14, 15 pivoting relative to the seat stanchion 16 about the hinge rod 23a in a scissor-like motion as described above, until the seat portion 20 of the device 1 is in the collapsed position.

Once the device 1 has been put into the collapsed position shown in Figures 2 and 4 and as described above, it can be folded up against the side of the conventional pushchair 2 into the storage position, as shown in Figure 7. This is possible due to the attachment clamps 18, 19 being pivotable relative the clamp strut 17/chassis member 12 respectively, as described above. Once the device 1 has been folded into this storage position, is can be held in place by a retaining means such as a clip (not shown).

With the device 1 in the storage position, the pushchair 2 has a much slimmer profile and will fit through normal doorways with ease. However, if a user wishes to neaten the appearance of the pushchair 2 and device 1 combination further, and make it even slimmer, they may unscrew the wheel retaining nut 32 and remove the wheel 30 from the axle shaft 31.

As can be seen in Figure 6, one of the advantages of the present invention is that when it is attached to a pushchair 2 and is not in the folded storage position, the wheel 30 of the device 1 is aligned with or is coaxial with wheels 3 of the pushchair 2. This means that the pushchair 2 and device 1 combination can be tilted backwards on all three wheels 30, 3 about their common contact line on the ground or their common axis, in order to get up a kerb, for example, and so is much more easily manoeuvrable than a conventional pushchair 2 would be with any of the other known add-on devices.

It is intended that the attachment clamps 18, 19 of the device 1 are suitable to attach to a frame of any conventional pushchair 2. However, some pushchairs currently available may not have side frames compatible with the attachment clamps

18, 19, and so it is envisaged that the device may be supplied with a replacement section of pushchair frame 4 that can be substituted for the relevant section of the original frame to allow the device to be attachable thereto. The specific replacement section of frame 4 could be pushchair-specific, so that a user could identify which pushchair they already own, and purchase a device of the present invention that comes with the appropriate replacement frame section.

In an alternative attachment mechanism to that described above, a universal supplementary section of frame 4 could be provided. This supplementary section 4 would be attachable to the attachment clamps 18, 19 and could further include pushchair-specific attachment means 5, 6 to couple the device 1, via the supplementary frame section 4, to the pushchair 2. Therefore, instead of replacing a section of the existing pushchair frame, there would be an additional section of frame 4. In this case, the user would identify which pushchair they already own, and purchase a device 1 of the present invention that comes with the appropriate pushchair-specific attachment means 5, 6 to enable the device 1 to be fitted to their pushchair 2.

In a further embodiment of the invention, a strap 7 may be connected between a top part 22a of the backrest 22 and a part of the pushchair 2 which is higher than the top 22a of the backrest 22 (see Figure 6). This strap 7 prevents the auxiliary seat device 1 from pivoting downwards about the attachment clamps 18, 19 relative to the pushchair 2 if the wheel 30 runs over a hole or drops off a kerb, for example. In such a scenario, the weight of the auxiliary seat device 1 (and a child thereon) is transferred through the strap 7 to the pushchair 2 and is balanced out by the weight of said pushchair 2 and of a child in the pushchair seat. It will be appreciated that this means of preventing the auxiliary seat device 1 from pivoting downwards beyond a certain angle does not necessarily need to be a strap 7 as shown in Figure 6. For example, a rigid rod could be used secured to the pushchair 2 and some suitable point on the auxiliary seat device 1.

Referring now to Figures 8 – 31, a second embodiment 100 of an add-on pushchair seat of the invention is shown. As with the first embodiment described above, the

second embodiment is also attachable to a frame of any conventional pushchair to provide a secondary side seat for a second child to sit on, in addition to a first child seated in the pushchair itself.

The second embodiment of an add-on seat 100 of the invention generally comprises a folding support frame 120 having a seat or base frame member 121 and a backrest frame member 122, and a wheel mechanism 140 including a wheel 145 in contact with the ground when the add-on seat 100 is in an operative position. An attachment mechanism 170 is provided to enable the add-on seat 100 to be secured to a conventional pushchair.

The base frame member 121 and the backrest frame member 122 are both substantially 'U'-shape frame members, each having a respective first (left-side) distal end 121a, 122a, and respective second (right-side) distal end 121b, 122b. The base frame member 121 and the backrest frame member 122 are pivotally connected to each other at their first distal ends 121a, 122a and at their second distal ends 121b, 122b by left and right hinge brackets 150, 160 respectively.

A seat covering 123 is attached to the base frame member 121, and a backrest covering 124 is attached to the backrest frame member 122 (see Figure 31). The seat covering 123 provides the seat for a child to sit on when the add-on seat 100 is in use, and the backrest covering 124 provides a surface for the seated child to lean against. Both the seat covering 123 and the backrest covering 124 are preferably made of a flexible material such as a fabric or a flexible plastic and are attached to each other at their adjacent edges 123a, 124a. The seat covering 123 and the backrest covering 124 are both tensioned across the base frame member 121 and backrest frame member 122 respectively. Alternatively, the seat covering and backrest covering could be made from a rigid plastic material.

A wheel mechanism 140 is connected to the folding support frame 120 at the hinge brackets 150, 160 and comprises a main wheel strut 141 pivotally attached at one end 141a to the right hinge bracket 160, and a diagonal bracing strut 142 pivotally attached at one end 142a to the left hinge bracket 150. The other end 142b of the

bracing strut 142 is secured to the other end 141b of the main wheel strut 141 by a V-shaped moulded connector 143. This enables the main wheel strut 141 and the bracing strut 142 to be pivotable together about the left and right hinge brackets 150, 160 from an operative position in which they extend away from the frame 120 (see Figures 8 – 11), to a collapsed position (see Figures 12 – 15) and a storage position (see Figures 16 – 19) in which they lie flat against the base frame member 121 of the folding support frame 120.

A third sliding wheel strut 144 is telescopically received in the main wheel strut 141 and is slidable relative thereto to move in and out thereof. A wheel 145 is rotatably and detachably attached to an axle 146 at the free end 144a of the sliding strut 144 remote from the main wheel strut 141. An axle bracket 146a is secured to the free end 144a of the sliding wheel strut 144 to support the axle 146 thereon. The sliding strut 144 is locked in a desired position within the main strut 141 by means of securing bolts 147a extending though the main strut 141 and through apertures 147b in the sliding strut 144. To alter the position of the sliding strut 144 within the main strut 141, and thereby the distance of the wheel 145 from the hinge brackets 150, 160, the securing bolts 147a are removed, the sliding strut 144 moved to the new position with the appropriate apertures 147b aligned with the bolts 147a in the main strut 141, and the bolts 147a are screwed in again through the apertures 147b. It will be appreciated that other unillustrated means of securing the sliding strut 144 within the main strut 141 are possible, for example, spring-biased buttons on the sliding strut 144 being received in apertures in the main strut 141. In such an embodiment, the sliding strut 144 could be adjusted by depressing the buttons into the sliding strut 144 so that they are clear of the holes in the main strut 141, and when the sliding strut 144 was located in the new desired position, the buttons would spring out into the nearest holes in the main strut 141 under spring bias to lock the sliding strut 144 in position.

The wheel 145 is releasably attached to the axle 146, and includes the attachement mechanism as shown in Figure 30. The wheel 145 comprises a tyre 145a attached to a rim 145b. The rim 145b has a spring-biased button 145c at its centre (see Figure 10 for example) which can be depressed into the rim 145b. The wheel also

comprises two bearings 148 and two over-lapping axle-plates 149a, 149b, each with a hole therethrough, all contained within the rim 145b by a retaining plate 145d. In use, the wheel 145 is secured to the axle 146 by depressing the button 145c which is configured so as to push the two axle-plates 149a, 149b together so that the holes in each plate are aligned. The axle 146 can then be passed through a hole in the retaining plate 145d, through the first bearing 148, through the aligned holes in the axle-plates 149a, 149b, and through the second bearing 148. The button 145c is then released and the axle-plates move apart under the action of resilient spring arms on their sides pushing against a portion of the rim 145b, and lips on the axle-plates 149a, 149b then locate in a circumferential groove (not shown) in the axle 146 to hold the wheel 145 onto the axle 146. To release the wheel 145 from the axle 146, the process described above is reversed.

The left and right hinge brackets 150, 160 will now be described in more detail with reference to Figures 20 – 23. The left hinge bracket 150 comprises a housing plate 151, a backrest arm 152 and a wheel strut arm 153. The backrest arm 152 and the wheel strut arm 153 each include an integrally formed toothed cog portion 152a, 153a, and are rotatably secured to the housing plate 151 with the teeth of each cog portion 152a, 153a meshing. Therefore, when one arm is rotated, it causes the other arm to rotate. In use, the left side distal end 122a of the backrest frame member 122 is secured in an aperture in the backrest arm 152, and the one end 142a of the diagonal bracing strut 142 is secured in an aperture in the wheel strut arm 153. The housing plate 151 includes an aperture 151a which, in use, receives the left distal end 121a of the base frame member 121. The toothed cog portion 152a of the backrest arm 152 also includes a central aperture 152c, around which ratchet ridges 152d are radially arranged. A ratchet plate 154 is connected to the toothed cog portion 152a and has its own set of ratchet ridges 154a which engage with the ratchet ridges 152d of the toothed cog portion 152a so that the ratchet plate 154 rotates when the toothed cog portion 152a of the backrest arm 152 rotates. A wire guide 155 is attached to the side of the ratchet plate 154 remote from the toothed cog portion 152a, and a wire 156 extends from the ratchet plate 154, through the wire guide 155 and through a guide lug 151b on the left housing plate 151. The wire 156 is attached to the ratchet plate 154 such that when the left backrest arm 152 is

pivoted from the operative position to the collapsed position, the wire 156 is pulled through the wire guide 155 and though the guide lug 151b, for reasons which will be explained in more detail below.

The right hinge bracket 160 is similar to the left hinge bracket 150 and comprises a backrest arm 162 and a wheel strut arm 163. The backrest arm 162 and the wheel strut arm 163 each include an integrally formed toothed cog portion 162a, 163a, and are rotatably secured to the housing plate 161 with the teeth of each cog portion 162a, 163a meshing. Therefore, when one arm is rotated, it causes the other arm to rotate. In use, the right side distal end 122b of the backrest frame member 122 is secured in an aperture in the backrest arm 162, and the one end 141a of the main wheel strut 141 is secured in an aperture in the wheel strut arm 163. The housing plate 161 includes an aperture 161a which, in use, receives the right distal end 121b of the base frame member 121. Any suitable means may be used to secure the backrest frame member 122 in the backrest arms 152, 162 and the diagonal bracing strut 142 and the main wheel strut 141 in the wheel strut arms 153, 163, such as screws, rivets or bolts. Similarly, the same suitable means can be used to secure the base frame member 121 to the apertures 151a, 161a in the left and right housing plates 151, 161 respectively.

The above arrangement allows the base and backrest frame members 121, 122 to be pivotable relative to one another about the hinge brackets 150, 160 from an operative position (see Figures 8 – 11), in which each frame member 121, 122 is spaced from the other, to a collapsed position and a storage position, in which the backrest frame member 122 is folded substantially flat and lies against the base frame member 121 (see Figures 12 - 19). In the operative position, the backrest arms 152, 162 and the wheel strut arms 153, 163 extend away from each other (see Figures 20A and 22A) and are at their maximum angular displacement from the base frame member 121, limited by end faces 152b, 162b of the backrest arms 152, 162 adjacent the toothed cog portions 152a, 162a, contacting end faces 153b, 163b of the wheel strut arms 153, 163 adjacent the toothed cog portions 153a, 163a (indicated at arrows 'A'). In the collapsed position and the storage position, the backrest arms 152, 162 and the wheel strut arms 153, 163 lie close to each other

either side of their respective housing plate 151, 161 (see Figures 20B and 22E). The backrest arms 152, 162 and the wheel strut arms 152, 163 can be locked in the operative or storage position by a locking mechanism, described in detail below.

The right hinge bracket 160 includes a locking mechanism to lock the backrest arm 162 and the wheel strut arm 163 in a chosen position relative to each other. The locking mechanism comprises a locking plate 164 with a central post 164a, a spring 165 and a locking lever 166. The toothed cog portion 162a of the backrest arm has a central aperture 162c, around which ratchet ridges 162d are radially arranged. The locking plate 164 has a corresponding set of ratchet ridges (not shown) radially disposed around where the central post 164a joins the locking plate 164. The ratchet ridges 162d are located on the side of the toothed cog 162a that faces the ratchet ridges on the locking plate 164. The backrest arm 162 is rotatably attached to the housing plate 161 by the post 164a of the locking plate 164 passing though the spring 165, through the aperture 162c in the centre of the toothed cog portion 162a, through an aperture 161b in the housing plate 161 and is secured to the locking lever 166 by a pin 167 which extends though the locking lever 166 and through an aperture in the end of the post 164a.

Once assembled as described above, the locking lever 166 is pivotable about the pin 167. However, the distance $D_{unlocked}$ between the axis of the pin 167 and an upper angled face 166b of the locking lever 166 is less than a distance D_{locked} between the axis of the pin 167 and a rear face 166c of the locking lever 166. Therefore, when the locking lever 166 is moved from a locked position (see Figures 22A and 22E) to an unlocked position (see Figures 22C and 22D), the locking lever 166 acts as a cam against the housing plate 161 and the pin 167 moves towards the housing plate 161 by a distance equal to $[D_{locked} - D_{unlocked}]$. This moves the post 164a and therefore the locking plate 164 away from the toothed cog portion 162a by a corresponding distance which is sufficient to ensure that the two sets of ratchet ridges are spaced from one another. The backrest arm 162 and the wheel strut arm 163 are therefore free to rotate relative to the housing plate 161. The spring 165 ensures that the locking plate 164 is held away from the toothed cog portion 162a when the locking lever 166 is in the unlocked position.

When the locking lever 166 is moved from the unlocked position to the locked position, the cam action moves the pin 167 by a distance equal to $[D_{locked} - D_{unlocked}]$ away from the housing plate 161. This pulls the central post 164a and the locking plate 164 towards the toothed cog portion 162a and the ratchet ridges 162d on the toothed cog portion 162a into engagement with the ratchet ridges on the locking plate 164. Neither the locking plate 164 nor the locking lever 166 can rotate about the axis of the central post 164a. The locking plate 164 is shaped to abut a portion of the housing plate 161 and is thereby prevented from rotating relative to the housing plate 161. The wheel strut arm 163 is rotatably attached to the housing plate 161 by a shaft 168. The end of the shaft 168 proximate the locking lever 166 has a mushroom head 168a which projects from the end of the shaft 168 away from the wheel strut arm 163. The locking lever 166 includes a locking aperture 166a to receive the mushroom head 168a at the end of the shaft 168, and a latch mechanism within the locking lever 166 (not shown) engages with the rim of the mushroom head 168a to secure the locking lever 166 thereto. The locking lever also includes a release button 169 which disengages the latch mechanism from the mushroom head 168a to allow the locking lever to be pivoted about the pin 167 as described above. Therefore, when the locking lever 166 is secured to the mushroom head 168a at the end of the shaft 168 as described above, it is unable to rotate about the axis of the central post 164a. As a result, the backrest arm 162 and the wheel strut arm 163 are locked in position until the locking lever 166 is again moved to the unlocked position as described above, so that the ratchet ridges are moved out of engagement with each other. As the backrest frame member 122 connects the left backrest arm 152 to the right backrest arm 162, and the wheel struts 141, 142 connect the left wheel strut arm 153 to the right wheel strut arm 163, the locking mechanism locks the movement of the both the wheel mechanism 140 and the backrest frame member 122 about the hinge brackets 150, 160.

The add-on seat 100 is provided with an attachment mechanism 170 to enable it to be secured to a conventional pushchair. The attachment mechanism 170 comprises front and rear pushchair clamps 171, 172, a connection bar 190, and front and rear hinges 191, 192. The pushchair clamps 171, 172 can be secured to a side frame of a

pushchair and are releasably attachable to the connection bar 190. They are also designed to be able to be securely attached to pushchair frames of different cross-sections and dimensions, for example, they can attach to circular, oval, square and rectangular cross-section pushchair frames. The front and rear hinges 191, 192 are pivotally attached to the base frame member 121 and also to the connection bar 190. Therefore, when the two pushchair clamps 171, 172 are secured to the pushchair frame and to the connection bar 190, and the two hinges 191, 192 are secured to the base frame member 121 and to the connection bar 190, the add-on seat 100 is secured to the pushchair.

The connection bar 190 may also be provided with an articulated section 190a (see Figures 9 and 10) which is of the same cross-sectional dimension as the connection bar 190, but which is connected to one end thereof by an articulated joint 190b to be pivotable about a vertical axis of the joint 190b relative to the connection bar 190. This articulated section is designed to enable the add-on seat 100 to be connected to a pushchair whose side frame may not lie parallel with the forward direction of travel of the pushchair. For example, modern three-wheeled pushchairs have two rear wheels and the side frames taper inwards towards a single front wheel. To enable the add-on seat 100 to be attached to such a pushchair, the rear pushchair clamp 172 can be connected to the rear of the side frame of the pushchair and to the rear of the connection bar 190, and the front pushchair clamp 171 can be connected to the front of the pushchair and to the articulated section 190a of the connection bar 190, so that the front pushchair clamp 171 and articulated section 190a would be inset from the rear pushchair clamp 172 due to the shape of the pushchair. The articulated section 190a of the connection bar 190 would thus be pivoted towards the pushchair at an angle to the connection bar 190. The add-on seat 100 would still be secured to the pushchair, but the connection bar 190, and therefore the folding support frame 120 and wheel mechanism 140, would be in alignment with the direction of travel of the pushchair, and not angled inwards parallel to the tapered side of the pushchair. It will be appreciated that the articulated section 190a could equally be connected to the rearmost end of the connection bar 190 instead of the front end if necessary, for example, if the side of

the pushchair to which is it so be attached, tapered inwardly towards the rear of the pushchair.

The two pushchair clamps 171, 172 are identical and so only one will be described in detail hereafter. The pushchair clamps 171, 172 comprise a first body 173 with a flexible metal band 174 ridgedly secured at one end 174a to one side of the first body 173, and the other free end 174b removably received in an aperture 173a in the opposite side of the first body 173. The aperture 173a houses a threaded screw 175 and the other free end 174b of the band 174 is received in the aperture 173a in contact with the threaded screw 175. The side of the band 174 adjacent the threaded screw 175 is provided with a series of parallel grooves 174c which cooperate with the thread of the threaded screw 175 such that when the threaded screw 175 is turned clockwise, the band 174 is pulled through the aperture 173a, reducing the size of the loop of band 174 between the rigidly secured one end 174a of the band 174 and the threaded screw 175. Conversely, when the threaded screw is turned anticlockwise, the other free end 174b of the band 174 is pushed through the aperture 173a, enlarging the size of the loop of band 174 between the rigidly secured one end 174a of the band 174 and the threaded screw 175, until the other end 174b of the band 174 is pushed free of the threaded screw 175. This function is similar to that of known 'jubilee clips'.

A second body 176 is secured to the first body 173 and can rotate relative to the first body 173 so that the second body 176 can be positioned in a specific orientation about a horizontal axis, regardless of at which angle the first body 173 is secured to a pushchair. The second body 176 includes a front opening to an internal cavity, and an upper and lower circular hole 176a, 176b in the upper and lower faces respectively leading to the internal cavity. A shaft 177 is disposed vertically within the internal cavity and includes side wings 177a which are received in corresponding slots 177b in the side walls of the internal cavity. A bolt 178 extends through a hole in the middle of the shaft 177 and through the rear wall of the second body portion 176, and is secured to the first body portion 173, providing the rotateable coupling described above. Upper and lower ends of the shaft 177 are provided with buttons 179a, 179b respectively, which are slidably received thereon and biased away from

each other by upper and lower springs 180a, 180b respectively. When assembled, the upper and lower buttons 179a, 179b extend through the upper and lower holes 176a, 176b and are prevented from being pushed all of the way through their respective hole by a lip 181a, 181b at the base of each button which abuts the rim of the hole 176a, 176b on the inside of the internal cavity.

The pushchair clamps 171, 172 further include a third body 182 comprising a box section with a rectangular aperture 183 therethrough, and upper and lower arms 184a, 184b extending perpendicularly from the upper and lower faces of the box section. Each arm 184a, 184b has a circular aperture 185a, 185b therethrough sized slightly larger than the diameter of the buttons 179a, 179b of the second body 176. The third body 182 can be releasably secured to the second body 176 by depressing the buttons 179a, 179b towards each other so that they sit within the apertures 176a, 176b, and then sliding the third body 182 to engage with the second body 176 with the upper and lower arms 184a, 184b above and below the upper and lower surfaces of the second body 176. When the upper and lower circular holes 176a, 176b in the second body 176 are aligned with the upper and lower circular apertures 185a, 185b in the arms 184a, 184b respectively, the buttons 179a, 179b can spring outwards under the biasing force of the springs 180a, 180b through both upper and lower holes 176a, 176b and upper and lower apertures 185a, 185b to secure the second and third bodies 176, 182 together.

The front and rear hinges 191, 192 are similar to each other and will be described in detail hereafter. Both hinges 191, 192 comprise a first part 193 and a second part 194, pivotally connected to one another by a hinge rod 195 and pivotable relative to one another from an operative position in which the first and second part 193, 194 lie adjacent to each other, to a storage position in which the first and second parts 193, 194 extend away from each other.

The first part 193 has a rectangular aperture 193a therethrough of the same cross sectional dimension as that of the base frame member 121 to allow, in use, the base frame member 121 to make a press fit in the aperture 193a to be secured thereto. The second part 194 has a rectangular aperture 194a therethrough of the same cross

sectional dimension as that of the connection bar 190 to allow, in use, the connection bar 190 to make a press fit in the aperture 194a to be secured thereto.

The first part 193 of the rear hinge 192 has a latch plate 198 which is received in a slot 196 in the bottom of the first part 193, and is spring biased out of the slot 196. The latch plate 198 is prevented from being pushed out of the slot 196 by a small retaining pin 198a which is located in a small vertical slot 193b in the side of the first part 193 of the hinge 192. The second part 194 has a flange 197 extending perpendicularly from the side of the second part 194 opposite the latch plate 198, and an upstanding lip 197a extends from the flange 197. As the hinge 192 is pivoted to the operative position, the lip 197a contacts the latch-plate 198 and pushes it upwards against the force of the spring bias, until the lip 197a passes the latch plate 198 and the latch plate 198 clicks into place between the lip 197a and the second part 194 of the hinge 192. The hinge 192 is thereby retained in the operative position until the latch plate 198 is lifted up and retracted into the slot 196 to release the lip 197a and allow the first and second parts 193, 194 to pivot freely. The latch plate 198 is attached to the wire 156 from the left hinge bracket 150 at a wire fastening point 198b on the top of the latch plate 198. The wire 156 extends from the wire fastening point, through the slot 196, out of the first part 193 of the rear hinge 192 and to the guide lug 151b, the wire guide 155 and ratchet plate 154 as described previously. Therefore, when the wire 156 is pulled by rotation of the ratchet plate 154 on rotation of the backrest arm 152, the latch plate 198 is pulled upwards in the direction of arrow 'B' into the slot.

The front hinge 191 does not have the latch plate 198 and lip 197a arrangement of the rear hinge 192. Instead, the front hinge only has a flange without an upstanding lip, and when the front hinge 191 is in the operative position, a lower face of the first part 193 sits on the flange 197 and is supported by it, but is not locked in that position. However, it is possible, in an alternative embodiment of the invention, for both front and rear hinges 191, 192 to include the latch 198 and lip 197a arrangement of the rear hinge 192.

The pushchair also includes a footrest 200, comprising a foot plate 201 and two support arms 202 pivotably attached to the base frame member 121. The footrest 200 can pivot from an operative position in which a seated child can rest their feet on the foot plate 201 (see Figures 8 – 11), to a folded position in which the footrest 200 is folded flat against the base frame member 121 (see Figures 12 – 19). The footrest 200 can be retained in the folded position by the wheel struts 153, 163 sandwiching it between them and the base frame member 121. The footrest also includes two wires or strings 203 extending from the footplate 201, or proximate the footplate 201, to the base frame member 121 to limit the maximum degree to which the footrest 200 can pivot away from the base frame member 121.

The add-on pushchair seat 100 of the invention is used as described hereafter. First, the two pushchair clamps 171, 172 are secured to the side frame of a pushchair. Once in place, the clamps 171, 172 are designed to remain secured to the pushchair at all times, even when the add-on seat 100 is not attached to the pushchair, and also when the pushchair itself is folded away for storage. The pushchair clamps 171, 172 are secured to the pushchair by unscrewing the threaded screw 175 so that the free end 174b of the steel band 174 is free of the first body 173. The steel band is then passed around an appropriate part of the pushchair frame and the free end 174b of the band 174 pushed into the aperture 173a so that the grooves 174c in the band 174 engage with the thread of the screw 175. The threaded screw 175 is then rotated clockwise to pull the band through the aperture 173a in the first body 173, which tightens the band 174 around the frame of the pushchair and grips the frame clamp 171, 172 thereto. An important feature of this system is that the pushchair clamps 171, 172 are attachable to pushchair frames of varying shapes and sizes, allowing the add-on seat 100 of the invention to be universally used with any commercially available pushchair. Although the add-on seat is adjustable to allow the pushchair clamps to be positioned at a range of heights on the side of the pushchair frame, it is important that each pushchair clamp 171, 172 is placed at the same height as the other.

Next, the second bodies 176 are rotated about their securing bolts 178 so that each one is positioned with the upper button 179a directly above the lower button 179b

and the axis of the shaft 177 lying vertically. The two third bodies 182 are secured to the connection bar 190 and/or the articulated section 190a of the connection bar 190 if necessary, with the connection bar 190 and articulated section 190a making a press fit in the rectangular apertures 183. The third bodies 182 can be forced to slide along the connection bar 190 and articulated section 190a against the resistance of the press fit, so that they are horizontally spaced to align with the first and second bodies 173, 176 on the pushchair. The third bodies 182 are then attached to the second bodies 176 as described above, by depressing the upper and lower buttons 179a, 179b, sliding the upper and lower arms 184a, 184b above and below the upper and lower surfaces of the second bodies 176, and releasing the buttons 179a, 179b so that they spring though the upper and lower holes 176a, 176b in the second bodies 176, and also through the upper and lower apertures 185a, 185b in the arms 184a, 184b respectively. The third bodies 182 are thereby secured to the first and second bodies 173, 176, and so the connection bar 190 and articulated section is secured to the pushchair frame. As described above, the hinges 191, 192 are also secured to the connection bar 190 and to the base frame member 121, thereby connecting the whole add-on seat 100 to the pushchair.

The add-on seat 100 must be adjusted so that it is positioned correctly with respect to the pushchair. First the whole device is folded into the operative position as shown in Figures 8 – 11, with hinges 191, 192 in the operative position so the base frame member 121 is positioned in a horizontal plane, the backrest frame member 122 folded away from the base frame member 121, and the wheel mechanism 140 fully folded away from the base frame member 121. Next, the sliding wheel strut 144 is telescopically adjusted within the main wheel strut 141 until the wheel 145 contacts the ground. It will be appreciated that if the pushchair clamps 171, 172 are positioned either higher or lower on the pushchair frame, the sliding wheel strut 144 will need to be either extended out of, or retracted into the main wheel strut 141 for the wheel 145 to contact the ground. Once the sliding wheel strut 144 is in the correct position, it is secured in that position by the securing bolts 147a extending though the main strut 141 and through apertures 147b in the sliding strut 144. Finally, the add-on seat 100 is positioned so that the wheel 145 is aligned with the rear wheels of the pushchair to which it is attached. This can be done by sliding

either the hinges 191, 192 along the connection bar 190 and/or articulated section 190a, or by sliding the third bodies 182 of the pushchair clamps 171, 172 along the connection bar 190. This allows the add-on seat 100 to be moved forwards or backwards with respect to the pushchair, until the correct position is obtained.

It is an important feature of the add-on seat 100 of the invention that it is constructed so that the rear wheel 145 and axle 146 can be positioned in line with and/or co-axial with the rear wheels of the pushchair. This enables the pushchair and attached add-on seat 100 to easily mount kerbs because a user can tilt the pushchair backwards towards themselves so that the pushchair and add-on seat 100 all pivot about a common axis – i.e. the line of contact on the ground of the pushchair wheels and the add-on seat 100 wheel 145. If the wheel 145 of the invention is not aligned with the rear wheels of the pushchair, the combined apparatus of the pushchair and add-on seat 100 would not tilt backwards (or forwards, to descend kerbs) easily.

It will be appreciated that if the height at which the add-on seat 100 is attached on the pushchair is changed, then the extension of the sliding wheel strut 144 within the main wheel strut 141, and the position of the base frame member 121 relative to the pushchair will have to be changed if the wheel 145 is to remain in line/co-axial with the rear wheels of the pushchair. More specifically, if the pushchair clamps 171, 172 are positioned higher up on the pushchair, the sliding wheel strut 144 will need to be extended out of the main wheel strut 141 further so that the wheel 145 contacts the ground, and consequently, the wheel 145 will be positioned further back relative to the pushchair. The base frame member 121 will then need to be moved forwards relative to the pushchair to re-align the wheel 145 with the wheels of the pushchair. Conversely, if the pushchair clamps 171, 172 are positioned lower down on the pushchair, the sliding wheel strut 144 will need to be retracted into the main wheel strut 141 for the wheel 145 to contact the ground, and consequently, the wheel 145 will be positioned further forwards relative to the pushchair. Therefore, the base frame member 121 will then need to be moved backwards relative to the pushchair to re-align the wheel 145 with the wheels of the pushchair.

Once in this operative position, the backrest frame member 122 is locked relative to the base frame 121 by the cam action of the locking lever 166 pulling the ratchet ridges of the locking mechanism into engagement as described above. The locking lever 166 is also held in the locked position by the internal latch engaging with the mushroom head 168a of the shaft 168 of the right hinge bracket 160, as described above. A child can then sit on the seat covering 123 with their back against the backrest covering 124 to be transported around on the add-on seat.

When the pushchair is to be used to carry only one child and the add-on seat 100 is not required, the add-on seat 100 can be folded from the operative position to a collapsed position (as shown in Figures 12 – 15) and then folded up to a storage position (as shown in Figures 16 - 19) as described hereafter.

The release button 169 is depressed (Figure 22B), releasing the internal latch within the locking lever 166 which allows the locking lever 166 to pivot about the pin 167 (Figure 22C) and free the mushroom head 168a of the shaft 168 from the locking aperture 166a. As described above, this cam action of the locking lever 166a allows the locking plate 164 to move away from the toothed cog portion 162a of the backrest arm 162 under the biasing force of the spring 165, and thereby disengage the ratchet ridges 162d on the toothed cog portion 162a from the ratchet ridges on the locking plate 164. This allows the two backrest arms 152, 162 and the two wheel strut arms 153, 163 to pivot about the hinge brackets 150, 160 respectively (Figure 22D), and therefore allows the associated backrest frame member 122 and wheel mechanism 140 to pivot about the hinge brackets 150, 160.

The wheel mechanism 140 and the backrest frame member 122 can then be folded into the collapsed position in which they both lie flat against the base frame member 121 (see Figures 12 – 15). Once in this collapsed position, the locking lever 166 can be pivoted back to the locked position (Figure 22E), pulling the locking plate 164 back towards the locking lever 166 and thereby engaging the ratchet ridges 162d on the toothed cog 162a with the ratchet ridges on the locking plate 164. This locks the backrest arms 152, 162 and associated backrest frame member 122, and the wheel strut arms 153, 163 and associated wheel mechanism 140, in the collapsed

position. As mentioned previously, the footrest 200 is folded up with the wheel mechanism 140 in the collapsed position and is held between the main and bracing wheel struts 141, 142 and the base frame member 121.

Once in the collapsed position as described above, the add-on seat 100 can be folded up against the side of the pushchair into the storage position (see Figures 16 – 19). By moving the backrest frame member 122 to the folded collapsed position as described above, the wire 156 is pulled though the wire guide 155 and though the guide lug 151b, which pulls the latch plate 198 into the slot 196 in the rear hinge 192 to release the lip 197a, and thereby release the second part 194, of the rear hinge 192 from the first part 193. The collapsed folding support frame 120 and wheel mechanism 140 can then be pivoted upwards about the front and rear hinges 191, 192 to the storage position to lie flat against the side of the pushchair in a substantially vertical plane.

The add-on seat can be retained in the storage position described above by using a strap (not shown) to hold it to the pushchair. In addition, the wheel 145 can be removed from the axle as described above, and attached to a 'false axle' 146b protruding from the side of the connection bar 190 (see Figures 16 and 18). The side of the wheel 145 thereby abuts the hinges 191, 192 and prevents them from pivoting back to the operative position.

If the pushchair is to be transported, for example, in the boot of a car, it will most probably be necessary to remove the main body of the add-on seat 100 from the pushchair to allow the pushchair to be folded. This is done by detaching the third bodies 182 from the second bodies 176 of the pushchair clamps 171, 172 as described above. The only part of the add-one seat 100 that then remains attached to the pushchair is the first and second bodies 173, 176 of the pushchair clamps 171, 172 which are intended to be small enough to not hinder the folding mechanism of modern pushchairs.

Other unillustrated embodiments of the present invention may include additional features or accessories. For example, a rain cover could be provided, attachable to

the auxiliary seat device 1/100, to partially or entirely surround a child seated on the device to shelter the child from wind/rain/sleet/snow. The rain cover could incorporate a supporting frame structure attachable to the device. Alternatively, the device could be provided with a sunshade or parasol.

The add-on seat 1/100 would preferably include a seat belt or a 3- or 5- point safety harness to secure around the child's waist and/or shoulders when seated, to prevent the child from falling off the seat and being injured.

The wheel struts 141, 142, 144 and folding frame members 121, 122 are intended to be made from light-weight steel tubing for optimum strength and rigidity, whilst also remaining light enough to carry easily. This also has the benefit of minimising the weight of the accessory exerted on the side of the pushchair so that when it is in the storage position, it does not cause the pushchair to tip over. It is also envisaged that the seat cover 123 and the backrest cover 124 are easily removable for cleaning, and replaceable when worn or to change the aesthetic appearance of the invention.

In addition to the functional accessories mentioned above, the auxiliary seat device 1 may also include an accessory intended to amuse the child whilst the child is in the seat. This could include a toy steering wheel or dashboard arrangement, or a hobby-horse style attachment positionable in front of the child.

Claims

1. An auxiliary seat attachable to a pushchair to enable it to accommodate two children seated side-by-side, the seat comprising a frame having a backrest and a base and a wheel in contact with the ground in an operative position to support a child seated on the base with their back against the backrest, wherein the frame is configured so that the backrest and the base fold substantially flat when the auxiliary seat is not in use and wherein the auxiliary seat, including the base and backrest, can pivot relative to the pushchair to be folded against the side thereof in a storage position with the wheel off the ground, once the base and backrest of the seat have been folded substantially flat.

2. An auxiliary seat according to claim 1 wherein the base and the backrest are pivotable relative to one another such that they are collapsible from the erect operative position to the collapsed folded position by means of a scissor-like mechanism.

3. An auxiliary seat according to claim 2 wherein the scissor-like mechanism includes at least one sliding joint to enable the base and backrest to be erected and collapsed.

4. An auxiliary seat according to claim 3 wherein the backrest is attached to one end of a first support strut and the base is attached to one end of a second support strut, and in which said first and second support struts are pivotable relative to each other and the end of the first support strut remote from the backrest is connected to the at least one sliding joint.

5. An auxiliary seat according to any preceding claim comprising a locking mechanism to retain the seat in the erect operative position.

6. An auxiliary seat according to claim 3 or claim 4 comprising a locking mechanism to retain the seat in the erect operative position and which locks the at least one sliding joint in place.

7. An auxiliary seat according to claim 6 wherein the locking mechanism comprises a latch extending from the at least one sliding joint, operable to lock onto a fixed shaft on the frame.

8. An auxiliary seat according to claim 7 wherein the latch is located at one end of an arm, the arm rotatably mounted to the at least one sliding joint and operable to move from a first locked position in which the latch snags on the fixed shaft, to a second unlocked position in which the latch is clear of the fixed shaft to allow movement of the at least one sliding joint.

9. An auxiliary seat according to claim 1 wherein the backrest and the base are pivotably connected to one another by hinge joints to be pivotable from the erect operative position to the collapsed storage position in which the backrest lies flat against the base.

10. An auxiliary seat according to claim 9 wherein the base comprises a base frame and a seat coving attached thereto.

11. An auxiliary seat according to claim 9 or claim 10 wherein the backrest comprises a backrest frame with a backrest covering attached thereto.

12. An auxiliary seat according to any of claims 9 – 11 wherein the wheel is secured to the frame by a pivotable wheel mechanism which can pivot from an extended operative position to a folded storage position in which the wheel mechanism lies substantially flat against the frame.

13. An auxiliary seat according to claim 12 wherein the wheel mechanism includes a telescopic strut to allow the distance of the wheel from the frame to be telescopically adjusted independently of the pivoting of the wheel mechanism between the operative position and the storage position.

14. An auxiliary seat according to claim 13 wherein the telescopic strut includes a locking mechanism to lock the strut in the desired position.

15. An auxiliary seat according to any of claims 12 to 14 wherein, in the storage position, the wheel mechanism lies flat against the base on the opposite side thereto to the backrest.

16. An auxiliary seat according to any of claims 12 to 15 wherein the wheel mechanism is connected to the frame at said hinge joints.

17. An auxiliary seat according to claim 16 wherein the backrest and the wheel mechanism are mechanically connected to one another to be moveable together between their respective operative position and their folded storage position.

18. An auxiliary seat according to claim 16 wherein at least one hinge joint includes a locking means to lock the backrest in the operative position or in the storage position.

19. An auxiliary seat according to claim 17 wherein at least one hinge joint includes a locking means to lock the backrest and the mechanically associated wheel mechanism in the operative position or in the storage position.

20. An auxiliary seat according to claim 18 or claim 19 wherein the locking means includes a pair of ratchet plates operated by a cam lever to move from a locked position in which the ratchets of each plate engage with each other, to an unlocked position in which the ratchets of each plate are out of engagement with each other to allow the backrest and/or wheel mechanism to pivot about the hinge joints.

21. An auxiliary seat according to any preceding claim wherein the frame is attached to the pushchair by a first clamping means extending from one side of the frame.

22. An auxiliary seat according to claim 21 wherein the first clamping means is attached to a first support strut which is hingedly attached to the frame.

23. An auxiliary seat according to claim 21 or claim 22 wherein the frame is further attached to the pushchair by a second clamping means extending from said one side of the frame.

24. An auxiliary seat according to claim 23 wherein the second clamping means is hingedly attached to the frame.

25. An auxiliary seat according to claim 23 or claim 24 wherein the first and second clamping means are attachable to a supplementary pushchair frame bar which includes further attachment means operable to fix the bar and seat attached thereto, to the conventional pushchair.

26. An auxiliary seat according to claim 23 or claim 24 wherein the first and second clamping means are attachable to a replacement pushchair frame bar which can be fitted in place of an existing section of frame of a conventional pushchair to fix the seat thereto.

27. An auxiliary seat according to any of claims 1 – 20 including at least one clamp to secure the add-on seat to a frame of a pushchair.

28. An auxiliary seat according to claim 27 wherein the at least one clamp is attached to a connection bar, and the frame is attached to the connection bar by at least one hinge connector to be pivotable relative to the connection bar.

29. An auxiliary seat according to claim 28 wherein the at least one clamp and/or the at least one hinge connector are slidable relative to the connection bar to allow the position of the frame to be adjusted relative to the pushchair.

30. An auxiliary seat according to claim 28 or 29 wherein the frame, at least one hinge connector and connection bar are releasably attached to the at least one clamp.

31. An auxiliary seat according to any of claims 28 to 30 wherein the at least one hinge connector includes a locking mechanism to lock the auxiliary seat in the operative position.

32. An auxiliary seat according to any preceding claim which is releasably attachable to said pushchair.

33. An auxiliary seat according to any preceding claim wherein the at least one wheel is detachable.

34. An auxiliary seat according to any preceding claim including locking mechanism to secure the auxiliary seat in the storage position.

35. An auxiliary seat according to any preceding claim wherein the at least one wheel is positioned such that when the auxiliary seat is mounted on the pushchair in an operative position, the at least one wheel is in alignment with a rear wheel of the pushchair.

36. An auxiliary seat according to any preceding claim wherein the at least one wheel is positioned such that when the auxiliary seat is mounted on the pushchair in an operative position, an axle of the at least one wheel is coaxial with an axle of a rear wheel of the pushchair.

37. An auxiliary seat according to any preceding claim attachable to a pushchair to enable two children to be seated side-by-side and facing the same direction.

38. An auxiliary seat according to any preceding claim wherein the seat includes a safety harness to retain a child in position thereon.

39. An auxiliary seat according to any preceding claim including a rain cover attached to the seat to at least partially surround a child sitting on the seat.

40. An auxiliary seat according to any preceding claim including a sunshade attached to the seat to shade a child sitting on the seat.

41. An auxiliary seat according to any preceding claim including a toy steering wheel positionable in front of a child sitting on the seat.

42. An auxiliary seat according to any preceding claim including a toy hobby-horse style attachment positionable in front of a child sitting on the seat.

43. A pushchair incorporating an auxiliary seat according to any preceding claim.

44. An auxiliary seat substantially as hereinbefore described with reference to the accompanying drawings.

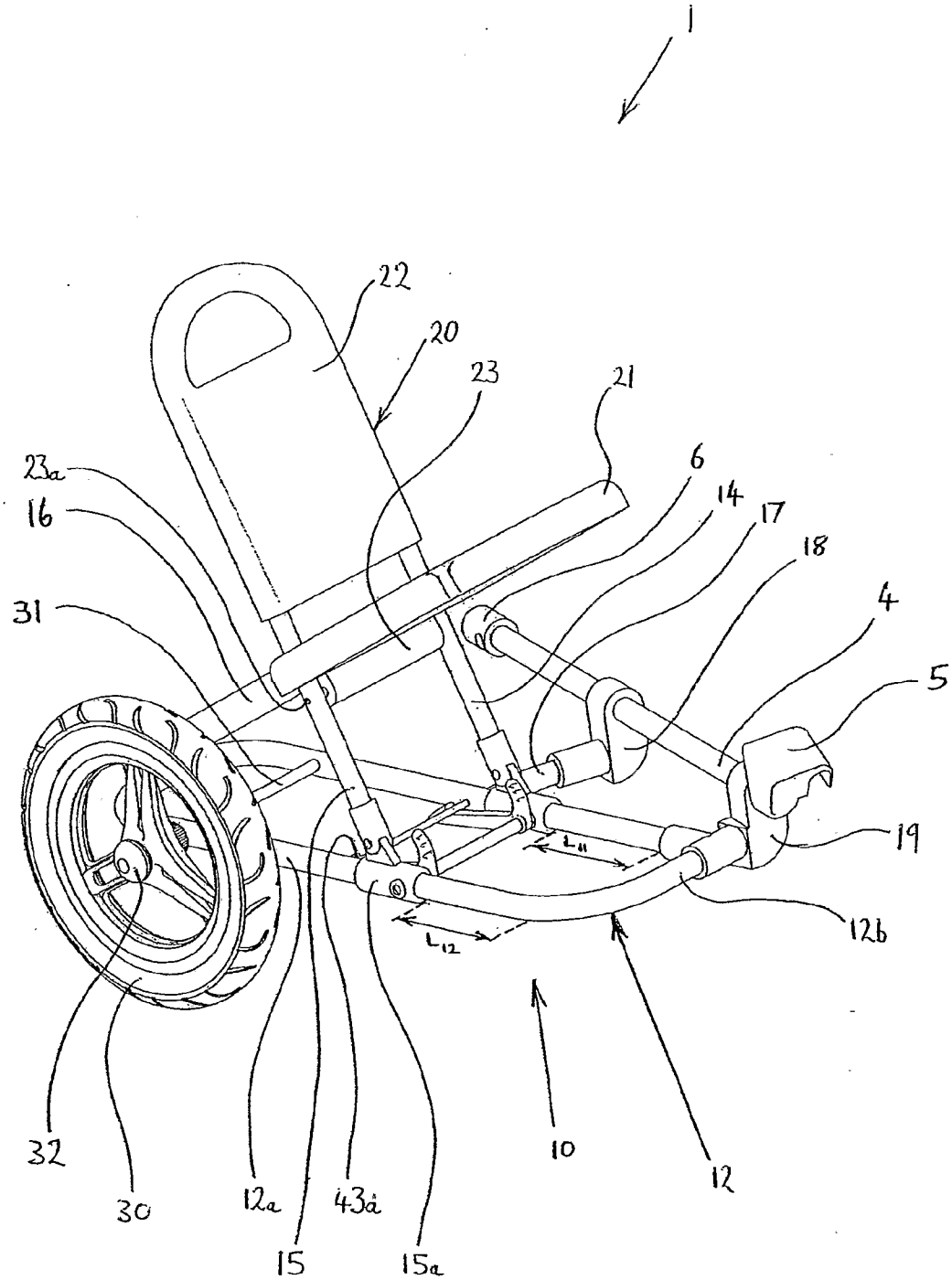


FIGURE 1

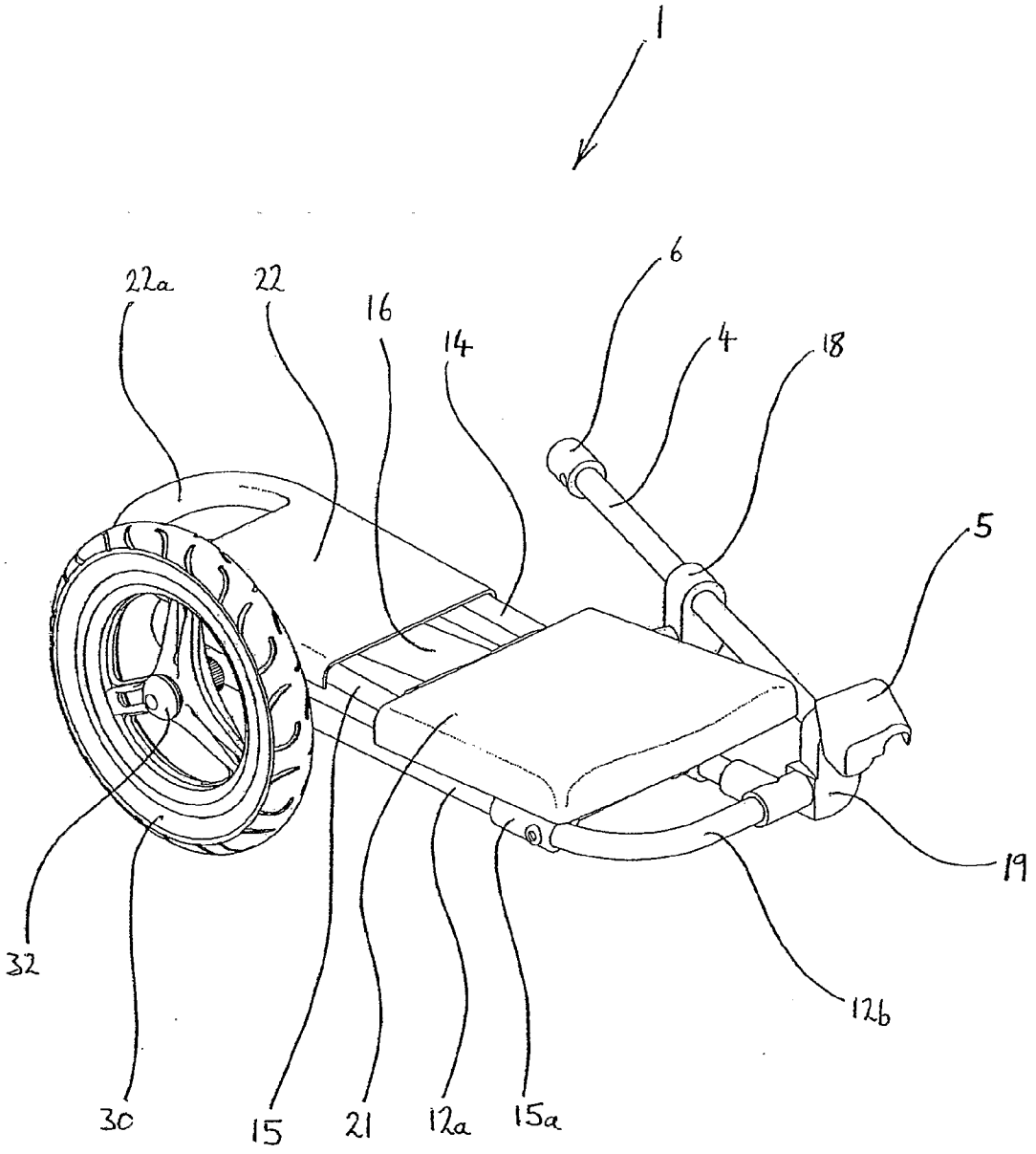


FIGURE 2.

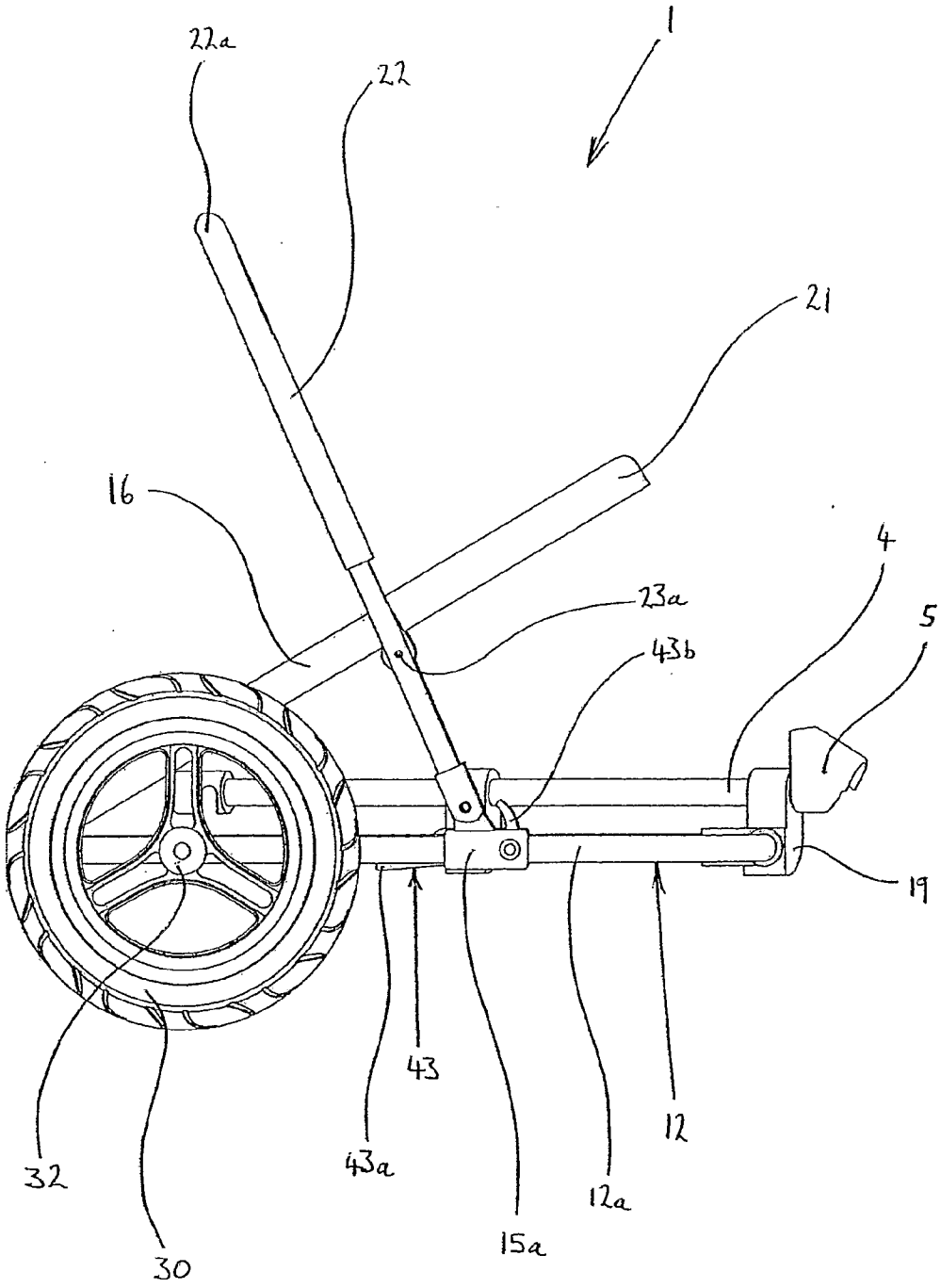


FIGURE 3

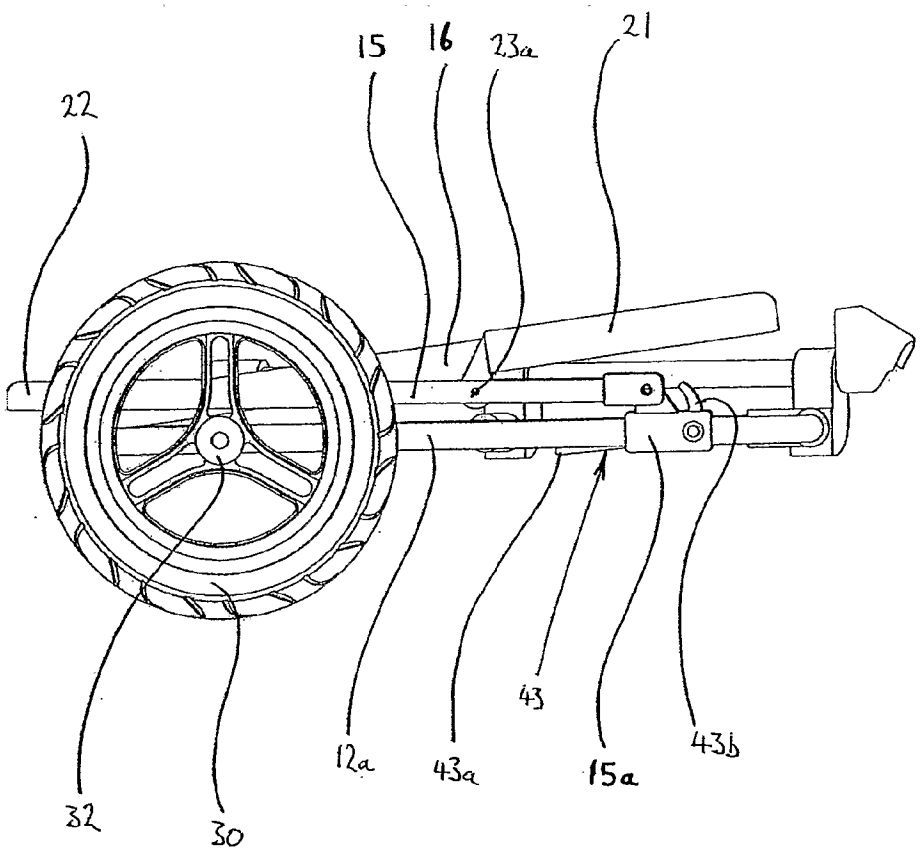


FIGURE 4

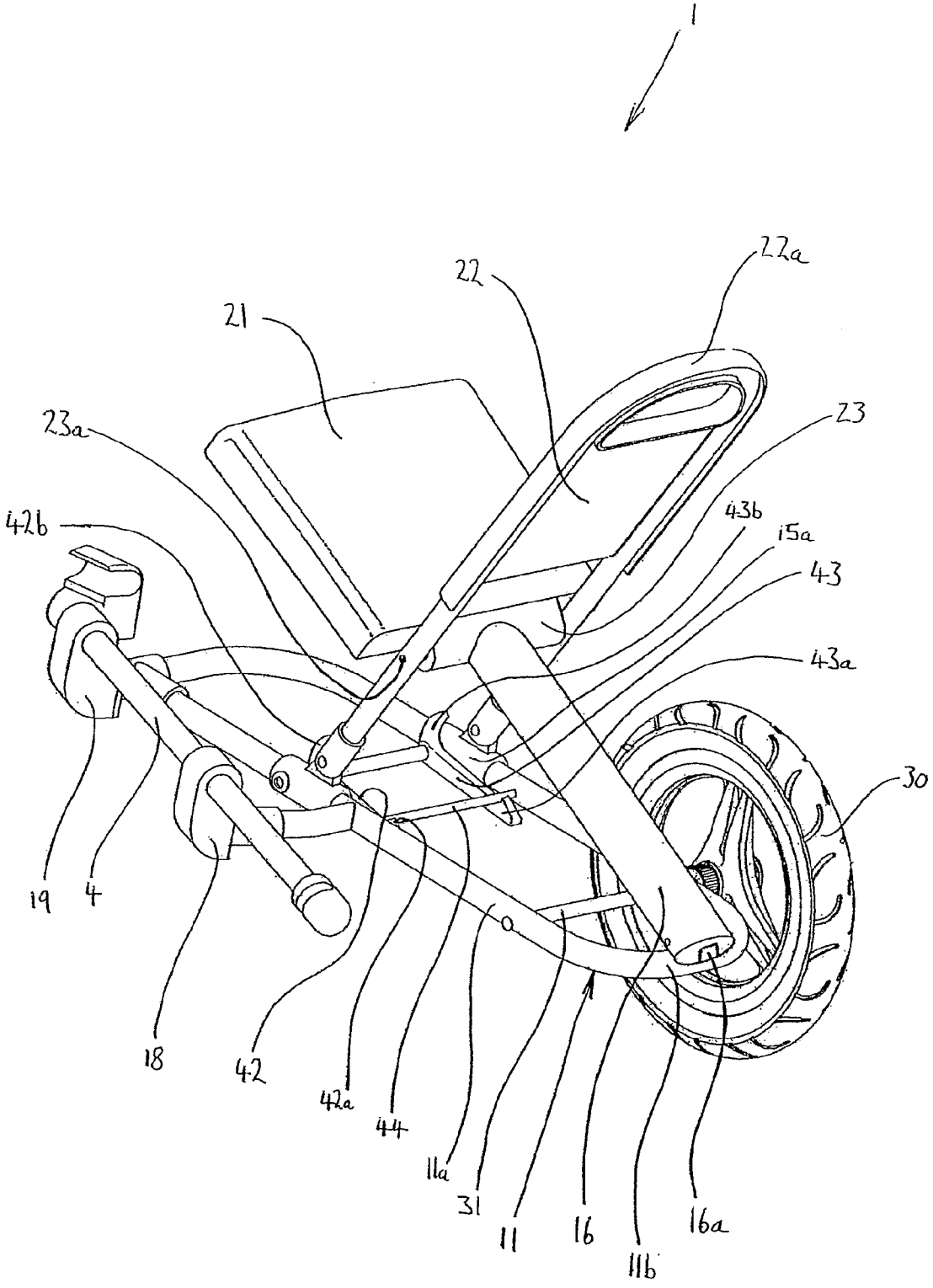

1
22a
22
21
23a
23
42b
43b
15a
43
43a
30
19
4
18
42
42a
44
11a
31
11
16
16a
11b

FIGURE 5

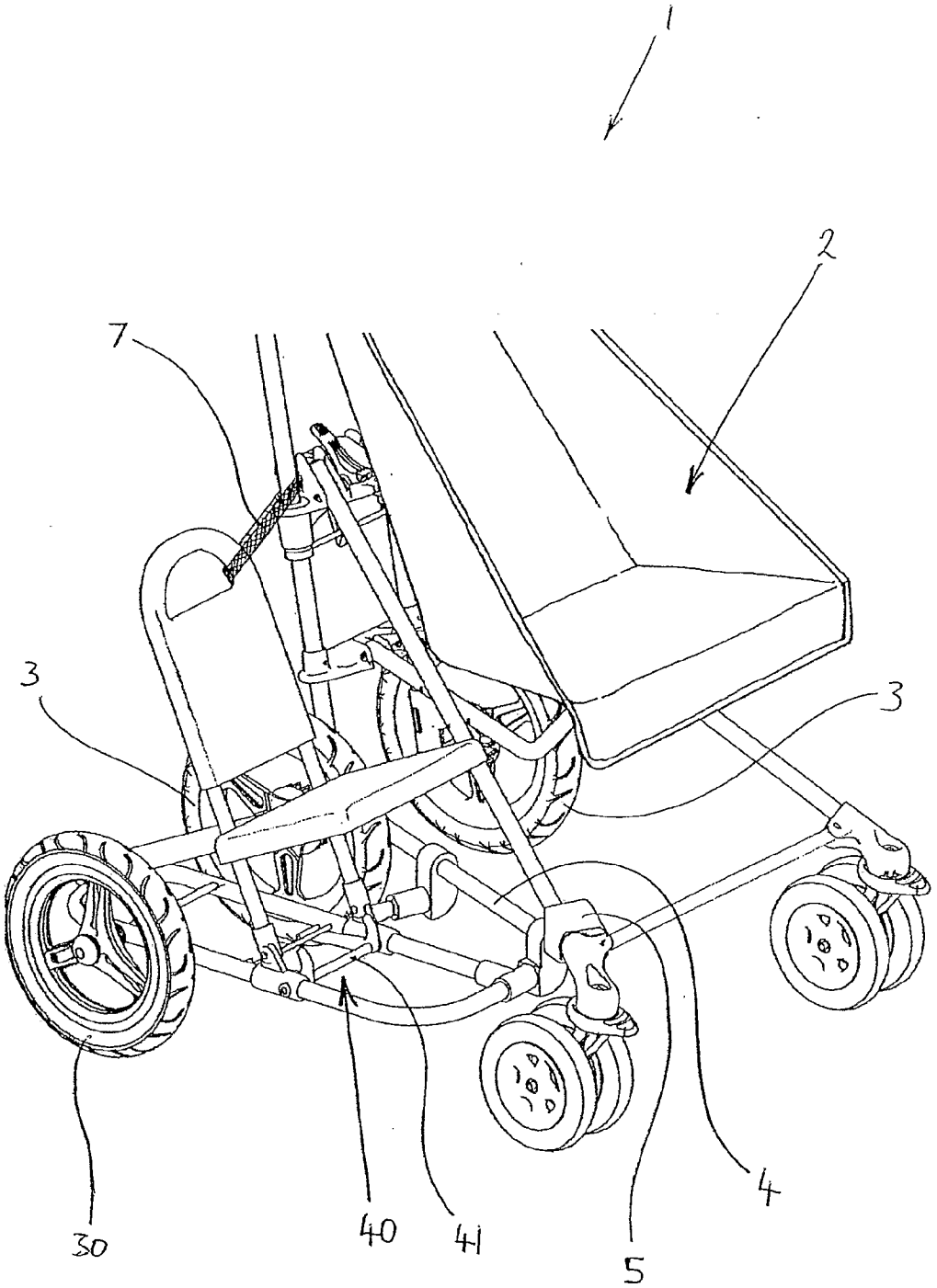


FIGURE 6.

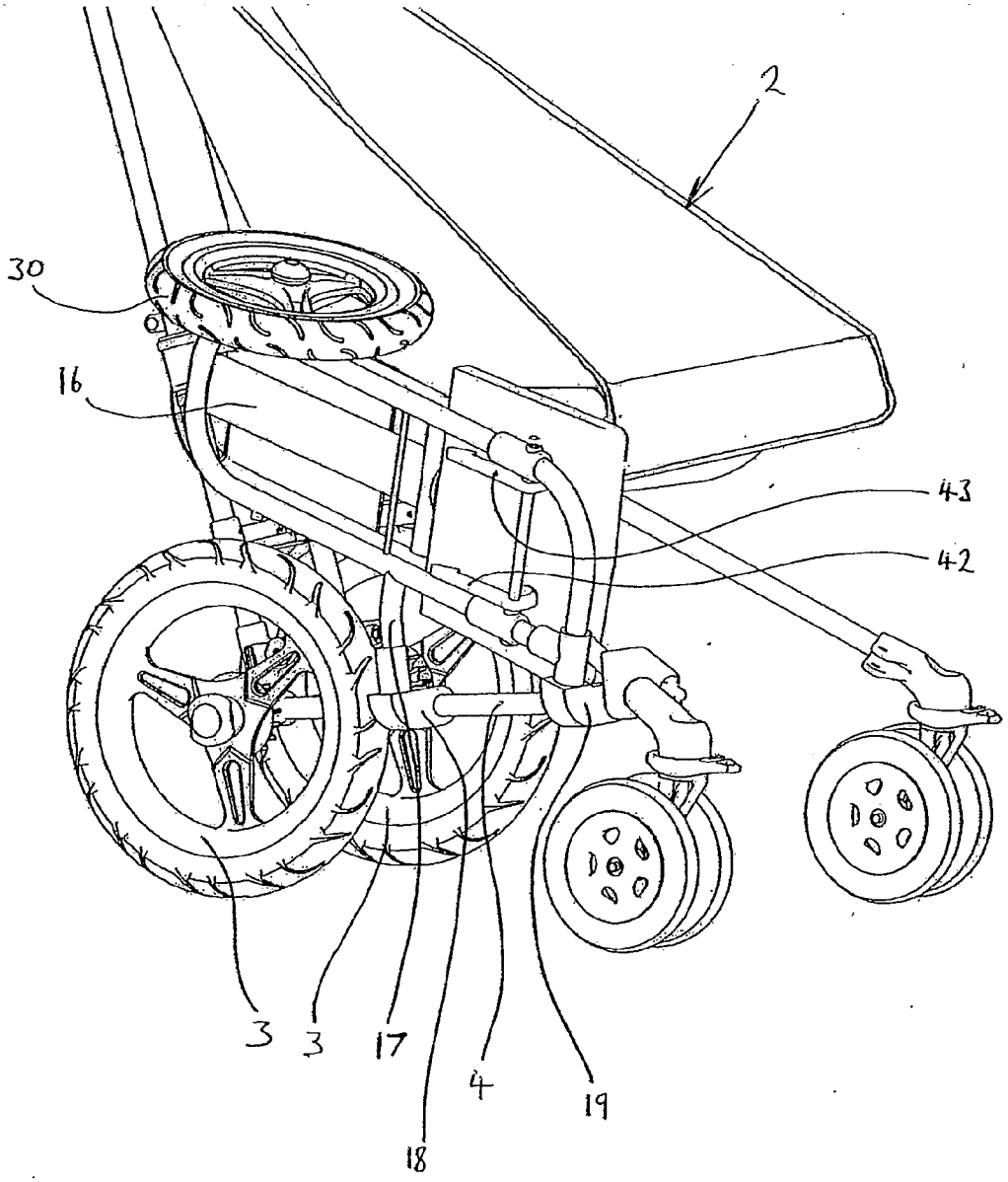
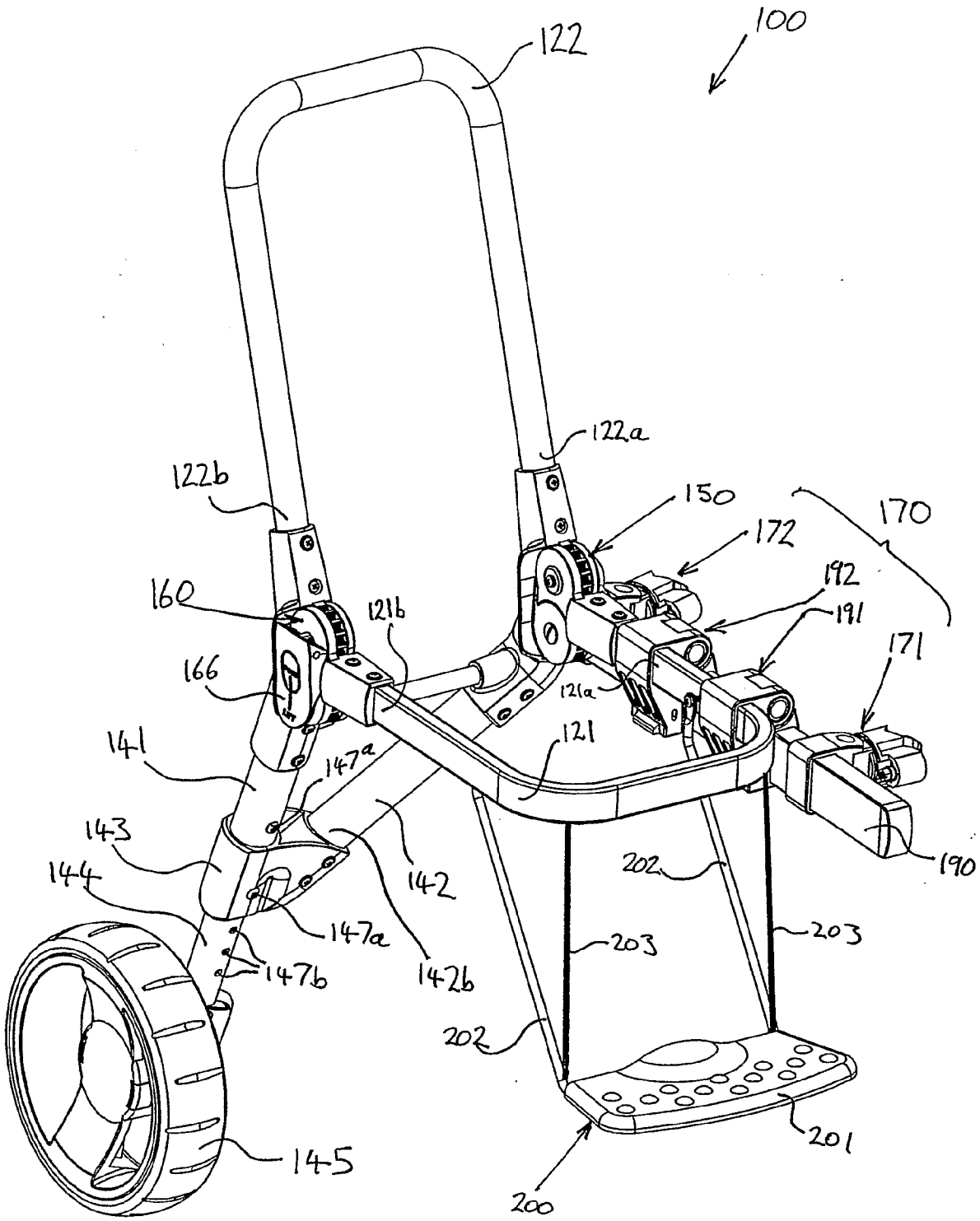


FIGURE 7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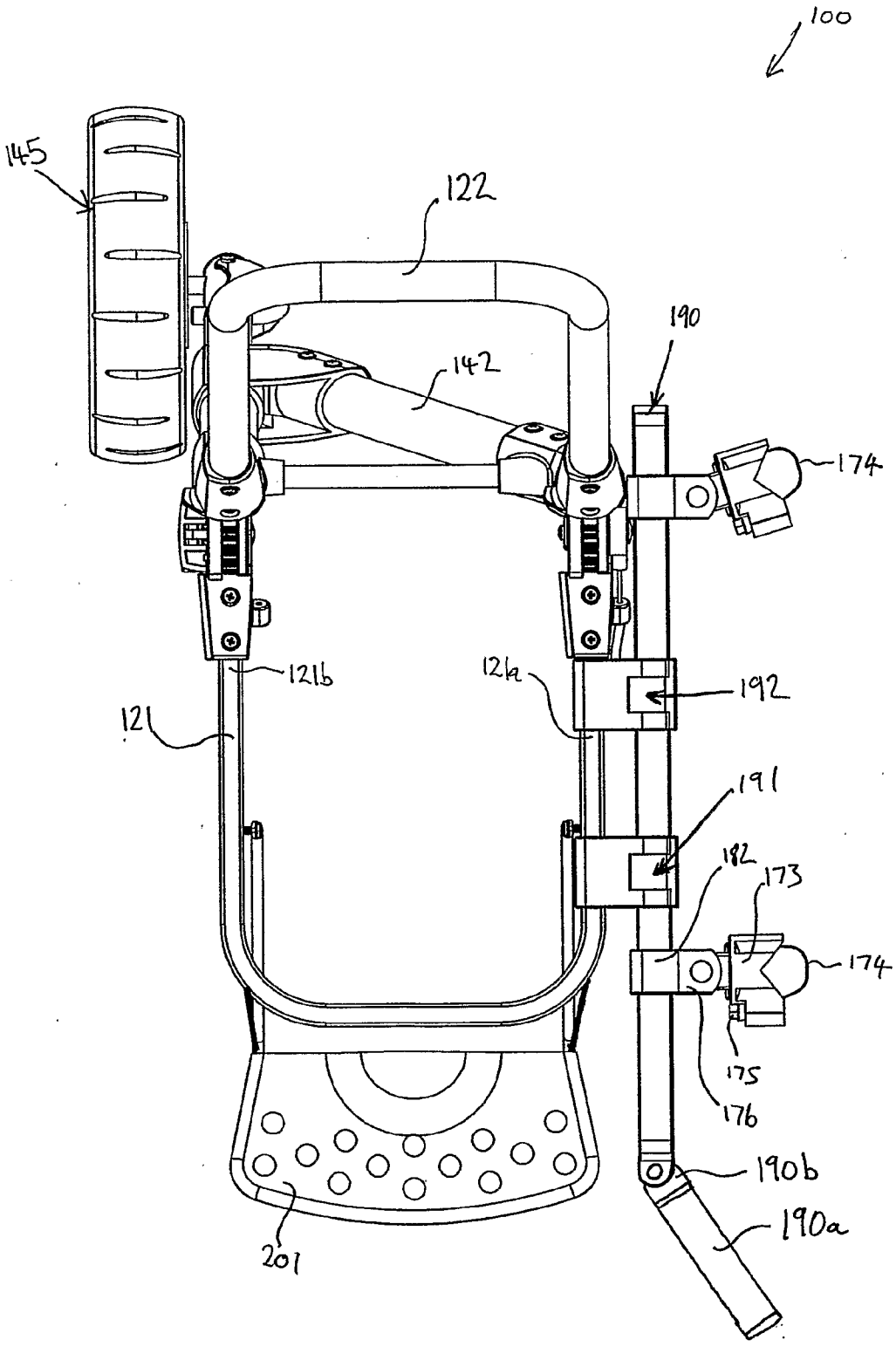
190

FIGURE 8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190a
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FIGURE 9

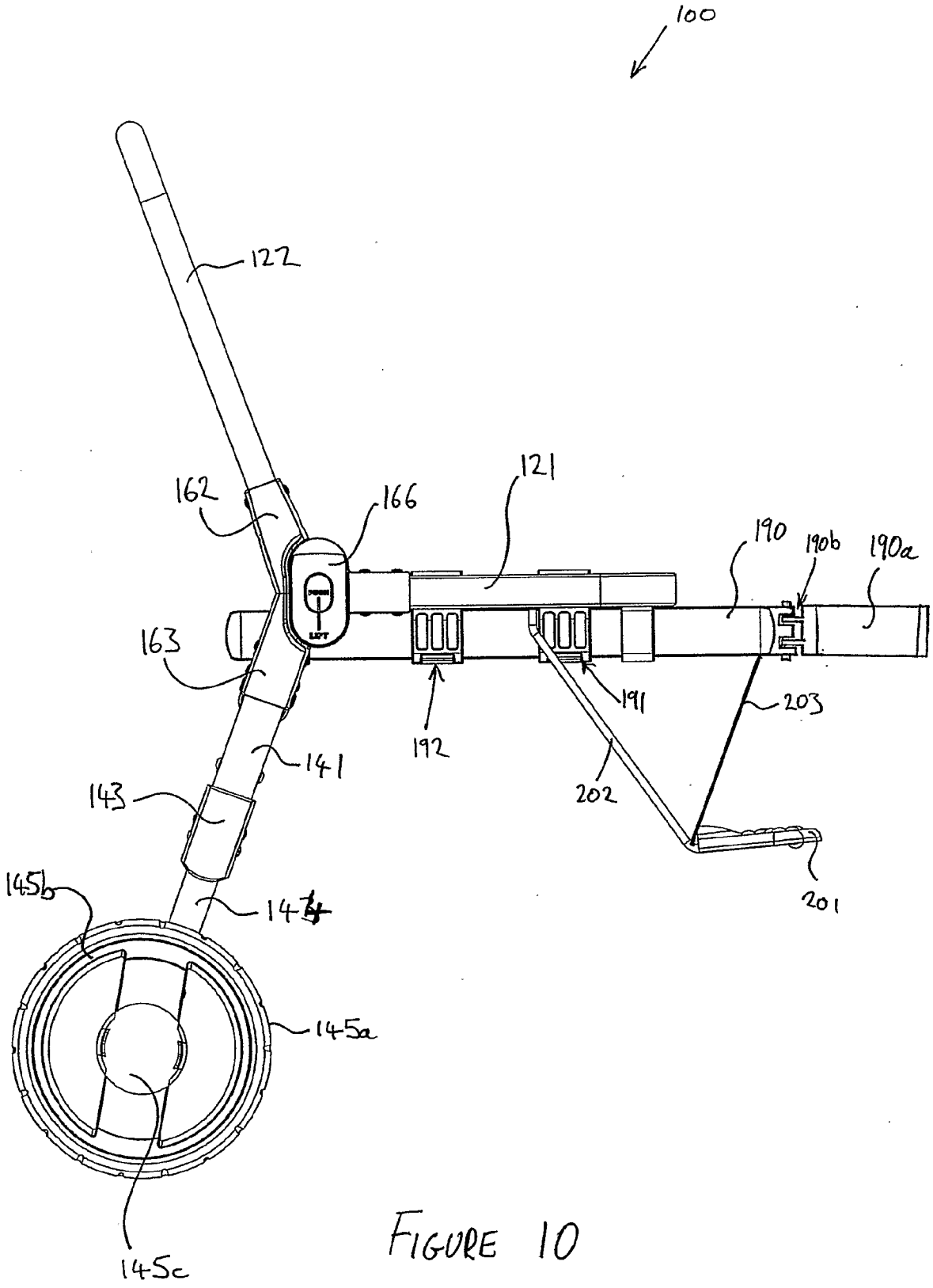
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FIGURE 10

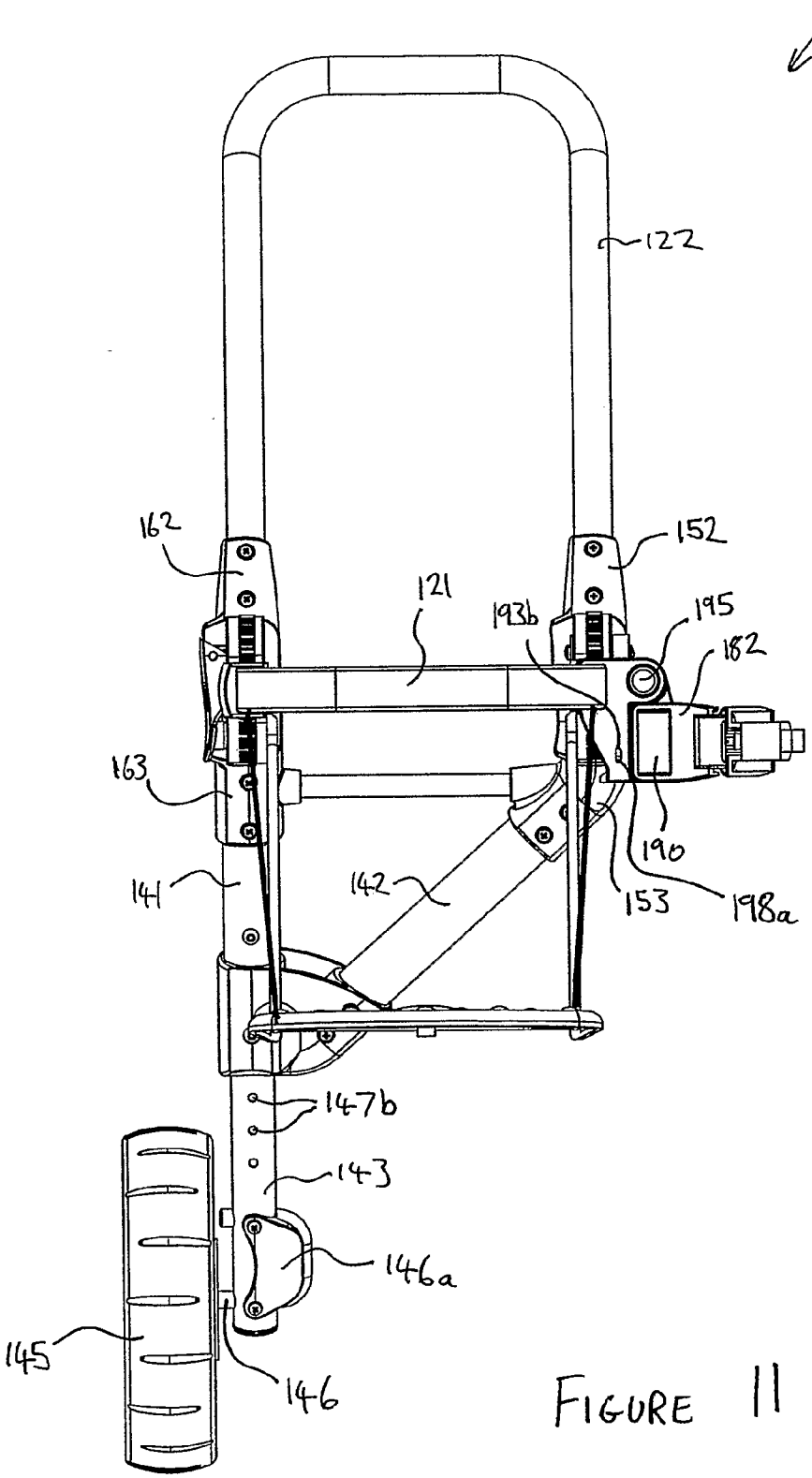
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FIGURE 11

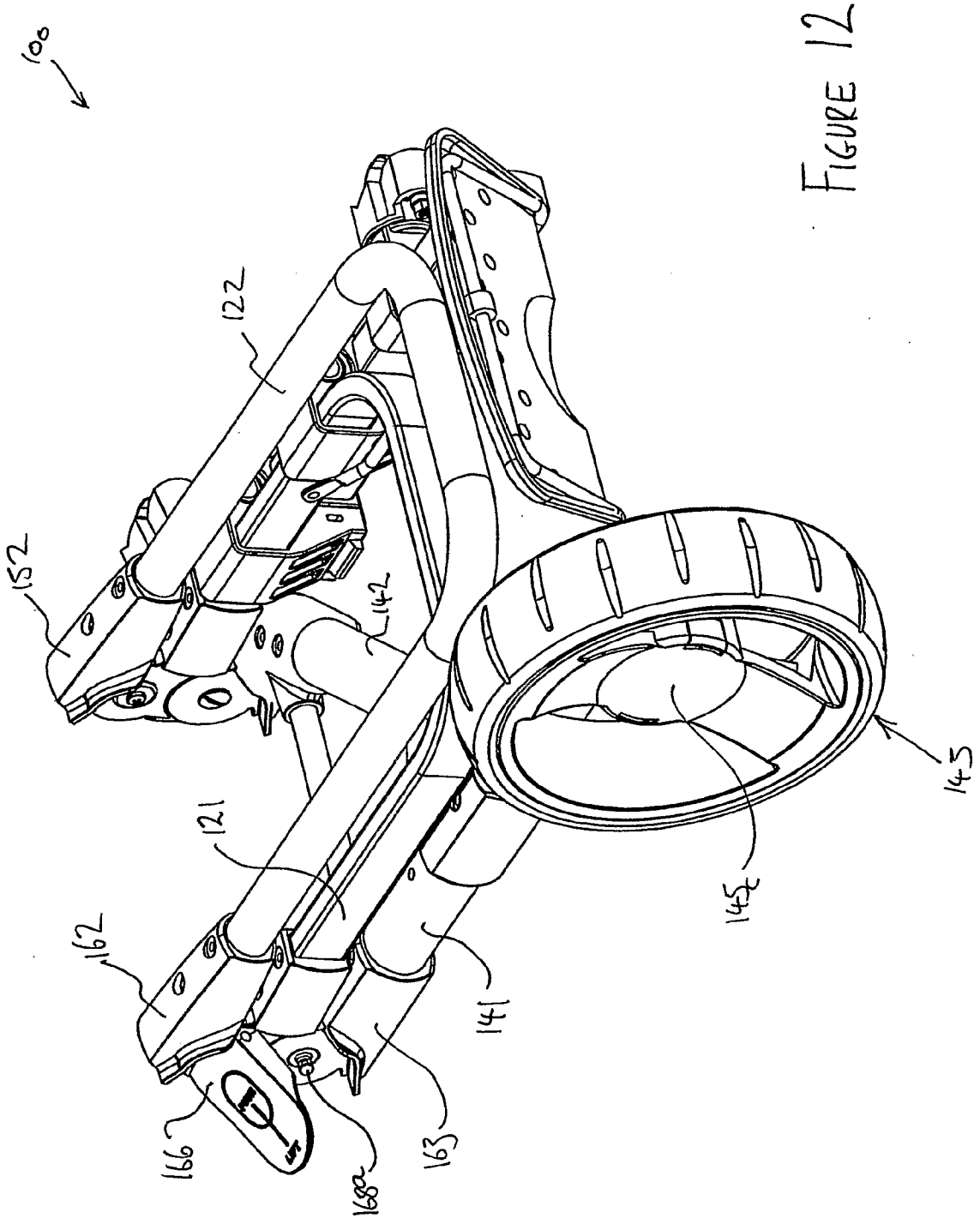


FIGURE 12

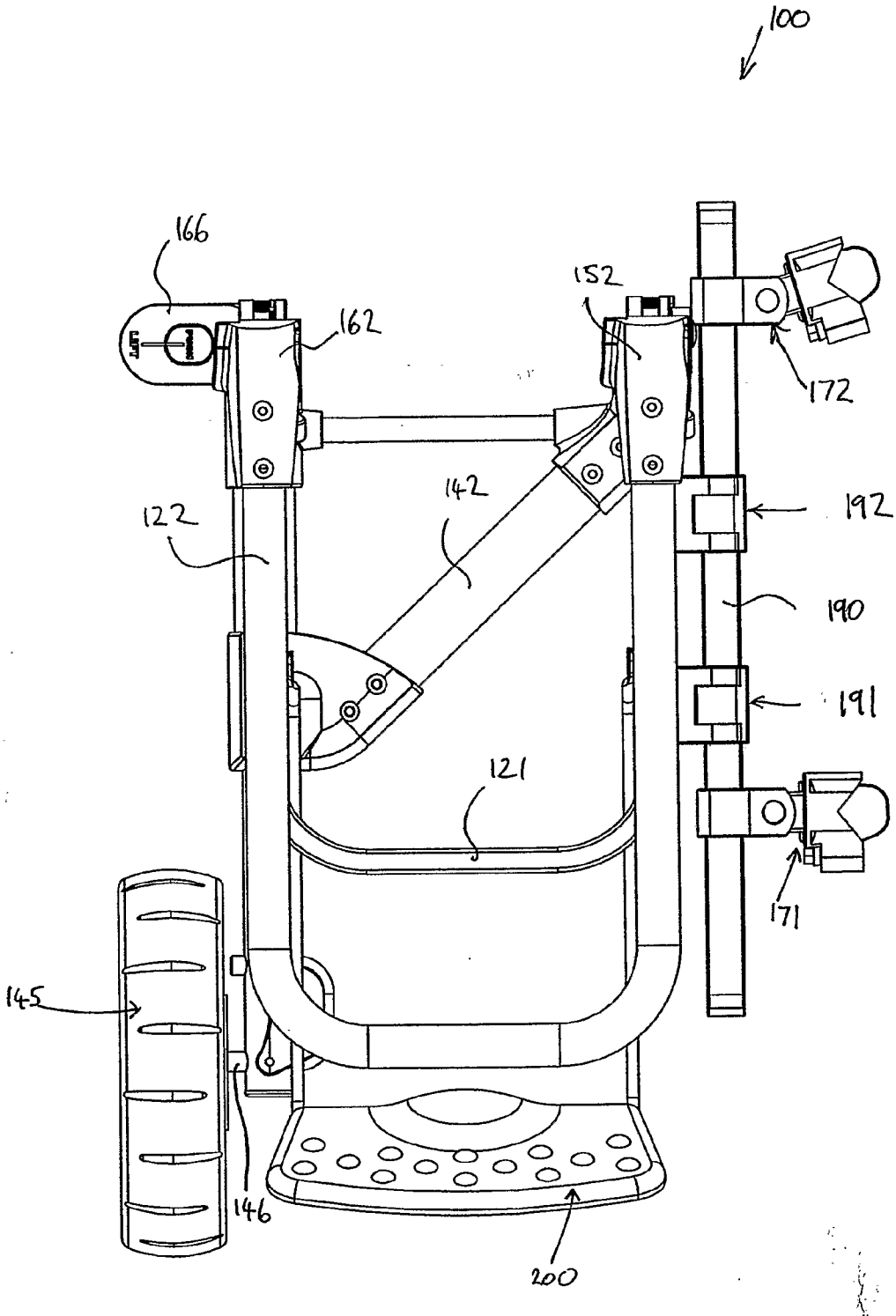
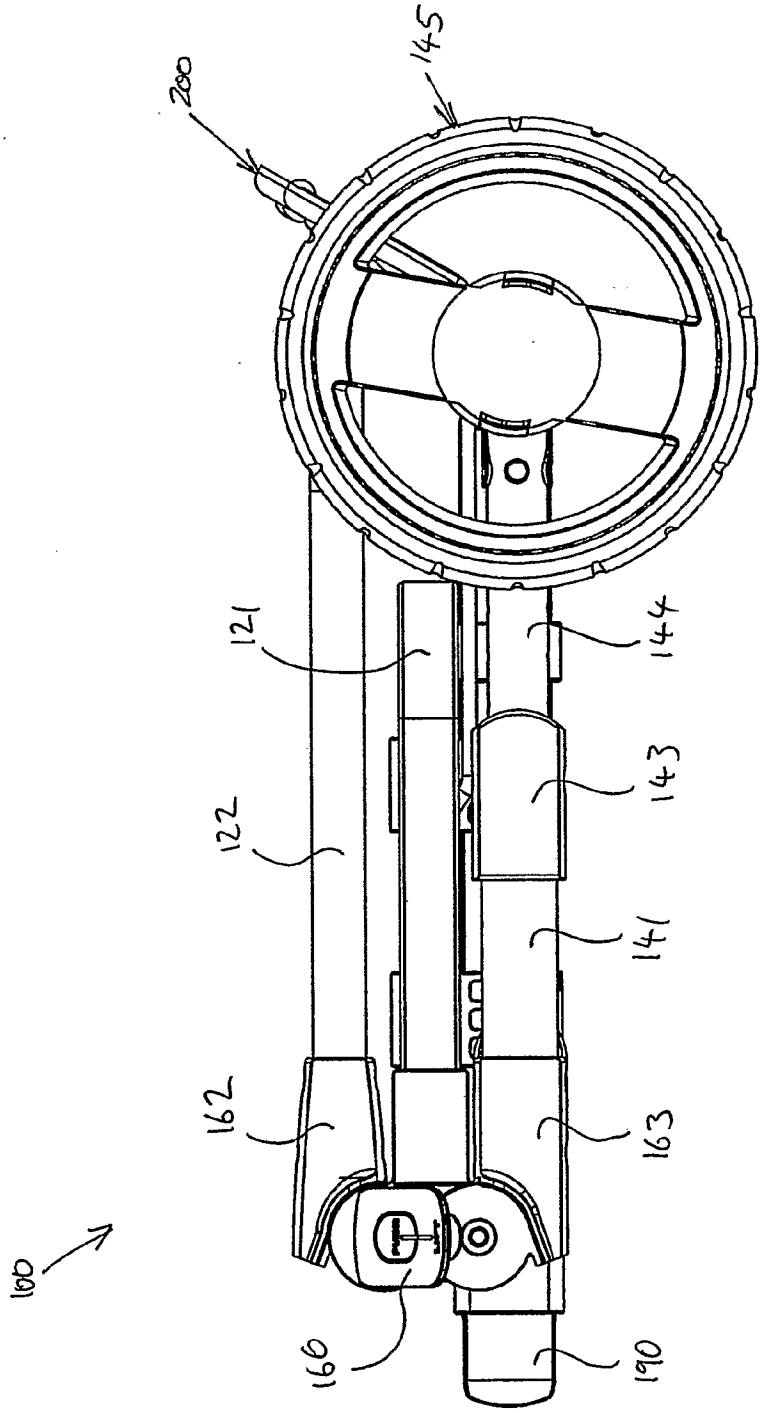


FIGURE 13



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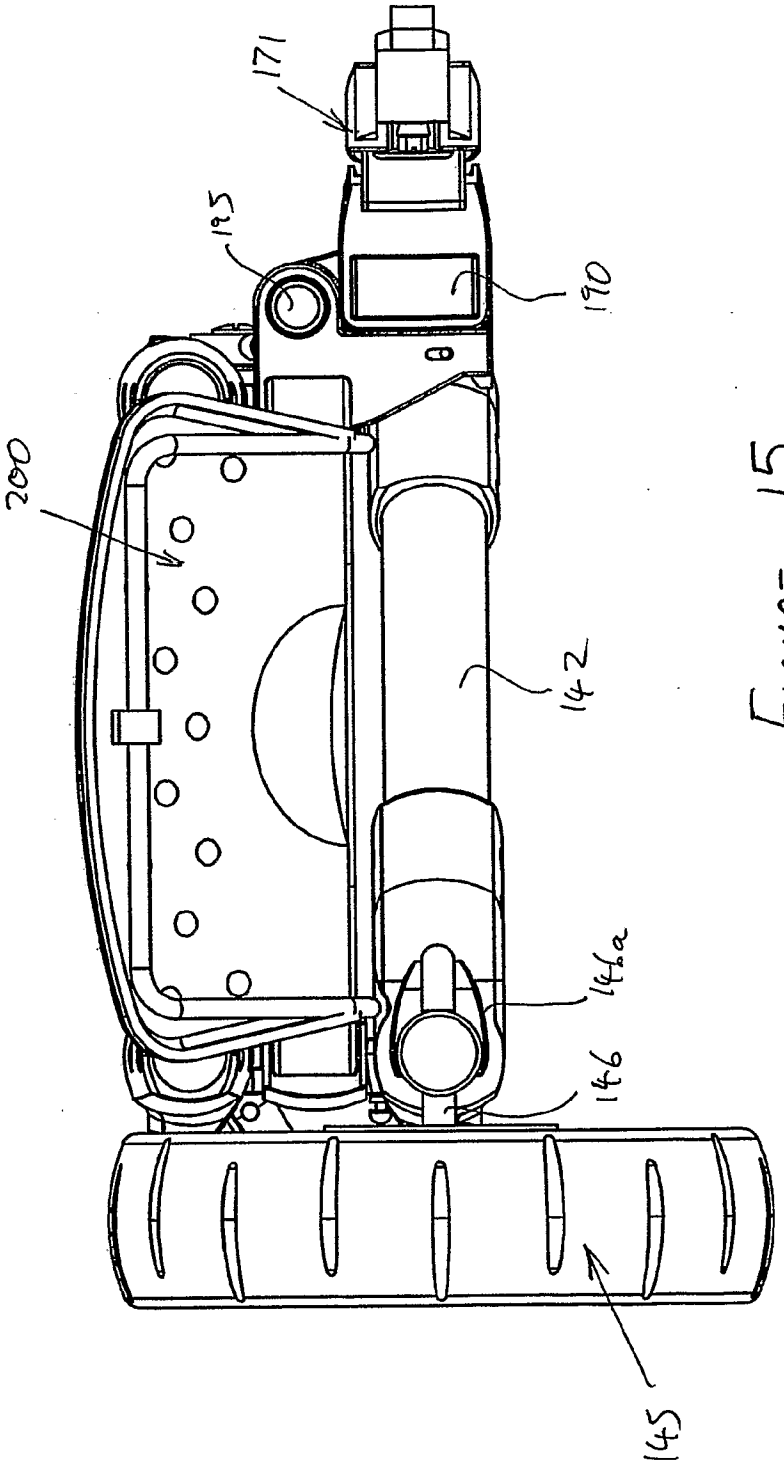

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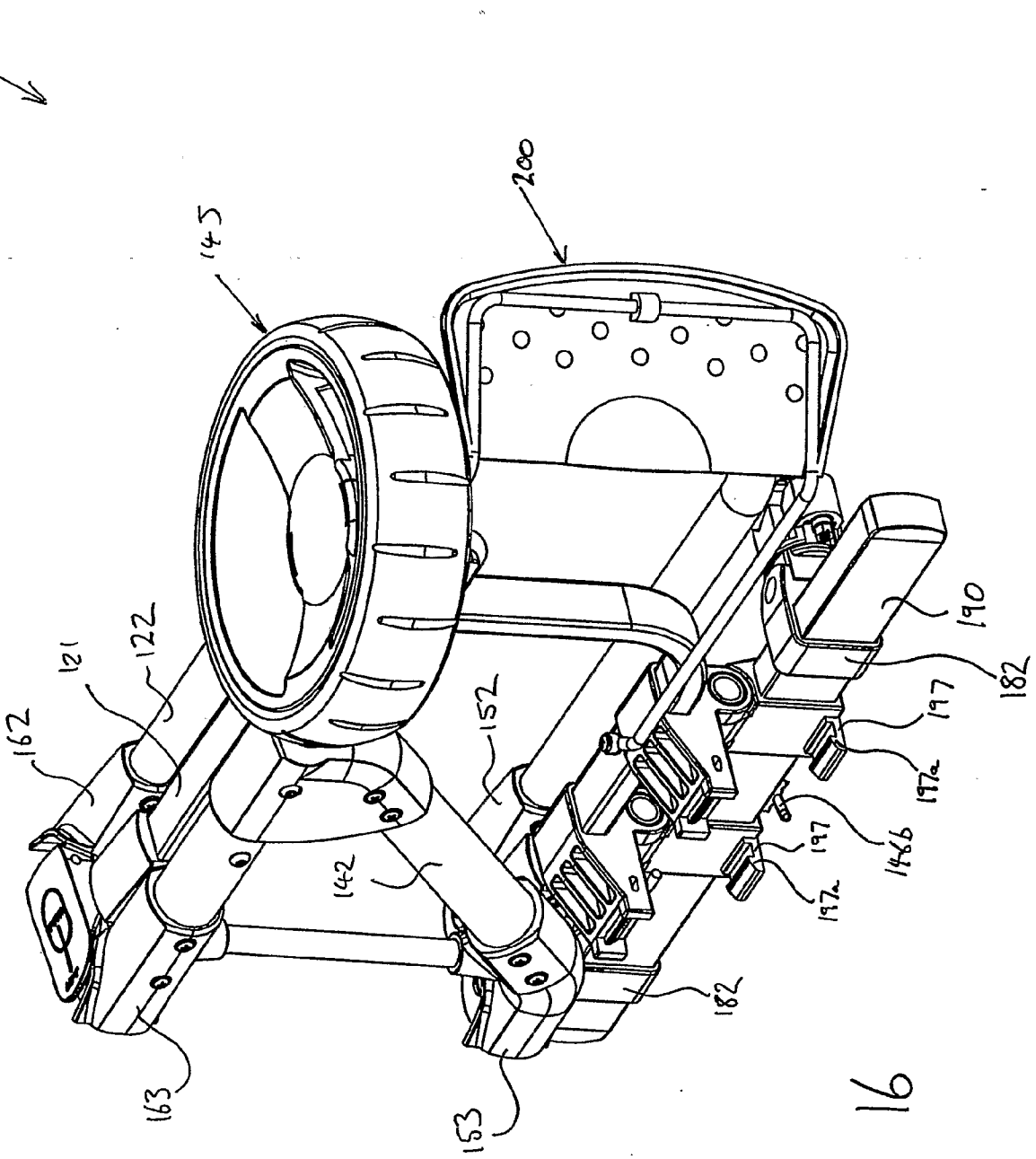
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182
197
197a
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197a
182
152
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153

FIGURE 16

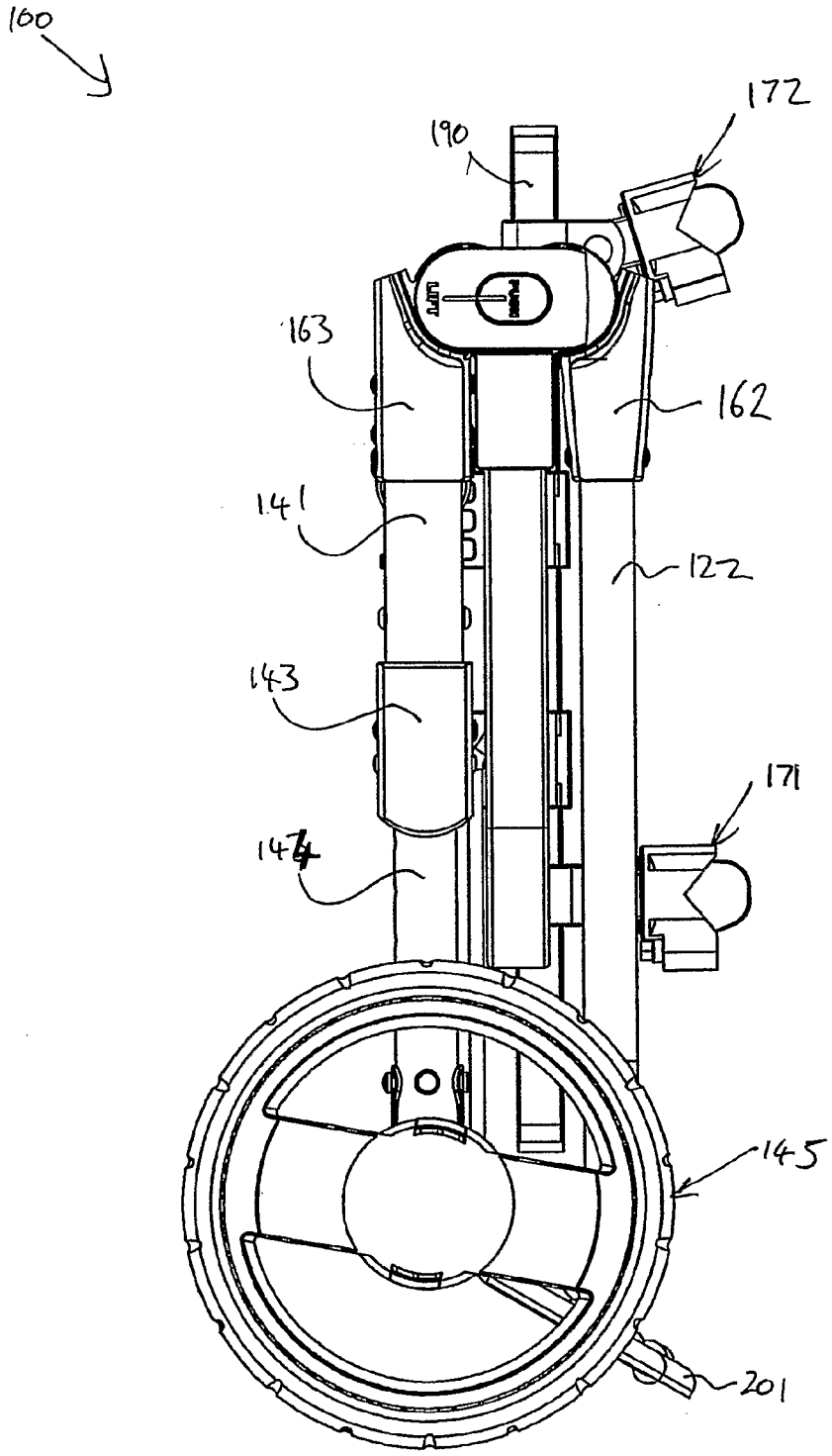
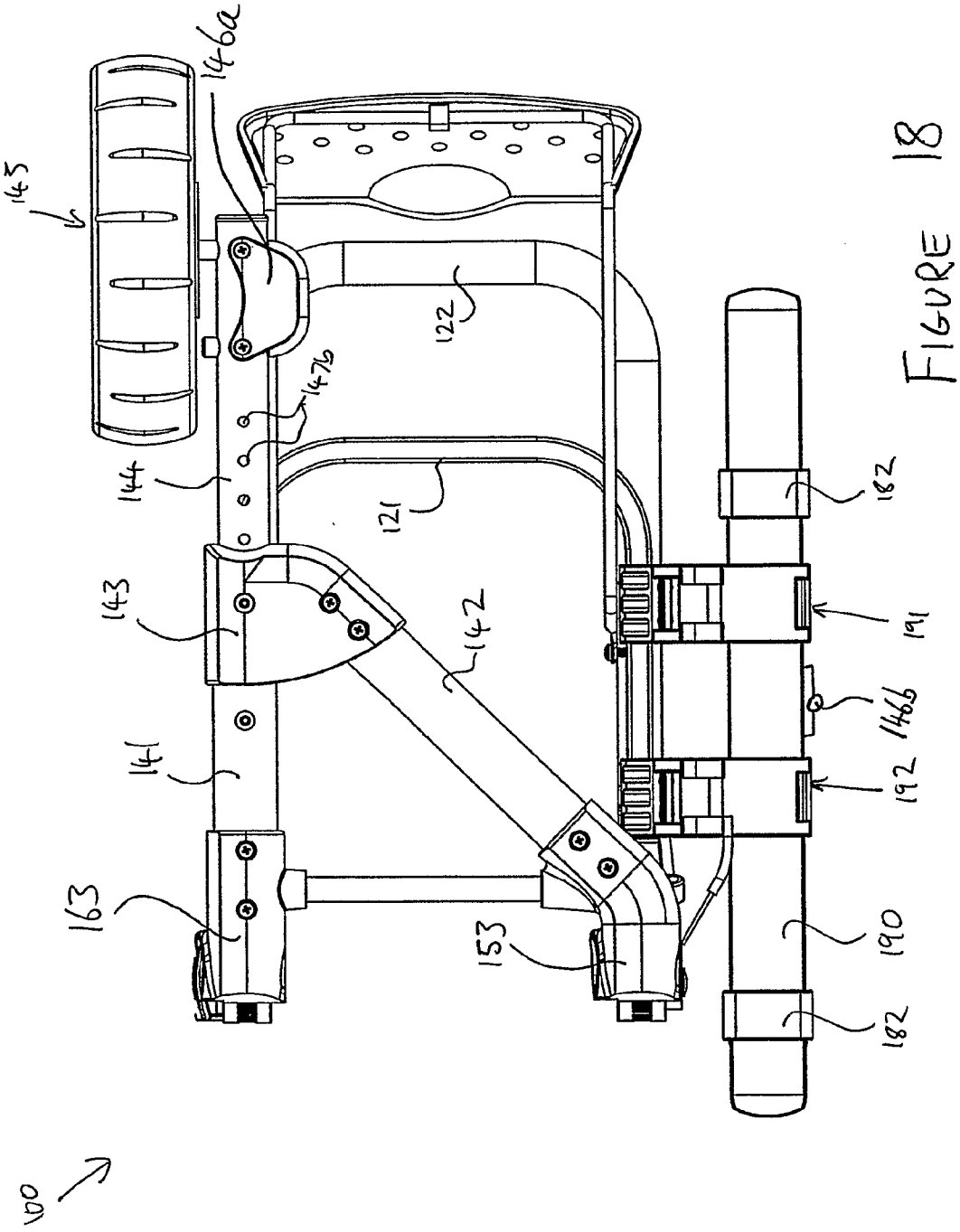


FIGURE 17


145
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142
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146b
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182
100

FIGURE 18

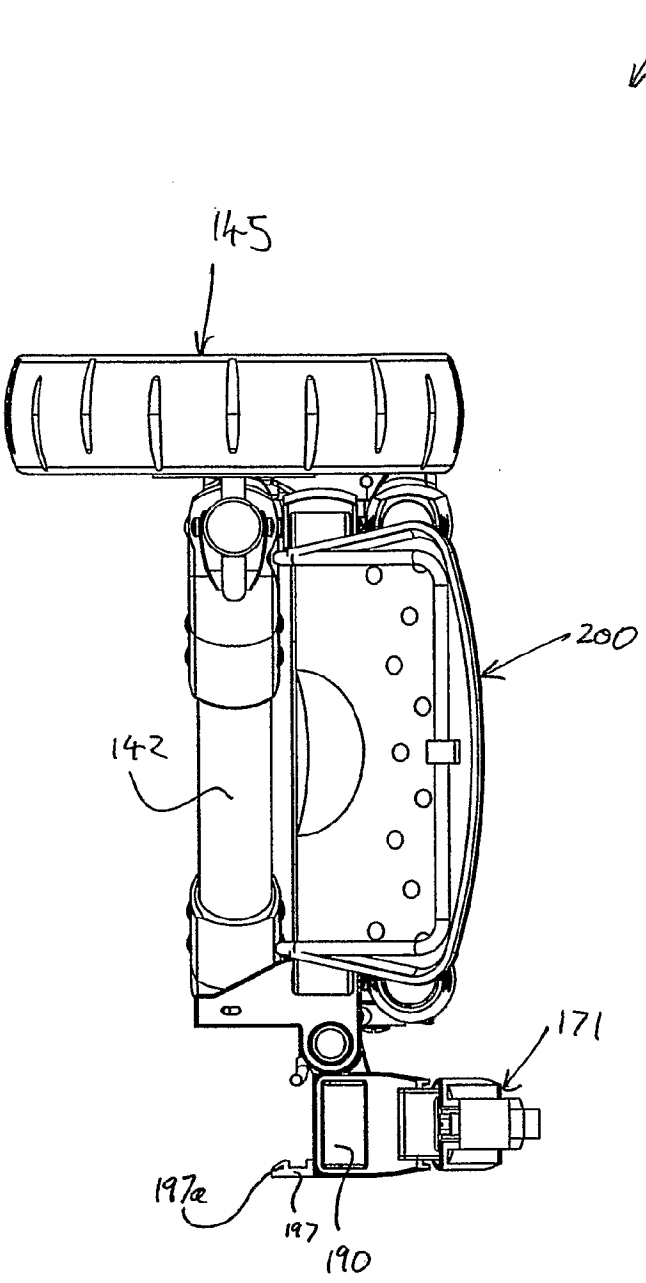

FIGURE 19

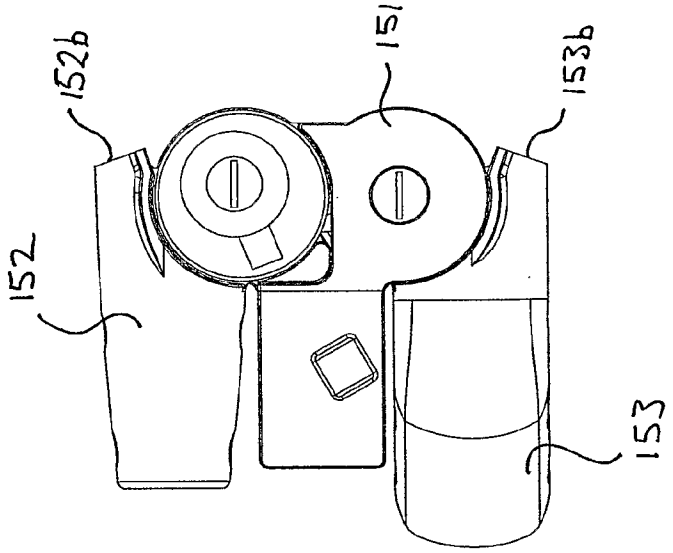

FIGURE 20B

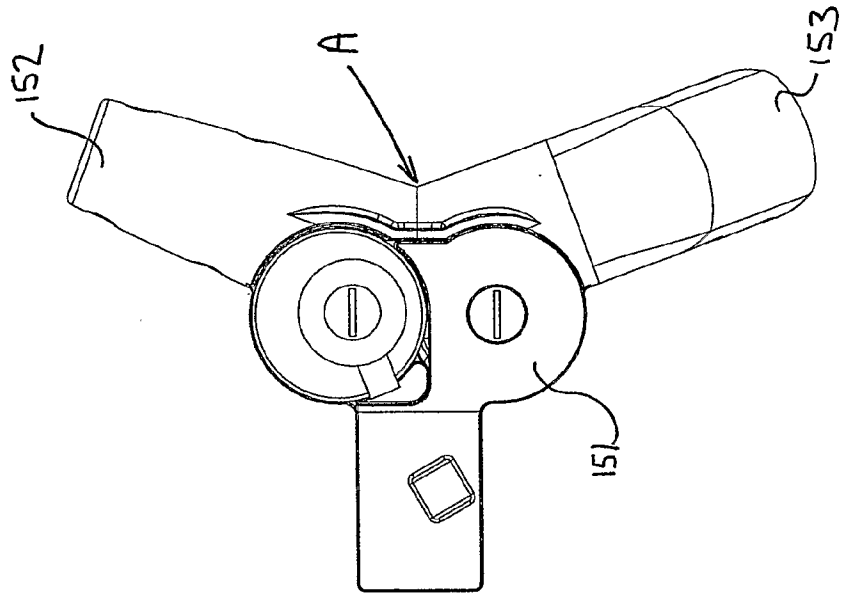

FIGURE 20A

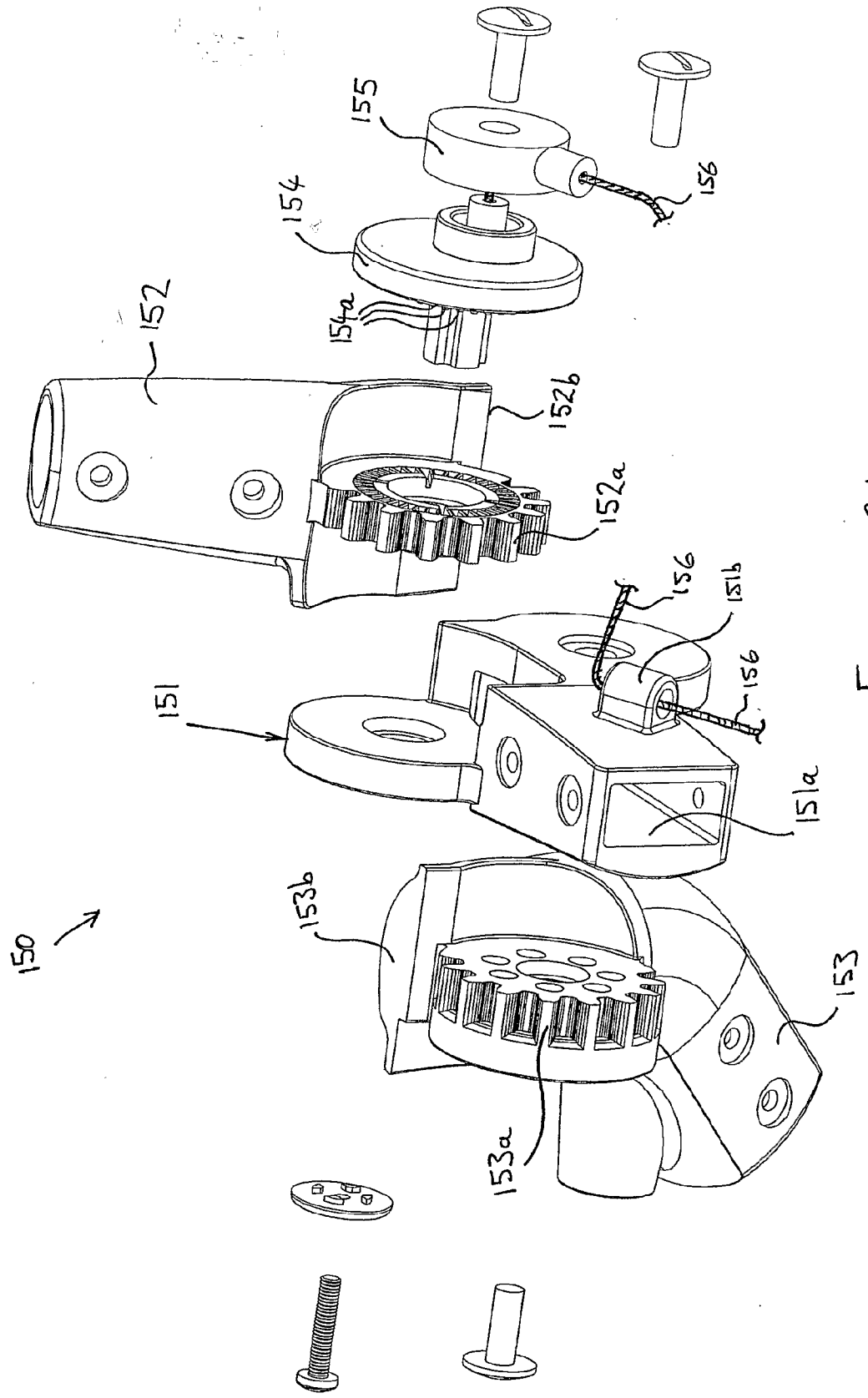
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FIGURE 21

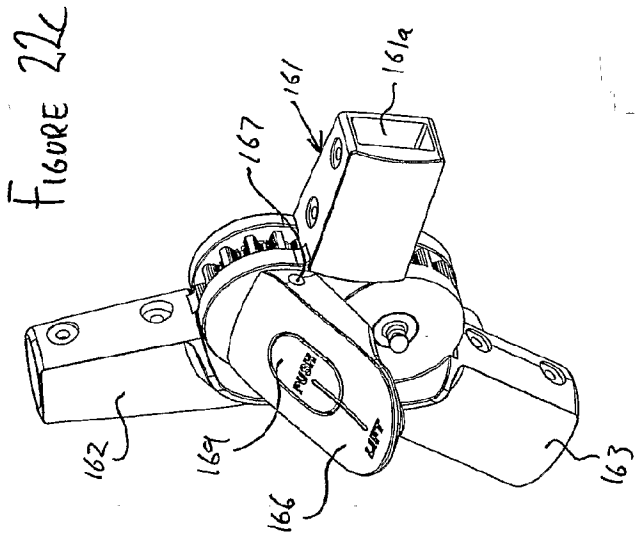


FIGURE 22C

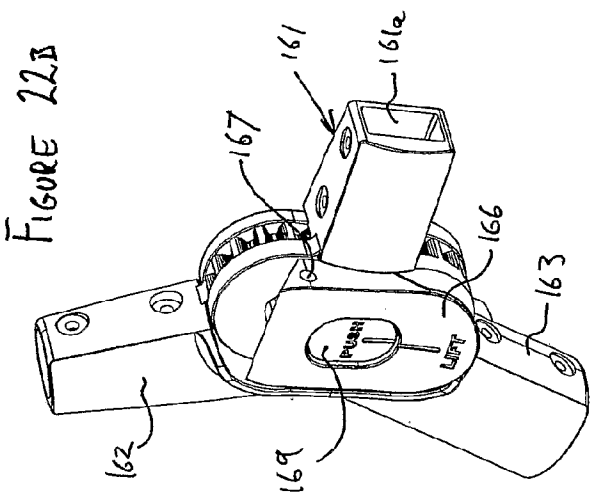


FIGURE 22B

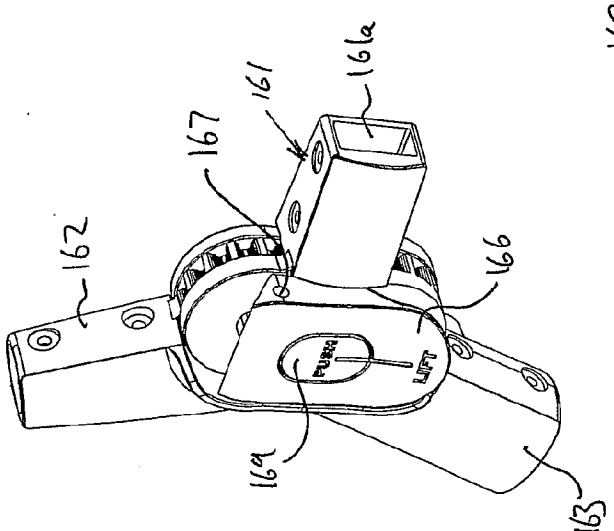


FIGURE 22A

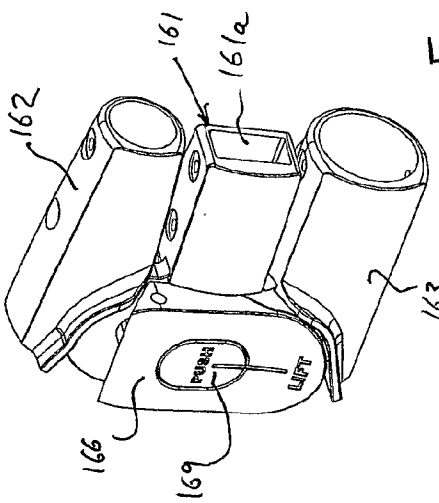


FIGURE 22E

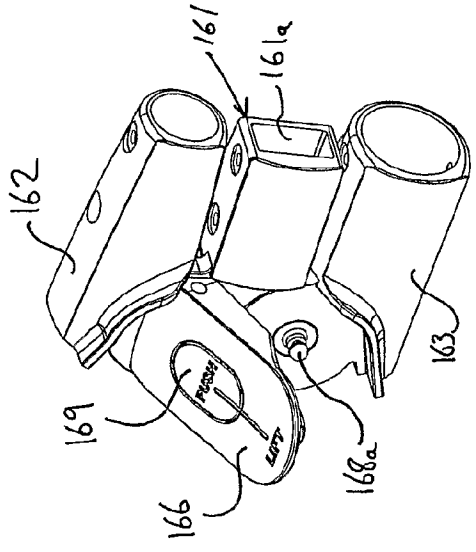
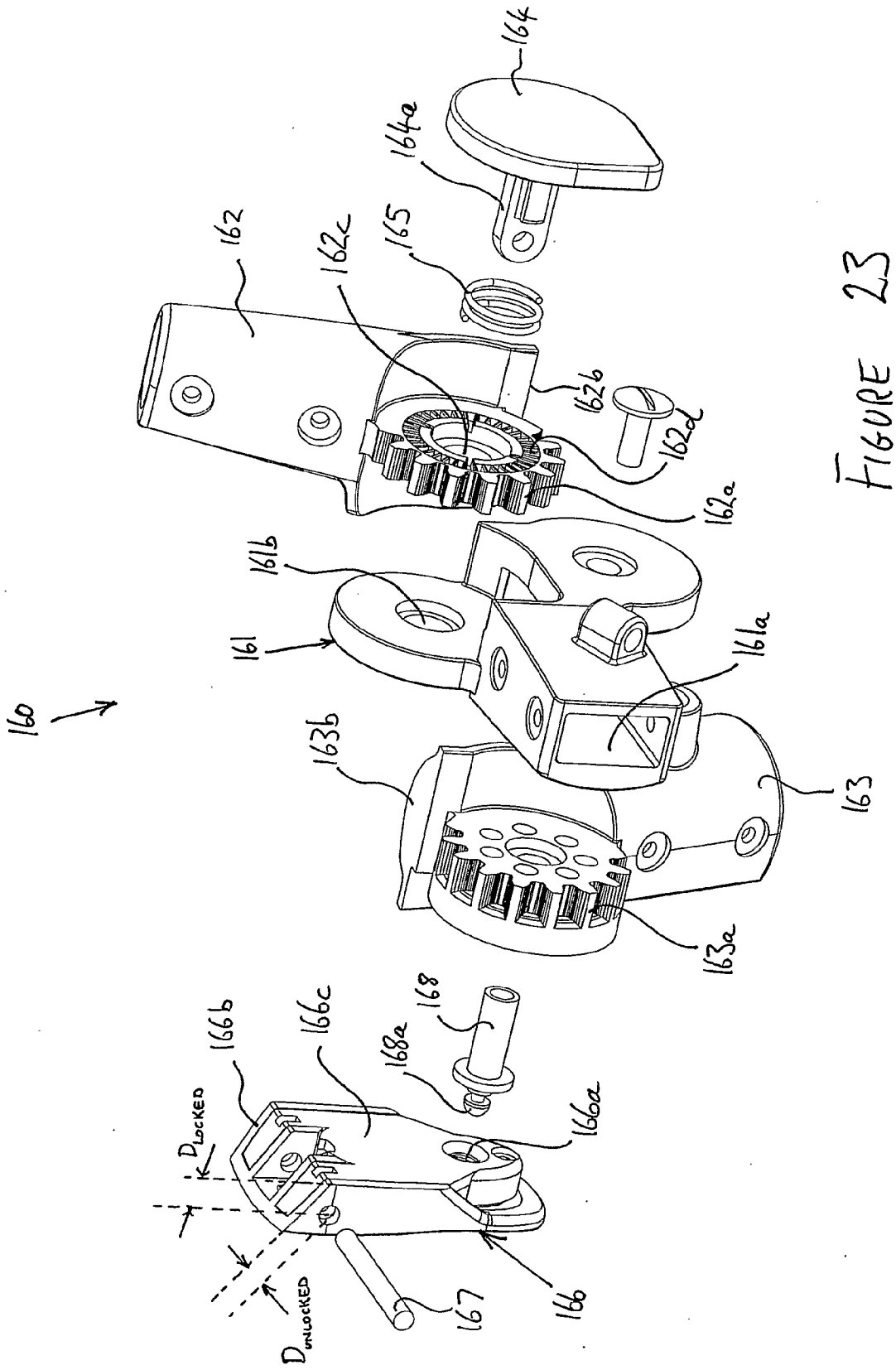


FIGURE 22D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168a
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$D_{UNLOCKED}$

FIGURE 23

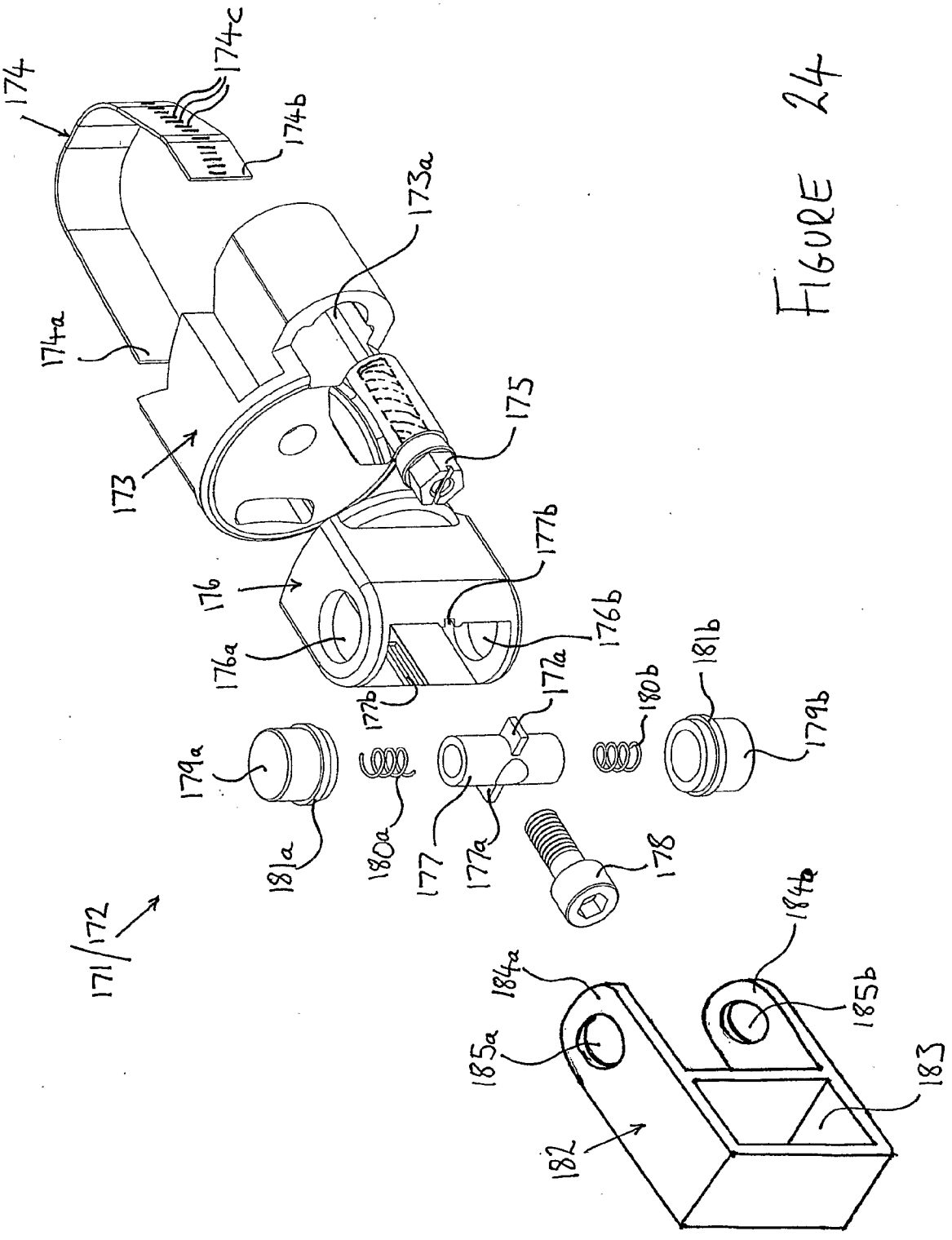
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FIGURE 24

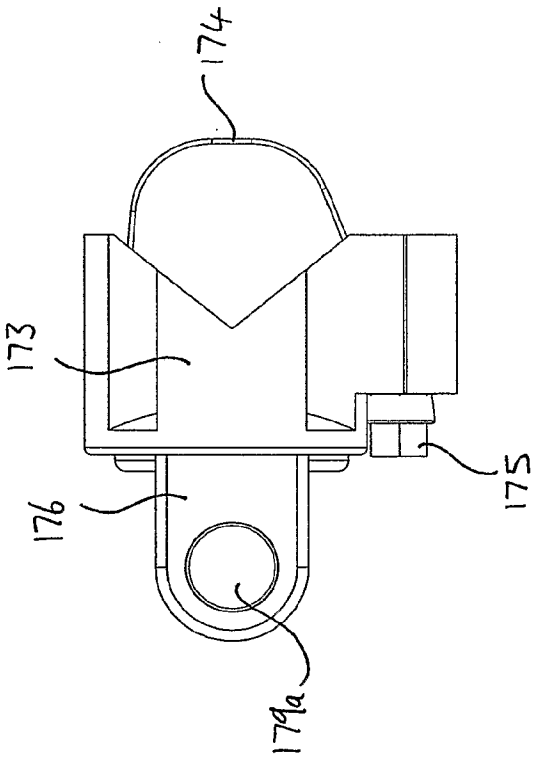

FIGURE 25

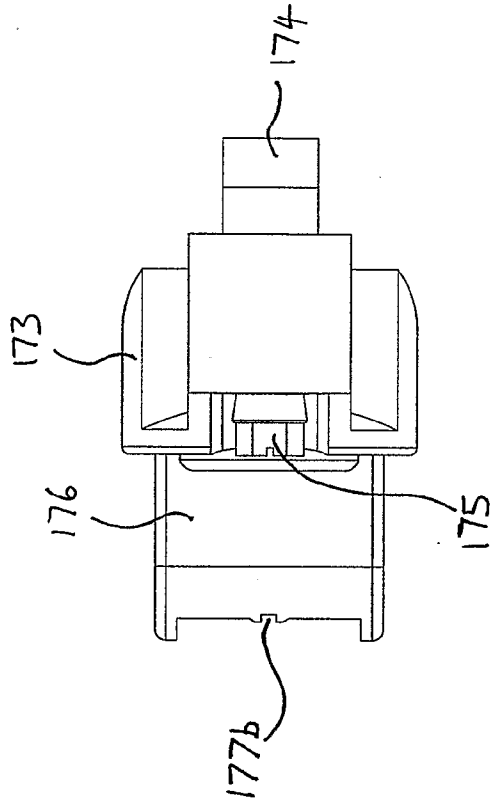

FIGURE 26

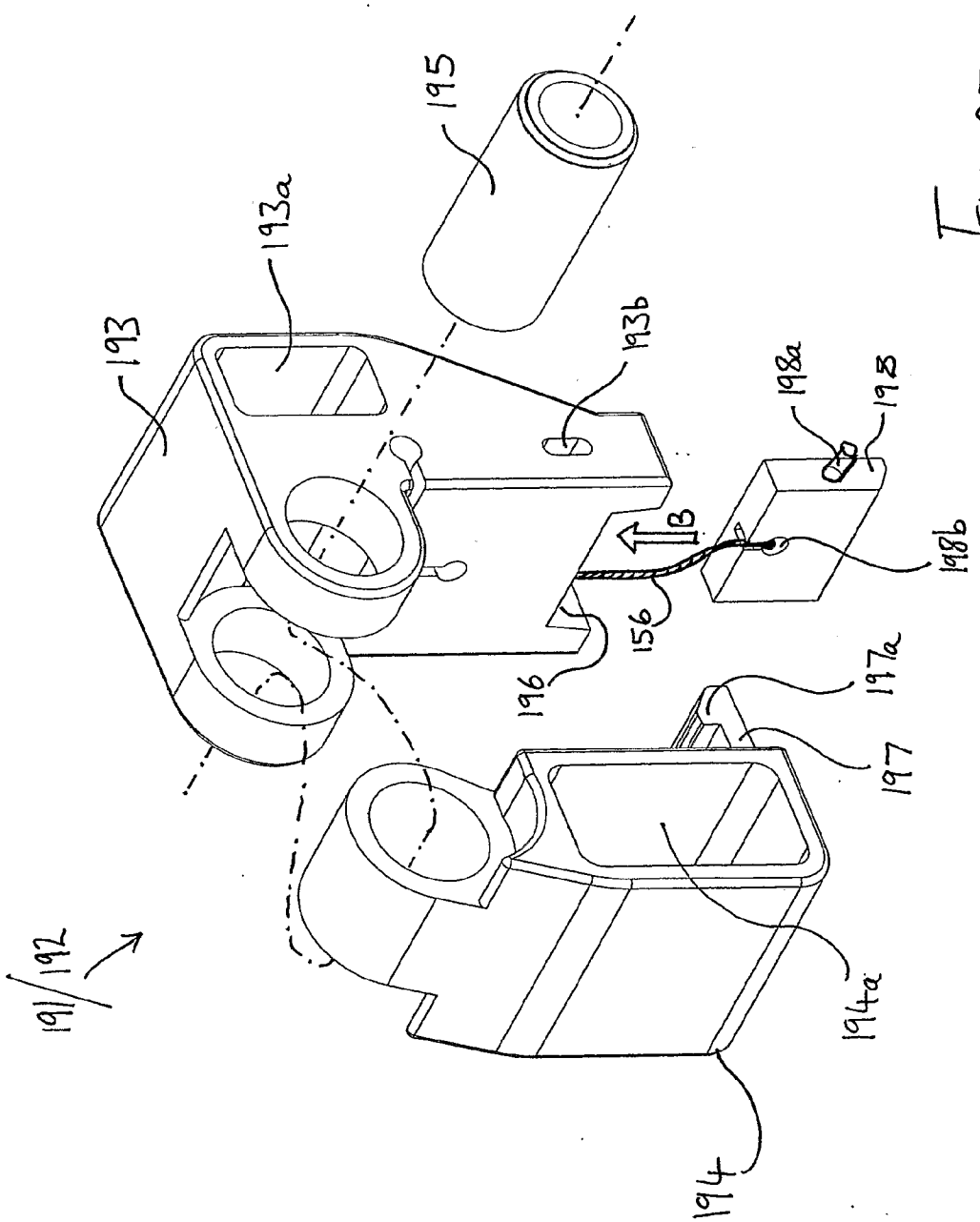
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FIGURE 27

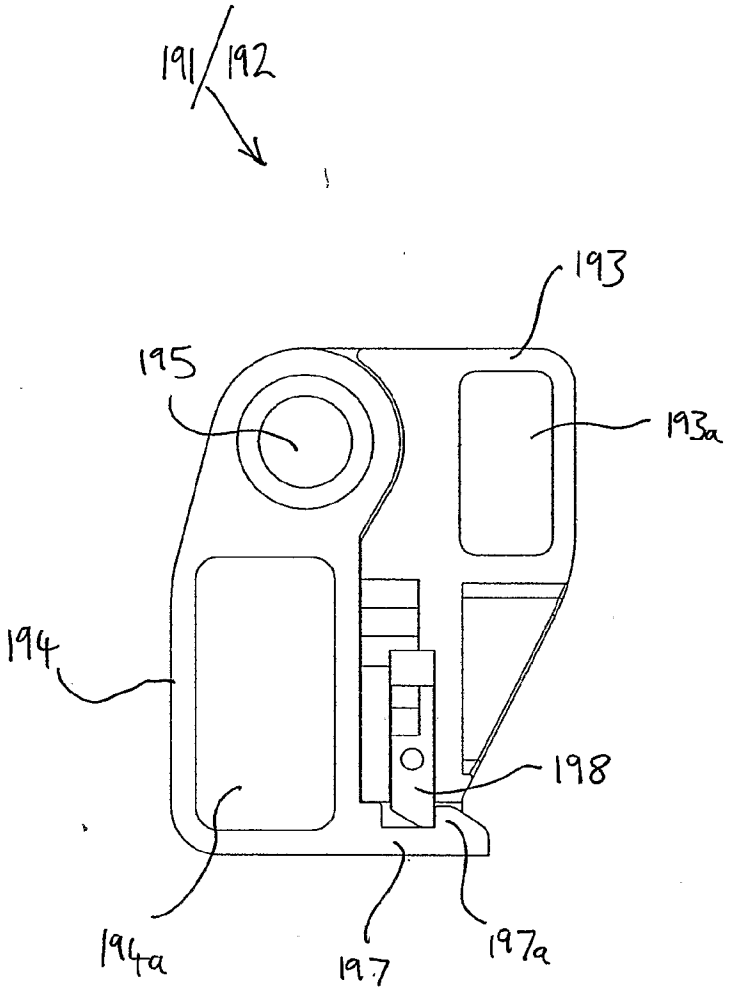

FIGURE 28

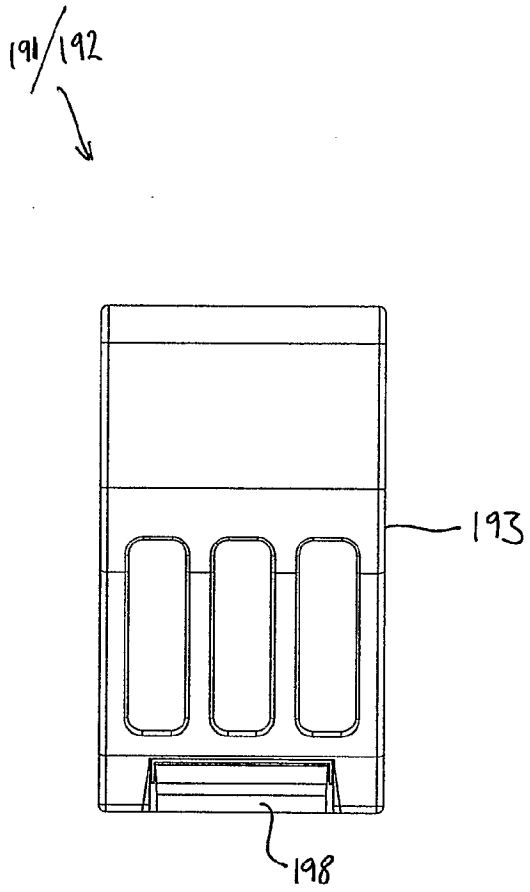

FIGURE 29

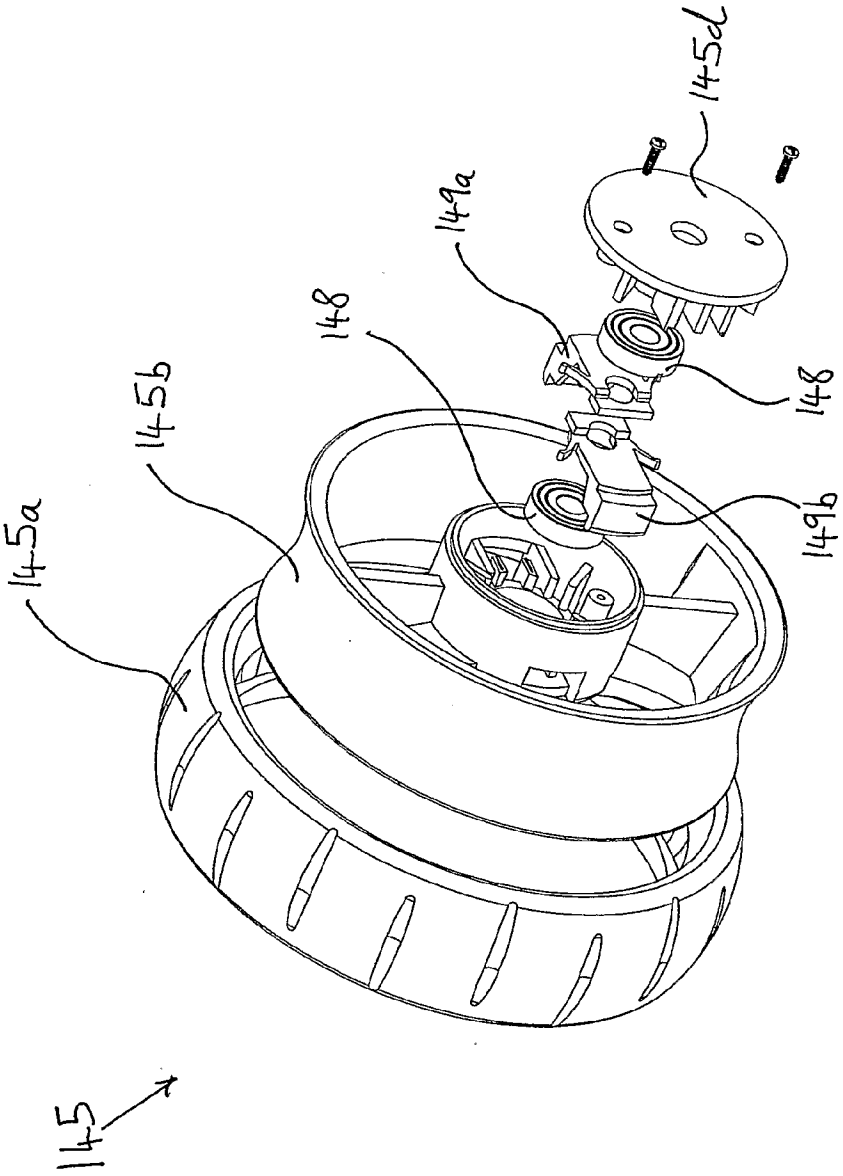

FIGURE 30

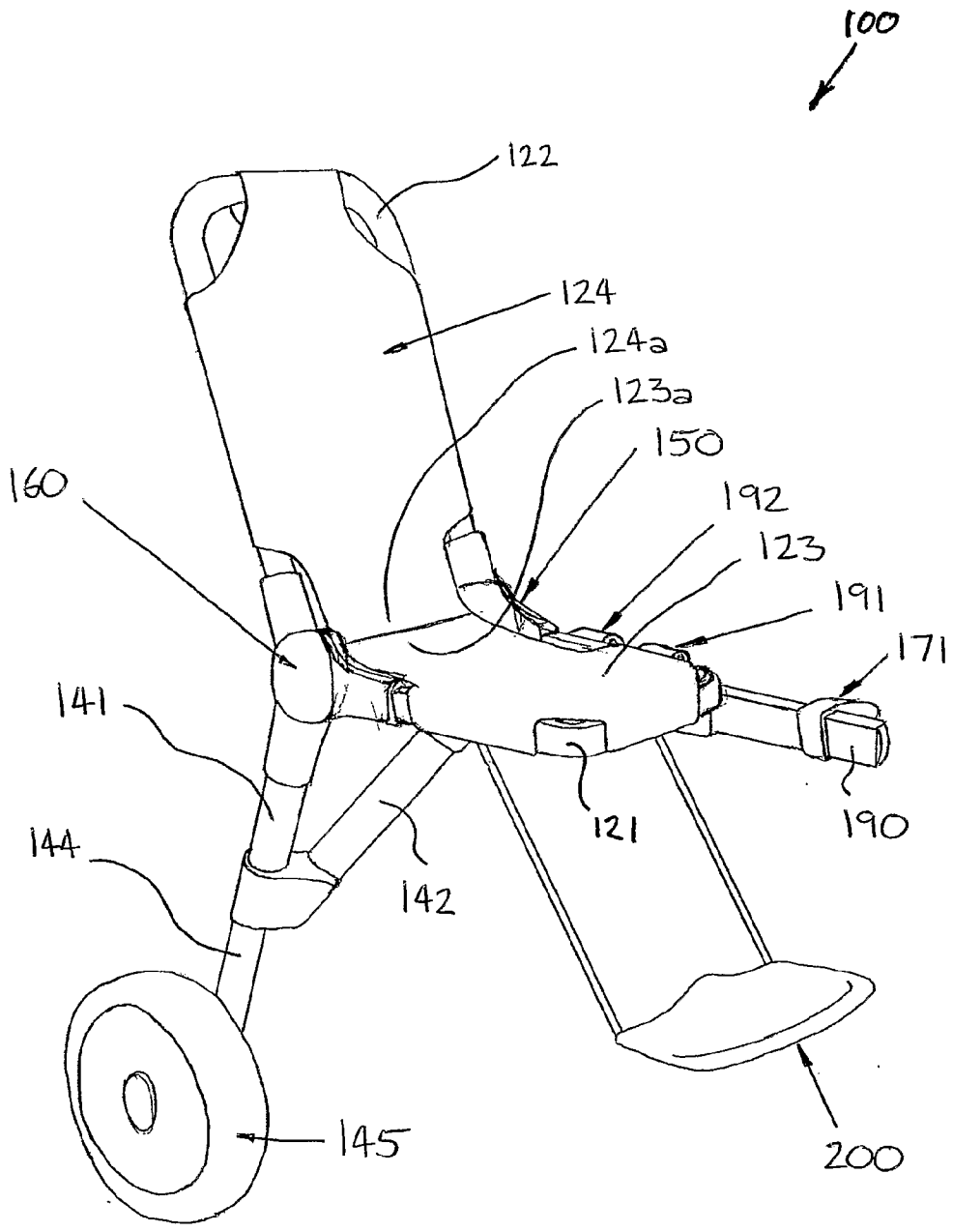
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FIGURE 31

INTERNATIONAL SEARCH REPORT

Inter Application No
PCT/GB2005/001276

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 B62B9/00

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

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 B62B

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

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 3 000 645 A (SCHMIDT CARL O) 19 September 1961 (1961-09-19) abstract; figures 1,2,4,7	1,5, 9-12, 15-19, 21-28, 30-35, 37,43,44
Y	figures 1,2,4,7	2-4,6
Y	US 6 715 783 B1 (HANSON WAYNE H ET AL) 6 April 2004 (2004-04-06) abstract; figures 4,8,10	2-4,6
A	figures	1
A	DE 40 33 548 A1 (TROAX-AXO AB, HILLERSTORP, SE) 25 April 1991 (1991-04-25) abstract; figure 1	1-4

-/--

[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

° Special categories of cited documents :

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

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

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

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

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

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

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

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

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
8 June 2005	15/06/2005

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Lindner, V

563 01 1056 UPPABABY ET AL. EX. 1068

INTERNATIONAL SEARCH REPORT

Inte Application No
PCT/GB2005/001276

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	DE 89 08 113 U1 (COMBIPRODUKT TEXTILVERARBEITUNGS GMBH, 5750 MENDEN, DE) 10 August 1989 (1989-08-10) abstract; figure 1	1-4
A	US 5 125 712 A (STAMOUTSOS ET AL) 30 June 1992 (1992-06-30) abstract; figures	1,38-42
A	US 2003/209885 A1 (SZMIDT LESZEK G ET AL) 13 November 2003 (2003-11-13) abstract; figures	1,38-42
A	DE 202 10 943 U1 (WEGNER, CHRISTIANE) 21 November 2002 (2002-11-21) abstract; figure 1	1

564 of 1056 UPPABABY ET AL. EX. 1068

INTERNATIONAL SEARCH REPORT

Inte Application No
PCT/GB2005/001276

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 3000645 A	19-09-1961	NONE	
US 6715783 B1	06-04-2004	AU 1353701 A WO 0132493 A1	14-05-2001 10-05-2001
DE 4033548 A1	25-04-1991	SE 468429 B FR 2653401 A1 NO 904526 A ,B, SE 8903477 A	18-01-1993 26-04-1991 22-04-1991 21-04-1991
DE 8908113 U1	10-08-1989	NONE	
US 5125712 A	30-06-1992	NONE	
US 2003209885 A1	13-11-2003	US 2004178593 A1	16-09-2004
DE 20210943 U1	21-11-2002	DE 10318434 A1	26-08-2004

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ELECTRONIC PAYMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/448,417	05/15/2024 08:47:18 PM Z ET	34757-2775

Title of Invention

REMOVABLE SEAT ATTACHMENT FOR A STROLLER

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	3414	FILED BY	Loretta Garcia
PATENT CENTER #	65545042	AUTHORIZED BY	Umar Bakhsh
CUSTOMER #	134811	FILING DATE	08/11/2023
CORRESPONDENCE ADDRESS	-	FIRST NAMED INVENTOR	Mark ZEHFUSS

Payment Information

PAYMENT METHOD	PAYMENT TRANSACTION ID	PAYMENT AUTHORIZED BY
DA / 195029	E20245EK49355546	Loretta Garcia

PRE-AUTHORIZED ACCOUNT	PRE-AUTHORIZED CATEGORY
195029	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)

FEE CODE	DESCRIPTION	ITEM PRICE($)	QUANTITY	ITEM TOTAL($)
1806	SUBMISSION OF AN INFORMATION DISCLOSURE STATEMENT	260.00	1	260.00
			TOTAL AMOUNT:	$260.00

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New Applications Under 35 U.S.C. 111

UPPABABY ET AL. EX. 1068

If a new application is being filed and the application includes the necessary components for 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.

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1. CN106184331 - BABY CARRIAGE SEAT FRAME AND BABY CARRIAGE

Office
China

Application Number
102015000212388

Application Date
29.04.2015

Publication Number
106184331

Publication Date
07.12.2016

Grant Number
106184331

Grant Date
06.07.2018

Publication Kind
B

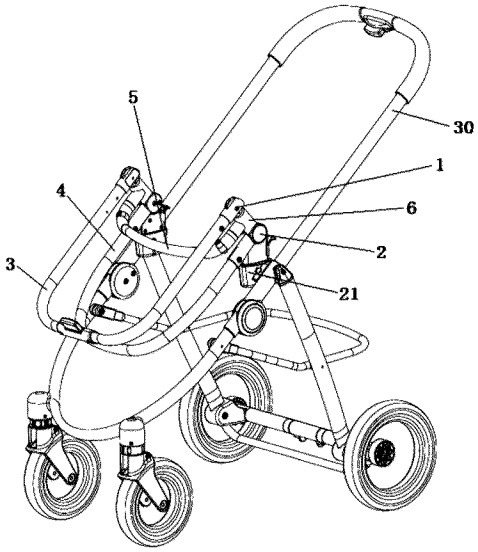
IPC
B62B 7/06

Applicants
珠海阳光儿童用品有限公司

Inventors
刘修平

Agents
中国国际贸易促进委员会专利商标事务所 11038

Title
(EN) Baby carriage seat frame and baby carriage
(ZH) 婴儿车座椅架和婴儿车



Abstract

(EN) The invention discloses a baby carriage seat frame and a baby carriage. The baby carriage seat frame comprises a first frame body, a second frame body, a middle connecting base, a first pivot and a second pivot; the first frame body is rotatably connected with the first end of the middle connecting base through the first pivot, and the second frame body is rotatably connected with the second end of the middle connecting base through the second pivot; the baby carriage seat frame has an unfolded state and a folded state, in the folded state, the first frame body and the second frame body are located on the same side of the middle connecting base, and a pinch preventing clearance is formed between the first frame body and the second frame body. According to the baby carriage seat frame and the baby carriage, the condition that fingers are pinched in the folding and unfolding process can be prevented, and the safety performance of the baby carriage seat frame and the baby carriage is improved.

(ZH) 本发明公开了一种婴儿车座椅架和婴儿车。婴儿车座椅架包括第一架体、第二架体、中间连接座、第一枢轴和第二枢轴，第一架体与中间连接座的第一端通过第一枢轴可转动地连接，第二架体与中间连接座的第二端通过第二枢轴可转动地连接，婴儿车座椅架具有展开状态和折叠状态，在折叠状态，第一架体与第二架体位于中间连接座的同侧且第一架体与第二架体之间具有防夹手间隙。本发明可以防止婴儿车座椅架在折叠收合的过程中夹伤手指，提高婴儿车座椅架和婴儿车的安全性能。

(19)中华人民共和国国家知识产权局

(12)发明专利

(10)授权公告号 CN 106184331 B
(45)授权公告日 2018.07.06

(21)申请号 201510212388.6

(22)申请日 2015.04.29

(65)同一申请的已公布的文献号
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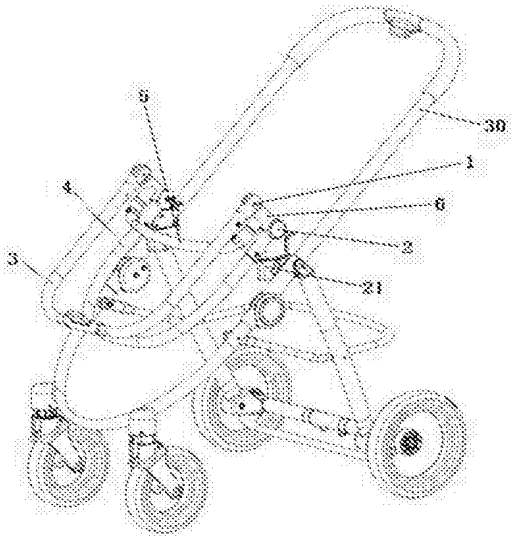
(54)发明名称

婴儿车座椅架和婴儿车

(57)摘要

本发明公开了一种婴儿车座椅架和婴儿车。婴儿车座椅架包括第一架体、第二架体、中间连接座、第一枢轴和第二枢轴，第一架体与中间连接座的第一端通过第一枢轴可转动地连接，第二架体与中间连接座的第二端通过第二枢轴可转动地连接，婴儿车座椅架具有展开状态和折叠状态，在折叠状态，第一架体与第二架体位于中间连接座的同侧且第一架体与第二架体之间具有防夹手间隙。本发明可以防止婴儿车座椅架在折叠收合的过程中夹伤手指，提高婴儿车座椅架和婴儿车的安全性能。



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1.一种婴儿车座椅架，其特征在于，所述婴儿车座椅架包括第一架体、第二架体、中间连接座(6)、第一枢轴(1)、第二枢轴(2)和第二锁定机构，所述第一架体与所述中间连接座(6)的第一端通过所述第一枢轴(1)可转动地连接，所述第二架体与所述中间连接座(6)的第二端通过所述第二枢轴(2)可转动地连接，所述婴儿车座椅架具有展开状态、折叠状态和过渡状态，在所述折叠状态，所述第一架体与所述第二架体位于所述中间连接座(6)的同侧且所述第一架体与所述第二架体之间具有防夹手间隙；其中，

所述第二锁定机构具有锁定位置和解锁位置，在所述第二锁定机构的锁定位置，所述第二架体与所述中间连接座(6)相对固定，在所述第二锁定机构的解锁位置，所述第二架体相对于所述中间连接座(6)可转动地设置；

在所述过渡状态，所述第一架体与所述中间连接座(6)之间的相对位置与在所述折叠状态相同而所述第二架体与所述中间连接座(6)之间的相对位置与在所述展开状态相同，所述第二锁定机构与所述第一架体联动地设置，在所述展开状态，所述第二锁定机构处于其锁定位置，在所述过渡状态，所述第二锁定机构在所述第一架体的驱动下处于其解锁位置。

2.根据权利要求1所述的婴儿车座椅架，其特征在于，所述婴儿车座椅架还包括设置于所述中间连接座(6)上的扶手(5)，在所述折叠状态，所述第一架体、所述第二架体和所述扶手(5)均位于所述中间连接座(6)的同侧，且所述防夹手间隙包括位于所述第一架体与所述扶手(5)之间的第一防夹手间隙和位于所述第二架体与所述扶手(5)之间的第二防夹手间隙。

3.根据权利要求1或2所述的婴儿车座椅架，其特征在于，所述婴儿车座椅架还包括第一锁定机构和支撑座(21)，所述第一锁定机构具有锁定位置和解锁位置，在所述第一锁定机构的锁定位置，所述第一架体与所述中间连接座(6)相对固定，在所述第一锁定机构的解锁位置，所述第一架体相对于所述中间连接座(6)可转动地设置。

4.根据权利要求1所述的婴儿车座椅架，其特征在于，所述第一架体包括第一管架(3)和第一管架连接座(11)，所述第一管架连接座(11)的第一端与所述第一管架(3)固定连接，所述第一管架连接座(11)的第二端与所述中间连接座(6)通过所述第一枢轴(1)可转动地连接；所述第二架体包括第二管架(4)和第二管架连接座(12)，所述第二管架连接座(12)的第一端与所述中间连接座(6)通过所述第二枢轴(2)可转动地连接，所述第二管架连接座(12)的第二端与所述第二管架(4)固定连接。

5.根据权利要求3所述的婴儿车座椅架，其特征在于，所述第一锁定机构包括第一锁定块(7)、第一弹性元件(13)、第一牵引件(14)和第一锁定槽(8)，所述第一锁定槽(8)设置于所述中间连接座(6)的第一端，所述第一锁定块(7)的第一端与所述第一牵引件(14)连接，所述第一锁定块(7)的第二端包括与所述第一锁定槽(8)配合的第一锁定头，所述第一弹性元件(13)对所述第一锁定块(7)施加使所述第一锁定头朝向所述第一锁定槽(8)的第一弹性力，在所述第一锁定机构的锁定位置，所述第一锁定头与所述第一锁定槽(8)插接配合，在所述第一锁定机构的解锁位置，所述第一锁定头与所述第一锁定槽(8)解除配合。

6.根据权利要求4所述的婴儿车座椅架，其特征在于，所述第二锁定机构包括第二锁定块(9)、第二弹性元件(15)、第二牵引件(16)和第二锁定槽(10)，所述第二锁定槽(10)设置于所述第二管架连接座(12)上，所述第二锁定块(9)的第一端与所述第二牵引件(16)连接，

所述第二锁定块(9)的第二端包括与所述第二锁定槽(10)配合的第二锁定头，所述第二弹性元件(15)对所述第二锁定块(9)施加使所述第二锁定头朝向所述第二锁定槽(10)的第二弹性力，在所述第二锁定机构的锁定位置，所述第二锁定头与所述第二锁定槽(10)插接配合，在所述第二锁定机构的解锁位置，所述第二锁定头与所述第二锁定槽(10)解除配合。

7.根据权利要求6所述的婴儿车座椅架，其特征在于，所述第一管架连接座(11)的第二端具有绕所述第一枢轴(1)设置的第一曲线槽(17)，所述第二牵引件(16)上设有第一销钉(18)，所述第一销钉(18)位于所述第一曲线槽(17)内并与所述第一曲线槽(17)滑动配合，所述第一曲线槽(17)设置为使在所述展开状态所述第一销钉(18)的轴线与所述第一枢轴(1)的轴线之间的距离大于在所述折叠状态所述第一销钉(18)的轴线与所述第一枢轴(1)的轴线之间的距离。

8.根据权利要求7所述的婴儿车座椅架，其特征在于，在所述展开状态，所述第一销钉(18)与所述第一曲线槽(17)的第一端抵接，在所述折叠状态，所述第一销钉(18)与所述第一曲线槽(17)的第二端抵接。

9.根据权利要求6所述的婴儿车座椅架，其特征在于，所述中间连接座(6)的第二端设置有围绕所述第二枢轴(2)同心设置的弧形的第二曲线槽，所述第二管架连接座(12)上设置有第二销钉，所述第二销钉位于所述第二曲线槽内并与所述第二曲线槽滑动配合，在所述展开状态，所述第二销钉与所述第二曲线槽的第一端抵接，在所述折叠状态，所述第二销钉与所述第二曲线槽的第二端抵接。

10.一种婴儿车，包括婴儿车座椅架，其特征在于，所述婴儿车座椅架为根据权利要求1至9中任一项所述的婴儿车座椅架。

婴儿车座椅架和婴儿车

技术领域

[0001] 本发明涉及手动车辆领域，特别涉及一种婴儿车座椅架和婴儿车。

背景技术

[0002] 现有技术中，为了存贮和运输时减少包装体积，很多婴儿车是可折叠的，其婴儿车座椅架亦是可折叠的。

[0003] 申请号为201310743731.0的中国专利申请公开了一种可折叠的婴儿车座椅架。如图1所示，该中国专利申请公开的可折叠的婴儿车座椅架包括上座椅架管2’、下座椅架管3’、以及扶手杆1’，所述上座椅架管2’、下座椅架管3’、以及扶手杆1’相互铰接，且铰接处设有一可使上座椅架管2’、下座椅架管3’和扶手杆1’分别绕铰接处相互自由旋转折叠收合的折叠控制装置。

[0004] 在实现本发明的过程中，发明人发现以上现有技术具有如下不足之处：该现有技术的婴儿车座椅架在折叠收合的过程中，上座椅管2’和扶手杆1’之间、下座椅架管3’和扶手杆1’之间均成为了容易夹伤手指的区域。

发明内容

[0005] 本发明的目的在于提供一种婴儿车座椅架和婴儿车，可以防止婴儿车座椅架在折叠收合的过程中夹伤手指，提高婴儿车座椅架和婴儿车的安全性能。

[0006] 本发明第一方面提供一种婴儿车座椅架，所述婴儿车座椅架包括第一架体、第二架体、中间连接座、第一枢轴和第二枢轴，所述第一架体与所述中间连接座的第一端通过所述第一枢轴可转动地连接，所述第二架体与所述中间连接座的第二端通过所述第二枢轴可转动地连接，所述婴儿车座椅架具有展开状态和折叠状态，在所述折叠状态，所述第一架体与所述第二架体位于所述中间连接座的同侧且所述第一架体与所述第二架体之间具有防夹手间隙。

[0007] 进一步地，所述婴儿车座椅架还包括设置于所述中间连接座上的扶手，在所述折叠状态，所述第一架体、所述第二架体和所述扶手均位于所述中间连接座的同侧，且所述防夹手间隙包括位于所述第一架体与所述扶手之间的第一防夹手间隙和位于所述第二架体与所述扶手之间的第二防夹手间隙。

[0008] 进一步地，所述婴儿车座椅架还包括第一锁定机构和第二锁定机构，其中，所述第一锁定机构具有锁定位置和解锁位置，在所述第一锁定机构的锁定位置，所述第一架体与所述中间连接座相对固定，在所述第一锁定机构的解锁位置，所述第一架体相对于所述中间连接座可转动地设置；所述第二锁定机构具有锁定位置和解锁位置，在所述第二锁定机构的锁定位置，所述第二架体与所述中间连接座相对固定，在所述第二锁定机构的解锁位置，所述第二架体相对于所述中间连接座可转动地设置。

[0009] 进一步地，所述婴儿车座椅架还包括过渡状态，在所述过渡状态，所述第一架体与所述中间连接座之间的相对位置与在所述折叠状态相同而所述第二架体与所述中间连接

座之间的相对位置与在所述展开状态相同，其中，所述第二锁定机构与所述第一架体联动地设置，在所述展开状态，所述第二锁定机构处于其锁定位置，在所述过渡状态，所述第二锁定机构在所述第一架体的驱动下处于其解锁位置。

[0010] 进一步地，所述第一架体包括第一管架和第一管架连接座，所述第一管架连接座的第一端与所述第一管架固定连接，所述第一管架连接座的第二端与所述中间连接座通过所述第一枢轴可转动地连接；所述第二架体包括第二管架和第二管架连接座，所述第二管架连接座的第一端与所述中间连接座通过所述第二枢轴可转动地连接，所述第二管架连接座的第二端与所述第二管架固定连接。

[0011] 进一步地，所述第一锁定机构包括第一锁定块、第一弹性元件、第一牵引件和第一锁定槽，所述第一锁定槽设置于所述中间连接座的第一端，所述第一锁定块的第一端与所述第一牵引件连接，所述第一锁定块的第二端包括与所述第一锁定槽配合的第一锁定头，所述第一弹性元件对所述第一锁定块施加使所述第一锁定头朝向所述第一锁定槽的第一弹性力，在所述第一锁定机构的锁定位置，所述第一锁定头与所述第一锁定槽插接配合，在所述第一锁定机构的解锁位置，所述第一锁定头与所述第一锁定槽解除配合。

[0012] 进一步地，所述第二锁定机构包括第二锁定块、第二弹性元件、第二牵引件和第二锁定槽，所述第二锁定槽设置于所述第二管架连接座上，所述第二锁定块的第一端与所述第二牵引件连接，所述第二锁定块的第二端包括与所述第二锁定槽配合的第二锁定头，所述第二弹性元件对所述第二锁定块施加使所述第二锁定头朝向所述第二锁定槽的第二弹性力，在所述第二锁定机构的锁定位置，所述第二锁定头与所述第二锁定槽插接配合，在所述第二锁定机构的解锁位置，所述第二锁定头与所述第二锁定槽解除配合。

[0013] 进一步地，所述第一管架连接座的第二端具有绕所述第一枢轴设置的第一曲线槽，所述第二牵引件上设有第一销钉，所述第一销钉位于所述第一曲线槽内并与所述第一曲线槽滑动配合，所述第一曲线槽设置为使在所述展开状态所述第一销钉的轴线与所述第一枢轴的轴线之间的距离大于在所述折叠状态所述第一销钉的轴线与所述第一枢轴的轴线之间的距离。

[0014] 进一步地，在所述展开状态，所述第一销钉与所述第一曲线槽的第一端抵接，在所述折叠状态，所述第一销钉与所述第一曲线槽的第二端抵接。

[0015] 进一步地，所述中间连接座的第二端设置有围绕所述第二枢轴同心设置的弧形的第二曲线槽，所述第二管架连接座上设置有第二销钉，所述第二销钉位于所述第二曲线槽内并与所述第二曲线槽滑动配合，在所述展开状态，所述第二销钉与所述第二曲线槽的第一端抵接，在所述折叠状态，所述第二销钉与所述第二曲线槽的第二端抵接。

[0016] 本发明第二方面提供一种婴儿车，包括婴儿车座椅架，其中，所述婴儿车座椅架为本发明第一方面中任一项所述的婴儿车座椅架。

[0017] 基于本发明提供的婴儿车座椅架和婴儿车。婴儿车座椅架包括第一架体、第二架体、中间连接座、第一枢轴和第二枢轴，第一架体与中间连接座的第一端通过第一枢轴可转动地连接，第二架体与中间连接座的第二端通过第二枢轴可转动地连接，婴儿车座椅架具有展开状态和折叠状态，在折叠状态，第一架体与第二架体位于中间连接座的同侧且第一架体与第二架体之间具有防夹手间隙。由于本发明中将现有技术中第一架体和第二架体之间直接铰接改变为第一架体和第二架体分别与中间连接座的不同部位铰接，因此，在折叠

状态下，在第一架体和第二架体之间具有一定的间隔可以设置防夹手间隙，防夹手间隙的设置则可以防止婴儿车座椅架在折叠收合的过程中夹伤手指，提高婴儿车座椅架和婴儿车的安全性能。

[0018] 通过以下参照附图对本发明的示例性实施例的详细描述，本发明的其它特征及其优点将会变得清楚。

附图说明

[0019] 此处所说明的附图用来提供对本发明的进一步理解，构成本申请的一部分，本发明的示意性实施例及其说明用于解释本发明，并不构成对本发明的不当限定。在附图中：

[0020] 图1为现有技术的一种可折叠的婴儿车座椅架的立体结构示意图。

[0021] 图2为本发明第一实施例的婴儿车座椅架在展开状态的立体结构示意图。

[0022] 图3为本发明第一实施例的婴儿车座椅架在折叠状态的立体结构示意图。

[0023] 图4为本发明第一实施例的婴儿车座椅架在展开状态的分解的立体结构示意图。

[0024] 图5为本发明第一实施例的婴儿车座椅架在展开状态的分解的结构示意图。

[0025] 图6为本发明第一实施例的婴儿车座椅架在展开状态的带有局部透视的结构示意图。

[0026] 图7为本发明第一实施例的婴儿车座椅架在过渡状态的带有局部透视的结构示意图。

[0027] 图8为本发明第一实施例的婴儿车座椅架在折叠状态的带有局部透视的结构示意图。

[0028] 图9为本发明第一实施例的婴儿车座椅架在展开状态下第一锁定装置处于锁定位置的局部透视结构示意图。

[0029] 图10为本发明第一实施例的婴儿车座椅架在展开状态下第一锁定装处于解锁位置的局部透视结构示意图。

[0030] 图11为本发明第一实施例的婴儿车座椅架在过渡状态的局部透视结构示意图。

[0031] 图12为本发明第一实施例的婴儿车座椅架在折叠状态的局部透视结构示意图。

[0032] 图13为本发明第一实施例的婴儿车在婴儿车座椅架处于展开状态的立体结构示意图。

[0033] 图14为本发明第一实施例的婴儿车在婴儿车座椅架处于折叠状态的立体结构示意图。

[0034] 图15为本发明第二实施例的婴儿车座椅架在展开状态的立体结构示意图。

[0035] 图16为本发明第二实施例的婴儿车座椅架在折叠状态的立体结构示意图。

[0036] 图17为本发明第三实施例的婴儿车座椅架在展开状态的立体结构示意图。

[0037] 图18为本发明第三实施例的婴儿车座椅架在折叠状态的立体结构示意图。

[0038] 图2至图18中，各附图标记分别代表：

[0039] 1、第一枢轴；

[0040] 2、第二枢轴；

[0041] 3、第一管架；

[0042] 4、第二管架；

[0043] 5、扶手；

[0044] 6、中间连接座；

[0045] 7、第一锁定块；

[0046] 8、第一锁定槽；

[0047] 9、第二锁定块；

[0048] 10、第二锁定槽；

[0049] 11、第一管架连接座；

[0050] 12、第二管架连接座；

[0051] 13、第一弹性元件；

[0052] 14、第一牵引件；

[0053] 15、第二弹性元件；

[0054] 16、第二牵引件；

[0055] 17、第一曲线槽；

[0056] 18、第一销钉；

[0057] 19、操作部；

[0058] 21、支撑座；

[0059] 30、婴儿车车架。

具体实施方式

[0060] 下面将结合本发明实施例中的附图，对本发明实施例中的技术方案进行清楚、完整地描述，显然，所描述的实施例仅仅是本发明一部分实施例，而不是全部的实施例。以下对至少一个示例性实施例的描述实际上仅仅是说明性的，决不作为对本发明及其应用或使用的任何限制。基于本发明中的实施例，本领域普通技术人员在没有作出创造性劳动前提下所获得的所有其他实施例，都属于本发明保护的范围。

[0061] 除非另外具体说明，否则在这些实施例中阐述的部件和步骤的相对布置、数字表达式和数值不限制本发明的范围。同时，应当明白，为了便于描述，附图中所示出的各个部分的尺寸并不是按照实际的比例关系绘制的。对于相关领域普通技术人员已知的技术、方法和设备可能不作详细讨论，但在适当情况下，所述技术、方法和设备应当被视为授权说明书的一部分。在这里示出和讨论的所有示例中，任何具体值应被解释为仅仅是示例性的，而不是作为限制。因此，示例性实施例的其它示例可以具有不同的值。应注意到：相似的标号和字母在下面的附图中表示类似项，因此，一旦某一项在一个附图中被定义，则在随后的附图中不需要对其进行进一步讨论。

[0062] 为了便于描述，在这里可以使用空间相对术语，如“在……之上”、“在……上方”、“在……上表面”、“上面的”等，用来描述如在图中所示的一个器件或特征与其他器件或特征的空间位置关系。应当理解的是，空间相对术语旨在包含除了器件在图中所描述的方位之外的在使用或操作中的不同方位。例如，如果附图中的器件被倒置，则描述为“在其他器件或构造上方”或“在其他器件或构造之上”的器件之后将被定位为“在其他器件或构造下方”或“在其他器件或构造之下”。因而，示例性术语“在……上方”可以包括“在……上方”和“在……下方”两种方位。该器件也可以其他不同方式定位（旋转90度或处于其他方位），并

且对这里所使用的空间相对描述作出相应解释。

[0063] 如图2至图18所示，本发明的婴儿车座椅架包括第一架体、第二架体、中间连接座6、第一枢轴1和第二枢轴2。第一架体与中间连接座6的第一端通过第一枢轴1可转动地连接。第二架体与中间连接座6的第二端通过第二枢轴2可转动地连接。婴儿车座椅架具有展开状态和折叠状态。在折叠状态，第一架体与第二架体位于中间连接座6的同侧且第一架体与第二架体之间具有防夹手间隙。

[0064] 防夹手间隙的数量可以是一个，也可以是多个。两个相对活动的部件之间有可能夹手的区域均可以设置防夹手间隙。防夹手间隙指的是两个相邻的彼此之间具有相对运动的部件之间的最小间距大于或等于婴儿车安全标准中规定的最小的安全夹手间隙。现行的国标GB14748-2006《儿童推车安全要求》中规定的安全夹手间隙为大于或等于12mm。

[0065] 由于本发明中将现有技术中第一架体和第二架体之间直接铰接改变为第一架体和第二架体分别与中间连接座的不同部位铰接，因此，在折叠状态下，在第一架体和第二架体之间具有一定的间隔可以设置防夹手间隙，防夹手间隙的设置则可以防止婴儿车座椅架在折叠收合的过程中夹伤手指，提高婴儿车座椅架和婴儿车的安全性能。

[0066] 第一实施例

[0067] 图2至图12示出了本发明第一实施例的婴儿车座椅架。

[0068] 如图2至图12所示，婴儿车座椅架包括第一架体、第二架体、中间连接座6、第一枢轴1和第二枢轴2。

[0069] 第一架体与中间连接座6的第一端通过第一枢轴1可转动地连接。第二架体与中间连接座6的第二端通过第二枢轴2可转动地连接。从而，第一架体和第二架体可分别绕第一枢轴1和第二枢轴2相对于中间连接座6进行相对靠近的转动或相互远离的转动。

[0070] 婴儿车座椅架具有展开状态和折叠状态。在折叠状态，第一架体与第二架体位于中间连接座6的同侧且第一架体与第二架体之间具有防夹手间隙。本实施例中，在折叠状态，第一架体与第二架体均垂直于中间连接座6。在展开状态，第一架体、第二架体和中间连接座6处于同一平面上。

[0071] 另外，第一实施例中，婴儿车座椅架还包括设置于中间连接座6上的扶手5。在折叠状态，第一架体、第二架体和扶手5均位于中间连接座6的同侧。第一实施例中前述防夹手间隙包括位于第一架体与扶手5之间的第一防夹手间隙和位于第二架体与扶手5之间的第二防夹手间隙。

[0072] 由于在第一架体与扶手5之间设置了第一防夹手间隙、在第二架体与扶手5之间设置了第二防夹手间隙，因此，即使设置了扶手5的情况下，也可以防止婴儿车座椅架在折叠收合的过程中夹伤手指。

[0073] 本实施例中优选地，扶手5与中间连接座6可拆卸地连接且相对固定。另外，扶手5优选地垂直于中间连接座6。

[0074] 如图4至图12所示，本实施例中，婴儿车座椅架还包括第一锁定机构和第二锁定机构。

[0075] 第一锁定机构具有锁定位置和解锁位置，在第一锁定机构的锁定位置，第一架体与中间连接座6相对固定，在第一锁定机构的解锁位置，第一架体相对于中间连接座6可转动地设置。

[0076] 第二锁定机构具有锁定位置和解锁位置，在第二锁定机构的锁定位置，第二架体与中间连接座6相对固定，在第二锁定机构的解锁位置，第二架体相对于中间连接座6可转动地设置。

[0077] 如图7和图11所示，优选地，婴儿车座椅架还包括过渡状态。在过渡状态，第一架体与中间连接座6之间的相对位置与在折叠状态相同而第二架体与中间连接座6之间的相对位置与在展开状态相同。

[0078] 其中，第二锁定机构与第一架体联动地设置，在展开状态，第二锁定机构处于其锁定位置，在过渡状态，第二锁定机构在第一架体的驱动下处于其解锁位置。

[0079] 第一实施例中，第一架体包括第一管架3和第一管架连接座11。第一管架连接座11的第一端与第一管架3固定连接，第一管架连接座11的第二端与中间连接座6通过第一枢轴1可转动地连接。本实施例中第一架体为靠背架体，第一管架3为靠背管。

[0080] 如图4至图12所示，第一锁定机构设置于第一架体与中间连接座6内。第一锁定机构包括第一锁定块7、第一弹性元件13、第一牵引件14和第一锁定槽8。第一锁定槽8设置于中间连接座6的第一端。第一锁定块7的第一端与第一牵引件14连接，第一锁定块7的第二端包括与第一锁定槽8配合的第一锁定头。第一弹性元件13对第一锁定块7施加使第一锁定头朝向第一锁定槽8的第一弹性力。在第一锁定机构的锁定位置，第一锁定头与第一锁定槽8插接配合，在第一锁定机构的解锁位置，第一锁定头与第一锁定槽8解除配合。

[0081] 本实施例中，第一牵引件14为牵引绳，牵引绳通过设置在第一管架3上的操作部19进行操作。另外，在扶手5的两端各设置一个第一锁定机构。操作部19可以是一个与两个第一锁定机构的牵引绳14分别连接的压块。在婴儿车座椅架的展开状态下，如果不对压块进行操作，第一弹性元件13作用于第一锁定块7上的第一弹性力使第一锁定块7的第一锁定头插入第一锁定槽8内，第一锁定机构处于锁定状态，第一架体相对于中间连接座6固定；当下压压块时，两个牵引绳同时受拉，牵引绳的拉力克服对应的第一弹性元件13作用于第一锁定块7上的第一弹性力，将第一锁定头从第一锁定槽8内拉出，从而使第一锁定机构处于解锁状态，此时，第一架体相对于中间连接座6转变为可转动的，使第一架体围绕第一枢轴1相对于中间连接座6转动靠近扶手5，即可进行婴儿车座椅架从展开状态向过渡状态的转换操作。

[0082] 同时，第二架体包括第二管架4和第二管架连接座12。第二管架连接座12的第一端与中间连接座6通过第二枢轴2可转动地连接，第二管架连接座12的第二端与第二管架4固定连接。本实施例中第二架体为座架架体，第二管架4为座架管。

[0083] 如图4至图12所示，第二锁定机构设置于第二架体与中间连接座6内。第二锁定机构包括第二锁定块9、第二弹性元件15、第二牵引件16和第二锁定槽10。第二锁定槽10设置于第二管架连接座12上。第二锁定块9的第一端与第二牵引件16连接，第二锁定块9的第二端包括与第二锁定槽10配合的第二锁定头。第二弹性元件13对第二锁定块9施加使第二锁定头朝向第二锁定槽10的第二弹性力。在第二锁定机构的锁定位置，第二锁定头与第二锁定槽10插接配合，在第二锁定机构的解锁位置，第二锁定头与第二锁定槽10解除配合。

[0084] 以下结合图4至图12对第二锁定机构与第一架体之间的具体联动结构进行说明。如图4至图12所示，第一管架连接座11的第二端具有绕第一枢轴1设置的第一曲线槽17，第二牵引件16的第一端设有第一销钉18，第一销钉18位于第一曲线槽17内并与第一曲线槽17

滑动配合。第一曲线槽17设置为使在展开状态第一销钉18的轴线与第一枢轴1的轴线之间的距离大于在折叠状态第一销钉18的轴线与第一枢轴1的轴线之间的距离。本实施例中，第一曲线槽17从其第一端至第二端逐渐靠近第一枢轴1的轴线。第一销钉18与第一曲线槽17的配合，可以实现第二锁定机构与第一架体之间的联动。

[0085] 另外优选地，在展开状态，第一销钉18与第一曲线槽17的第一端抵接，在折叠状态，第一销钉18与第一曲线槽17的第二端抵接。由此，第一销钉18与第一曲线槽17的配合还对第一架体相对于中间连接座6的转动角度提供限制。

[0086] 本实施例中，第二牵引件16为牵引块，第一销钉18设置在牵引块的第一端，牵引块的第二端与第二锁定块9的第一端通过彼此配合的挂钩部连接。如图9至图12所示，在婴儿车座椅架的展开状态下，第二弹性元件15作用于第二锁定块9上的第二弹性力使第二锁定块9的第二锁定头插入第二锁定槽10内，第二锁定机构处于锁定状态，第二架体相对于中间连接座6固定；当第一架体相对于中间连接座6绕第一枢轴1转动时，第一曲线槽17随之绕第一枢轴1转动，第一销钉18在第一曲线槽17内相对滑动，由于第一曲线槽17从第一端至第二端逐渐靠近第一枢轴1的轴线，在第一架体转动的过程中，第一销钉18在第一曲线槽17的带动下克服第二弹性元件15对第二锁定块9的第二弹性力亦逐渐靠近第一枢轴1的轴线，则牵引块和第二锁定块9亦随之逐渐向第一枢轴1的轴线靠近，第二锁定头则逐渐从第二锁定槽10内脱出，直至婴儿车座椅架到达过渡状态，第二锁定头与第二锁定槽10解除配合，从而使第二锁定机构处于解锁状态，此时，第二架体相对于中间连接座6转变为可转动的，使第二架体绕第二枢轴2相对于中间连接座6转动靠近扶手5，即可进行婴儿车座椅架从过渡状态开始向折叠状态的转换操作。

[0087] 进一步优选地，中间连接座6的第二端设置有围绕第二枢轴2同心设置的弧形的第二曲线槽，第二管架连接座12的第一端上设置有第二销钉，第二销钉位于第二曲线槽内并与第二曲线槽滑动配合，在展开状态，第二销钉与第二曲线槽的第一端抵接，在折叠状态，第二销钉与第二曲线槽的第二端抵接。

[0088] 第二销钉与第二曲线槽的配合为第二架体相对于中间连接座6的转动角度提供限制。

[0089] 婴儿车座椅架还包括与婴儿车车架接驳的支撑座21。本实施例中，支撑座21与第二管架连接座12固定连接。因此，该婴儿车座椅架在从展开状态向折叠状态切换时，先使第一架体旋转至与中间连接座6相互垂直到达过渡状态，再在第一架体与中间连接座6之间无相对运动的情况下使中间连接座6绕第二枢轴2相对于第二架体转动至第二架体与中间连接座6相互垂直到达折叠状态。

[0090] 本发明第一实施例还提供一种婴儿车，该婴儿车包括了前述的婴儿车座椅架。图13和图14示出了本发明第一实施例的具有前述婴儿车座椅架的婴儿车。图13和图14中，为了清楚地表达婴儿车座椅架的结构及其与婴儿车车架的连接关系，婴儿车座椅架和婴儿车车架以外的其它结构未在图中示出。如图13和图14所示，婴儿车座椅架通过其支撑座21连接于婴儿车车架30上。

[0091] 第二实施例

[0092] 图15和图16示出了本发明第二实施例的婴儿车座椅架。

[0093] 如图15至图16所示，第二实施例与第一实施例最主要的差别在于第二实施例中，

中间连接座6与支撑座21固定连接。因此，该婴儿车座椅架在从展开状态向折叠状态切换时，先在中间连接座6和第二架体不动的情况下，使第一架体绕第一枢轴1旋转至与中间连接座6相互垂直到达过渡状态，再在中间连接座6和第一架体不动的情况下，使第二架体绕第二枢轴2转动至与中间连接座6相互垂直到达折叠状态。

[0094] 第二实施例中其它未说明的部分可参考第一实施例的相关内容。

[0095] 第三实施例

[0096] 图17和图18示出了本发明第三实施例的婴儿车座椅架。

[0097] 如图17至图18所示，第三实施例与第一实施例最主要的差别在于第三实施例中未设置扶手，在折叠状态下，第一架体和第二架体之间仅具有一个防夹手间隙，该防夹手间隙即第一架体和第二架体之间的间隔。

[0098] 第三实施例中其它未说明的部分可参考第一实施例的相关内容。

[0099] 最后应当说明的是：以上实施例仅用以说明本发明的技术方案而非对其限制；尽管参照较佳实施例对本发明进行了详细的说明，所属领域的普通技术人员应当理解：依然可以对本发明的具体实施方式进行修改或者对部分技术特征进行等同替换；而不脱离本发明技术方案的精神，其均应涵盖在本发明请求保护的技术方案范围当中。

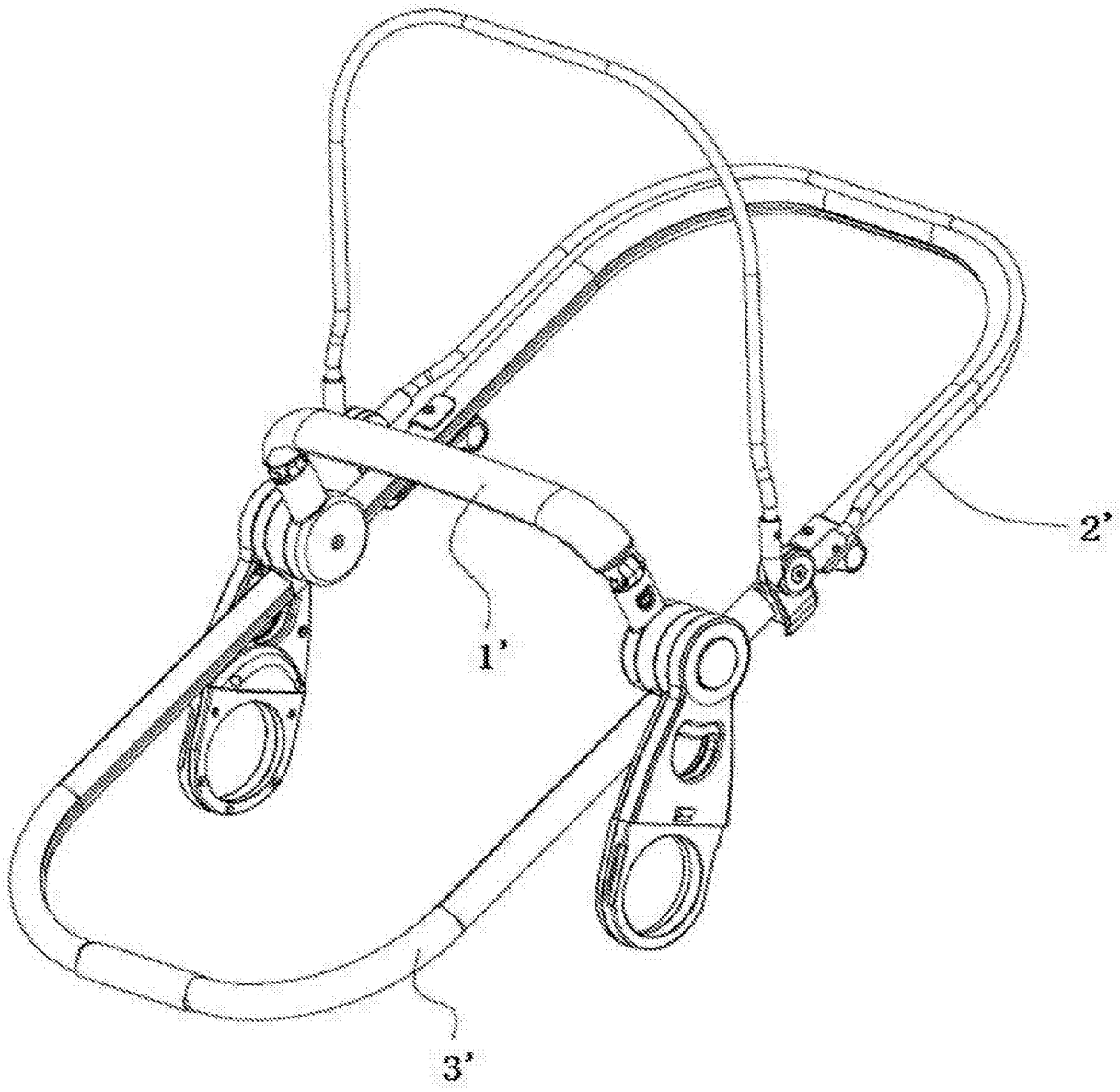
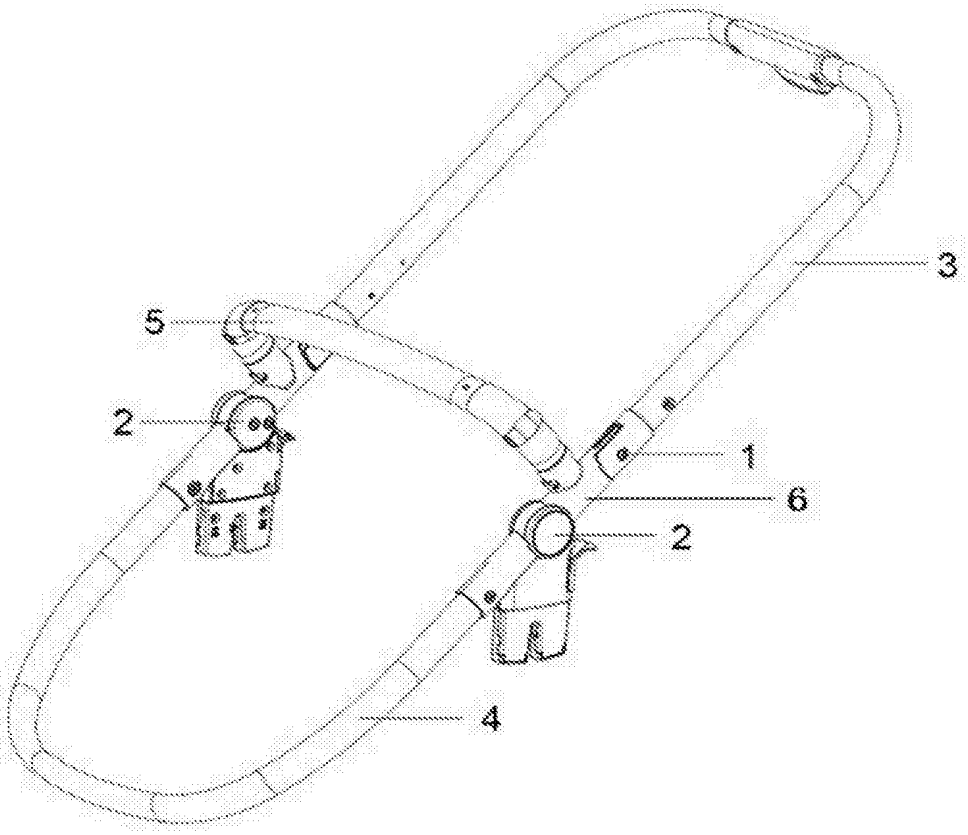


图1



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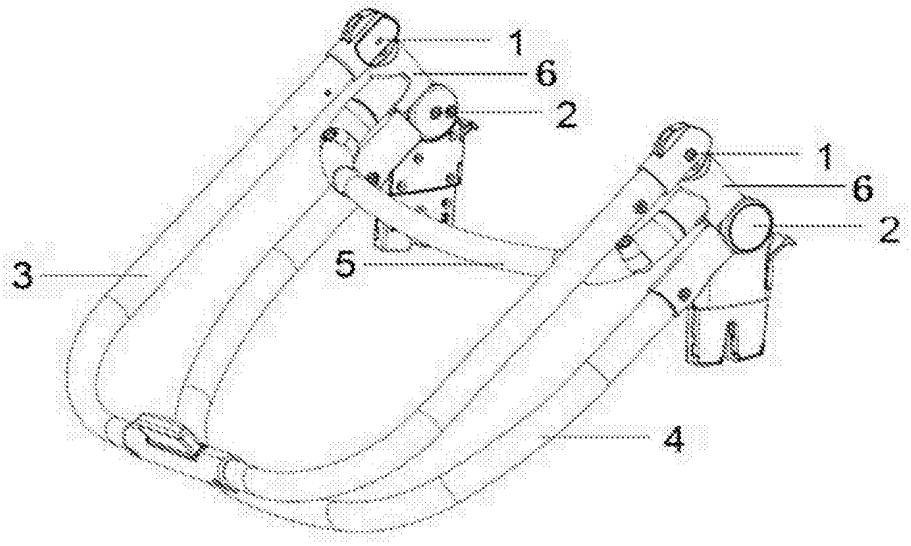


图3

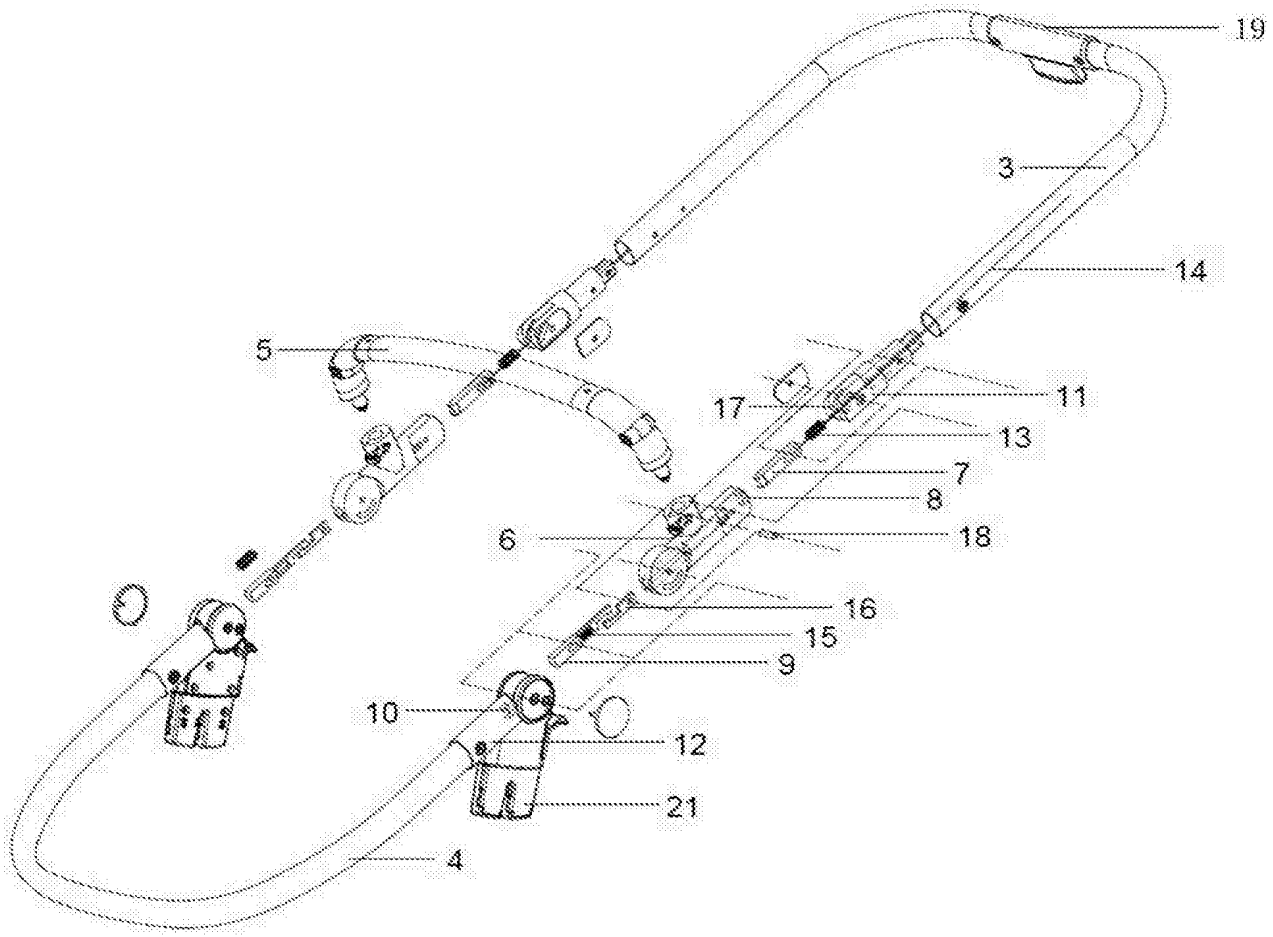
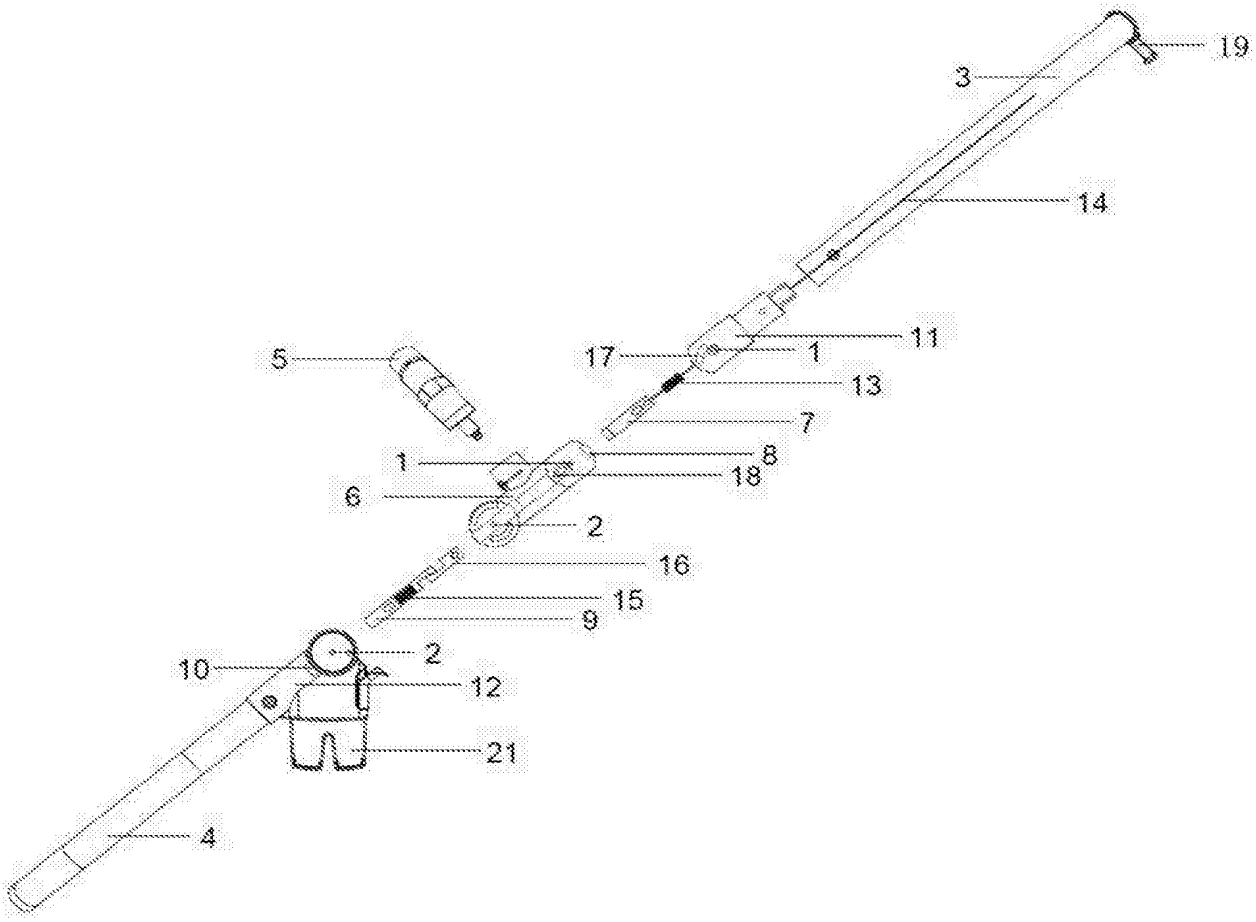


图4



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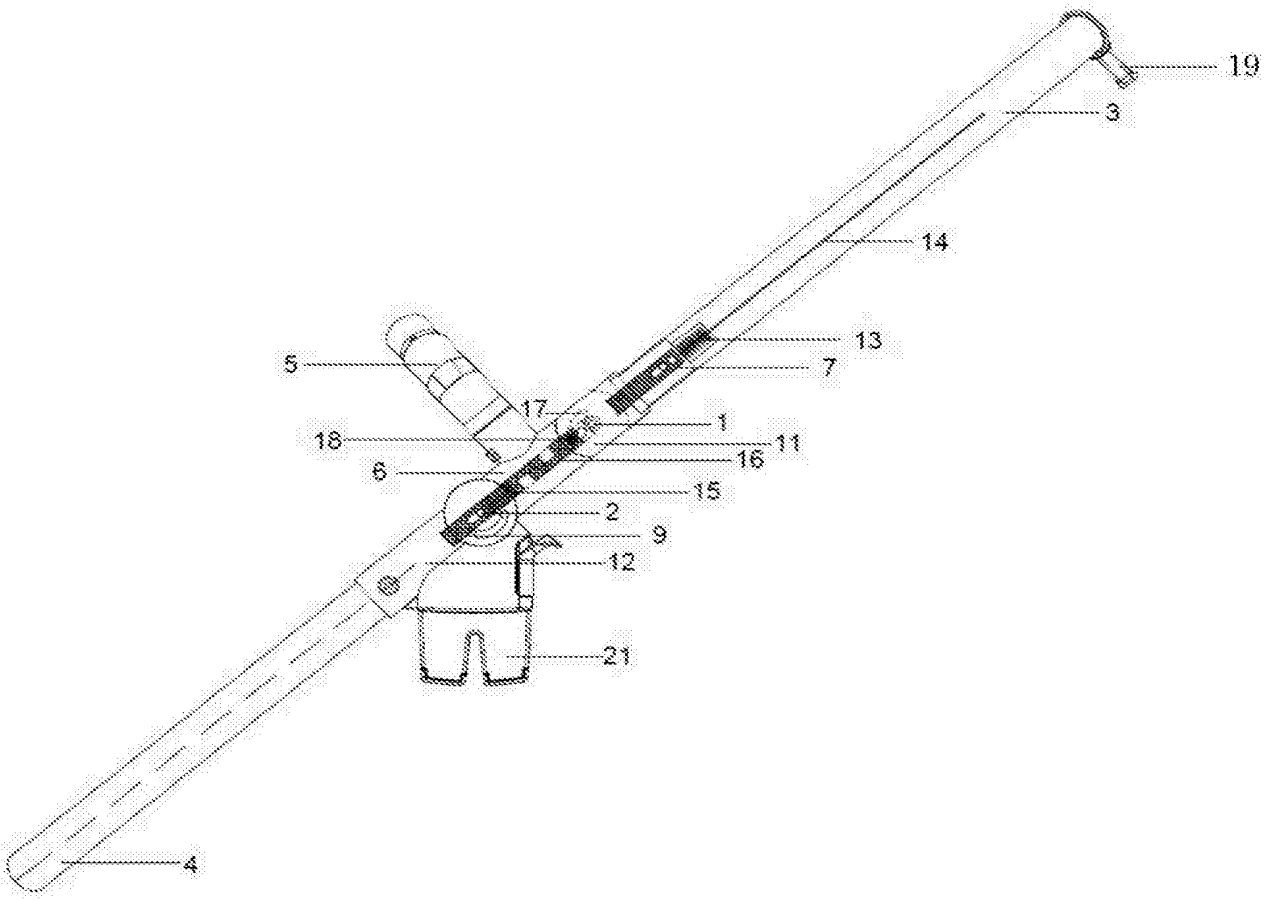

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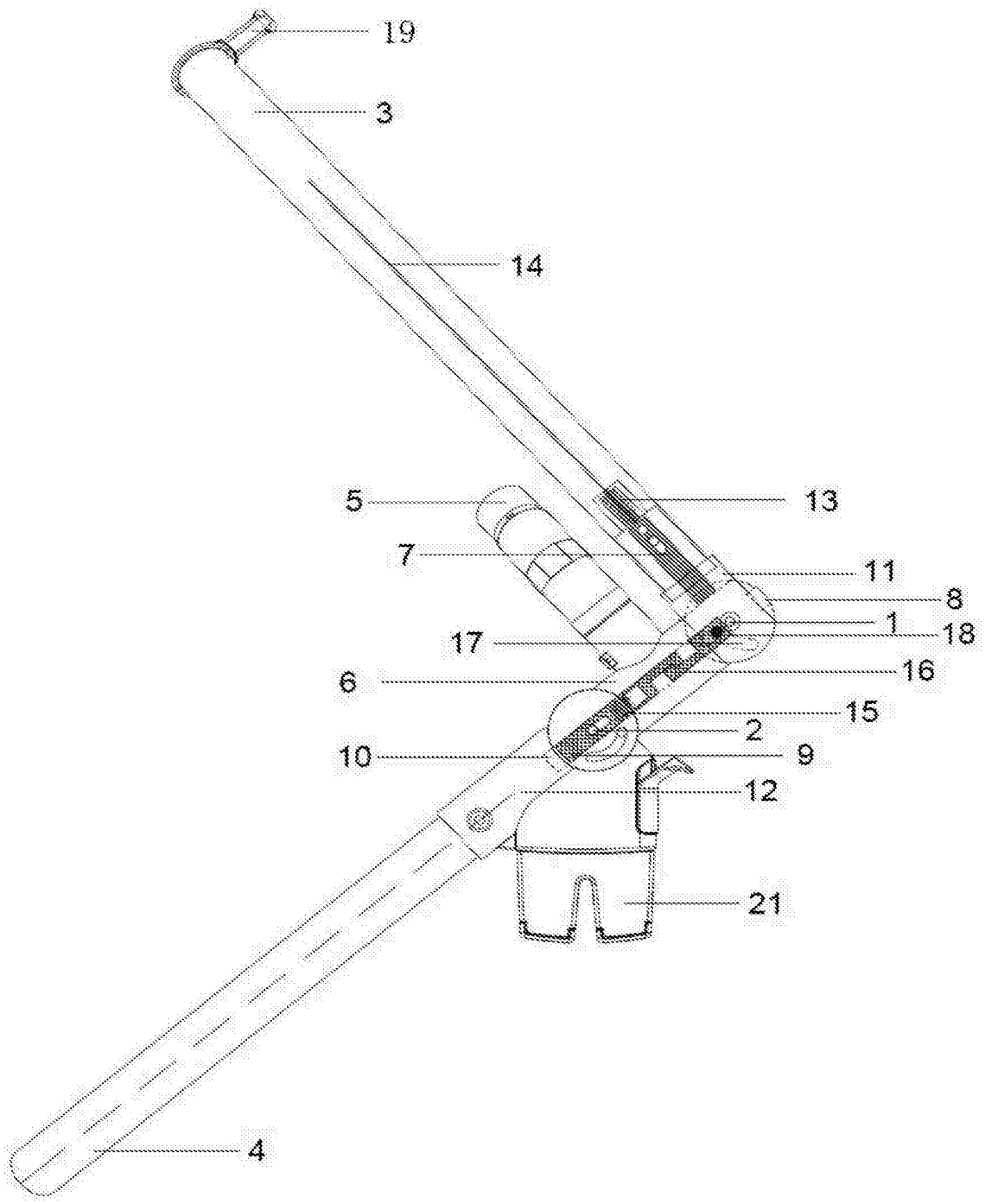

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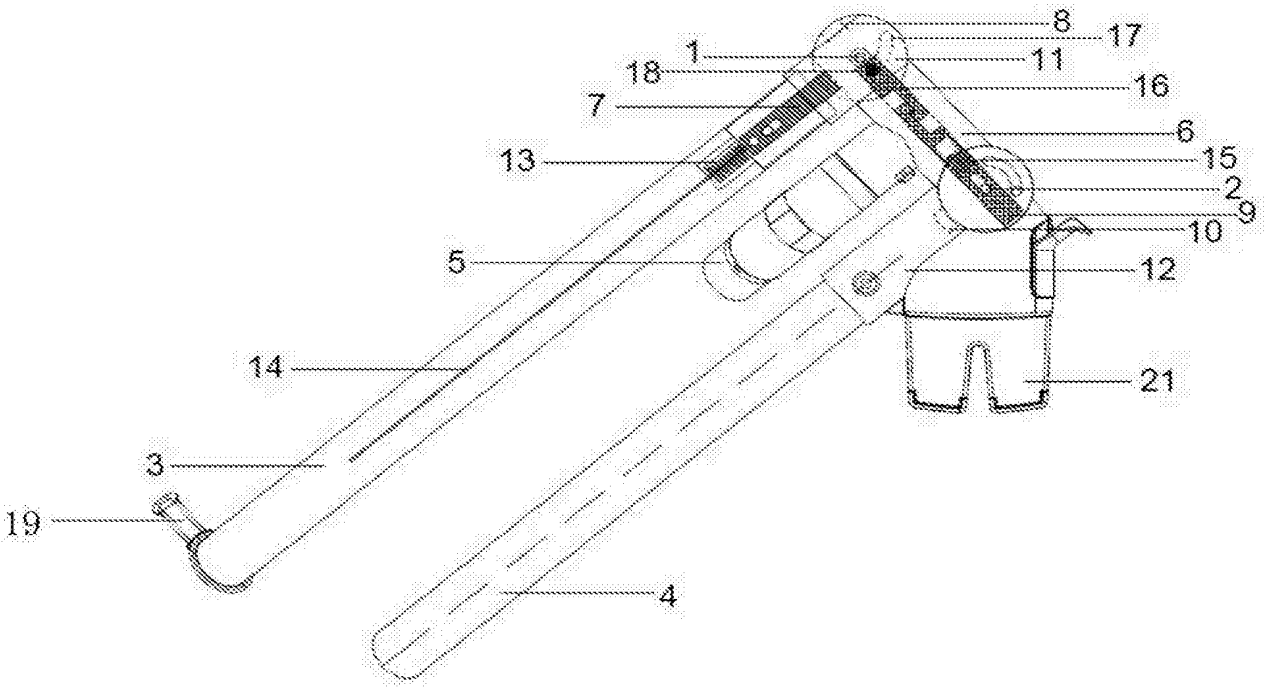

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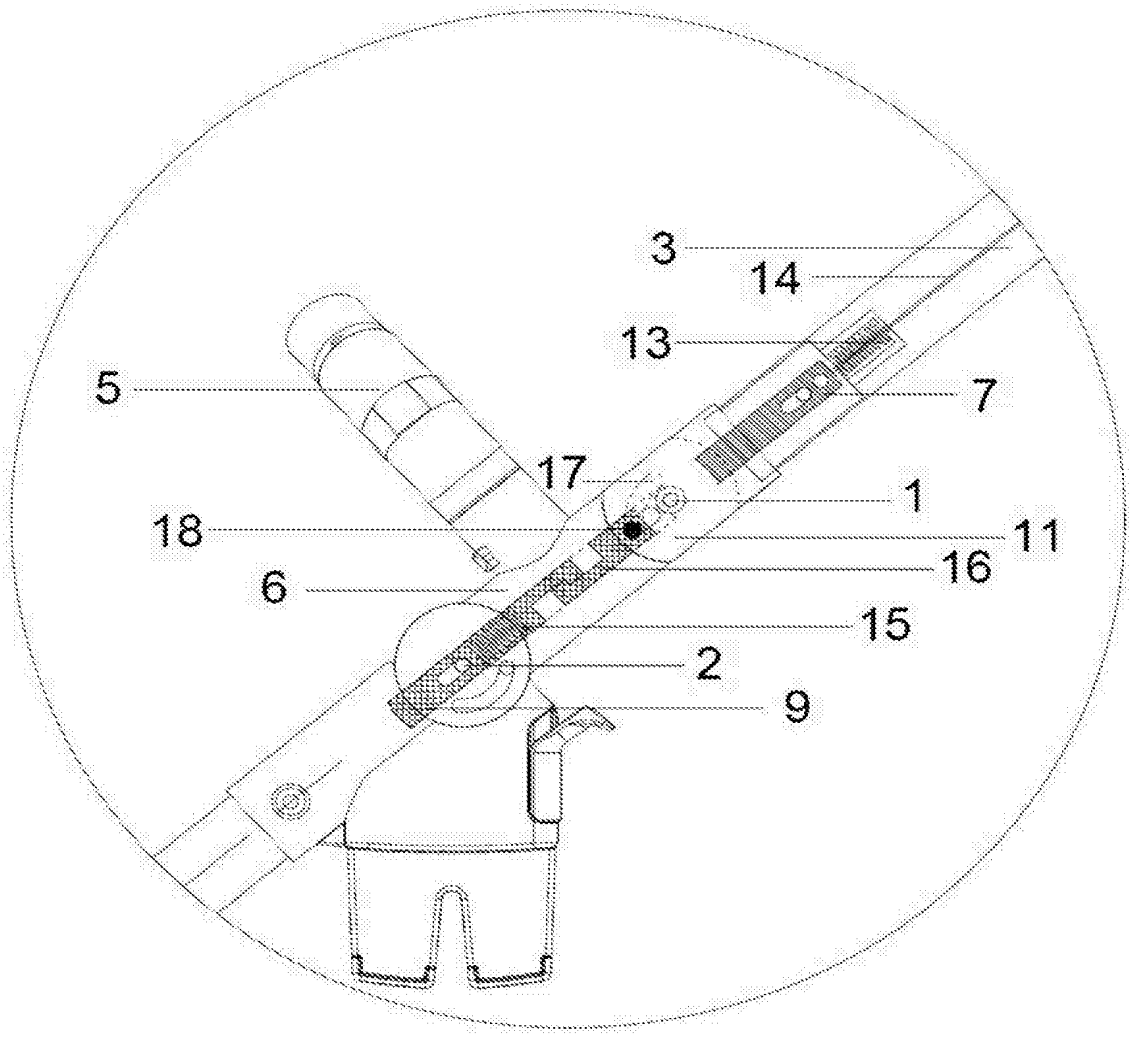

图9

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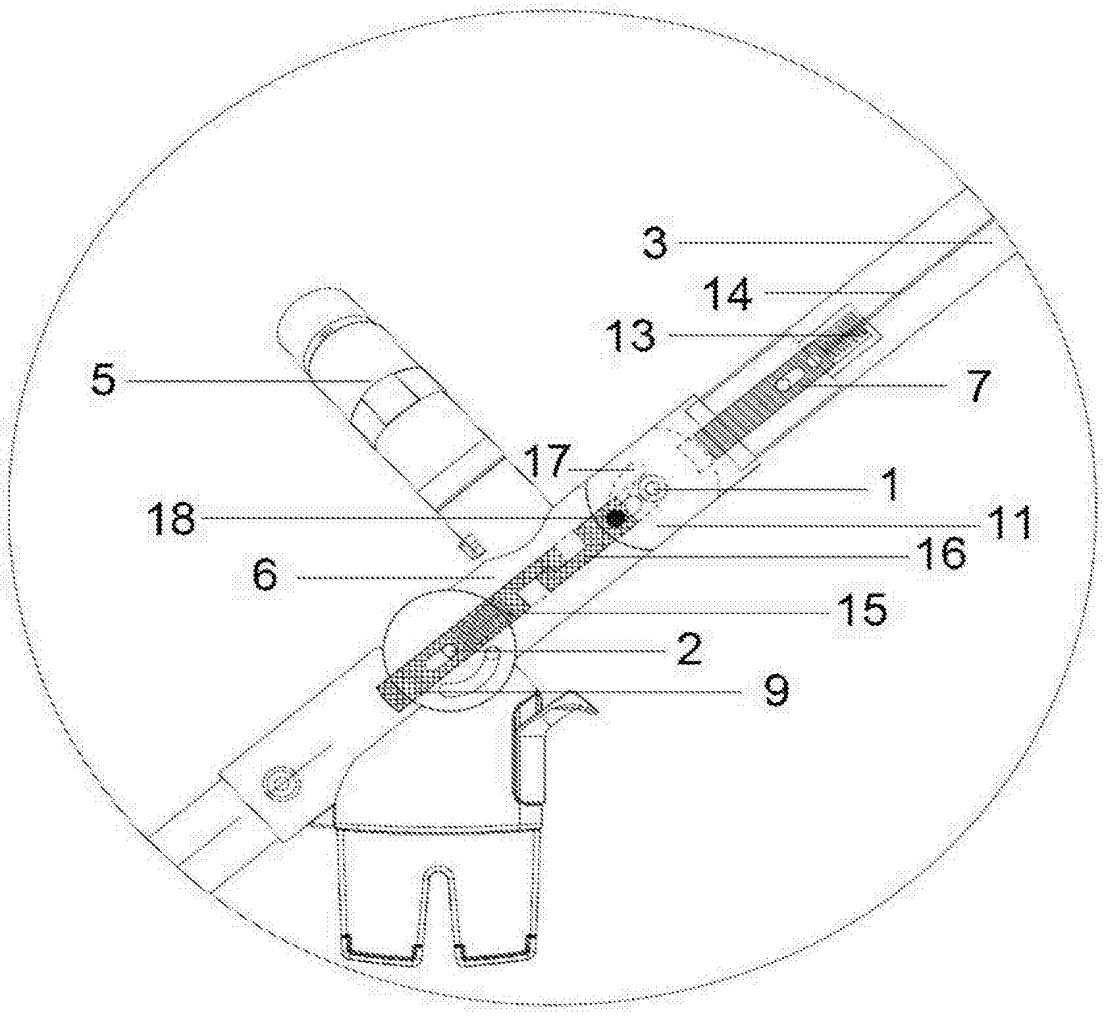

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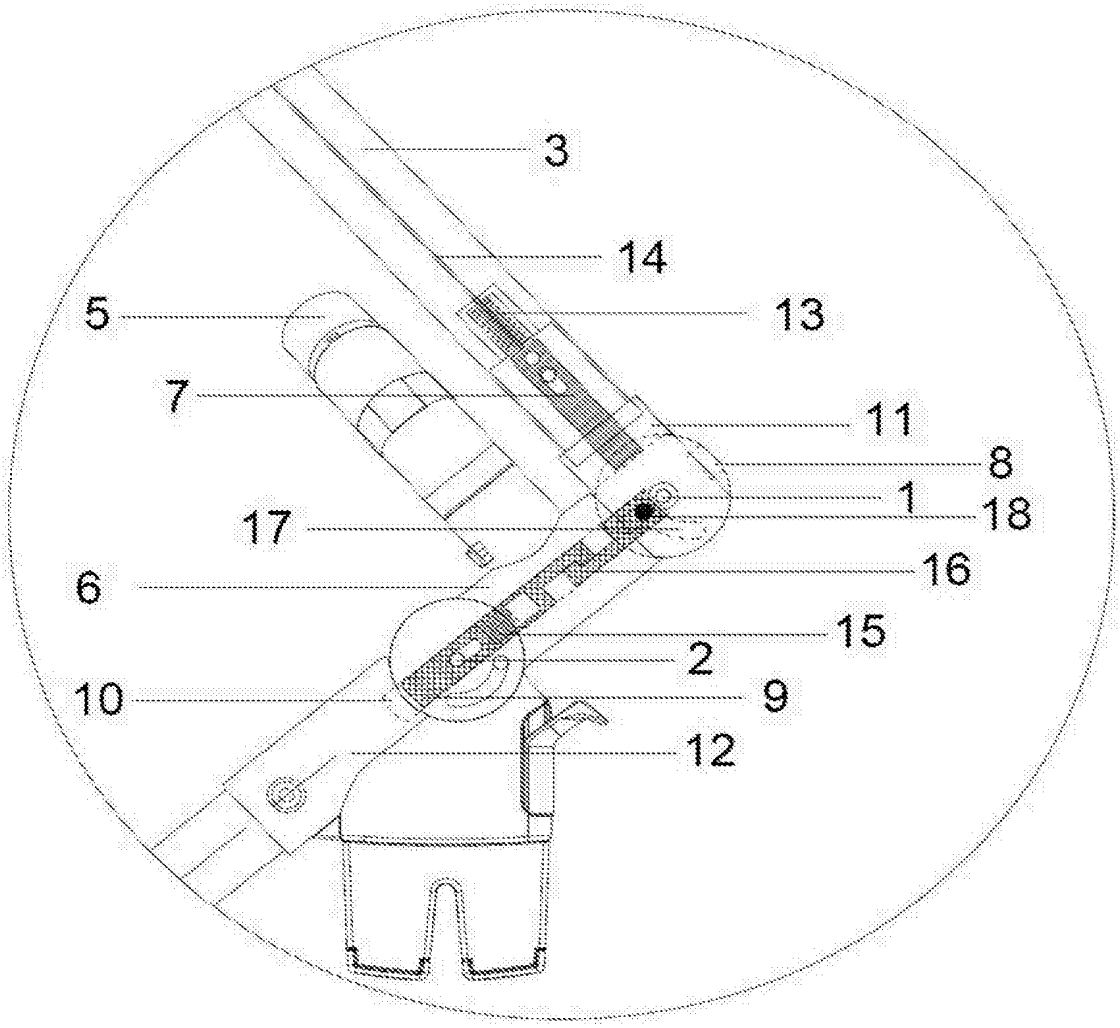

图11

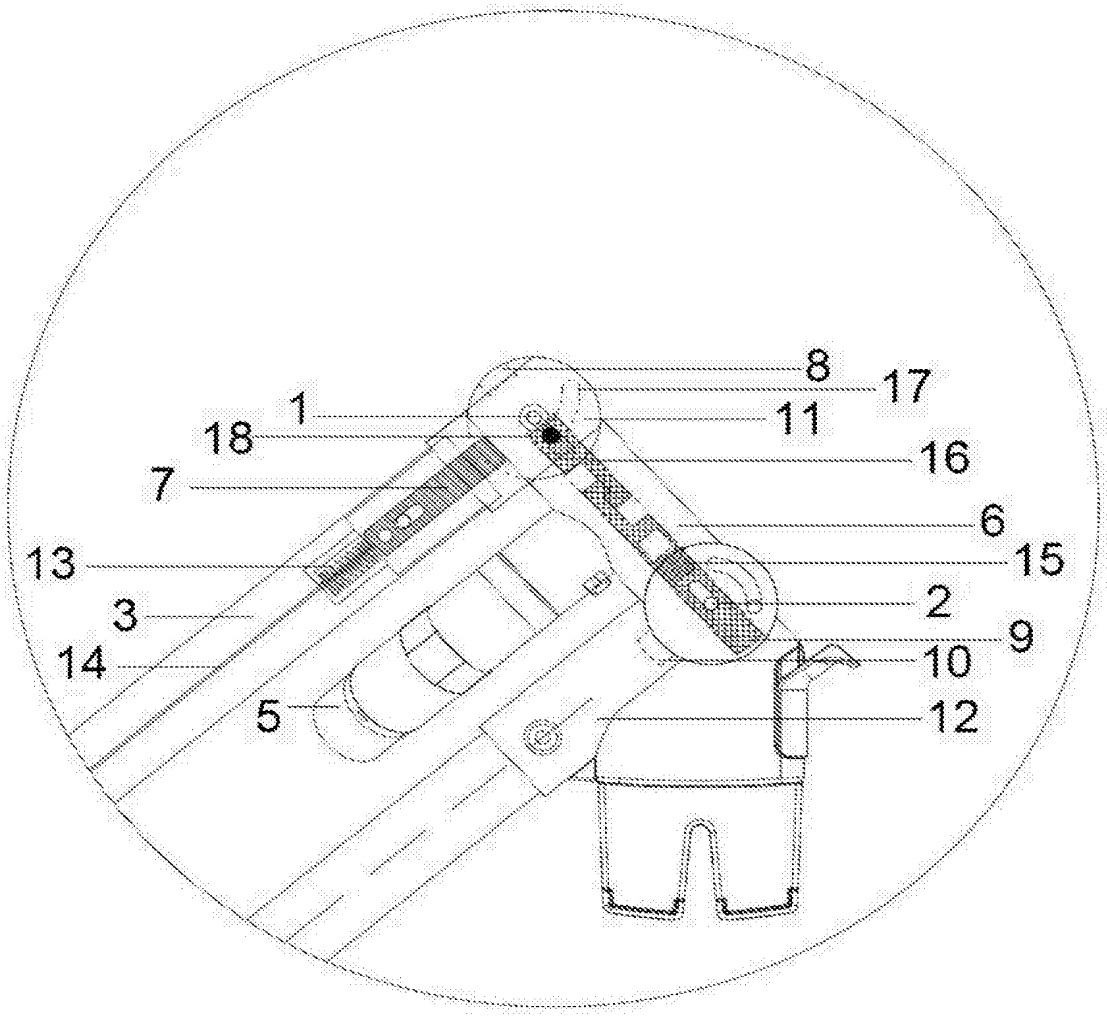

图12

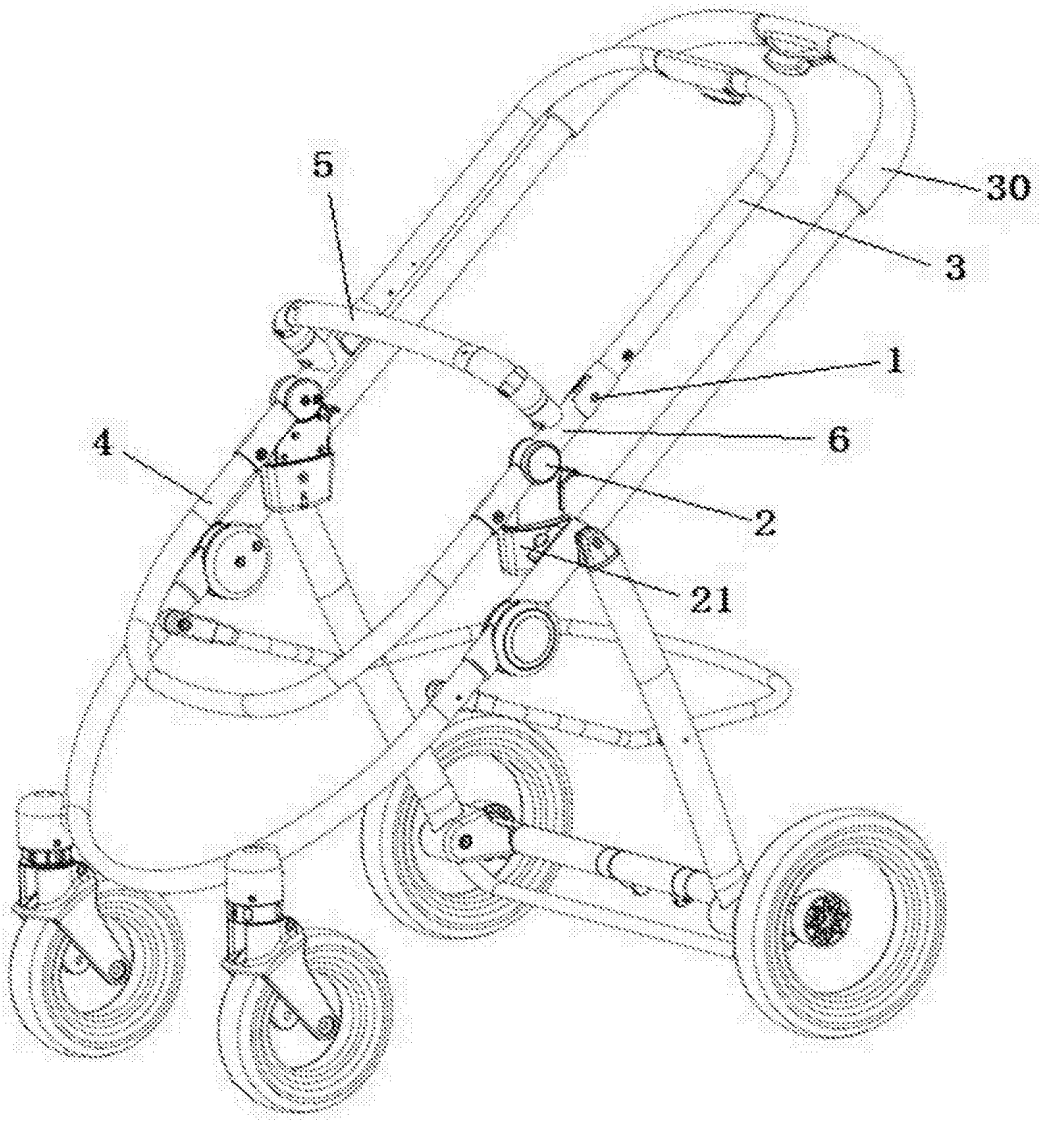

图13

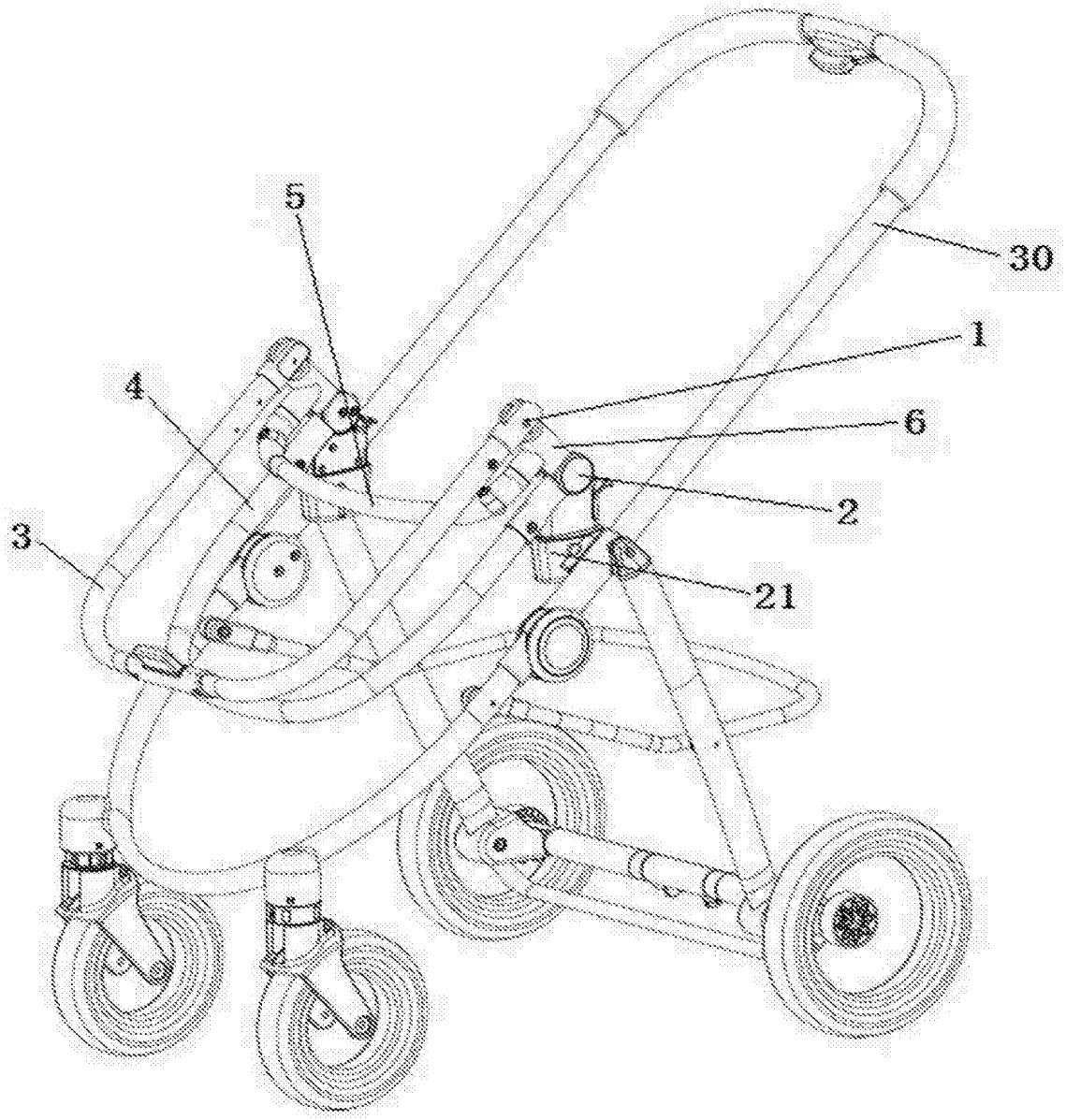

图14

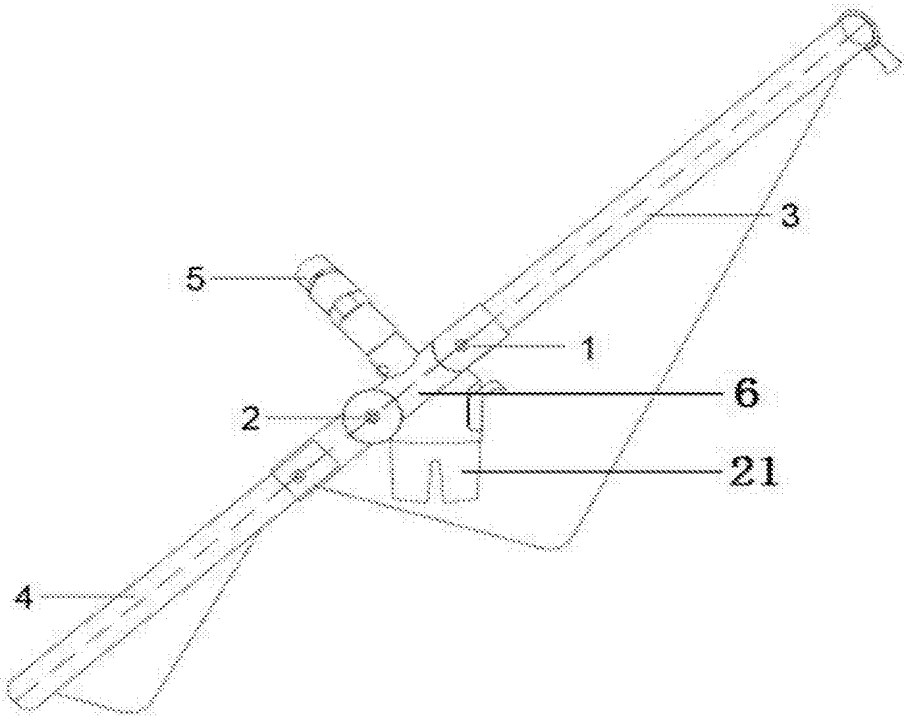

图15

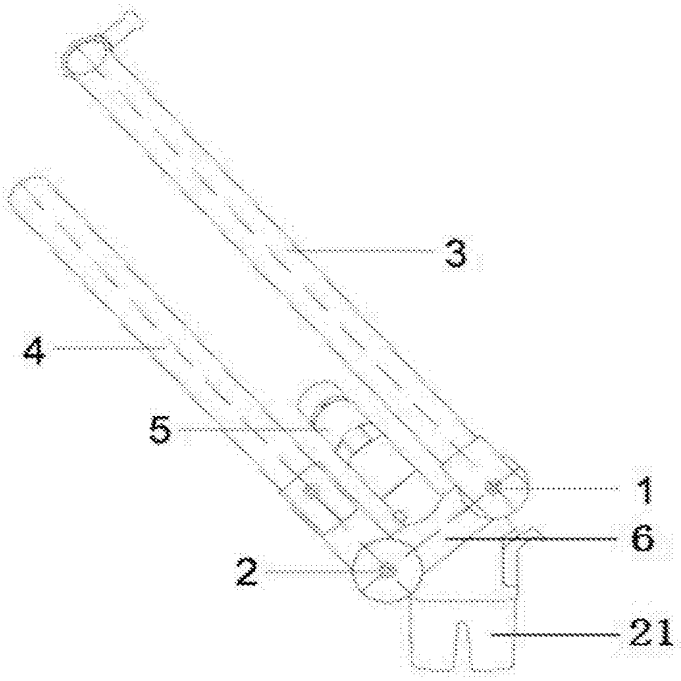

图16

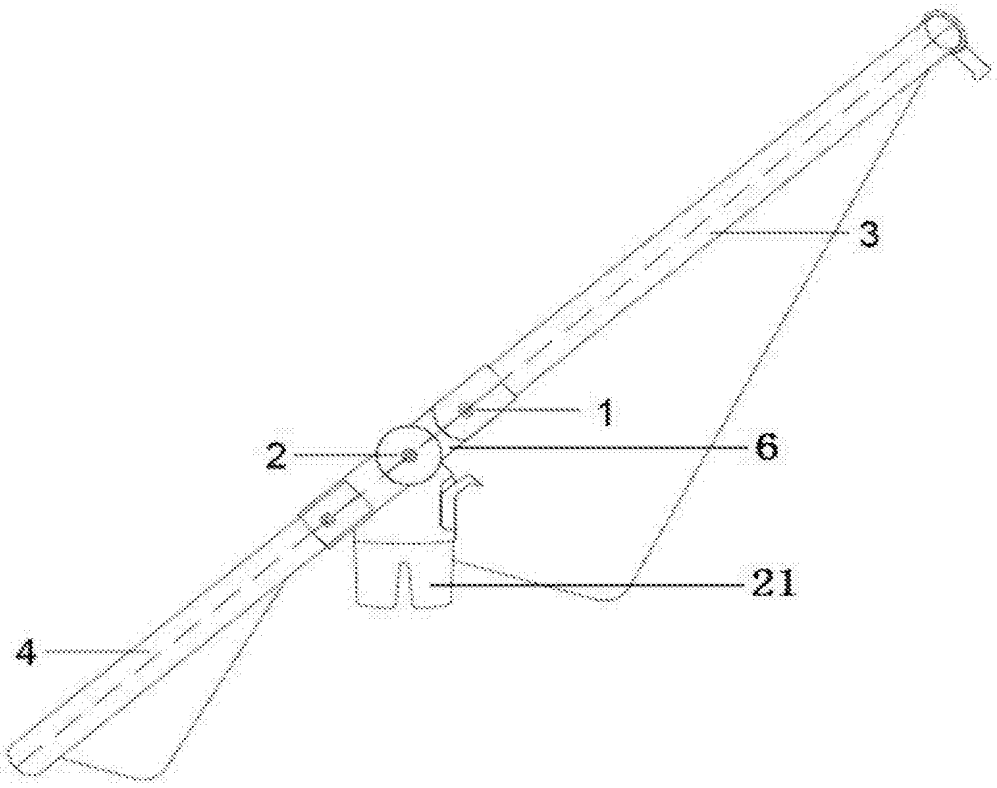

图17

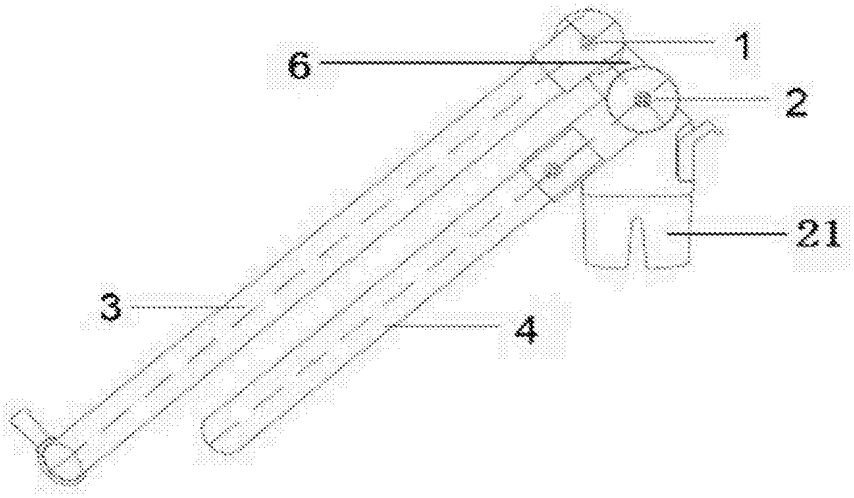

图18

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1. CN108909813 - BABY CARRIAGE CAPABLE OF BEING RAPIDLY FOLDED

Office
China

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Publication Number
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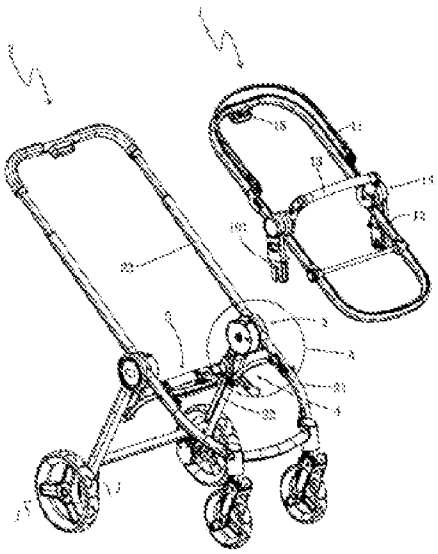
Title
[EN] Baby carriage capable of being rapidly folded
[ZH] 可快速折叠的童车



Abstract
[EN] The application relates to a baby carriage capable of being rapidly folded, which comprises a seat structure and a frame structure which are connected mutually. The frame structure comprises a front frame, a rear frame, an arm-rest frame, linkage folding joints, a locking connection structure and a first folding control mechanism, wherein the front frame, the rear frame and the arm-rest frame arehinged mutually; the linkage folding joints are arranged at common hinged positions of the front frame, the rear frame and the arm-reset frame; the locking connection mechanism is arranged between thefront frame and the rear frame; the first folding control mechanism is arranged on the rear frame. The seat structure comprises an upper seat frame, a lower seat frame, a front seat frame, seat framefolding joints and a second folding control mechanism; the upper seat frame, the lower seat frame and the front seat frame are hinged mutually by the seat frame folding joints and when the seat structure is unfolded for use, the upper seat frame, the lower seat frame and the front seat frame are locked mutually for positioning; the second folding control mechanism is connected with the seat framefolding joints to control the seat frame folding joints to carry out unlocking and folding. According to the application, by structural optimization, the baby carriage is convenient and rapid to fold; after the baby carriage is folded, a space is saved, so that the baby carriage is more convenient to store and carry.
[ZH] 本申请涉及可快速折叠的童车，包括相互连接的座椅结构和车架结构，车架结构包括相互铰接的前车架、后车架和扶手架，车架结构还包括：联动折叠关节，其设于前车架、后车架和扶手架的共同铰接处；锁定连接机构，其设在前车架和后车架之间；第一折叠控制机构，其设在后车架上；座椅结构包括上椅架、下椅架、前椅架、椅架折叠关节和第二折叠控制机构，上椅架、下椅架和前椅架通过椅架折叠关节相互铰接并在座椅结构展开使用时将上椅架、下椅架和前椅架相互锁紧定位，第二折叠控制机构与椅架折叠关节连接以控制椅架折叠关节解锁并折

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叠。本申请通过结构优化，折叠更加充分，折叠方便快捷，折叠后节省空间，更加便于存放和携带。

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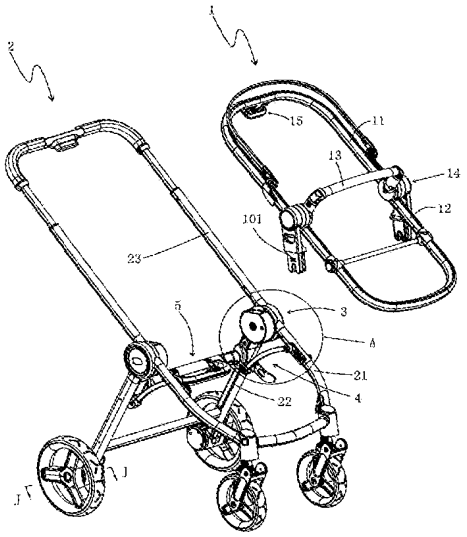
(54)发明名称

可快速折叠的童车

(57)摘要

本申请涉及可快速折叠的童车，包括相互连接的座椅结构和车架结构，车架结构包括相互铰接的前车架、后车架和扶手架，车架结构还包括：联动折叠关节，其设于前车架、后车架和扶手架的共同铰接处；锁定连接机构，其设在前车架和后车架之间；第一折叠控制机构，其设在后车架上；座椅结构包括上椅架、下椅架、前椅架、椅架折叠关节和第二折叠控制机构，上椅架、下椅架和前椅架通过椅架折叠关节相互铰接并在座椅结构展开使用时将上椅架、下椅架和前椅架相互锁紧定位，第二折叠控制机构与椅架折叠关节连接以控制椅架折叠关节解锁并折叠。本申请通过结构优化，折叠更加充分，折叠方便快捷，折叠后节省空间，更加便于存放和携带。



CN 108909813 B

1.可快速折叠的童车，包括相互连接的座椅结构(1)和车架结构(2)，所述车架结构(2)包括相互铰接的前车架(21)、后车架(22)和扶手架(23)，其特征在于，所述车架结构(2)还包括：

联动折叠关节(3)，其设于所述前车架(21)、所述后车架(22)和所述扶手架(23)的共同铰接处，用于带动所述前车架(21)和所述扶手架(23)同时相对转动；

锁定连接机构(4)，其设在所述前车架(21)和所述后车架(22)之间，用于将所述车架结构(2)锁定在展开使用状态；

第一折叠控制机构(5)，其设在所述后车架(22)上，用于锁定或解锁所述锁定连接机构(4)从而展开或折叠所述车架结构(2)；

所述座椅结构(1)包括上椅架(11)、下椅架(12)、前椅架(13)、椅架折叠关节(14)和第二折叠控制机构(15)，所述上椅架(11)、所述下椅架(12)和所述前椅架(13)通过所述椅架折叠关节(14)相互铰接并在所述座椅结构(1)展开使用时将所述上椅架(11)、所述下椅架(12)和所述前椅架(13)相互锁紧定位，所述第二折叠控制机构(15)与所述椅架折叠关节(14)连接以控制所述椅架折叠关节(14)解锁并折叠；

所述联动折叠关节(3)包括与所述前车架(21)连接的前车架连接件(31)、与所述后车架(22)连接的后车架连接件(32)以及与所述扶手架(23)连接的扶手架连接件(33)，所述后车架连接件(32)上设有孔长方向与所述后车架(22)平行的长条导孔(321)，所述前车架连接件(31)、所述后车架连接件(32)和所述扶手架连接件(33)的端部互相铰接形成同轴铰接部(1a)；

所述联动折叠关节(3)还包括第一联动杆(34)和第二联动杆(35)，所述第一联动杆(34)一端和所述第二联动杆(35)一端相铰接形成直动铰接部(2a)，所述直动铰接部(2a)设在所述长条导孔(321)内沿所述长条导孔(321)的孔长方向滑动，所述第一联动杆(34)另一端与所述扶手架连接件(33)相铰接形成第一转动铰接部(3a)，所述第二联动杆(35)另一端与所述前车架连接件(31)相铰接形成第二转动铰接部(4a)，所述第一转动铰接部(3a)和所述第二转动铰接部(4a)分别设置在所述同轴铰接部(1a)两对侧的圆周上，且所述第一转动铰接部(3a)和所述第二转动铰接部(4a)分别与所述同轴铰接部(1a)形成偏心，所述后车架连接件(32)上设有用于限制所述第一转动铰接部(3a)转动行程的第一弧形长孔(5a)以及用于限制所述第二转动铰接部(4a)转动行程的第二弧形长孔(6a)，所述第一转动铰接部(3a)绕所述同轴铰接部(1a)转动时推动所述直动铰接部(2a)沿所述长条导孔(321)的孔长方向滑动，从而联动所述直动铰接部(2a)拉动所述第二转动铰接部(4a)绕所述同轴铰接部(1a)转动，完成所述车架结构(2)的联动折叠动作；

所述椅架折叠关节(14)包括：

上椅架连接件(141)，其设有第一铰接部(1411)以及与所述上椅架(11)连接的第一连接部(1412)，所述第一铰接部(1411)上设有第一轴孔(1411e)、设在所述第一铰接部(1411)端面且沿所述第一轴孔(1411e)外周设置的第一斜推凸起(1411b)以及沿所述第一斜推凸起(1411b)外周设置的第一齿槽(1411c)，在所述第一铰接部(1411)上与所述第一齿槽(1411c)相背的端面设有沿所述第一轴孔(1411e)外周设置的第二齿槽(1411d)；

第一旋转顶凸体(142)，其周部设有与所述第一斜推凸起(1411b)相配合的第一斜推部(1421)，其内部设有用于传递旋转动力的卡孔(1422)，所述第一旋转顶凸体(142)同轴设置

在所述第一铰接部(1411)内且与所述第一斜推凸起(1411b)在周向相错安装,所述第一旋转顶凸体(142)旋转时所述第一斜推部(1421)沿所述第一斜推凸起(1411b)爬升使所述第一旋转顶凸体(142)往轴向顶出;

第一卡齿(143),其卡嵌在所述第一齿槽(1411c)内,其一端面与所述第一旋转顶凸体(142)的一端面相抵,所述第一旋转顶凸体(142)往轴向顶出时推动所述第一卡齿(143)往轴向运动而脱离所述第一齿槽(1411c);

椅车连接件(144),其设有第二铰接部(1441)以及与所述车架结构(2)连接的第二连接部(1442),所述第二铰接部(1441)上设有周向设置的第三齿槽(1441a),所述第一卡齿(143)在轴向的部分卡嵌在所述第三齿槽(1441a)内,所述第一卡齿(143)和所述第三齿槽(1441a)内之间设有供所述第一卡齿(143)轴向移动的轴向间隙,所述第一卡齿(143)与所述第二铰接部(1441)之间设有用于将所述第一卡齿(143)顶往所述第一齿槽(1411c)的第三压缩弹簧;

第二旋转顶凸体(145),其设有旋转基部(1451)、沿所述旋转基部(1451)轴向伸出的卡轴(1452)以及沿在所述旋转基部(1451)周向设置的第二斜推部(1453),所述第二斜推部(1453)上设有一第二牵拉部(1454),所述卡轴(1452)沿所述旋转基部(1451)轴向延伸且穿过所述第一轴孔(1411e)伸进所述第一旋转顶凸体(142)的卡孔(1422)内以使所述第二旋转顶凸体(145)旋转时带动所述第一旋转顶凸体(142)转动;

第二卡齿(146),其设有转动腔(1461),所述转动腔(1461)在底部沿周向设有第二斜推凸起(1461a),所述第二卡齿(146)嵌装在所述第二齿槽(1411d)内,所述第二卡齿(146)和所述第二齿槽(1411d)内之间设有供所述第二卡齿(146)轴向移动的轴向间隙,所述旋转基部(1451)同轴嵌装在所述转动腔(1461)内且所述第二斜推部(1453)与所述第二斜推凸起(1461a)在周向相错安装,所述第二斜推部(1453)与所述第二斜推凸起(1461a)之间具有沿所述第二斜推部(1453)转动方向的行程间隙(1454a),所述第二旋转顶凸体(145)旋转时所述第二斜推部(1453)先转过所述行程间隙(1454a)再沿所述第二斜推凸起(1461a)爬升使所述第二卡齿(146)往轴向运动而脱离所述第二齿槽(1411d),所述第二旋转顶凸体(145)与所述第二卡齿(146)之间设有第二旋转顶凸体复位弹簧(200);

下椅架连接件(147),其设有第三铰接部(1471)以及与所述下椅架(12)连接的第三连接部(1472),所述第三铰接部(1471)上设有周向设置的第四齿槽(1471a),所述第二卡齿(146)在轴向的部分卡嵌在所述第四齿槽(1471a)内,所述第二卡齿(146)与所述第三铰接部(1471)之间设有用于将所述第二卡齿(146)顶向所述第二齿槽(1411d)的第四压缩弹簧;

前椅架连接件(148),其设有第四铰接部(1481)和与所述前椅架(13)连接的第四连接部(1482),所述第四铰接部(1481)与所述第三铰接部(1471)相铰接。

2.根据权利要求1所述的可快速折叠的童车,其特征在于,所述锁定连接机构(4)包括锁定连接件(41)、与所述后车架(22)平行设置的滑杆(42)以及可滑动地连接在所述滑杆(42)上的锁块(43),所述锁定连接件(41)一端铰设在所述前车架(21)上,另一端铰设在所述锁块(43)上,所述锁块(43)上开设有锁孔(431)。

3.根据权利要求2所述的可快速折叠的童车,其特征在于,所述第一折叠控制机构(5)包括:

连接杆(53),其两端固定连接在所述后车架(22)上,所述连接杆(53)设有长条滑腔

(531)，在所述连接杆(53)的外周上还固定有顶挡部(532)；

旋转杆(51)，其可绕所述连接杆(53)同轴转动地套设在所述连接杆(53)外部，所述旋转杆(51)沿外周设有当所述旋转杆(51)转动时套进所述顶挡部(532)的转动槽(522)，所述旋转杆(51)内设有旋转腔(521)，所述旋转腔(521)内开设有锥形槽(5211)，所述锥形槽(5211)的槽宽沿腔壁周向缩小，所述旋转杆(51)上还设有用于带动所述旋转杆(51)转动的旋转把手(52)，所述旋转把手(52)上设有可沿所述旋转把手(52)轴向滑移的第一滑键(523)以及与所述第一滑键(523)连接且随所述第一滑键(523)滑移以伸进所述转动槽(522)内的挡销(524)，所述第一滑键(523)与所述旋转把手(52)之间设有挡销复位弹簧，所述旋转把手(52)与所述连接杆(53)之间设有用于所述旋转把手(52)转动复位的把手复位弹簧；

牵拉组件(54)，其设在所述长条滑腔(531)内，所述牵拉组件(54)包括第一牵拉块(541)和第二牵拉块(542)，所述第一牵拉块(541)和所述第二牵拉块(542)相背设置且所述第一牵拉块(541)和所述第二牵拉块(542)之间设有第一压缩弹簧(10)，所述第一牵拉块(541)上设有与所述锥形槽(5211)相配合的第一轴推斜面(5411)，所述第二牵拉块(542)上设有与所述锥形槽(5211)相配合的第二轴推斜面(5412)，所述第一轴推斜面(5411)和第二轴推斜面(5412)分别与所述锥形槽(5211)的槽壁接触；

锁芯(55)，所述旋转杆(51)内设有锁道(511)，所述锁芯(55)设在所述锁道(511)内，所述锁道(511)内设有将所述锁芯(55)向外顶出的第二压缩弹簧(20)，所述锁块(43)上开设有锁孔(431)，所述车架结构(2)展开使用时所述锁芯(55)伸进所述锁孔(431)内以锁定所述锁块(43)，所述锁芯(55)与所述第一牵拉块(541)之间设有用于将所述锁芯(55)从所述锁孔(431)内拉出以解锁所述锁定连接机构(4)的第一拉绳(40)。

4.根据权利要求1所述的可快速折叠的童车，其特征在于，所述第一铰接部(1411)上设有圆心与所述第一铰接部(1411)铰接中心重合的第一圆弧孔(1411a)，所述第一圆弧孔(1411a)上设有第一始端(1411aa)和第一末端(1411ab)，所述第三铰接部(1471)上设有圆心与所述第三铰接部(1471)铰接中心重合的第二圆弧孔(1471b)，所述第二圆弧孔(1471b)上设有第二始端(1471ba)和第二末端(1471bb)，在所述座椅结构(1)展开使用状态时所述第二末端(1471bb)与所述第一始端(1411aa)重叠，在所述第四铰接部(1481)一偏心部位上设有联动部(1481a)，所述联动部(1481a)上固定有贯穿所述第一圆弧孔(1411a)和第二圆弧孔(1471b)的联动销轴，所述座椅结构(1)折叠时所述第三铰接部(1471)先转动至所述第二始端(1471ba)和所述第一始端(1411aa)重叠的状态，继续转动所述第三铰接部(1471)时所述第二始端(1471ba)带动所述联动销轴转至所述第二始端(1471ba)和所述第一末端(1411ab)重叠的状态，从而实现上椅架(11)、下椅架(12)和前椅架(13)的转动折叠。

5.根据权利要求1所述的可快速折叠的童车，其特征在于，所述第二折叠控制机构(15)包括：

外套件(151)，其固定在所述上椅架(11)上；

内套件(152)，其套设在所述外套件(151)内，所述内套件(152)上设有滑槽(1521)以及在所述滑槽(1521)内滑动的第二滑键(1522)，所述第二滑键(1522)上设有随所述第二滑键(1522)滑动方向运动的挡转部(1522a)，所述第二滑键(1522)与所述内套件(152)之间设有用于所述挡转部(1522a)复位的挡转复位弹簧；

扳转件(153)，其铰设在所述内套件(152)上，所述扳转件(153)上设有凸出于所述扳转件(153)周向表面的卡转部(1531)，转动所述扳转件(153)时所述卡转部(1531)与所述挡转部(1522a)在径向相交，将所述扳转件(153)扳转至第一角度时所述挡转部(1522a)挡住所述卡转部(1531)旋转，所述扳转件(153)与所述内套件(152)之间设有用于所述扳转件(153)复位的扳转复位弹簧，所述扳转件(153)上还设有随所述扳转件(153)转动实现牵拉的第二拉绳(50)，所述第二拉绳(50)与所述第二牵拉部(1454)连接。

6.根据权利要求1-5任一项所述的可快速折叠的童车，其特征在于，所述后车架(22)上设有第一后轮(24)、第二后轮(25)、用于刹停所述第一后轮(24)的主刹车(26)以及由所述主刹车(26)带动用于刹停所述第二后轮(25)的副刹车(27)，所述第一后轮(24)沿轮轴一周设有主刹车孔(241)；

所述主刹车(26)包括与所述后车架(22)连接的轮轴安装座(261)，所述轮轴安装座(261)上装有能绕所述第一后轮(24)轮轴转动的踏块(28)，所述踏块(28)上设有刹车滑块(281)，所述轮轴安装座(261)外周上设有所述刹车滑块(281)常置的常置凹位(2611)和刹车时定住刹车状态的刹车凹位(2612)，所述刹车滑块(281)随所述踏块(28)转动在所述常置凹位(2611)和所述刹车凹位(2612)之间滑动，所述刹车滑块(281)上设有使其抵住所述常置凹位(2611)或所述刹车凹位(2612)的滑块复位弹簧，所述踏块(28)与所述轮轴安装座(261)上之间设有使所述踏块(28)趋于所述常置凹位(2611)的踏块复位弹簧，所述踏块(28)上还设有拉动所述副刹车(27)的第三拉绳(60)；

所述轮轴安装座(261)上设有伸出所述轮轴安装座(261)卡入所述主刹车孔(241)内实现刹车的刹车销组件(263)，所述刹车销组件(263)包括刹车销轴(2631)和刹车销套(2632)，所述刹车销轴(2631)套入所述刹车销套(2632)内且所述刹车销轴(2631)和所述刹车销套(2632)之间设有顶销弹簧(2633)，所述刹车销套(2632)设有行程孔(263a)，所述刹车销轴(2631)上设有伸进所述行程孔(263a)内的行程轴；

所述踏块(28)上还设有转动时能控制所述刹车销组件(263)刹车或否的旋转滑槽(842)，所述旋转滑槽(842)包括高位(8421)、低位(8422)以及连接所述高位(8421)和所述低位(8422)的滑斜面(8423)，所述轮轴安装座(261)与所述踏块(28)之间设有用于使所述刹车销套(2632)抵住所述旋转滑槽(842)的顶套弹簧(2634)。

7.根据权利要求1所述的可快速折叠的童车，其特征在于，所述扶手架(23)包括上扶手支架(231)、与所述上扶手支架(231)套接的下扶手支架(232)以及固定在所述上扶手支架(231)上可控制扶手伸缩的扶手调节装置；

所述扶手调节装置包括安装在上扶手支架(231)上的固定座(234)、固定在所述固定座(234)内的限位块(235)、可在所述限位块(235)内移动的移动块(236)以及可带动所述移动块(236)移动的弹性按钮(237)，所述移动块(236)上设有第四拉绳(70)，所述移动块(236)在所述限位块(235)内移动时拉动所述第四拉绳(70)；

所述扶手调节装置还包括固定在上扶手支架(231)的卡掣基座(238)、套设在所述卡掣基座(238)内沿扶手伸缩方向运动的伸缩滑块(239)以及套设在所述卡掣基座(238)内沿垂直于扶手伸缩方向运动的卡掣滑块(230)，所述伸缩滑块(239)与所述第四拉绳(70)连接，所述下扶手支架(232)上设有若干沿扶手伸缩方向分布的卡掣孔，所述卡掣滑块(230)可卡进所述卡掣孔内以使所述上扶手支架(231)和所述下扶手支架(232)相互锁定，所述卡掣滑

块(230)上设有斜向的斜长孔(2301)，所述伸缩滑块(239)在所述斜长孔(2301)内滑动以使所述伸缩滑块(239)沿扶手伸缩方向运动时所述卡掣滑块(230)内沿垂直于扶手伸缩方向运动。

8.根据权利要求3所述的可快速折叠的童车，其特征在于，所述座椅结构(1)上设有插头(101)，所述车架结构(2)上设有插槽部(201)，所述插头(101)可拆卸地插装在所述插槽部(201)内以使所述座椅结构(1)可拆卸地安装在所述车架结构(2)上，所述插槽部(201)与所述联动折叠关节(3)同轴铰接，所述插槽部(201)上设有卡转孔(202)，第一折叠控制机构(5)上还设有：

第二推拉连接件(75)，其下端设有用于带动所述第二推拉连接件(75)进行推拉动作的滑凸(751)，第二推拉连接件(75)推出时伸进所述卡转孔(202)以制止所述插槽部(201)转动；

连接盖(76)，其套设在所述后车架(22)上且与所述连接杆(53)一端固定连接，所述连接盖(76)上设有推拉盲孔(761)，所述第二推拉连接件(75)可滑动地装设在所述推拉盲孔(761)内，所述推拉盲孔(761)在面向所述连接杆(53)一侧设有条形孔(7611)，所述滑凸(751)从所述条形孔(7611)伸出以沿所述条形孔(7611)孔长方向作平移运动以推拉所述第二推拉连接件(75)，所述推拉盲孔(761)底部与所述第二推拉连接件(75)之间设有第五压缩弹簧(100)；

旋转头(77)，其设在所述旋转杆(51)端部，所述旋转头(77)上设有弧形面(771)，所述弧形面(771)包括远离所述旋转杆(51)轴心的远轴位(7711)和靠近所述旋转杆(51)轴心的近轴位(7712)，所述滑凸(751)紧贴所述弧形面(771)内侧，所述旋转头(77)随所述旋转把手(52)转动时，所述滑凸(751)在所述远轴位(7711)与所述近轴位(7712)之间切换以带动所述滑凸(751)沿所述条形孔(7611)孔长方向作平移运动，所述滑凸(751)作平移运动时带动所述第二推拉连接件(75)实现推拉动作。

可快速折叠的童车

【技术领域】

[0001] 本申请涉及童车领域，尤其涉及可快速折叠的童车。

【背景技术】

[0002] 可折叠的童车已经在各个家庭中普及，现有的折叠童车一般包括车架结构和座椅结构，可只有车架结构能够折叠，为了使得童车在家存放、出行携带等使用更加方便、省空间，需要更加优化的折叠结构。

【发明内容】

[0003] 为解决上述技术问题，本申请的目的在于提供可快速折叠的童车，其通过结构的优化，折叠更加充分，折叠方便快捷，折叠后节省空间，更加便于存放和携带。

[0004] 本申请是通过以下技术方案实现的：

[0005] 可快速折叠的童车，包括相互连接的座椅结构和车架结构，所述车架结构包括相互铰接的前车架、后车架和扶手架，所述车架结构还包括：

[0006] 联动折叠关节，其设于所述前车架、所述后车架和所述扶手架的共同铰接处，用于带动所述前车架和所述扶手架同时相对转动；

[0007] 锁定连接机构，其设在所述前车架和所述后车架之间，用于将所述车架结构锁定在展开使用状态；

[0008] 第一折叠控制机构，其设在所述后车架上，用于锁定或解锁所述锁定连接机构从而展开或折叠所述车架结构；

[0009] 所述座椅结构包括上椅架、下椅架、前椅架、椅架折叠关节和第二折叠控制机构，所述上椅架、所述下椅架和所述前椅架通过所述椅架折叠关节相互铰接并在所述座椅结构展开使用时将所述上椅架、所述下椅架和所述前椅架相互锁紧定位，所述第二折叠控制机构与所述椅架折叠关节连接以控制所述椅架折叠关节解锁并折叠。

[0010] 如上所述的可快速折叠的童车，所述锁定连接机构包括锁定连接件、与所述后车架平行设置的滑杆以及可滑动地连接在所述滑杆上的锁块，所述锁定连接件一端铰设在所述前车架上，另一端铰设在所述锁块上，所述锁块上开设有锁孔。

[0011] 与现有技术相比，本申请有如下优点：

[0012] 本申请通过结构优化，折叠更加充分，折叠方便快捷，折叠后节省空间，更加便于存放和携带。

【附图说明】

[0013] 为了更清楚地说明本申请实施例中的技术方案，下面将对实施例描述中所需要使用的附图作简单地介绍，显而易见地，下面描述中的附图仅仅是本申请的一些实施例，对于本领域普通技术人员来讲，在不付出创造性劳动的前提下，还可以根据这些附图获得其他的附图。

[0014] 图1为本申请实施例的童车展开使用状态的立体分解示意图；

[0015] 图2和图3为本申请实施例的两种不同折叠状态的立体示意图；

[0016] 图4为图1中A部的放大图；

[0017] 图5为图2中B部的放大图；

[0018] 图6为图4中K方向的局部剖视图；

[0019] 图7为本申请实施例所述的第一折叠控制机构对所述第二推拉连接件的控制示意图；

[0020] 图8为本申请实施例所述强制锁定结构与所述强制锁定解除结构的连接示意图；

[0021] 图9至图11为本申请实施例所述的第一折叠控制机构在不同分解程度以及在不同角度的立体分解示意图；

[0022] 图12为本申请实施例的所述座椅结构展开使用状态下所述第二旋转顶凸体和所述第二卡齿的位置状态示意图；

[0023] 图13和图14为本申请实施例的所述椅架折叠关节的两个不同角度的立体分解示意图；

[0024] 图15为图13在E部的放大图；

[0025] 图16为图13在F部的放大图；

[0026] 图17为本申请实施例的所述联动折叠关节的立体分解示意图；

[0027] 图18为本申请实施例的所述联动折叠关节的展开状态示意图；

[0028] 图19为本申请实施例的所述联动折叠关节的折叠状态示意图；

[0029] 图20和图21为本申请实施例的第二折叠控制机构的两个不同角度的立体分解示意图；

[0030] 图22至图24为本申请实施例的第二折叠控制机构中的扳转件在座椅结构折叠过程中的的状态示意图；

[0031] 图25为本申请实施例所述主刹车和所述副刹车的连接示意图；

[0032] 图26和图27为本申请实施例的主刹车的两个不同角度的立体分解示意图，其中图26中同时示出了后车架和第一后轮，而图27同时示出了后车架；

[0033] 图28为本申请实施例所述副刹车的立体分解示意图；

[0034] 图29为图1中J方向的剖视图；

[0035] 图30为图29的H部放大图；

[0036] 图31为图27的G部放大图；

[0037] 图32为本申请实施例所述踏块的结构示意图；

[0038] 图33为本申请的所述扶手架的立体分解示意图；

[0039] 图34为图33中C部的放大图；

[0040] 图35为图33中D部的放大图。

【具体实施方式】

[0041] 为了使本申请所解决的技术问题、技术方案及有益效果更加清楚明白，以下结合附图及实施例，对本申请进行进一步详细说明。应当理解，此处所描述的具体实施例仅仅用以解释本申请，并不用于限定本申请。

[0042] 如图1至图35所示，本申请实施例提出可快速折叠的童车，其包括相互连接的座椅结构1和车架结构2，所述车架结构2包括相互铰接的前车架21、后车架22和扶手架23，所述车架结构2上还设有联动折叠关节3、锁定连接机构4和第一折叠控制机构5。

[0043] 参照图8以及图17至图19，所述联动折叠关节3设于所述前车架21、所述后车架22和所述扶手架23的共同铰接处，用于带动所述前车架21和所述扶手架23同时相对转动；所述联动折叠关节3包括与所述前车架21连接的前车架连接件31、与所述后车架22连接的后车架连接件32以及与所述扶手架23连接的扶手架连接件33，所述后车架连接件32上设有孔长方向与所述后车架22平行的长条导孔321，所述前车架连接件31、所述后车架连接件32和所述扶手架连接件33的端部互相铰接形成同轴铰接部1a；所述联动折叠关节3还包括第一联动杆34和第二联动杆35，所述第一联动杆34一端和所述第二联动杆35一端相铰接形成直动铰接部2a，所述直动铰接部2a设在所述长条导孔321内沿所述长条导孔321的孔长方向滑动，所述第一联动杆34另一端与所述扶手架连接件33相铰接形成第一转动铰接部3a，所述第二联动杆35另一端与所述前车架连接件31相铰接形成第二转动铰接部4a，所述第一转动铰接部3a和所述第二转动铰接部4a分别设置在所述同轴铰接部1a两对侧的圆周上，且所述第一转动铰接部3a和所述第二转动铰接部4a分别与所述同轴铰接部1a形成偏心，所述后车架连接件32上设有用于限制所述第一转动铰接部3a转动行程的第一弧形长孔5a以及用于限制所述第二转动铰接部4a转动行程的第二弧形长孔6a，所述第一转动铰接部3a绕所述同轴铰接部1a转动时推动所述直动铰接部2a沿所述长条导孔321的孔长方向滑动，从而联动所述直动铰接部2a拉动所述第二转动铰接部4a绕所述同轴铰接部1a转动，完成所述车架结构2的联动折叠动作。需要说明的是，本实施例中所述扶手架连接件33设有两个并对称设在所述后车架连接件32的两侧，两个所述扶手架连接件33铆接形成第一转动铰接部3a，所述第一转动铰接部3a穿过所述第一弧形长孔5a并在所述第一弧形长孔5a内活动。联动折叠关节3使童车能够充分折叠且折叠后占用空间更小，便于携带与存放，另外，联动的结构使用起来更加简单便捷。

[0044] 参见图4至图5，锁定连接机构4设在所述前车架21和所述后车架22之间，用于将所述车架结构2锁定在展开使用状态；所述锁定连接机构4包括锁定连接件41、与所述后车架22平行设置的滑杆42以及可滑动地连接在所述滑杆42上的锁块43，所述锁定连接件41一端铰设在所述前车架21上，另一端铰设在所述锁块43上，所述锁块43上开设有锁孔431，具体地，所述锁块43开设有滑孔，所述锁块43通过所述滑孔套设在所述滑杆42上以形成滑动连接。当锁块43滑至如图4所示位置时，锁定连接件41与前车架21后车架22形成一个三角支撑结构，基于三角形的稳定性，使得童车能够稳定在展开状态，其结构简单，且使得童车展开后的展开状态更加稳定、可靠、安全。

[0045] 为了进一步将所述车架结构2加强锁定在展开使用状态，使得童车的展开使用状态进一步稳定、可靠、安全以更大限度地保障儿童安全，所述联动折叠关节3上还设有强制锁定结构，所述强制锁定结构包括：锁轴61，其设在所述扶手架连接件33上且沿所述同轴铰接部1a周向设置，所述锁轴61在所述车架结构2展开和折叠过程中绕所述同轴铰接部1a作周向运动；转动锁片62，其铰接在所述后车架连接件32上且沿所述同轴铰接部1a周向设置，所述转动锁片62上设有用于锁紧所述锁轴61的锁钩622，所述转动锁片62通过转动在一锁片锁定位置和一锁片解锁位置之间切换，所述转动锁片62转至锁片锁定位置时所述锁钩

622勾住所述锁轴61以锁紧所述锁轴61，所述转动锁片62在于所述后车架连接件32铰接处设有用于复位的扭转复位弹簧624。

[0046] 如图6至图11，第一折叠控制机构5设在所述后车架22上，用于锁定或解锁所述锁定连接机构4从而展开或折叠所述车架结构2；所述第一折叠控制机构5包括：连接杆53，其两端固定连接在所述后车架22上，所述连接杆53设有长条滑腔531，在所述连接杆53的外周上还固定有顶挡部532；旋转杆51，其可绕所述连接杆53同轴转动地套设在所述连接杆53外部，所述旋转杆51沿外周设有当所述旋转杆51转动时套进所述顶挡部532的转动槽522，所述旋转杆51内设有旋转腔521，所述旋转腔521内开设有锥形槽5211，所述锥形槽5211的槽宽沿腔壁周向缩小，所述旋转杆51上还设有用于带动所述旋转杆51转动的旋转把手52，所述旋转把手52上设有可沿所述旋转把手52轴向滑移的第一滑键523以及与所述第一滑键523连接且随所述第一滑键523滑移以伸进所述转动槽522内的挡销524，所述第一滑键523与所述旋转把手52之间设有挡销复位弹簧，所述旋转把手52与所述连接杆53之间设有用于所述旋转把手52转动复位的把手复位弹簧；牵拉组件54，其设在所述长条滑腔531内，所述牵拉组件54包括第一牵拉块541和第二牵拉块542，所述第一牵拉块541和所述第二牵拉块542相背设置且所述第一牵拉块541和所述第二牵拉块542之间设有第一压缩弹簧10，所述第一牵拉块541上设有与所述锥形槽5211相配合的第一轴推斜面5411，所述第二牵拉块542上设有与所述锥形槽5211相配合的第二轴推斜面5412，所述第一轴推斜面5411和第二轴推斜面5412分别与所述锥形槽5211的槽壁接触；锁芯55，所述旋转杆51内设有锁道511，所述锁芯55设在所述锁道511内，所述锁道511内设有将所述锁芯55向外顶出的第二压缩弹簧20，所述锁块43上开设有锁孔431，所述车架结构2展开使用时所述锁芯55伸进所述锁孔431内以锁定所述锁块43。所述锁芯55与所述第一牵拉块541之间设有用于将所述锁芯55从所述锁孔431内拉出以解锁所述锁定连接机构4的第一拉绳40。所述第一折叠控制机构通过一键控制，可以方便快捷地控制童车在折叠和展开状态之间切换，另外，折叠童车之前必须先滑动第一滑键并转动旋转把手来解锁锁定连接机构后才能开始折叠，这样可以有效预防误触控制按钮的情况下造成意外，大大提高了童车使用的安全性，再一方面，通过旋转把手转动解锁不仅更加省力，而且在解锁并折叠童车后可以直接提起把手携带童车，方便快捷。

[0047] 需要说明的是，所述联动折叠关节与所述第一折叠控制机构上设有用于解锁所述强制锁定结构的强制锁定解除结构，图6至图11已示出强制锁定解除结构在所述第一折叠控制机构上的结构，所述强制锁定解除结构在转动旋转把手来解锁所述锁定连接机构的同时解锁所述强制锁定结构。具体地，所述强制锁定解除结构包括：活动孔623，其设在所述转动锁片62上，所述活动孔623内设有锁定位6231、滑动位6232和解锁位6233，所述滑动位6232两边分别与所述锁定位6231和所述解锁位6233相衔接；活动轴71，其设于所述活动孔623内并在所述锁定位6231和所述解锁位6233之间切换以带动所述转动锁片62转动；第一推拉连接件74，其上端连接在所述活动轴71上以带动所述活动轴71在所述活动孔623内运动，其中所述第一推拉连接件74与所述活动轴71优选连接方式为焊接，当然也可以铰接；第二推拉连接件75，其上端与所述第一推拉连接件74下端铰接，所述第二推拉连接件75下端设有用于带动第二推拉连接件75进行推拉动作的滑凸751；连接盖76，其套设在所述后车架22上且与所述连接杆53一端固定连接，所述连接盖76上设有推拉盲孔761，所述第二推拉连接件75可滑动地装设在所述推拉盲孔761内，所述推拉盲孔761在面向所述连接杆53一侧设

有条形孔7611，所述滑凸751从所述条形孔7611伸出以沿所述条形孔7611孔长方向作平移运动以推拉所述第二推拉连接件75，所述推拉盲孔761底部与所述第二推拉连接件75之间设有第五压缩弹簧100；旋转头77，其设在所述旋转杆51端部，所述旋转头77上设有弧形面771，所述弧形面771包括远离所述旋转杆51轴心的远轴位7711和靠近所述旋转杆51轴心的近轴位7712，所述滑凸751紧贴所述弧形面771内侧，所述旋转头77随所述旋转把手52转动时，所述滑凸751在所述远轴位7711与所述近轴位7712之间切换以带动所述滑凸751沿所述条形孔7611孔长方向作平移运动。在解锁所述强制锁定结构时，先转动旋转把手52，旋转把手52带动旋转杆51绕连接杆53转动，旋转头77上的弧形面771随之旋转，迫使滑凸751从远轴位7711滑至近轴位7712，同时滑凸751在条形孔7611内向靠近旋转轴的径向移动，滑凸751移动时带动第二推拉连接件75在推拉盲孔761内向孔内方向移动，第一推拉连接件74随第二推拉连接件75的移动而拉动活动轴71从活动孔623的锁定位6231滑至解锁位6233，驱动转动锁片62转动，从而使锁钩622脱离锁轴61，完成强制锁定结构的解锁。同理，当转动旋转把手52反转时可使强制锁定结构重新锁定，而且为了加强复位的作用力，所述转动锁片62在于所述后车架连接件32铰接处设有用于复位的扭转复位弹簧624，所述推拉盲孔761底部与所述第二推拉连接件75之间设有第五压缩弹簧100。通过以上强制锁定解除结构，只需轻松转动旋转把手即可在解锁所述锁定连接机构的同时解锁所述强制锁定结构，结构简单，操作方便省力。

[0048] 进一步地，所述座椅结构1上设有插头101，所述车架结构2上设有插槽部201，所述插头101可拆卸地插装在所述插槽部201内以使所述座椅结构1可拆卸地安装在所述车架结构2上，所述座椅结构1可以上下180度调转地反插在所述车架结构2上以实现不同的使用需求，其中插头101上设有弹性卡凸，插槽部201内设有与所述弹性卡凸适配的卡扣以使插头101能够稳定地插嵌在所述插槽部201内，通过按压所述弹性卡凸使其脱出所述卡扣则可以从插槽部201内拔出所述插头101；

[0049] 所述插槽部201与所述联动折叠关节3同轴铰接，所述插槽部201上设有卡转孔202，第二推拉连接件75下端的滑凸751带动第二推拉连接件75进行推拉动作时可伸进所述卡转孔202以制止所述插槽部201转动或退出所述卡转孔202以使插槽部201自由旋转，所述插槽部201自由旋转时所述座椅结构1可相对所述车架结构2自由转动。从上述结构可知，旋转把手驱动旋转头77转动，旋转头77驱动滑凸751作平移运动，滑凸751带动第二推拉连接件75作推拉动作，第二推拉连接件75伸进或退出所述卡转孔202以控制所述插槽部201的转动从而控制所述座椅结构1相对于所述车架结构2的旋转折叠，综上所述，即转动旋转把手不仅可以在解锁所述锁定连接机构的同时解锁所述强制锁定结构，还可以同时使得所述座椅结构1可相对于所述车架结构2自由旋转，上述技术方案通过一个控制机构控制多个结构的状态以实行折叠，大大地简化了折叠的操作，使得童车的使用更加方便。

[0050] 其中，联动折叠关节3、锁定连接机构4与第一折叠控制机构5共同构成联动解锁结构。

[0051] 进一步地，如图25至图32所示，所述后车架22上设有第一后轮24、第二后轮25、用于刹停所述第一后轮24的主刹车26以及由所述主刹车26带动用于刹停所述第二后轮25的副刹车27，所述第一后轮24沿轮轴一周设有主刹车孔241；所述主刹车26包括与所述后车架22连接的轮轴安装座261，所述轮轴安装座261上装有能绕所述第一后轮24轮轴转动的踏块

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28，所述踏块28上设有刹车滑块281，所述轮轴安装座261外周上设有所述刹车滑块281常置的常置凹位2611和刹车时定住刹车状态的刹车凹位2612，所述刹车滑块281随所述踏块28转动在所述常置凹位2611和所述刹车凹位2612之间滑动；所述常置凹位2611和所述刹车凹位2612底部为锥形且相邻设置；所述刹车滑块281上设有使其抵住所述常置凹位2611或所述刹车凹位2612的滑块复位弹簧300，所述踏块28与所述轮轴安装座261上之间设有使所述踏块28趋于所述常置凹位2611的踏块复位弹簧，所述踏块28上还设有拉动所述副刹车27的第三拉绳60；所述轮轴安装座261上设有伸出所述轮轴安装座261卡入所述主刹车孔241内实现刹车的刹车销组件263，所述刹车销组件263包括刹车销轴2631和刹车销套2632，所述刹车销轴2631套入所述刹车销套2632内且所述刹车销轴2631和所述刹车销套2632之间设有顶销弹簧2633，所述刹车销套2632设有行程孔263a，所述刹车销轴2631上设有伸进所述行程孔263a内的行程轴263b；所述踏块28上还设有转动时能控制所述刹车销组件263刹车或否的旋转滑槽842，所述旋转滑槽842包括高位8421、低位8422以及连接所述高位8421和所述低位8422的滑斜面8423，所述轮轴安装座261与所述踏块28之间设有用于使所述刹车销套2632抵住所述旋转滑槽842的顶套弹簧2634。其结构简单，只需轻踏踏块，就可以实现联动刹车，且由于刹车滑块281与常置凹位2611和刹车凹位2612的配合使得刹车位置更加准确可靠稳定。

[0052] 其中刹车过程阐释如下：轻踏踏块28，旋转滑槽842转动，随滑斜面8423滑至高位8421的刹车销套2632向第一后轮24方向顶出，受到挤压的顶销弹簧2633压使刹车销轴2631伸进主刹车孔241内，以卡住第一后轮24，实现刹车，此时刹车滑块281随踏块28的踏转从常置凹位2611滑至刹车凹位2612以稳定刹车状态，另外，旋转滑槽842转动时，旋转滑槽842通过牵动第三拉绳60拉动副刹车27实现第二后轮25的刹车，达到一踩双刹的效果。同理，解除刹车状态只需将踏块28复位，顶套弹簧2634将刹车销套2632向远离第一后轮24方向顶出以使刹车销套2632抵住低位8422，同时行程孔263a通过行程轴263b将刹车销轴2631拉离主刹车孔241，解除刹车。

[0053] 其中，所述副刹车27包括：副轮轴安装座271，其与所述后车架22连接，所述副轮轴安装座271上装有能绕所述第二后轮25轮轴转动的转动块29；副刹车孔，其沿所述第二后轮25轮轴一周设置；以及副刹车销组件273，其设在所述副轮轴安装座271上且伸出所述副轮轴安装座271以卡入所述副刹车孔内实现刹车，所述副刹车销组件273包括副刹车销轴2731和副刹车销套2732，所述副刹车销轴2731套入所述副刹车销套2732内且所述副刹车销轴2731和所述副刹车销套2732之间设有副顶销弹簧2733，所述副刹车销套2732设有副行程孔273a，所述副刹车销轴2731上设有伸进所述副行程孔273a内的副行程轴；所述转动块29上还设有转动时能控制所述副刹车销组件273刹车或否的副旋转滑槽942，所述副旋转滑槽942包括副高位9421、副低位9422以及连接所述副高位9421和所述副低位9422的副滑斜面9423，所述副轮轴安装座271与所述转动块29之间设有用于使所述副刹车销套2732抵住所述副旋转滑槽942的副顶套弹簧2734；所述转动块29与所述副轮轴安装座271上之间设有转动块复位弹簧400；所述第三拉绳60与所述转动块29连接以当踏动踏块28时所述第三拉绳60拉动所述转动块29转动。上述用于刹车的结构使得童车的刹车更加平缓，可靠。

[0054] 当旋转滑槽842通过牵动第三拉绳60拉动副刹车27实现第二后轮25的刹车的过程中，第三拉绳60拉动所述转动块29转动，随副滑斜面9423滑至副高位9421的副刹车销套

2732向第二后轮25方向顶出，受到挤压的副顶销弹簧2733压使副刹车销轴2731伸进副刹车孔内，以卡住第二后轮25，实现刹车，需要说明的是，当解除第一后轮24的刹车状态时，转动块29失去第三拉绳60的拉力，此时转动块复位弹簧400将转动块29转动复位，副顶套弹簧2734将副刹车销套2732向远离第二后轮25方向顶出以使副刹车销套2732抵住副低位9422，同时副行程孔273a通过副行程轴将副刹车销轴2731拉离副刹车孔以解除刹车。

[0055] 如图33至图35所示，所述扶手架23包括上扶手支架231、与所述上扶手支架231套接的下扶手支架232以及固定在所述上扶手支架231上可控制扶手伸缩的扶手调节装置；所述扶手调节装置包括安装在上扶手支架231上的固定座234、固定在所述固定座234内的限位块235、可在所述限位块235内移动的移动块236以及可带动所述移动块236移动的弹性按钮237，所述移动块236上设有第四拉绳70，所述移动块236在所述限位块235内移动时拉动所述第四拉绳70；所述扶手调节装置还包括固定在上扶手支架231的卡掣基座238、套设在所述卡掣基座238内沿扶手伸缩方向运动的伸缩滑块239以及套设在所述卡掣基座238内沿垂直于扶手伸缩方向运动的卡掣滑块230，所述伸缩滑块239与所述第四拉绳70连接，所述下扶手支架232上设有若干沿扶手伸缩方向分布的卡掣孔，所述卡掣滑块230可卡进所述卡掣孔内以使所述上扶手支架231和所述下扶手支架232相互锁定，所述卡掣滑块230上设有斜向的斜长孔2301，所述伸缩滑块239在所述斜长孔2301内滑动以使所述伸缩滑块239沿扶手伸缩方向运动时所述卡掣滑块230内沿垂直于扶手伸缩方向运动。结构简单，可以一键实现扶手架23的伸缩，方便快捷，实用性强。

[0056] 从图1可以看出车架结构2在展开使用状态下的立体分解示意图，下面阐述车架结构2的折叠过程：先滑动第一折叠控制机构5上的第一滑键523，挡销524随第一滑键523从转动槽522内缩回而留出顶挡部532的转动空间，然后转动旋转把手52，旋转腔521内的锥形槽5211随其转动，推动牵拉组件54内的第一牵拉块541和第二牵拉块542相对运动，实现第一拉绳40的牵拉动作，从而将锁芯55从所述锁孔431内拉出，解锁了原来被锁芯55锁住的锁块43，即解除了前车架21和后车架22的锁定，接着扳动扶手架23，联动折叠关节3带动前车架21与扶手架23同时向靠近后车架22方向转动，实现车架结构2的折叠。同理，车架结构2的展开过程只需反方向转动旋转把手52，在挡销复位弹簧的作用下第一滑键523滑移拉动挡销524伸进所述转动槽522内以防止旋转把手52转动，这样做可以有效防止把手的误操作导致的安全事故，接下来扳动扶手架23，联动折叠关节3带动前车架21与扶手架23同时向远离后车架22方向转动，实现车架结构2的展开。

[0057] 所述座椅结构1包括上椅架11、下椅架12、前椅架13、椅架折叠关节14和第二折叠控制机构15，所述上椅架11、所述下椅架12和所述前椅架13通过所述椅架折叠关节14相互铰接并在所述座椅结构1展开使用时将所述上椅架11、所述下椅架12和所述前椅架13相互锁紧定位，所述第二折叠控制机构15与所述椅架折叠关节14连接以控制所述椅架折叠关节14解锁并折叠。

[0058] 如图12至图16所示，所述椅架折叠关节14包括：上椅架连接件141，其设有第一铰接部1411以及与所述上椅架11连接的第一连接部1412，所述第一铰接部1411上设有第一轴孔1411e、设在所述第一铰接部1411端面且沿所述第一轴孔1411e外周设置的第一斜推凸起1411b以及沿所述第一斜推凸起1411b外周设置的第一齿槽1411c，在所述第一铰接部1411上与所述第一齿槽1411c相背的端面设有沿所述第一轴孔1411e外周设置的第二齿槽

1411d；第一旋转顶凸体142，其周部设有与所述第一斜推凸起1411b相配合的第一斜推部1421，其内部设有用于传递旋转动力的卡孔1422，所述第一旋转顶凸体142同轴设置在所述第一铰接部1411内且与所述第一斜推凸起1411b在周向相错安装，所述第一旋转顶凸体142旋转时所述第一斜推部1421沿所述第一斜推凸起1411b爬升使所述第一旋转顶凸体142往轴向顶出；第一卡齿143，其卡嵌在所述第一齿槽1411c内，其一端面与所述第一旋转顶凸体142的一端面相抵，所述第一旋转顶凸体142往轴向顶出时推动所述第一卡齿143往轴向运动而脱离所述第一齿槽1411c；椅车连接件144，其设有第二铰接部1441以及与所述车架结构2连接的第二连接部1442，所述第二铰接部1441上设有周向设置的第三齿槽1441a，所述第一卡齿143在轴向的部分卡嵌在所述第三齿槽1441a内，所述第一卡齿143和所述第三齿槽1441a内之间设有供所述第一卡齿143轴向移动的轴向间隙，所述第一卡齿143与所述第二铰接部1441之间设有用于将所述第一卡齿143顶往所述第一齿槽1411c的第三压缩弹簧；第二旋转顶凸体145，其设有旋转基部1451、沿所述旋转基部1451轴向伸出的卡轴1452以及沿在所述旋转基部1451周向设置的第二斜推部1453，所述第二斜推部1453上设有第二牵拉部1454，所述卡轴1452沿所述旋转基部1451轴向延伸且穿过所述第一轴孔1411e伸进所述第一旋转顶凸体142的卡孔1422内以使所述第二旋转顶凸体145旋转时带动所述第一旋转顶凸体142转动；第二卡齿146，其设有转动腔1461，所述转动腔1461在底部沿周向设有第二斜推凸起1461a，所述第二卡齿146嵌装在所述第二齿槽1411d内，所述第二卡齿146和所述第二齿槽1411d内之间设有供所述第二卡齿146轴向移动的轴向间隙，所述旋转基部1451同轴嵌装在所述转动腔1461内且所述第二斜推部1453与所述第二斜推凸起1461a在周向相错安装，所述第二斜推部1453与所述第二斜推凸起1461a之间具有沿所述第二斜推部1453转动方向的行程间隙1454a，所述第二旋转顶凸体145旋转时所述第二斜推部1453先转过所述行程间隙1454a再沿所述第二斜推凸起1461a爬升使所述第二卡齿146往轴向运动而脱离所述第二齿槽1411d，所述第二旋转顶凸体145与所述第二卡齿146之间设有第二旋转顶凸体复位弹簧200；下椅架连接件147，其设有第三铰接部1471以及与所述下椅架12连接的第三连接部1472，所述第三铰接部1471上设有周向设置的第四齿槽1471a，所述第二卡齿146在轴向的部分卡嵌在所述第四齿槽1471a内；前椅架连接件148，其设有第四铰接部1481和与所述前椅架13连接的第四连接部1482，所述第四铰接部1481与所述第三铰接部1471相铰接。所述第二卡齿146与所述第三铰接部1471之间设有用于将所述第二卡齿146顶向所述第二齿槽1411d的第四压缩弹簧，当然，所述第四压缩弹簧也可以设在第四铰接部1481上，所述第四压缩弹簧穿过所述第三铰接部1471将所述第二卡齿146顶向所述第二齿槽1411d。上述椅架折叠关节可以更方便地实现童车的折叠，使其折叠更加充分，节省占用空间，便于携带与存放。

[0059] 进一步地，所述第一铰接部1411上设有圆心与所述第一铰接部1411铰接中心重合的第一圆弧孔1411a，所述第一圆弧孔1411a上设有第一始端1411aa和第一末端1411ab，所述第三铰接部1471上设有圆心与所述第三铰接部1471铰接中心重合的第二圆弧孔1471b，所述第二圆弧孔1471b上设有第二始端1471ba和第二末端1471bb，在所述座椅结构1展开使用状态时所述第二末端1471bb与所述第一始端1411aa重叠，在所述第四铰接部1481一偏心部位上设有联动部1481a，所述联动部1481a上固定有贯穿所述第一圆弧孔1411a和第二圆弧孔1471b的联动销轴，所述座椅结构1折叠时所述第三铰接部1471先转动至所述第二始端

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1471ba和所述第一始端1411aa重叠的状态，继续转动所述第三铰接部1471时所述第二始端1471ba带动所述联动销轴转至所述第二始端1471ba和所述第一末端1411ab重叠的状态，从而实现上椅架11、下椅架12和前椅架13的转动折叠。该结构能够实现上椅架11、下椅架12和前椅架13的联动折叠与联动展开，结构巧妙，使得童车的使用更加方便，折叠更加顺畅。

[0060] 如图20至图24所示，所述第二折叠控制机构15包括：外套件151，其固定在所述上椅架11上；内套件152，其套设在所述外套件151内，所述内套件152上设有滑槽1521以及在所述滑槽1521内滑动的第二滑键1522，所述第二滑键1522上设有随所述第二滑键1522滑动方向运动的挡转部1522a，所述第二滑键1522与所述内套件152之间设有用于所述挡转部1522a复位的挡转复位弹簧；扳转件153，其铰设在所述内套件152上，所述扳转件153上设有凸出于所述扳转件153周向表面的卡转部1531，转动所述扳转件153时所述卡转部1531与所述挡转部1522a在径向相交，将所述扳转件153扳转至第一角度时所述挡转部1522a挡住所述卡转部1531旋转，所述扳转件153与所述内套件152之间设有用于所述扳转件153复位的扳转复位弹簧，所述扳转件153上还设有随所述扳转件153转动实现牵拉的第二拉绳50，所述第二拉绳50与所述第二牵拉部1454连接。第二折叠控制机构可以通过拉绳实现转动不同角度控制拉伸的不同距离的二次分级解锁，操作者只需通过轻松扳转即可实现童车的自动分步折叠，使得童车的折叠在方便快捷的基础上更加顺畅、稳定、安全。

[0061] 从图1可以看出座椅结构1在展开使用状态下的示意图，下面阐述座椅结构1的折叠过程：先滑动第二折叠控制机构15上的第二滑键1522，第二滑键1522上的挡转部1522a随之滑动从而留出供卡转部1531转动的空间，此时将扳转件153往上扳转第一角度a，本方案优选第一角度a为30度～60度，然后松开第二滑键1522使挡转部1522a以挡住卡转部1531复位，此时第二拉绳50被拉动了第一距离，继续扳转扳转件153至第二角度b，第二角度b优选90度～150度，此时第二拉绳50被拉动了第二距离。当第二拉绳50被拉动了第一距离时，椅架折叠关节14上的第二旋转顶凸体145被拉动，驱动第一旋转顶凸体142转动，第一旋转顶凸体142转动时将原来同时卡在上椅架连接件141与椅车连接件144上的第一卡齿143顶向椅车连接件144，实现上椅架连接件141与椅车连接件144的自由转动折叠；需要说明的是，如图12所示，当第二拉绳50被拉动了第一距离时，第二斜推部1453刚好转完行程间隙1454a，故当第二拉绳50被拉动了第二距离时，第一旋转顶凸体142继续旋转，从而将原来同时卡在上椅架连接件141和下椅架连接件147上的第二卡齿146顶向下椅架连接件147，实现上椅架连接件141和下椅架连接件147的自由转动折叠；需要提前说明的是，在座椅结构1展开使用状态时第二末端1471bb与第一始端1411aa重叠，将联动销轴卡死从而锁定前椅架连接件148，座椅结构1折叠时第三铰接部1471先转动至第二始端1471ba和第一始端1411aa重叠的状态，继续转动第三铰接部1471时第二始端1471ba带动联动销轴转至第二始端1471ba和第一末端1411ab重叠的状态，即下椅架连接件147和前椅架连接件148先折叠至重叠，然后下椅架连接件147带动前椅架连接件148一起与上椅架连接件141折叠重叠，从而实现上椅架11、下椅架12和前椅架13之间的转动折叠。同理，展开座椅结构只需方向操作第二折叠控制机构，第二旋转顶凸体复位弹簧200引导第二旋转顶凸体145反转，逐渐展开上椅架11、下椅架12和前椅架13即可，在此不作赘述。

[0062] 需要说明的是，锁定连接机构4在童车两侧对称设置，并由第一折叠控制机构5通过同是对称设置的拉绳同时控制；椅架折叠关节14在童车两侧对称设置，并由第二折叠控

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制机构15通过同是对称设置的拉绳同时控制；所述强制锁定结构和所述强制锁定解除结构在童车两侧对称设置，并通过旋转把手驱动同时动作；联动折叠关节3也是在童车两侧对称设置，故不作过多赘述。此外，本实施例所述的第一拉绳、第二拉绳和第三拉绳可以是迪尼玛绳和钢丝绳，在本实施例中优选为钢丝绳。

[0063] 综上所述，本申请通过结构上的改善，具有以下有益效果：

[0064] 1、联动折叠关节使童车能够充分折叠且折叠后占用空间更小，便于携带与存放，另外，联动的结构使用起来更加方便快捷；

[0065] 2、锁定连接机构基于三角形的稳定性，使得童车能够稳定在展开状态，其结构简单，且使得童车展开后的展开状态更加稳定、可靠、安全。

[0066] 3、强制锁定结构能够进一步将所述车架结构加强锁定在展开使用状态，使得童车的展开使用状态进一步稳定、可靠、安全以更大限度地保障儿童安全；配合强制锁定解除结构，只需轻松转动旋转把手即可在解锁所述锁定连接机构的同时解锁所述强制锁定结构，结构简单，操作方便省力。

[0067] 4、所述第一折叠控制机构通过一键控制，可以方便快捷地控制童车在折叠和展开状态之间切换，另外，折叠童车之前必须先滑动第一滑键并转动旋转把手来解锁锁定连接机构后才能开始折叠，这样可以有效预防误触控制按钮的情况下造成意外，大大提高了童车使用的安全性，再一方面，通过旋转把手转动解锁不仅更加省力，而且在解锁并折叠童车后可以直接提起把手携带童车，方便快捷。

[0068] 5、踩踏式的刹车结构结构简单，只需轻踏踏块，就可以实现联动刹车，且由于刹车滑块与常置凹位和刹车凹位的配合使得刹车位置更加准确、可靠、稳定。

[0069] 6、椅架折叠关节可以更方便地实现童车的折叠，使其折叠更加充分，节省占用空间，便于携带与存放，另外，其能够实现上椅架、下椅架和前椅架的联动折叠与联动展开，结构巧妙，使得童车的使用更加方便，折叠更加顺畅。

[0070] 7、第二折叠控制机构可以通过拉绳实现转动不同角度控制拉伸的不同距离的二次分级解锁，操作者只需通过轻松扳转即可实现童车的自动分步折叠，使得童车的折叠在方便快捷的基础上更加顺畅、稳定、安全。

[0071] 如上所述是结合具体内容提供的一种或多种实施方式，并不认定本申请的具体实施只局限于这些说明。凡与本申请的方法、结构等近似、雷同，或是对于本申请构思前提下做出若干技术推演，或替换都应当视为本申请的保护范围。

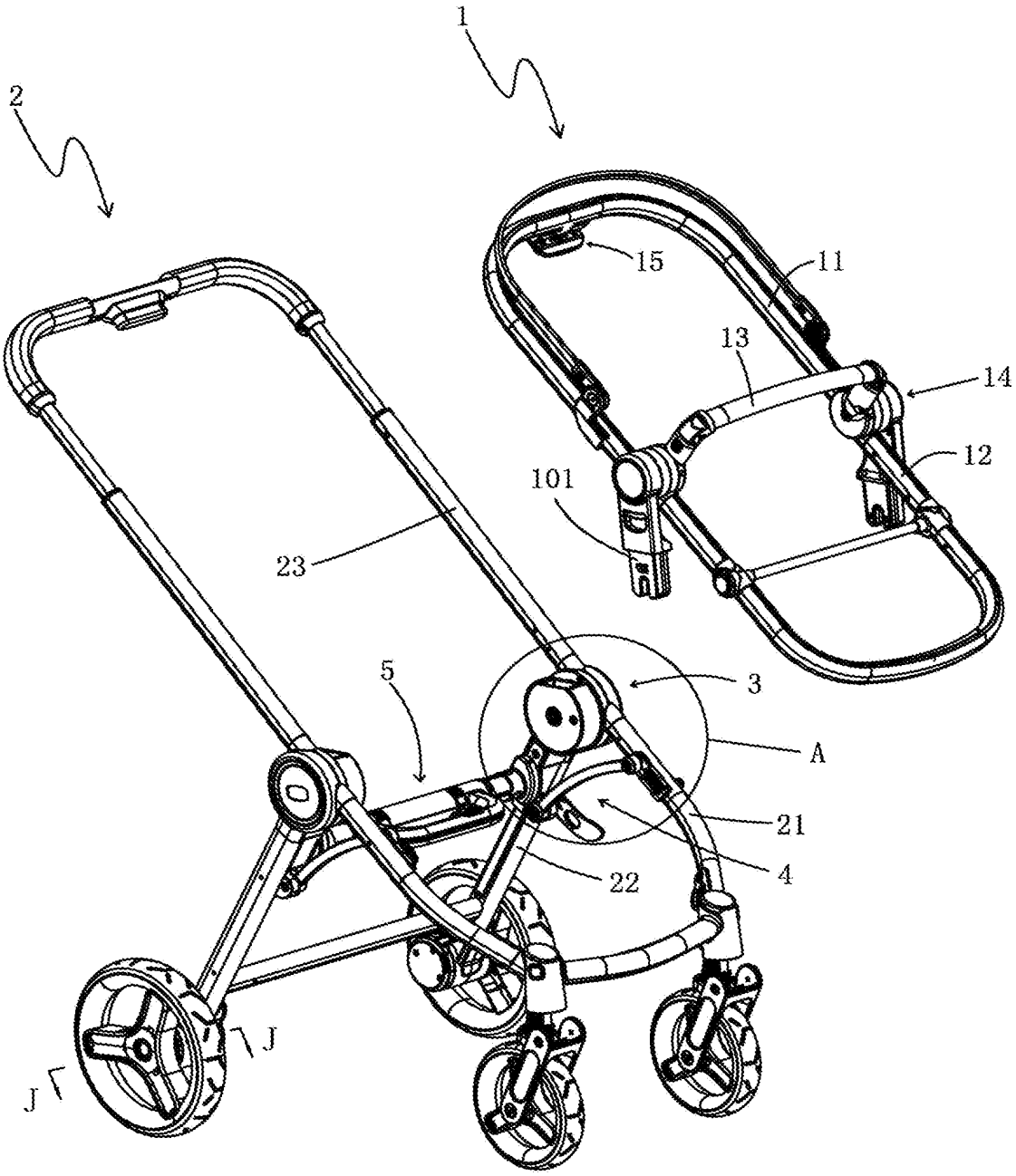

图1

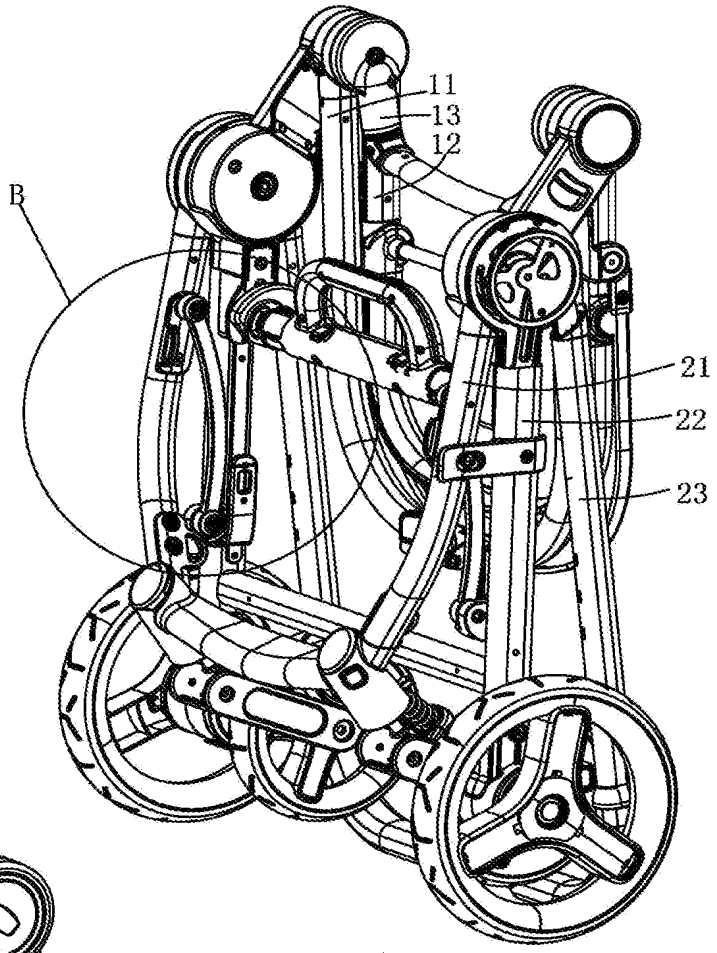

图 2

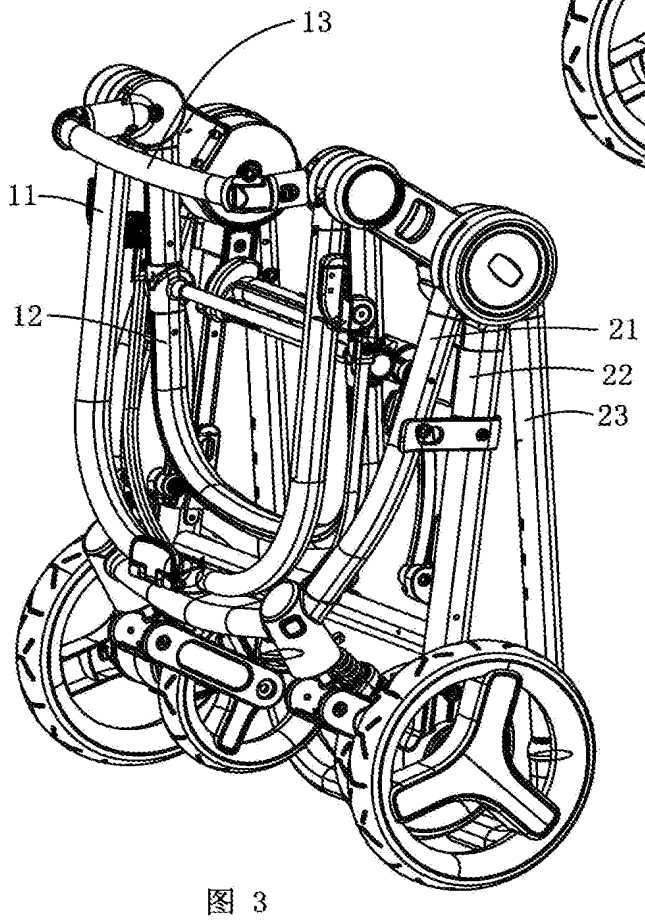

图 3

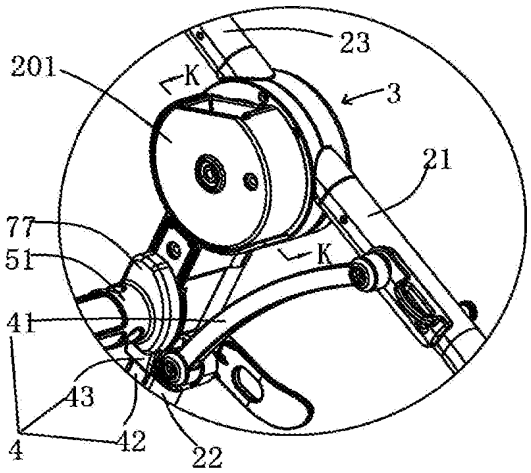

图 4

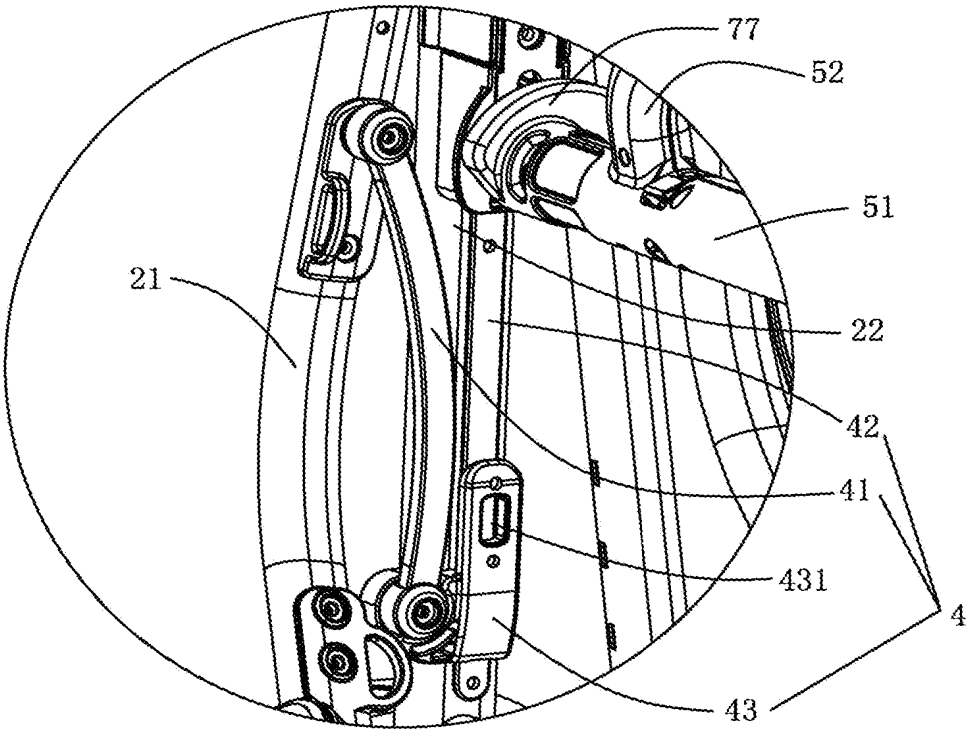

图5

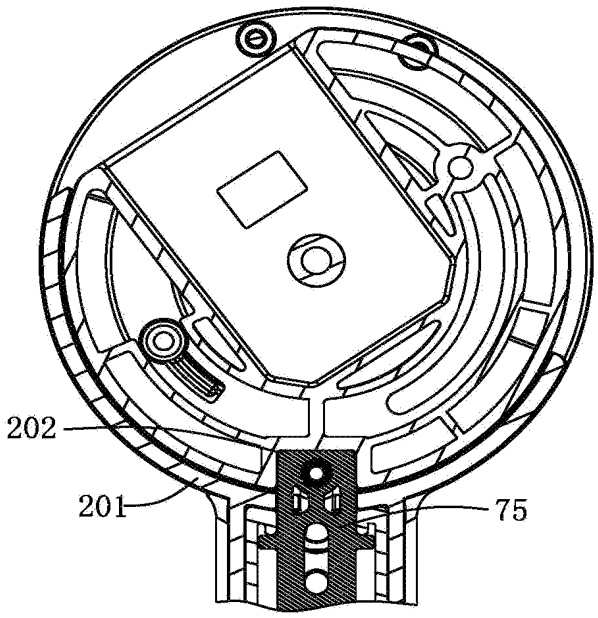

图6

Espacenet

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Baby trolley capable of change direction of sitting bag

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Applicant(s): GOODBABY CHILD PRODUCTS CO LTD ± (GOODBABY CHILD PRODUCTS CO., LTD)

Classification: **- international:** ***B62B9/12***
- cooperative:

Application number: CN2010261383U 20100111

Priority number (s): CN2010261383U 20100111

Abstract of CN201646823 (U)

The utility model relates to a baby trolley capable of change the direction of a sitting bag, which comprises a vehicle frame of the trolley and a sitting bag framework arranged in the vehicle frame of the trolley, wherein connecting elements which are detachably and fixedly matched and connected are respectively arranged in corresponding positions of the vehicle frame of the trolley and the sitting bag framework, the sitting bag framework is provided with a first position or a second positioning which is fixedly matched and connected with the vehicle frame of the trolley, and the first position horizontally rotates 180 degrees to be overlapped with the second position correspondingly to the vehicle frame of the trolley. Compared with the prior art, the utility model has the advantages that the sitting bag part in the baby trolley of the utility model can be singly dismounted for changing the direction, the nursing of babies can be convenient, the structure is simple, and the use is convenient.

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(12)实用新型专利

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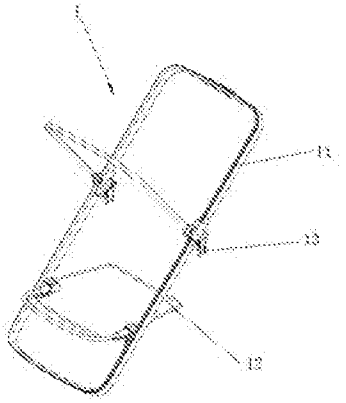
权利要求书 1 页 说明书 2 页 附图 3 页

(54)实用新型名称

一种可坐兜换向的儿童推车

(57)摘要

本实用新型涉及一种可坐兜换向的儿童推车，其包括推车车架、设置在推车车架内的坐兜框架，所述推车车架和坐兜框架的相应位置上各自设有相互可拆卸地配合固定连接的连接件，所述的坐兜框架具有与推车车架配合固定连接的第一位置或第二位置，相对于所述推车车架，所述的第一位置水平旋转180度后与所述第二位置重合。本实用新型与现有技术相比具有下列优点：本实用新型儿童推车中的坐兜部分可以单独拆卸下来进行换向，方便护理幼儿，结构简单使用方便。



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1. 一种儿童推车，其包括推车车架、设置在推车车架内的坐兜框架，其特征在于：所述推车车架和坐兜框架的相应位置上各自设有相互可拆卸地配合固定连接的连接件，所述的坐兜框架具有与推车车架配合固定连接的第一位置或第二位置；

相对于所述推车车架，所述的第一位置水平旋转 180 度后与所述第二位置重合。

2. 根据权利要求 1 所述的推车，其特征在于：所述的配合固定连接为卡扣连接方式。

3. 根据权利要求 2 所述的推车，其特征在于：所述的推车车架上的两相对侧部对称地设有卡槽，所述的坐兜框架的围框管上的相应位置设有与各卡槽配合固定连接的插件。

4. 根据权利要求 3 所述的推车，其特征在于：所述的卡槽位于所述推车车架的推把杆与前轮支架的连接处，所述的插件位于所述坐兜框架的上围框和下围框的连接处。

5. 根据权利要求 2 或 3 所述的推车，其特征在于：所述插件的前后侧对称地设有弹性突起；相应地，所述卡槽的前后侧壁对称地开设有与弹性突起配合卡扣孔。

一种可坐兜换向的儿童推车

技术领域

[0001] 本实用新型涉及一种儿童推车。

背景技术

[0002] 儿童推车一般大体上包括推车车架、设置在推车车架内的坐兜框架，现有技术中，坐兜框架与推车车架的两相对内侧固定连接。

[0003] 然后这样的结构设置不便于护理幼儿，例如不方便照顾观看，有时车向前推行时，幼儿无法避免日晒。

发明内容

[0004] 为了克服现有技术的不足，本实用新型提供了其包括推车车架、设置在推车车架内的坐兜框架，其中，所述推车车架和坐兜框架的相应位置上各自设有相互可拆卸地配合固定连接的连接件，所述的坐兜框架具有与推车车架配合固定连接的第一位置或第二位置；相对于所述推车车架，所述的第一位置水平旋转 180 度后与所述第二位置重合。

[0005] 优选的，所述的配合固定连接为卡扣连接方式。

[0006] 进一步优选的，所述的推车车架上的两相对侧部对称地设有卡槽，所述的坐兜框架的围框管上的相应位置设有与各卡槽配合固定连接的插件。

[0007] 再优选的，所述的卡槽位于所述推车车架的推把杆与前轮支架的连接处，所述的插件位于所述坐兜框架的上围框和下围框的连接处。

[0008] 优选的，所述卡槽的前后侧壁对称地开设有卡扣孔；相应地，所述插件的前后侧设有与卡扣孔配合的弹性突起。

[0009] 由于上述技术方案运用，本实用新型与现有技术相比具有下列优点：本实用新型儿童推车中的坐兜部分可以单独拆卸下来进行换向，方便护理幼儿，结构简单使用方便。

附图说明

[0010] 附图 1 为本实用新型儿童推车中的坐兜框架的立体图；

[0011] 附图 2 为附图 1 所示坐兜框架的侧视图；

[0012] 附图 3 为本实用新型的儿童推车的装配后立体图；

[0013] 其中：1、坐兜框架；11、上围框；12、下围框；13、插件；131、弹性突起；2、推车车架；21、推把杆；22、前轮支架；23、卡槽。

具体实施方式

[0014] 下面结合附图、详细说明本实用新型优选的实施方式：

[0015] 图 3 所示为一种儿童推车，其包括推车车架 2、设置在推车车架内的坐兜框架 1。

[0016] 推车车架 2 和坐兜框架 1 的相应位置上各自设有相互可拆卸地配合固定连接的连接件，坐兜框架 1 具有与推车车架配合固定连接的第一位置（图 3 所示位置）或第二位置；

相对于推车车架 2，第一位置水平旋转 180 度后与第二位置重合，即第二位置为第一位置换向后的位置。

[0017] 推车车架 2 和坐兜框架 1 的可拆卸地配合固定连接为卡扣连接方式。

[0018] 参见图 3，推车车架 2 的两相对内侧部对称地各设有一个卡槽 23，卡槽 23 具体位于推把杆 21 与前轮支架 22 的连接处，两个卡槽 23 结构相同。卡槽 23 的前后侧壁对称地开设有卡扣孔（图中未示出）。

[0019] 参见图 1、2 坐兜框架 1 的围框管上设有两个插件 13，插件 13 具体位于上围框 11 和下围框 12 的连接处。两个插件 13 的结构相同。插件 13 的前后侧对称地设有弹性突起 131。弹性突起 131 与卡扣孔的位置向对应。

[0020] 参见图 1、2、3，卡槽 23 与插件 13 之间为卡扣连接。插件 13 插入卡槽 23 内，弹性突起 131 滑入卡扣孔内，从而将坐兜固定安装到推车车架 2 上；按压弹性突起 131 的同时向上顶推（或拔出）插件 13，弹性突起 131 脱离卡扣孔，从而将坐兜从推车车架上拆卸下来。

[0021] 将坐兜拆卸下来后，可将其换向（推车车架 2 相对静止时，将坐兜框架 1 绕重垂线旋转 180 度，将图 3 的第一位置变换为第二位置），两个插件 13 的位置互换后再插入相应的卡槽 23 中，从而实现换向后的坐兜框架 1 与推车车架 2 固定。

[0022] 本实用新型的儿童推车并不局限于上述的实施例，凡根据本实用新型的精神实质所作的等效变化或修饰，都应涵盖在本实用新型的保护范围内。

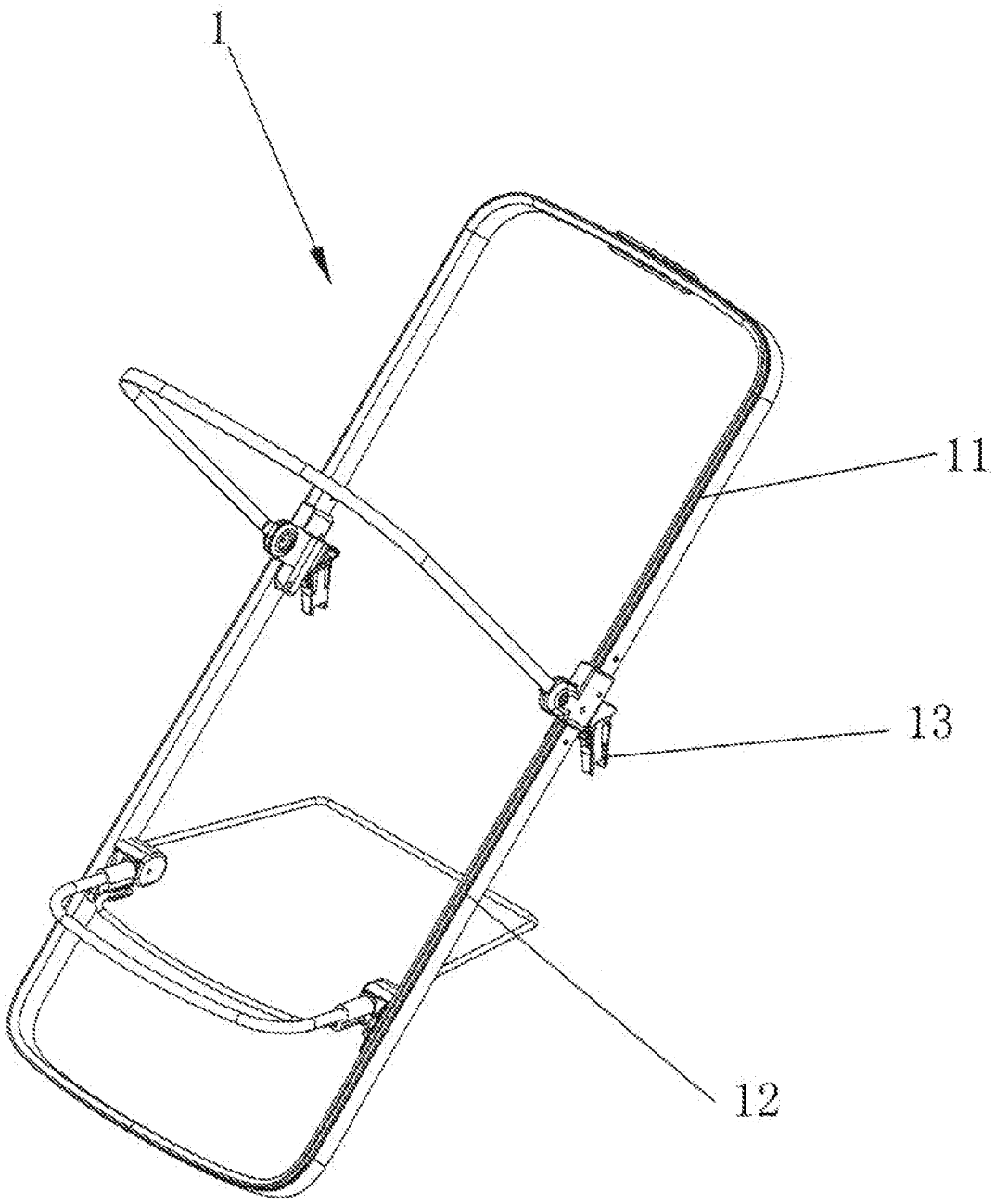

图 1

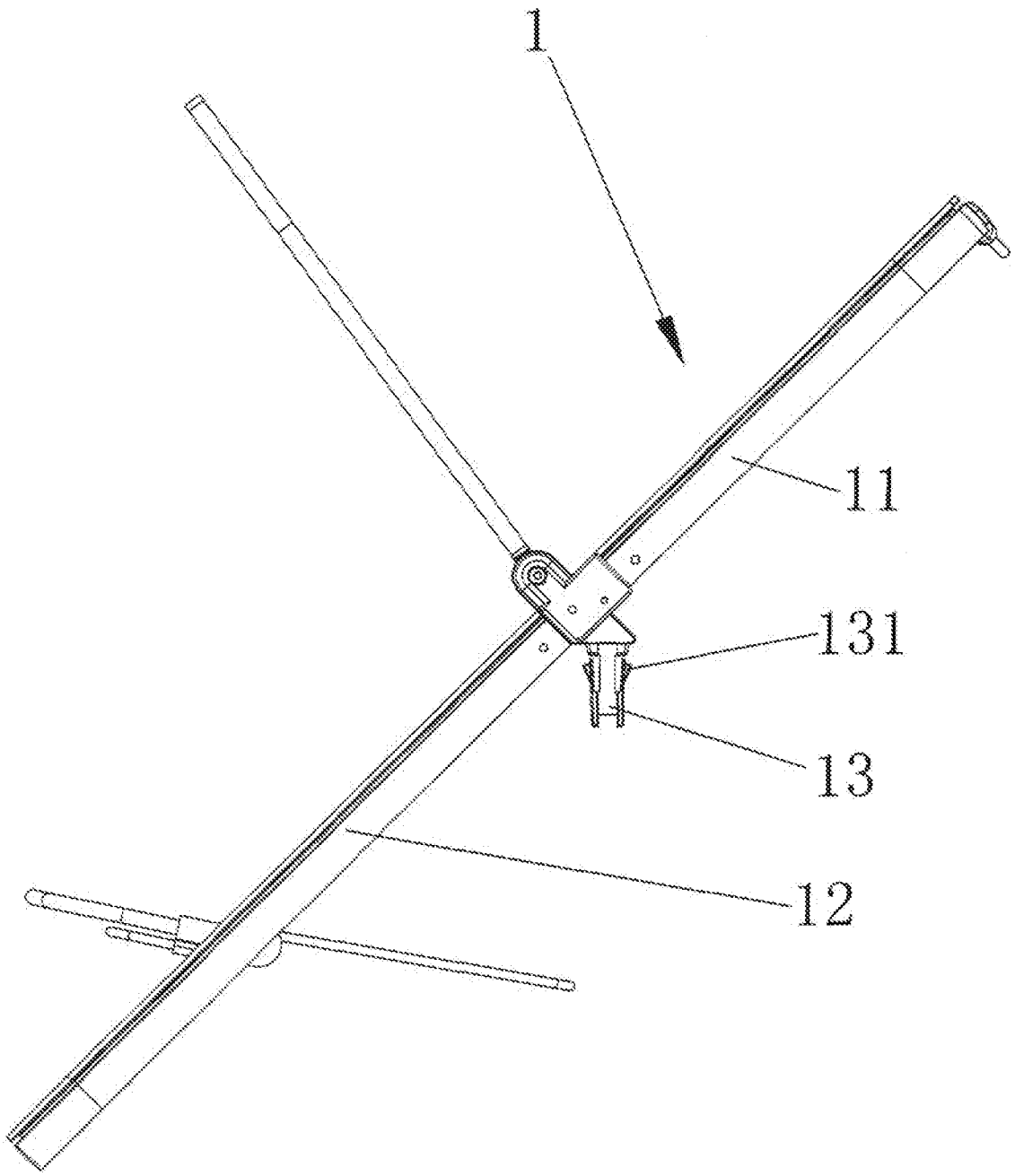

图 2

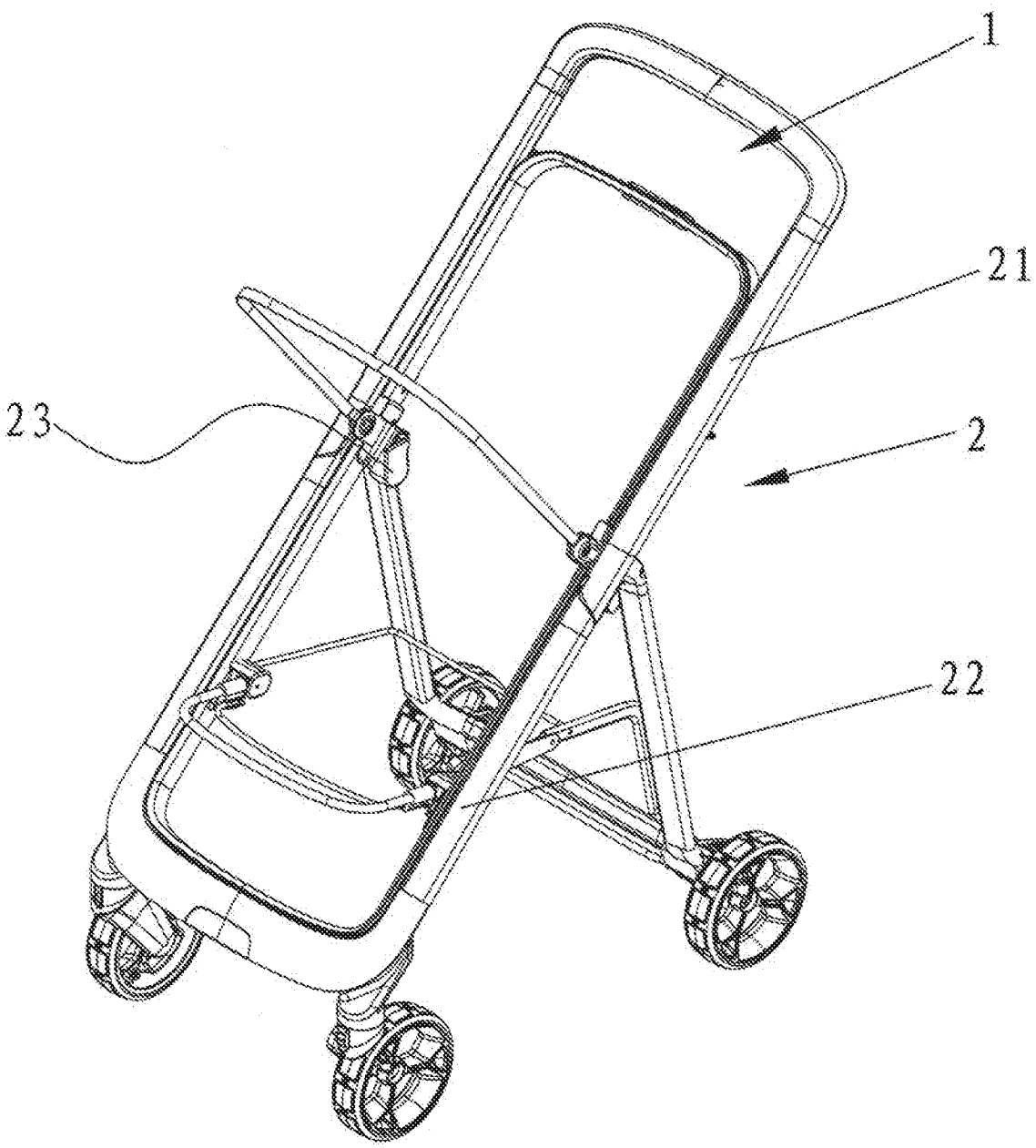

图 3

Espacenet

Bibliographic data: CN102256856 (A) — 2011-11-23

Seat attachment for a stroller

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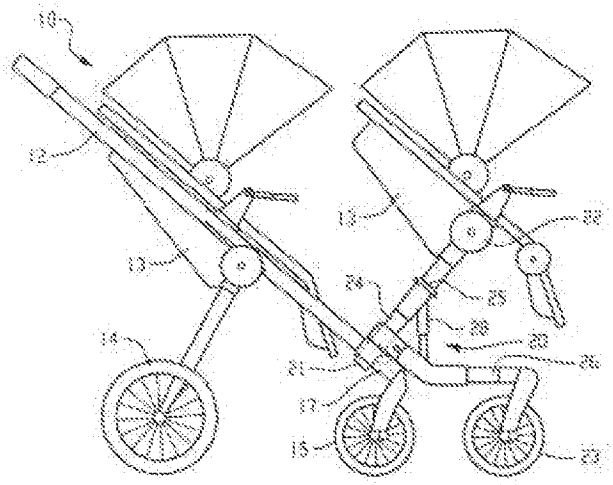
Abstract of CN102256856 (A)

The invention relates to a seat attachment for a stroller, single stroller and double strollers. Such a seat attachment may be used to reversibly convert a single stroller into a double stroller. More specifically, versions of the seat attachment relate to a seat attachment for a stroller capable of supporting a seat such as, but not limited to, a stroller seat, a baby seat, bassinet, a pram, a car seat, or a baby carrier, for example. The seat may be supported in front of a permanent seat of the stroller.



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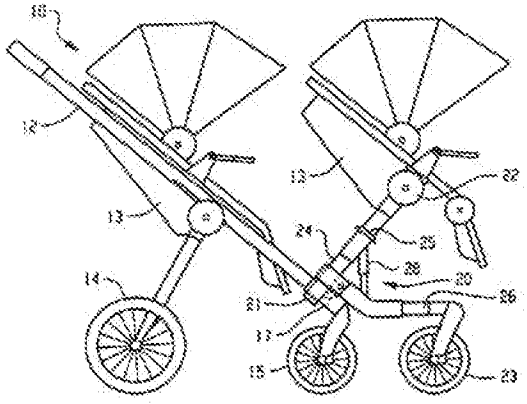
权利要求书 2 页 说明书 9 页 附图 8 页

(54)发明名称

用于手推童车的座椅附接件

(57)摘要

本发明涉及一种用于手推童车、单人手推童车及双人手推童车的座椅附接件。此座椅附接件可用来将单人手推童车以可逆方式转换成双人手推童车。更具体来说，所述座椅附接件的版本涉及一种用于手推童车的座椅附接件，其能够支撑例如但不限于手推童车座椅、婴儿座椅、摇篮、婴儿车、汽车座椅或婴儿吊篮等的座椅。可将所述座椅支撑在所述手推童车的永久座椅前部。



CN 102256856 A

1. 一种用于手推童车的座椅附接件，其包括：

附接框架部件，其包括能够连接到手推童车框架的连接器部分；及

座椅支撑元件，其能够支撑座椅。

2. 根据权利要求 1 所述的座椅附接件，其包括：

车轮。

3. 根据权利要求 2 所述的用于手推童车的座椅附接件，其进一步包括将所述车轮连接到所述附接框架部件的车轮支撑框架。

4. 根据权利要求 3 所述的用于手推童车的座椅附接件，其中所述车轮支撑框架以枢转方式连接到所述附接框架部件。

5. 根据权利要求 4 所述的用于手推童车的座椅附接件，其中所述车轮支撑框架以枢转方式连接于接近所述附接框架部件的中间处。

6. 根据权利要求 5 所述的用于手推童车的座椅附接件，其进一步包括折叠机构。

7. 根据权利要求 6 所述的用于手推童车的座椅附接件，其中所述折叠机构包括以滑动方式连接到所述附接框架部件的滑动连接器以及具有连接到滑动部件的第一端及连接到所述车轮支撑框架的第二端的斜撑。

8. 根据权利要求 4 所述的用于手推童车的座椅附接件，其中所述车轮支撑框架能够从第一位置枢转到第二位置。

9. 根据权利要求 8 所述的用于手推童车的座椅附接件，其中所述第一位置为锁定及使用中位置且所述第二位置为解锁及折叠位置。

10. 根据权利要求 1 所述的用于手推童车的座椅附接件，其中所述座椅为婴儿座椅、汽车座椅、手推童车座椅、摇篮或婴儿车。

11. 根据权利要求 1 所述的用于手推童车的座椅附接件，其中所述附接框架部件具有第一端及第二端。

12. 根据权利要求 11 所述的用于手推童车的座椅附接件，其中所述第一端能够连接到手推童车框架。

13. 根据权利要求 12 所述的用于手推童车的座椅附接件，其中所述第二端连接到座椅附接部件。

14. 根据权利要求 1 所述的用于手推童车的座椅附接件，其中所述座椅支撑元件能够将座椅支撑在前向或后向位置中。

15. 根据权利要求 1 所述的用于手推童车的座椅附接件，其进一步包括手推童车座椅，其中所述座椅支撑元件能够将所述手推童车座椅支撑在前向或后向位置中。

16. 一种双人手推童车，其包括：

手推童车框架，其包括车轮、框架、第一座椅及连接到所述框架的附接框架部件；

座椅附接件，其包括车轮、第二座椅及能够连接到所述附接框架部件的连接器部分。

17. 根据权利要求 12 所述的双人手推童车，其中所述连接器部分能够以可释放方式连接到所述附接框架部件。

18. 根据权利要求 12 所述的双人手推童车，其中所述第二座椅以可释放方式连接到座椅支撑元件。

19. 根据权利要求 18 所述的双人手推童车，其中所述座椅支撑元件能够将所述第二座

椅支撑在前向或后向位置中。

20. 一种双人手推童车，其包括：

第一座椅附接件，其能够以可拆卸方式支撑儿童座椅；及

第二座椅附接件，其能够支撑儿童座椅。

21. 根据权利要求 20 所述的双人手推童车，其中每一座椅附接件包括两个座椅连接器部分。

22. 根据权利要求 20 所述的双人手推童车，其中所述儿童座椅为手推童车座椅、婴儿吊篮、摇篮、婴儿车或汽车座椅中的一者。

23. 根据权利要求 20 所述的双人手推童车，其包括框架，其中所述框架包括把手部分、前车轮支撑部分及后车轮支撑部分。

24. 根据权利要求 23 所述的双人手推童车，其中第一座椅附接件邻近于所述前车轮支撑部分。

25. 根据权利要求 24 所述的双人手推童车，其中所述第一座椅附接件位于连接到所述车轮支撑部分的至少一个前车轮上面。

26. 根据权利要求 25 所述的双人手推童车，其中所述第二座椅附接件邻近于所述把手部分。

27. 根据权利要求 23 所述的双人手推童车，其进一步包括连接所述把手部分、所述前车轮支撑部分及所述后车轮支撑部分的折叠机构。

28. 一种手推童车，其包括：

框架；

至少一个前车轮；

至少一个后车轮；

手推童车座椅；及

座椅附接部分，其能够将第二座椅支撑在所述手推童车座椅的前部。

29. 根据权利要求 28 所述的手推童车，其中所述座椅附接部分包括两个座椅连接器。

30. 根据权利要求 29 所述的手推童车，其中所述座椅附接部分以可拆卸方式连接到所述框架。

31. 根据权利要求 30 所述的手推童车，其中所述座椅附接部分包括两个部分，每一部分包括一个座椅连接器。

32. 根据权利要求 30 所述的手推童车，其中所述框架包括用于将所述座椅附接部分以可拆卸方式连接到所述框架的套筒。

33. 根据权利要求 28 所述的手推童车，其中所述第二座椅为选自手推童车座椅、幼儿吊篮、摇篮、婴儿车或汽车座椅的一个座椅。

34. 根据权利要求 33 所述的手推童车，其中所述第二座椅与所述座椅附接部分成整体。

用于手推童车的座椅附接件

技术领域

[0001] 本发明针对一种用于手推童车、单人手推童车及双人手推童车的座椅附接件。此座椅附接件可用来将单人手推童车转换成双人手推童车。更具体来说，本发明的实施例针对一种用于手推童车的座椅附接件，其能够支撑例如但不限于手推童车座椅、婴儿座椅、摇篮、婴儿车、汽车座椅或婴儿吊篮等的座椅。所述座椅附接件的实施例能够将单人手推童车以可逆方式转换成双人手推童车。

背景技术

[0002] 具有多个幼儿的父母可能很难在不同地方之间运输其孩子。儿童走路慢而容易分心，且因此可能在其父母正试图在有限量的时间内完成购物任务或运动一下时落后父母。作为响应，许多父母已购买双人手推童车，其允许父母或监护者同时推着两名儿童且因此允许其更高效地办杂事、散步或慢跑。如此，双人手推童车允许父母或监护者具有比其在仅单人手推童车的情况下将具有的更大的自由，尤其是在试图照管两个睡着的儿童时。

[0003] 虽然双人手推童车具有某些优点，但双人手推童车也具有缺点。双人手推童车大致大于单人手推童车，且因此较难以操纵通过门口及沿着商店的走道行进。通常，能够容纳两名儿童的益处大大地抵消了这些缺点。然而，当父母或监护者仅随身带一个孩子时，双人手推童车的益处便不能实现而缺点仍存在。

[0004] 因此，父母通常买两个或两个以上手推童车以在不同时间使用：单人手推童车用于其仅随身带一个孩子时的时间且双人手推童车用于其需要将容纳两个孩子的手推童车时的时间。此通常产生其自身的一组问题。必须储存多个手推童车且典型汽车的尾箱或运动型多用途车的后部中存在很少空间来用于折叠式双人手推童车及折叠式单人手推童车两者。

[0005] 手推童车制造商已尝试通过提供用于使第二个儿童站在单人手推童车的后部上的地方或为第二个儿童提供挂在单人手推童车的座椅下方且稍靠后的另一座位的附接件来解决此问题。此为儿童提供第二个座椅，但所述儿童被紧裹到前座椅的后部，此可能为不舒适的、减少座椅下方储存的容量且妨碍父母将手提袋挂在把手上。

[0006] 存在对可方便地转换成双人手推童车的单人手推童车的需要。还需要将单人手推童车转换成能够容纳两名儿童而不损失父母或监护者的方便性的全双人手推童车的转换套件。

发明内容

[0007] 手推童车通常为单人手推童车（具有一个座椅以用于运输一名儿童的手推童车）或还可为双人手推童车（具有两个座椅以用于运输两名儿童的手推童车）。本发明的实施例针对一种用于手推童车的座椅附接件，其包括：连接器部分，其能够直接连接到手推童车框架或连接到所述手推童车框架的附接框架部件；及座椅支撑元件，其能够支撑座椅。在某些实施例中，所述用于手推童车的附接件包括具有第一端及第二端的附接框架部件。所述

第一端可能够将所述座椅附接件连接到手推童车框架且所述第二端可能够连接到所述座椅支撑元件。所述座椅支撑元件因此能够将座椅支撑在手推童车上。在更特定实施例中，可将所述座椅支撑在前向或后向位置中。

[0008] 另一实施例包括手推童车及用于所述手推童车的座椅附接件，其中所述手推童车包括连接到所述手推童车的框架的附接框架部件且所述用于手推童车的座椅附接件包括连接器部分。所述附接框架部件及所述连接器部分包括能够牢固地连接在一起的组件。在某些实施例中，所述附接框架部件及所述连接器部分包括能够牢固地且以可释放方式连接在一起的组件。以此方式，所述座椅附接件可附接到所述手推童车，且如上文所界定的座椅可连接到所述座椅附接件，因此将单人手推童车以可逆方式转换成双人手推童车。

[0009] 在另一实施例中，所述用于手推童车的座椅附接件进一步包括至少一个车轮。所述车轮可通过车轮支撑框架连接到所述座椅附接件，所述车轮支撑框架可刚性地附接到或可以枢转方式附接到所述座椅附接件。所述车轮支撑框架可连接到座椅附接件的任一区段，优选地所述车轮支撑框架以枢转方式连接到所述座椅附接件的后部部分在邻近于连接器部分的区域中或连接于接近附接部分的中间处。

[0010] 所述用于手推童车的座椅附接件的实施例可进一步包括折叠机构。所述折叠机构可包括以滑动方式连接到所述附接部分的滑动部件以及具有连接到所述滑动部件的第一端及连接到所述车轮支撑框架的第二端的折叠框架部件或斜撑。所述折叠机构允许所述车轮支撑框架从第一位置（使用中位置）枢转到第二位置（折叠位置）。所述用于手推童车的附接件还可包括锁定机构，其在使用中位置中将所述附接件紧固到手推童车且在处于折叠位置中时将所述手推童车解锁以允许所述附接件连接到所述手推童车或从所述手推童车拆卸。所述锁定机构可为附接到所述车轮支撑框架的小突出部，其啮合所述手推童车或所述手推童车附接部分中的对应孔口以将所述附接件紧固到所述手推童车。在折叠位置中，所述突出部不啮合在所述孔口中。

[0011] 另一方面针对一种双人手推童车。所述双人手推童车可包括框架，其中所述框架包括把手部分、前车轮支撑部分、后车轮支撑部分及折叠机构。所述双人手推童车的实施例包括手推童车框架，所述手推童车框架包括车轮、所述框架、第一座椅及连接到所述框架的连接器部分。所述双人手推童车可进一步包括座椅附接框架，所述座椅附接框架包括车轮、第二座椅及能够连接到手推童车框架的连接器部分的第二附接部分。所述第二附接部分可以可释放方式连接到所述连接器部分。此外，所述第二座椅可以可释放方式连接到所述座椅附接框架且能够将所述第二座椅支撑在前向或后向位置中。

[0012] 所述双人手推童车的另一实施例包括能够以可释放方式支撑第一儿童座椅的第一座椅附接件及能够以可释放方式支撑第二儿童座椅的第二座椅附接件。所述座椅附接件可包括用于将座椅支撑在两个侧上的两个座椅连接器部分。

[0013] 所述双人手推童车的又一实施例包括邻近于前车轮支撑部分的至少一个第一座椅附接件及邻近于每一折叠机构及 / 或把手部分的第二座椅附接件。所述第一座椅附接件可位于连接到所述车轮支撑部分的至少一个前车轮上面。

[0014] 所述手推童车的又一实施例包括：框架；至少一个前车轮；至少一个后车轮；第一手推童车座椅，其具有永久地附接到所述框架的至少一个第一附接部分；及至少一个以可释放方式连接的第二座椅附接部分，其能够将第二座椅支撑在所述第一手推童车座椅的前

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部。如同在其它实施例中一样，所述座椅附接件可包括两个座椅连接器。任一个或两个座椅附接部分可为具有两个座椅连接器的单个部分或各自包括一座椅连接器的两个单独件。

[0015] 在以上实施例中的任一者中，手推童车、双人手推童车或附接件可包括以下特征中的一者或一者以上，用于以可拆卸方式接纳所述附接部分的套筒。所述座椅附接部分可包括突出部，其具有与所述套筒的互补形状以用于插入到所述套筒中。此外，所述第二座椅可与所述座椅附接件成整体。

[0016] 在各种实施例中呈现了手推童车、双人手推童车及附接件的方面，然而，所属领域的技术人员将理解各种实施例的组件的各种变化形式及可互换性，其打算包含在本发明的范围中。

附图说明

[0017] 图 1 展示单人手推童车的实施例；

[0018] 图 2 展示用以将单人手推童车转换成双人手推童车的座椅附接件的实施例；

[0019] 图 3 展示图 1 的单人手推童车附接到图 2 的座椅附接件的组合；

[0020] 图 4 展示能够将汽车座椅支撑在图 2 的附接件上的座椅附接件的实施例；

[0021] 图 5 展示图 1 的单人手推童车附接到呈三轮车样的骑乘装置形式的附接件的实施例的组合；且

[0022] 图 6A 展示用于将附件支撑在手推童车上的附件附接件；图 6B 展示用于附接到图 6A 的附件附接件的手提袋或手提包。

[0023] 图 7 展示用于支撑包括一个车轮的座椅的附接件。

[0024] 图 8 展示能够以可逆方式从单人手推童车转换成双人手推童车的手推童车的实施例，其包括不包括车轮的附接部分。

[0025] 图 9A、9B、9C、9D、9E 及 9F 展示图 8 中所示的手推童车的实施例的各种配置。

具体实施方式

[0026] 本发明涉及一种用于手推童车的附件、附接件或转换套件（下文中称“座椅附接件”）。如上文所论述，父母或监护者可能发现自己处于其中在一手推童车中运输两个儿童会更方便的情形中，但同时发现具有单人手推童车及双人手推童车两者是不方便的。所述座椅附接件的实施例解决此问题。在一个方面中，所述用于手推童车的座椅附接件的实施例能够将单人手推童车转换成双人手推童车。举例来说，所述座椅附接件可支撑例如但不限于手推童车座椅、婴儿座椅、摇篮、婴儿车、婴儿吊篮或汽车座椅的座椅。因此，父母或监护者不需要单人手推童车及双人手推童车两者。经配置以接纳用于将单人手推童车转换成双人手推童车的座椅附接件的手推童车为使用者提供方便性。可通过将所述座椅附接件附接到单人手推童车且接着附接第二座椅来将所述单人手推童车连接成双人手推童车。如此，所述用于将单人手推童车转换成双人手推童车的座椅附接件的实施例包括能够连接到手推童车框架的至少一个连接器部分及能够支撑座椅的座椅支撑元件。所述座椅附接件可任选地包括用于额外支撑及稳定性的至少一个车轮，然而，为更方便起见，所述附接件的实施例不包含车轮。在某些实施例中，车轮可使双人手推童车稳定，但在所述附接件的其它实施例中，所述车轮可能并非合意的或必需的。举例来说，所述附接件的额外实施例包括手推

车样、四车轮货车样、三轮车样的附接件或可连接到手推童车的其它骑乘玩具。三轮车样的附接件将允许儿童在手推童车的前部骑乘或被推着。

[0027] 图 1 中展示单人手推童车 10 的实施例的侧视图。注意，图 1 仅展示单人手推童车 10 的一侧，然而，大多数组件包含位于所述单人手推童车的另一侧上但未展示于图 1 中的互补组件。单人手推童车 10 包括支撑座椅 13 的框架 12。框架 12 可任选地包含至少一个（优选地为两个）折叠机构 16，其允许将手推童车 10 折叠成用于储存或运输手推童车 10 的更方便大小。

[0028] 在此实施例中，将座椅 13 展示为典型的手推童车座椅，然而，其它类型的座椅可用于单人手推童车中。The 座椅 13 可永久地附加到框架 12 或以可释放方式连接使得其能够被拆卸并用不同座椅来替代。如本文中所使用，“以可释放方式连接”或“以可释放方式附接”意指所述连接并非永久连接且所述连接能够由手推童车的使用者连接及断开而不需要特殊工具或特殊技能。可释放连接包含（但不限于）钮扣、搭扣件、摩擦配件、干涉配合、螺纹连接、锁定连接片、键式连接、其它扣件等。在图 1 的手推童车 10 上，框架 12 支撑在一对后车轮 14 及一对前车轮 15 上。在此实施例中，后车轮 14 为固定的且不以所述框架为轴而旋转或枢转。单人手推童车 10 上的所述对前车轮 15 枢转以使得使单人手推童车 10 转动更容易且更方便。虽然在某些手推童车中枢转车轮可为优选的，但具有固定非枢转车轮的手推童车也为常见的。应注意，单人手推童车不需要成对的前车轮或后车轮且可用单个车轮来替代前对车轮 15 或后对车轮 14。按常规，许多单人手推童车（包含伞式手推童车、慢跑手推童车、全地形手推童车以及其它手推童车）可仅包含一个前车轮。本发明的座椅附接件的实施例可能够将任何样式的手推童车转换成双人手推童车，包含具有一个或两个前车轮的手推童车。

[0029] 手推童车 10 的实施例包括两个附接框架部件 17。连接器部分优选地位于手推童车的前部上以允许座椅附接件及座椅连接到手推童车 10 的前部。附接框架部件 17 允许座椅附接件（例如用于将单人手推童车 10 转换成如图 3 中所示的双人手推童车的座椅附接件）连接到手推童车。图 3 中仅展示一个座椅附接件，手推童车 10 将使用如图 3 中所展示的两个座椅附接件或包括两个座椅支撑元件的一个座椅附接件。手推童车 10 的实施例具有左侧及右侧附接框架部件 17。手推童车 10 的座椅附接件的实施例将包括能够在附接框架部件 17 处连接到手推童车框架的对应连接器部分。虽然关于单人手推童车描述了用于手推童车的座椅附接件，但所述附接件可类似地附接到双人手推童车。因此，所述座椅附接件的实施例可用于将双人手推童车转换成三人手推童车（如果需要的话）。

[0030] 图 2 中展示本发明的座椅附接件 20 的实施例。图 2 的座椅附接件呈解锁及折叠配置。座椅附接件 20 包括：能够连接到附接框架部件 17 的一对连接器部分 21；能够支撑座椅的两个座椅附接元件 22；及车轮 23。在此实施例中，所述连接器部分连接到座椅附接件 20 的后部，从而允许座椅附接件 20 连接到手推童车（例如图 1 中所示的手推童车 10）的前部。所述座椅附接件的其它实施例可包含一个以上车轮、一个连接器部分、一个座椅支撑元件或这些元件的组合。举例来说，在具有一个车轮的手推童车的实施例中，所述附接框架部件可位于前车轮的轮叉上。

[0031] 座椅附接件 20 包括将附接件 20 的车轮 23 连接到附接框架部件 24 的车轮支撑框架 26。每一附接框架部件 24 具有第一及第二端。所述第一端能够连接到手推童车框架且

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所述第二端连接到座椅支撑元件 22。座椅附接件 20 的实施例包括以枢转方式连接到两个附接框架部件 24 的车轮支撑框架 26。车轮支撑框架 26 或附接框架 24 可横跨手推童车在两个附接框架部件 17 之间的宽度。枢转连接 27 允许折叠并方便地储存或运输座椅附接件，但并非是本发明所必需的。所述枢转连接为任选的且提供更大方便性，然而，附接件的实施例可包括以可释放方式连接的车轮支撑框架或刚性框架，其可经并入以产生具有更大强度以供在其中（例如）可需要更强座椅附接件的情形中（例如在全地形或慢跑手推童车的情况下）使用的座椅附接件。可在附接框架上的任一点处连接所述车轮支撑框架，优选地在接近连接器部分 21 处或在接近附接框架 24 的中间处连接所述车轮支撑框架。

[0032] 举例来说，不具有车轮的座椅附接件的实施例可包含连接器部分 21 或附接框架部件 24 及座椅附接部件 22。在此实施例中，将不需要枢转连接 27、车轮支撑框架 26、滑动连接器 25 或车轮 23。

[0033] 座椅附接件 20 包括折叠机构，所述折叠机构包括连接到斜撑 28 的第一端的滑动连接器 25。斜撑 28 的第二端以枢转方式连接到车轮支撑框架 26。在此实施例中，可使滑动连接器 25 在附接框架部件 24 上于第一位置与第二位置之间移动。随着滑动连接器 25 移动，斜撑 28 将车轮支撑框架 26 从使用中位置推到储存位置。所述储存位置较紧凑，如图 2 中所示。另外，座椅附接件 20 的实施例包括能够将座椅附接件 20 紧固到手推童车（例如图 1 中所示的手推童车 10）的锁定机构 29。通过将滑动连接器 25 移动到其中使车轮支撑框架 26 及车轮 23 延展的使用中位置来啮合锁定机构 29。在用于手推童车 10 的座椅附接件 20 的实施例中，座椅附接件 20 的车轮以枢转方式连接到所述连接器部分，且当所述车轮处于使用中位置时，可释放连接被锁定，且当将车轮 23 移动到储存位置时，可释放连接被解锁，从而允许从手推童车 10 拆卸座椅附接件 20。可储存座椅附接件 20 且手推童车 10 可方便地用作单人手推童车。按设计，座椅附接件 20 可重新连接到手推童车 10 以用作双人手推童车。在本发明的任一实施例中，可将座椅附接部分在手推童车框架上紧固到适当位置中且锁定机构可与具有或不具有车轮的实施例一起使用。所述座椅附接件或手推童车框架可包括用于将手推童车与座椅附接件紧固在一起的锁定机构。所述锁定机构可为能够在使用期间将各组件紧固在一起的任何机构且可为（例如）摩擦锁定装置、螺纹连接、孔中栓塞（peg in a hole）或干涉锁定装置，例如孔或槽中销子。在图 2 中所示的实施例 20 中，在使附接件 20 从展开位置移动到折叠位置时，锁定机构 29 随车轮支撑框架 26 枢转。锁定机构 29 可滑动到图 1 中所示的手推童车 10 的附接框架部件中的孔或凹口中。如此，可通过将附接件 20 的附接部分 21 定位于手推童车 10 的附接部分 17 的槽 18 中而将附接件 20 附接到手推童车 10。可将滑动连接器 25 移动到使用中位置，移动车轮支撑框架且将锁定机构 29 定位到手推童车 10 的锁定槽 19 中。

[0034] 座椅附接件 20 的实施例的连接器部分 21 具有圆柱形形状。可将连接器部分 21 插入到图 1 的手推童车 10 的附接框架部件 17 的圆柱形凹部 18 中以紧固所述座椅附接件并将单人手推童车转换成双人手推童车，如图 3 中所示。座椅附接件的其它实施例可包含任何类型的连接器部分。所述连接器部分可具有实心或管状构造且可为任何横截面形状，举例来说，包含（但不限于）圆形、多边形、正方形、矩形及三角形。可利用其它附接机构将所述座椅附接件连接到手推童车，例如（但不限于）U 形托架、U 形螺栓、管夹、O 形托架、螺丝、螺栓或其它夹紧或附接构件。手推童车的附接框架部件具有互补及协作形状，其允许将

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连接器部分紧固到手推童车的附接部分。

[0035] 在图 3 中，展示图 2 的座椅附接件 20 连接到图 1 的单人手推童车 10，从而形成双人手推童车。将双人手推童车配置展示为两个手推童车座椅 13 呈直列式配置，但还可将其它配置（例如手推童车座椅及摇篮或婴儿车）支撑在所述双人手推童车上。此外，座椅附接件的座椅支撑元件可能够将前手推童车座椅支撑在前向或后向位置中。

[0036] 手推童车 10 的实施例仅作为一种类型的手推童车的实例而展示，所述手推童车的框架可为许多可能配置中的任一者。本发明的附件的实施例可经配置以用在手推童车的任何此种配置上。举例来说，婴儿手推童车的不同实施例可不包含两个前车轮、可不包含折叠机构或可只包含仅一个折叠机构。另外，婴儿手推童车可包含婴儿手推童车 10 中不包含的额外特征。举例来说，所述手推童车可任选地包括固定前车轮、完全不同的框架配置或位于手推童车的座椅底下的储存篮。

[0037] 座椅支撑部件可为能够将座椅支撑在座椅附接件上的任何配置。图 4 中展示供与汽车座椅或其它婴儿座椅一起使用的座椅支撑部件的另一实施例。图 4 的座椅支撑部件 40 的实施例包括主要支撑件 41。主要支撑件 41 包括用于支撑座椅的中心部分的支架。座椅的另一部分可搁靠在支撑杆 42 上。在此实施例中，支撑杆 42 可经调整以容纳不同形状及大小的座椅。支撑杆 42 可在孔口 43 内滑动且当处于支撑某一座椅的所要位置中时被锁定于适当位置中。因此，座椅被支撑在两个主要支撑件 41 及支撑杆 42 上。可通过将带 44 及 45 环绕在座椅上并借助带扣或其它紧固构件将所述带锁定于此位置中来进一步将所述座椅紧固在座椅附接部件 40 中。

[0038] 图 5 中展示用于手推童车的座椅附接件的另一实施例。组合 50 包括手推童车 10 及座椅附接件 51。座椅附接件 51 为三轮车样的附接件，其包括连接器部分 52，具有座椅支撑元件 56、座椅 57 及车轮 55 的框架 53。所述三轮车样的附接件可附接到手推童车 10 以允许在手推童车 10 中推着一名儿童而一名儿童骑乘座椅附接件 51。举例来说，所述座椅附接件还可为其它形状，例如汽车、卡车或动物形状。

[0039] 图 5 的手推童车 10 的实施例包括额外附件附接部分 58。附件附接部分 58 附接到手推童车 10 的框架部件。附件附接部分 58 的实施例展示于图 6A 上。此实施例特别适用于将如图 6B 中所示的手提袋或手提包 64 附接到手推童车 10。

[0040] 当使用手推童车时，父母或监护者通常携带其它物项，例如手提包、食品杂货手提袋、蜂窝电话、尿布、清洁湿巾或者其它个人或婴儿相关物项。一些手推童车具有用于放置此些物项的底部储存篮。然而，这些储存篮可能不方便接近或一些轻量手推童车不包含此些储存物。因此，手推童车的使用者可将手提包或购物手提袋挂在手推童车的把手上。此由于容易接近而为方便的，但把手上的手提袋的重量可导致手推童车不平衡且增加手推童车向后倾倒的趋势。挂在手推童车的把手上的沉重的手提袋可甚至在座椅上有儿童的情况下也导致手推童车向后倾斜。如果手推童车正面临上坡或不平坦的地形、正被向上推过路边或由幼小的儿童占用，那么问题会更糟。举例来说，可通过上文所描述的夹紧或附接方法中的任一者将附接部分附接到手推童车的框架。优选地，在接近手推童车 10 的重心处附接附件附接件 58 以避免产生手推童车的不平衡条件。图 6A 中展示附件附接件 58 的实施例。展示附件附接件 58 在接近折叠机构处连接到图 1 中的手推童车 10 的手推童车框架 12。所述附件的实施例包括用于连接到手推童车框架的第一端 61 及用于以可释放方式连接到所

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述附件的第二端 62。第一端 61 包括可连接到手推童车 10 的框架 12 的孔口 64。在某些实施例中，孔口 64 在一角度上～使得附件附接部分 58 的轴线为大致水平的。附件附接件 58 可任选地包括用于将附件附接到附件附接件 58 的肋状件。如图 6A 中所示的肋状件可用任何其它锁定元件或紧固构件替换，包含（例如）摩擦配件、旋紧式配件、干涉配件。

[0041] 图 6B 中展示用于附接到附件附接件 58 的附件的一个实例。所述附件为手提袋或手提包 64。所述附件包含能够紧固到附件附接件 58 上的附接部分 62 的附接部分 65。可通过将附接部分 65 紧固到附接部分 62 而将手提袋或手提包 64 紧固在手推童车 10 上。如所展示，附接部分 65 在附件附接件 58 的圆柱形附接部分 62 上滑动。附接部分 65 可包含接纳将手提袋或手提包 64 紧固到手推童车 10 的肋状件 63 的内部环形凹部。因此，如从侧面所观看，手提袋或手提包 64 被紧固到手推童车 10 在所述手推童车的中心部分中。因此，手提袋或手提包 64 被方便地紧固到手推童车 10，同时不引起手推童车 10 的不平衡条件。

[0042] 图 8 中展示手推童车 80 的另一实施例。可在附接件上不添加另一车轮的情况下容易地将手推童车 80 从包括一个座椅的单人手推童车转换成包括两个座椅的双人手推童车。手推童车 80 包括能够支撑手推童车座椅 86 的框架 81。在此实施例中，框架 81 包括前车轮支撑部分 81a、后车轮支撑部分 81b 及把手部分 81c。手推童车 80 的实施例的框架 81 进一步包括连接前车轮支撑部分 81a、后车轮支撑部分 81b 及把手部分 81c 的折叠机构 81d。折叠机构 81d 允许将手推童车折叠成较紧凑大小以便储存或运输。图 8A 展示呈折叠配置的手推童车 80。

[0043] 手推童车 80 进一步包括至少一个前车轮 82（可在图 8A 中看到手推童车 80 的两个前车轮 82）、至少一个后车轮 83（可在图 8A 中看到手推童车 80 的两个后车轮 83）、手推童车座椅 86 及能够将第二个座椅支撑在所述手推童车座椅的前部的座椅支撑部分 84。手推童车 80 可进一步包括储存篮 87。座椅支撑部分可具有能够牢固地将座椅支撑在手推童车上的任何设计。举例来说，座椅支撑部分 84 可类似于图 2 中所示的座椅支撑部分 20，但不具有车轮 23、斜撑 28、枢转连接 27 及 / 或车轮支撑框架 26。优选地，所述座椅支撑部分能够支撑座椅使得处于所述座椅中的儿童大致高于手推童车的框架。此提供对座椅的更容易接近、不阻挡对储存篮的接近、允许座椅的更通用配置、允许将更多种的座椅附接到所述框架且允许父母或其它监护者更容易地监视并看到每一座椅中的儿童。

[0044] 手推童车 80 包括手推童车座椅 86。手推童车座椅 86 位于邻近于把手部分 81c 处。手推童车座椅 86 可以固定方式附接到或以可拆卸方式附接到框架 81。在其中手推童车座椅 86 以可拆卸方式附接到框架 81 的手推童车 80 的实施例中，手推童车座椅 86 可被拆卸及重新放置成后向配置（参见图 9A）、由座椅支撑元件 84 上的幼儿提篮 91 或汽车座椅替换（参见图 9C）或者用座椅支撑元件 84 上的婴儿车 92 替换（参见图 9D）。手推童车 80 的实施例可包括邻近于把手部分 81c 的第二座椅支撑元件 89。包括第二座椅支撑元件 89 的手推童车 80 允许座椅被容易地拆卸并重新配置成不同定向或用不同样式的座椅替换。

[0045] 手推童车 80 的实施例包括第一座椅支撑元件 84。座椅支撑元件 84 连接到手推童车 80 的前车轮支撑框架 81a。座椅支撑元件 84 邻近于框架 81 的前车轮支撑部分 81a。所述座椅支撑元件能够将第二手推童车座椅 85 支撑在手推童车座椅 86 的前部。此为手推童车 80 的使用者提供方便性及多用性。座椅支撑元件可以固定方式附接到或以可拆卸方式附接到前车轮支撑部分 81a。前座椅 85 可大致定位于前车轮上方，使得手推童车保持稳

定。优选地，所述座椅应经定位使得手推童车的重心在前车轮与后车轮之间。如果不，那么可在附接件上放置额外车轮，如先前所描述。座椅支撑元件 84 包括座椅连接器 88。座椅连接器 88 可为多用途的通用连接器，其允许在座椅支撑元件 84 上更换不同座椅。举例来说，任何样式的座椅可经配置以连接到所述座椅连接器，例如（但不限于）手推童车座椅、婴儿座椅、摇篮、婴儿车、婴儿吊篮或汽车座椅。

[0046] 所述手推童车附接件的实施例包括连接器部分及座椅支撑元件。所述连接器部分能够将所述座椅附接件连接到框架。

[0047] 在图 8 中所示的实施例中，手推童车 80 包括第一手推童车座椅 86 及第二手推童车座椅 85。展示手推童车座椅 86 呈前向配置且展示第二手推童车座椅 85 呈后向配置。座椅支撑元件 84 能够将座椅支撑在连接到车轮支撑部分 81a 的前车轮 82 上面。优选地，前座椅大致位于前车轮上方且后座椅大致位于后车轮上方。

[0048] 虽然在图 8 的侧视图中无法看到，但所述手推童车的典型实施例将包括两个座椅连接器部分。一个座椅连接器部分将支撑座椅的每一侧。所述连接器部分可为一件式或多个部分。

[0049] 图 9A 到图 9F 展示对于本发明的手推童车可能有的各种配置。这些配置不应被视为手推童车的所有可用配置且所属领域的技术人员基于本说明书及图式集将认识到许多额外可能性。依据前文将了解，虽然本文已出于说明的目的描述了本发明的特定实施例，但可做出各种修改，此并不背离本发明的精神及范围。因此，本发明不受除所附权利要求书以外的限制。

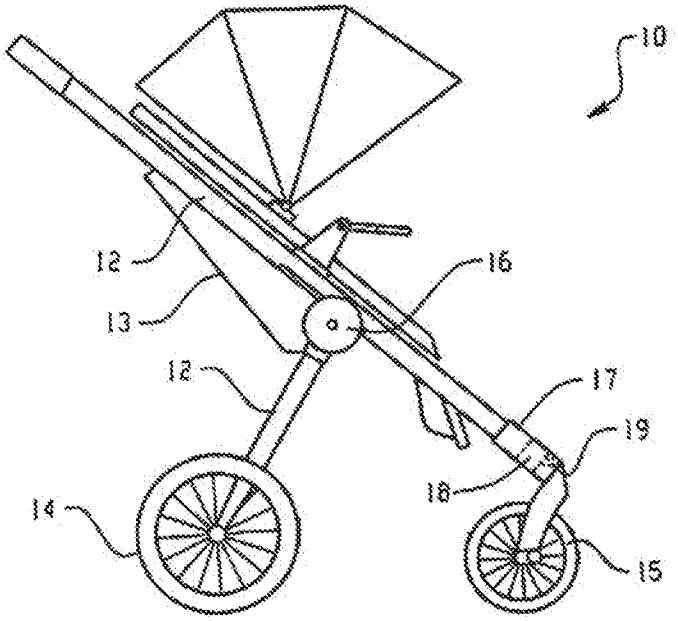

图 1

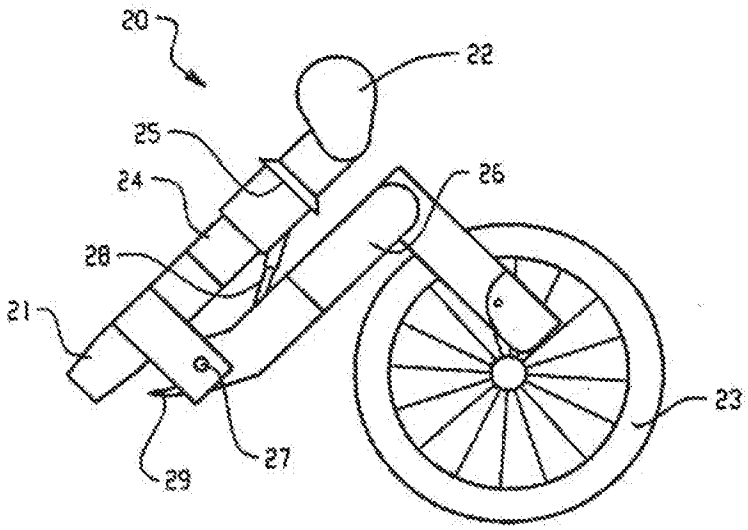

图 2

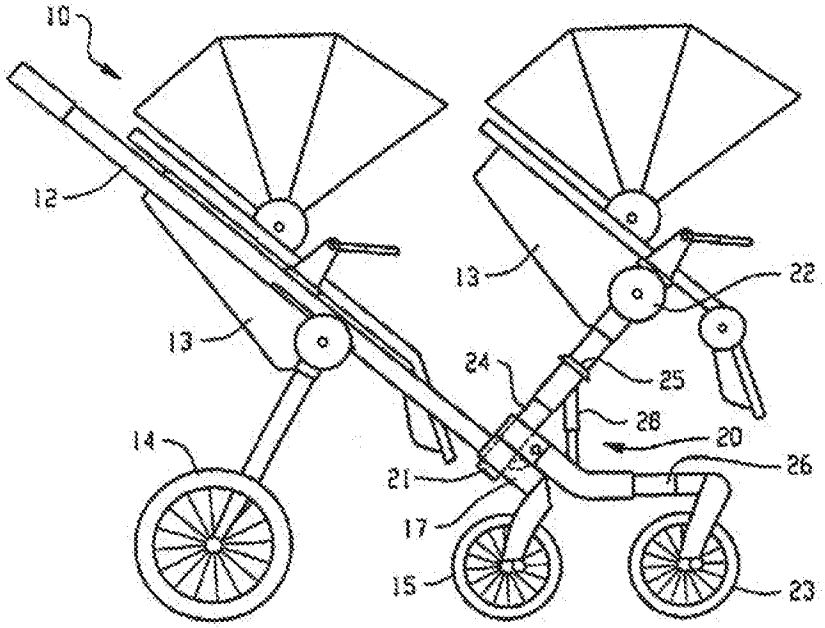

图 3

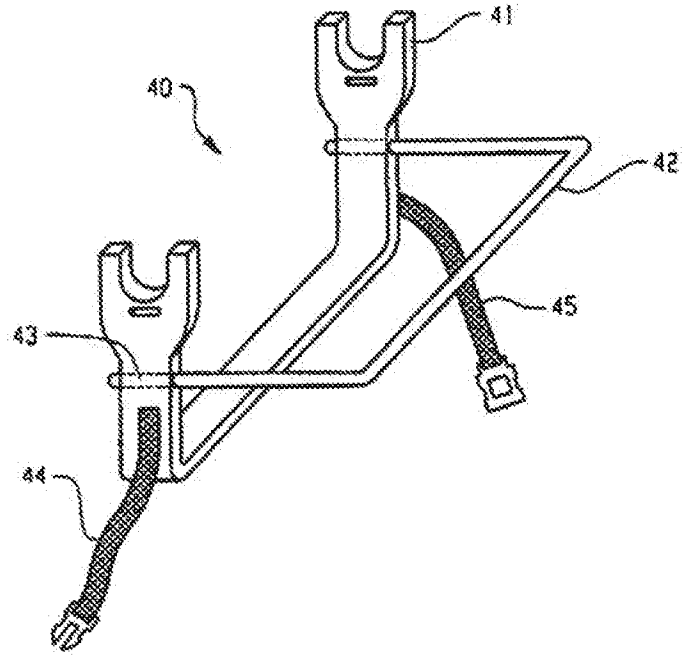

图 4

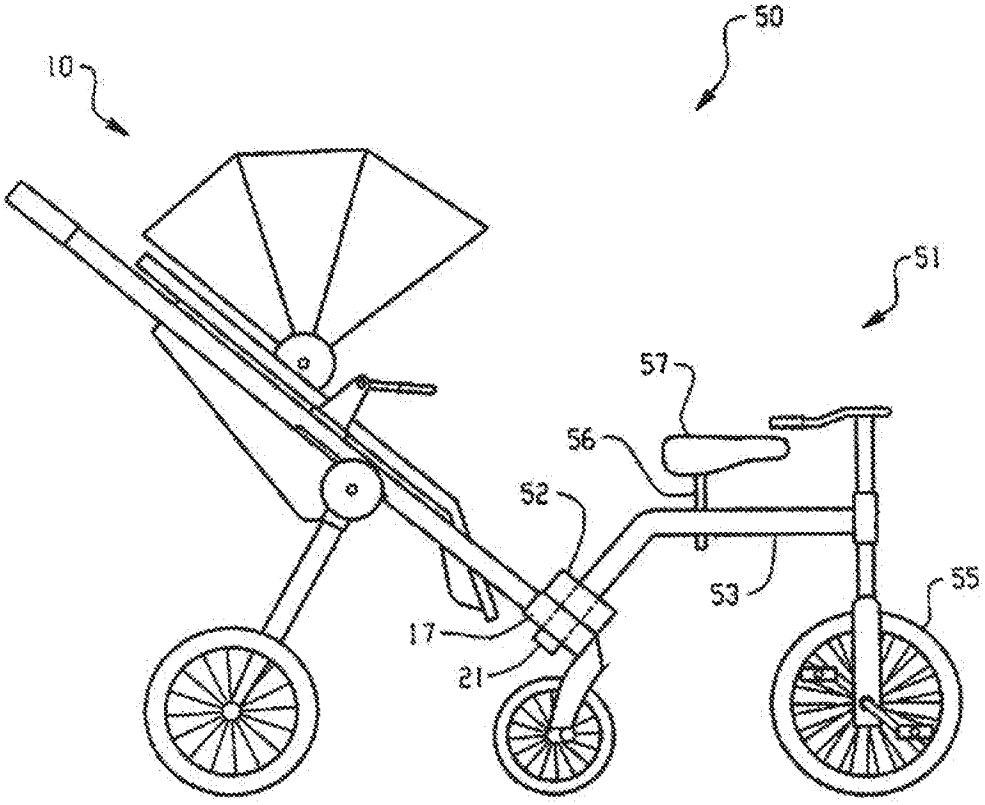

图 5

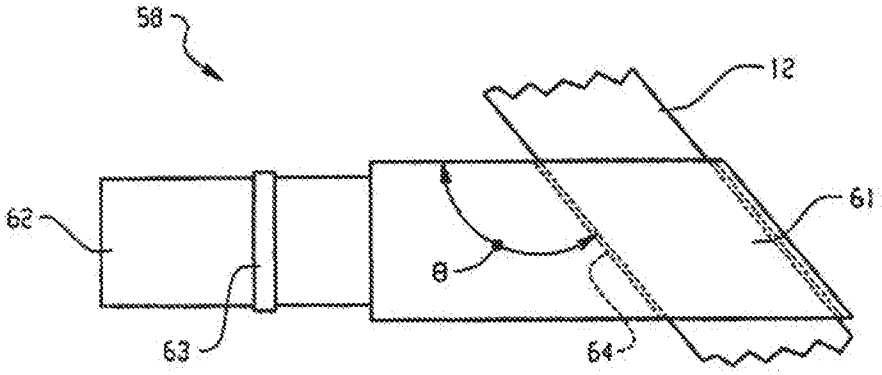

图 6A

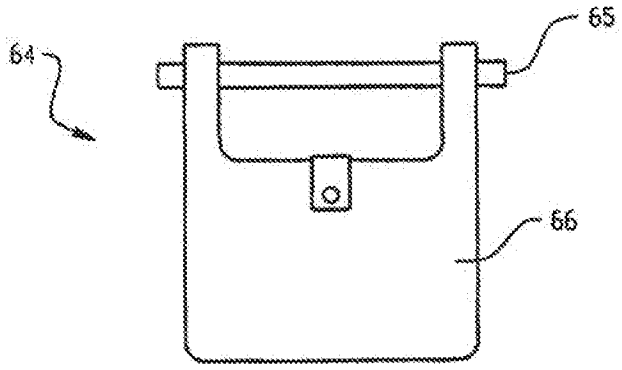

图 6B

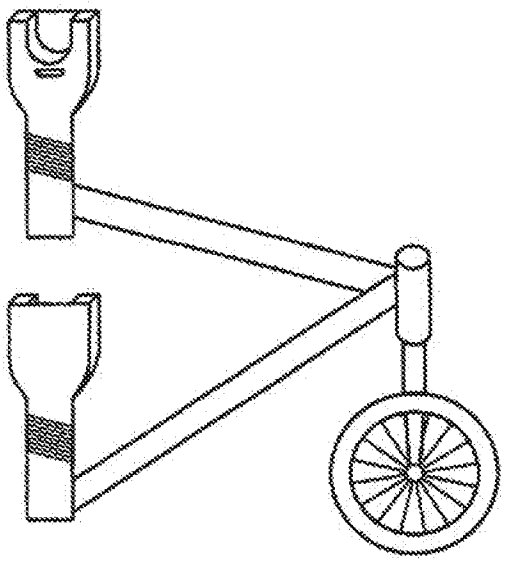

图 7

5/8

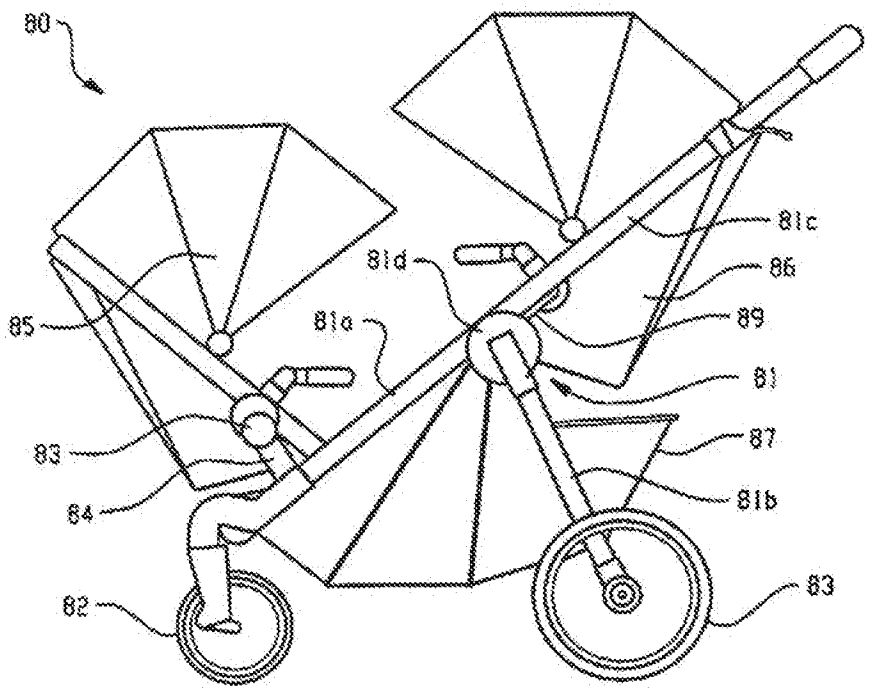
80
81c
81d
86
89
85
81a
81
87
83
84
81b
82
83

图 8

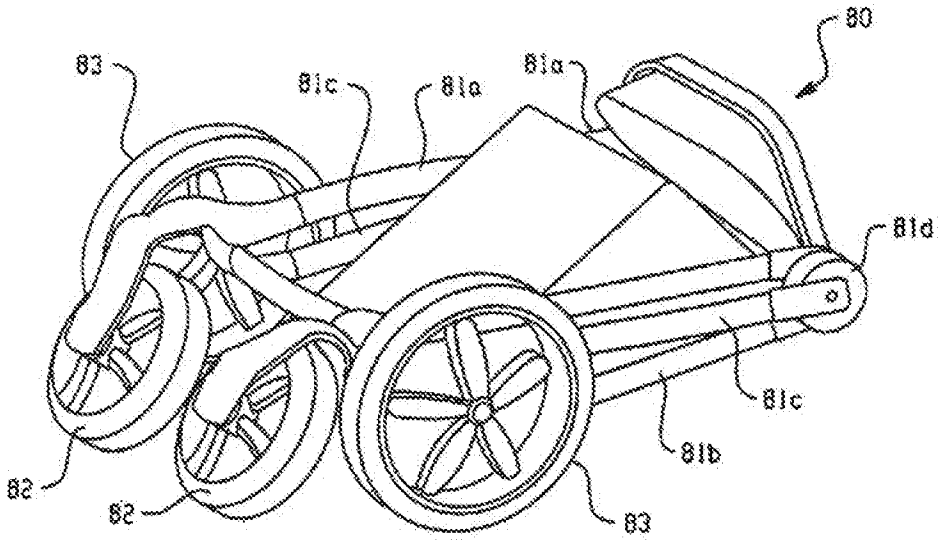
80
83
81c
81a
81a
81d
81c
81b
82
82
83

图 8A

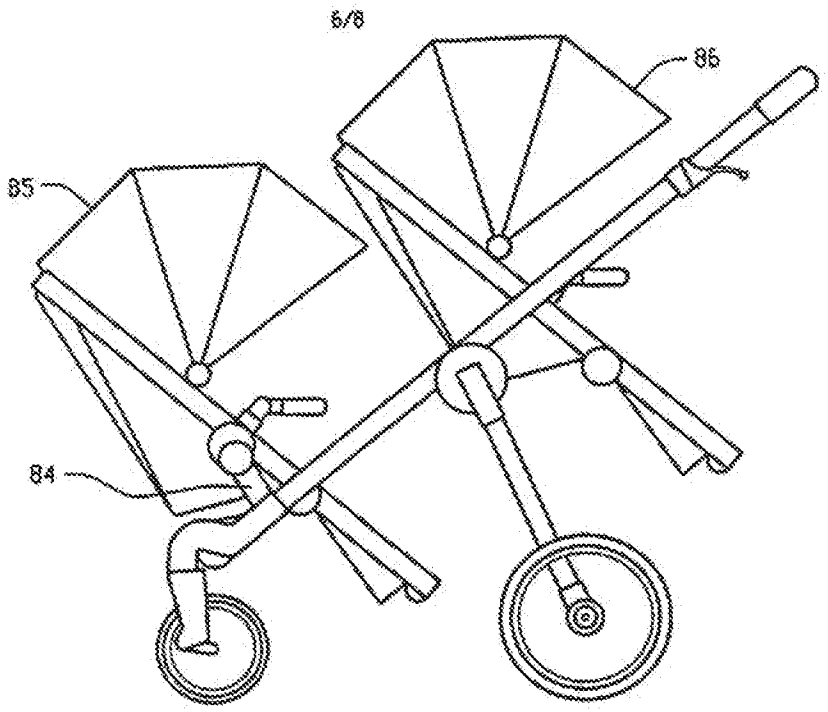

图 9A

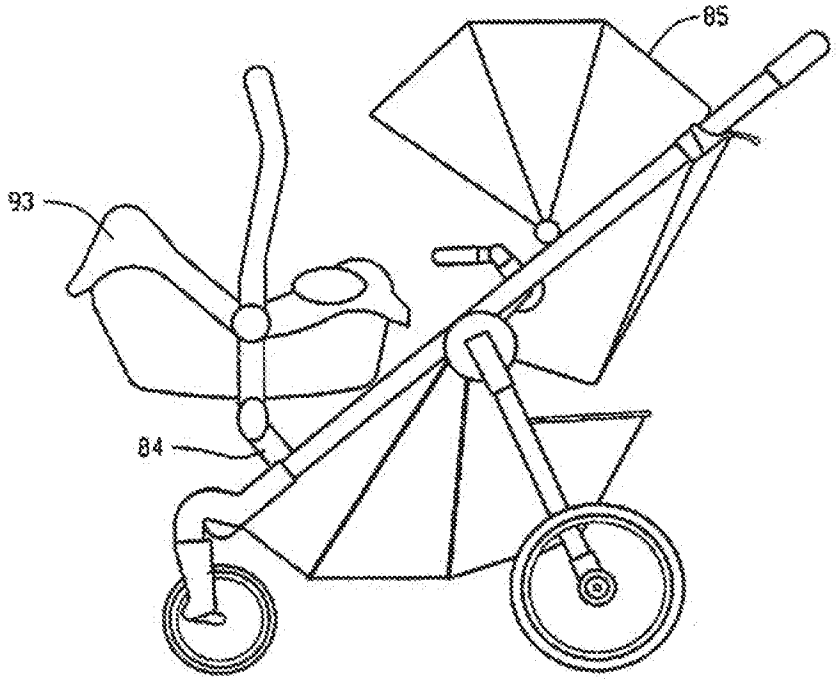

图 9B

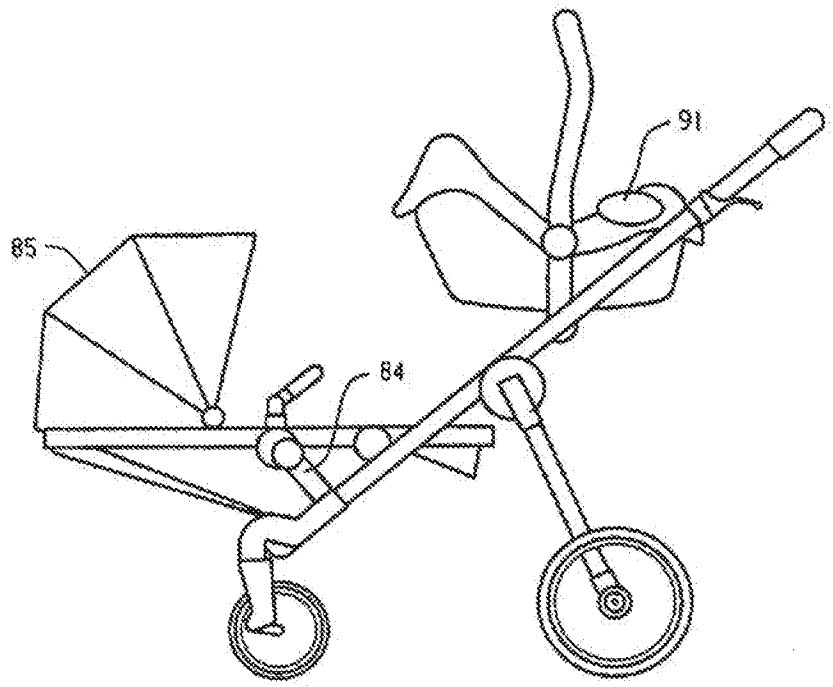

图 9C

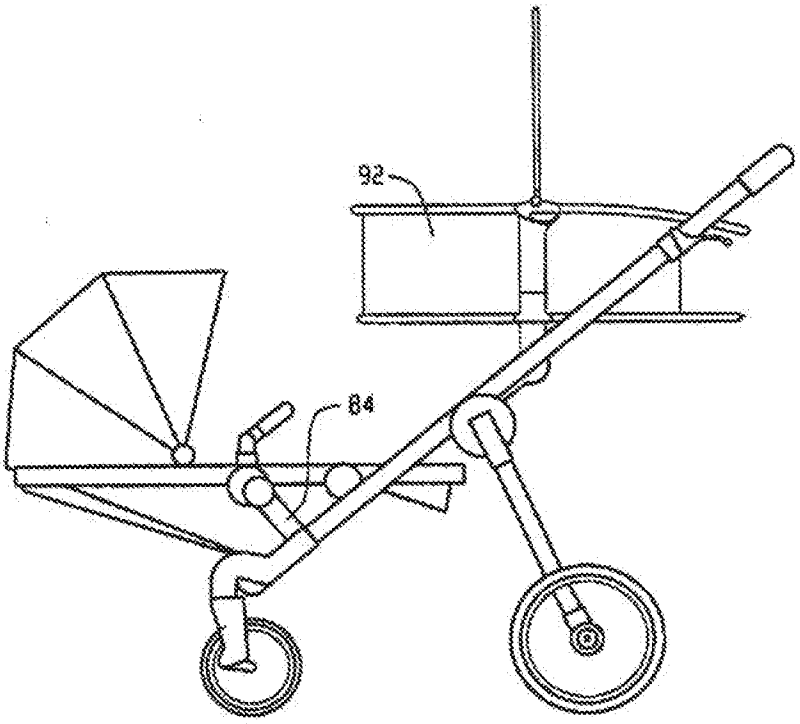

图 9D

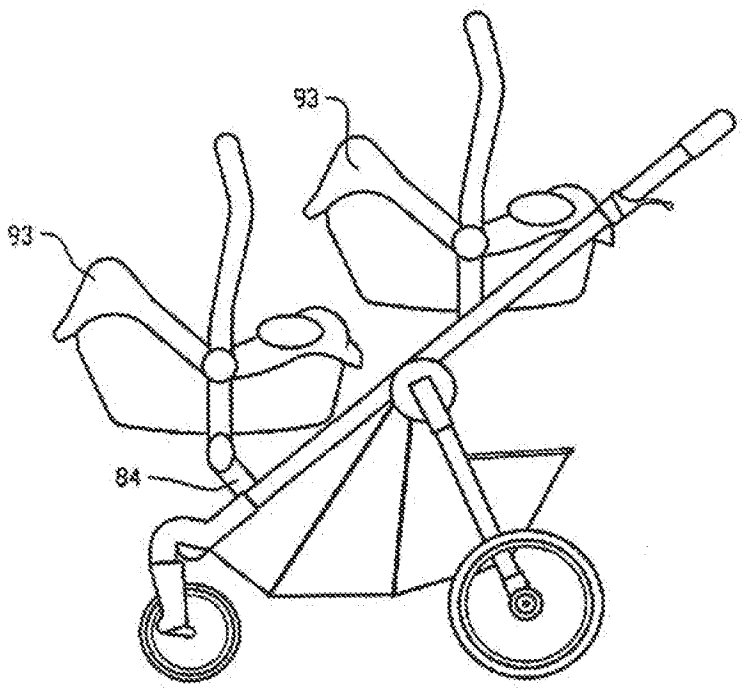

图 9E

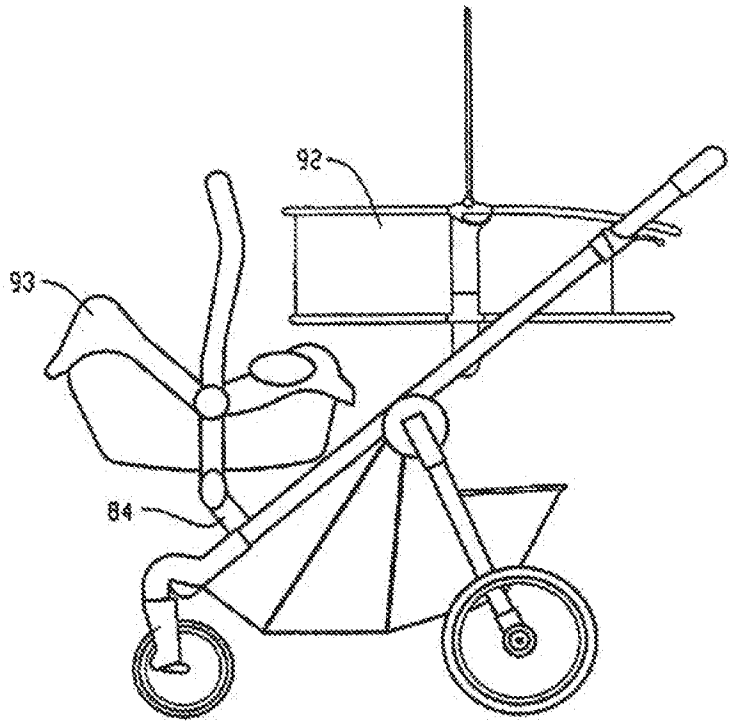

图 9F

Espacenet

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Seat attachment for a stroller

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Applicant(s): DYNAMIC BRANDS LLC ± (DYNAMIC BRANDS LLC)

Classification: - international:***B62B9/12***
- cooperative: **B62B7/006**; **B62B7/008**; **B62B7/14**; **B62B9/28**; B62B3/008; B62B7/145; B62K13/00

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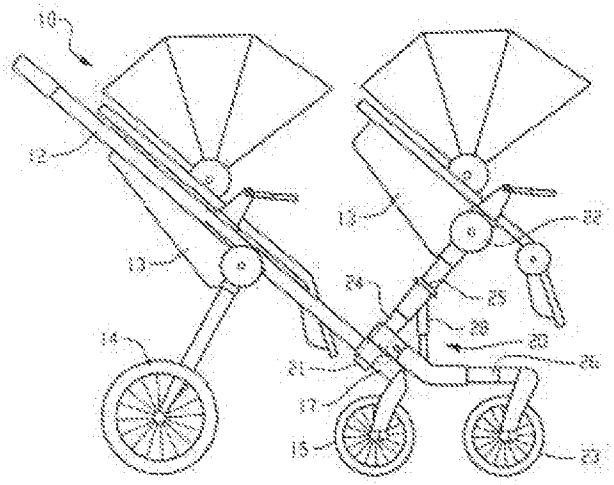
Abstract of CN103921830 (A)

The invention relates to a seat attachment for a stroller, single stroller and double strollers. Such a seat attachment may be used to reversibly convert a single stroller into a double stroller. More specifically, versions of the seat attachment relate to a seat attachment for a stroller capable of supporting a seat such as, but not limited to, a stroller seat, a baby seat, bassinet, a pram, a car seat, or a baby carrier, for example. The seat may be supported in front of a permanent seat of the stroller.



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B62B 9/12(2006.01)

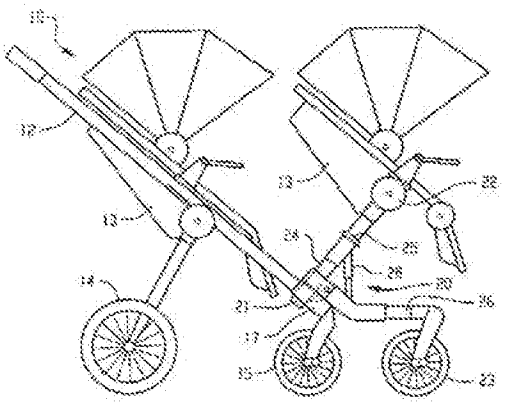
权利要求书1页 说明书8页 附图10页

(54)发明名称

用于手推童车的座椅附接件

(57)摘要

本发明涉及一种用于手推童车、单人手推童车及双人手推童车的座椅附接件。此座椅附接件可用来将单人手推童车以可逆方式转换成双人手推童车。更具体来说，所述座椅附接件的版本涉及一种用于手推童车的座椅附接件，其能够支撑例如但不限于手推童车座椅、婴儿座椅、摇篮、婴儿车、汽车座椅或婴儿吊篮等的座椅。可将所述座椅支撑在所述手推童车的永久座椅前部。



CN 103921830 A

1. 一种用于手推童车的座椅附接件，其包括：

一个分离的左侧附接框架部件，其中所述左侧附接框架部件包括：

连接器部分，其能够以可逆方式连接到手推童车框架，及左侧座椅支撑元件，其能够将座椅支撑于前向或后向的位置中；以及

一个分离的右侧附接框架部件，其中所述右侧附接框架部件包括：

连接器部分，其能够以可逆方式连接到手推童车框架，及右侧座椅支撑元件，其能够将所述座椅支撑于位于所述左侧座椅支撑元件和所述右侧座椅支撑元件之间的前向或后向的位置中。

2. 根据权利要求 1 所述的用于手推童车的座椅附接件，其中所述座椅为婴儿座椅、汽车座椅、手推童车座椅、摇篮、婴儿吊篮、或婴儿车。

3. 根据权利要求 1 所述的用于手推童车的座椅附接件，其中所述左侧附接框架部件和所述右侧附接框架部件中的每一者具有第一端及第二端。

4. 根据权利要求 3 所述的用于手推童车的座椅附接件，其中所述第一端能够连接到手推童车框架。

5. 根据权利要求 4 所述的用于手推童车的座椅附接件，其中所述第二端连接到座椅附接部件。

6. 根据权利要求 1 所述的用于手推童车的座椅附接件，其进一步包括连接到所述左侧座椅支撑元件和所述右侧座椅支撑元件的手推童车座椅。

7. 根据权利要求 1 所述的用于手推童车的座椅附接件，其中两个连接器部分通过钮扣、搭扣件、摩擦配件、干涉配合、螺纹连接，锁定连接片，或键式连接中的至少一者以可逆方式连接到所述手推童车。

用于手推童车的座椅附接件

[0001] 本申请是申请号为 200980148829.3、申请日为 2009 年 12 月 4 日、发明名称为“用于手推童车的座椅附接件”的发明专利申请的分案申请。

技术领域

[0002] 本发明针对一种用于手推童车、单人手推童车及双人手推童车的座椅附接件。此座椅附接件可用来将单人手推童车转换成双人手推童车。更具体来说，本发明的实施例针对一种用于手推童车的座椅附接件，其能够支撑例如但不限于手推童车座椅、婴儿座椅、摇篮、婴儿车、汽车座椅或婴儿吊篮等的座椅。所述座椅附接件的实施例能够将单人手推童车以可逆方式转换成双人手推童车。

背景技术

[0003] 具有多个幼儿的父母可能很难在不同地方之间运输其孩子。儿童走路慢而容易分心，且因此可能在其父母正试图在有限量的时间内完成购物任务或运动一下时落后父母。作为响应，许多父母已购买双人手推童车，其允许父母或监护者同时推着两名儿童且因此允许其更高效地办杂事、散步或慢跑。如此，双人手推童车允许父母或监护者具有比其在仅单人手推童车的情况下将具有的更大的自由，尤其是在试图照管两个睡着的儿童时。

[0004] 虽然双人手推童车具有某些优点，但双人手推童车也具有缺点。双人手推童车大致大于单人手推童车，且因此较难以操纵通过门口及沿着商店的走道行进。通常，能够容纳两名儿童的益处大大地抵消了这些缺点。然而，当父母或监护者仅随身带一个孩子时，双人手推童车的益处便不能实现而缺点仍存在。

[0005] 因此，父母通常买两个或两个以上手推童车以在不同时间使用，单人手推童车用于其仅随身带一个孩子时的时间且双人手推童车用于其需要将容纳两个孩子的手推童车时的时间。此通常产生其自身的一组问题。必须储存多个手推童车且典型汽车的尾箱或运动型多用途车的后部中存在很少空间来用于折叠式双人手推童车及折叠式单人手推童车两者。

[0006] 手推童车制造商已尝试通过提供用于使第二个儿童站在单人手推童车的后部上的地方或为第二个儿童提供挂在单人手推童车的座椅下方且稍靠后的另一座位的附接件来解决此问题。此为儿童提供第二个座椅，但所述儿童被紧裹到前座椅的后部，此可能为不舒适的、减少座椅下方储存的容量且妨碍父母将手提袋挂在把手上。

[0007] 存在对可方便地转换成双人手推童车的单人手推童车的需要。还需要将单人手推童车转换成能够容纳两名儿童而不损失父母或监护者的方便性的全双人手推童车的转换套件。

发明内容

[0008] 手推童车通常为单人手推童车（具有一个座椅以用于运输一名儿童的手推童车）或还可为双人手推童车（具有两个座椅以用于运输两名儿童的手推童车）。本发明的实施

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例针对一种用于手推童车的座椅附接件，其包括：连接器部分，其能够直接连接到手推童车框架或连接到所述手推童车框架的附接框架部件；及座椅支撑元件，其能够支撑座椅。在某些实施例中，所述用于手推童车的附接件包括具有第一端及第二端的附接框架部件。所述第一端可能够将所述座椅附接件连接到手推童车框架且所述第二端可能够连接到所述座椅支撑元件。所述座椅支撑元件因此能够将座椅支撑在手推童车上。在更特定实施例中，可将所述座椅支撑在前向或后向位置中。

[0009] 另一实施例包括手推童车及用于所述手推童车的座椅附接件，其中所述手推童车包括连接到所述手推童车的框架的附接框架部件且所述用于手推童车的座椅附接件包括连接器部分。所述附接框架部件及所述连接器部分包括能够牢固地连接在一起的组件。在某些实施例中，所述附接框架部件及所述连接器部分包括能够牢固地且以可释放方式连接在一起的组件。以此方式，所述座椅附接件可附接到所述手推童车，且如上文所界定的座椅可连接到所述座椅附接件，因此将单人手推童车以可逆方式转换成双人手推童车。

[0010] 在另一实施例中，所述用于手推童车的座椅附接件进一步包括至少一个车轮。所述车轮可通过车轮支撑框架连接到所述座椅附接件，所述车轮支撑框架可刚性地附接到或可以枢转方式附接到所述座椅附接件。所述车轮支撑框架可连接到座椅附接件的任一区段，优选地所述车轮支撑框架以枢转方式连接到所述座椅附接件的后部部分在邻近于连接器部分的区域中或连接于接近附接部分的中间处。

[0011] 所述用于手推童车的座椅附接件的实施例可进一步包括折叠机构。所述折叠机构可包括以滑动方式连接到所述附接部分的滑动部件以及具有连接到所述滑动部件的第一端及连接到所述车轮支撑框架的第二端的折叠框架部件或斜撑。所述折叠机构允许所述车轮支撑框架从第一位置（使用中位置）枢转到第二位置（折叠位置）。所述用于手推童车的附接件还可包括锁定机构，其在使用中位置中将所述附接件紧固到手推童车且在处于折叠位置中时将所述手推童车解锁以允许所述附接件连接到所述手推童车或从所述手推童车拆卸。所述锁定机构可为附接到所述车轮支撑框架的小突出部，其啮合所述手推童车或所述手推童车附接部分中的对应孔口以将所述附接件紧固到所述手推童车。在折叠位置中，所述突出部不啮合在所述孔口中。

[0012] 另一方面针对一种双人手推童车。所述双人手推童车可包括框架，其中所述框架包括把手部分、前车轮支撑部分、后车轮支撑部分及折叠机构。所述双人手推童车的实施例包括手推童车框架，所述手推童车框架包括车轮、所述框架、第一座椅及连接到所述框架的连接器部分。所述双人手推童车可进一步包括座椅附接框架，所述座椅附接框架包括车轮、第二座椅及能够连接到手推童车框架的连接器部分的第二附接部分。所述第二附接部分可以可释放方式连接到所述连接器部分。此外，所述第二座椅可以可释放方式连接到所述座椅附接框架且能够将所述第二座椅支撑在前向或后向位置中。

[0013] 所述双人手推童车的另一实施例包括能够以可释放方式支撑第一儿童座椅的第一座椅附接件及能够以可释放方式支撑第二儿童座椅的第二座椅附接件。所述座椅附接件可包括用于将座椅支撑在两个侧上的两个座椅连接器部分。

[0014] 所述双人手推童车的又一实施例包括邻近于前车轮支撑部分的至少一个第一座椅附接件及邻近于每一折叠机构及/或把手部分的第二座椅附接件。所述第一座椅附接件可位于连接到所述车轮支撑部分的至少一个前车轮上面。

[0015] 所述手推童车的又一实施例包括：框架；至少一个前车轮；至少一个后车轮；第一手推童车座椅，其具有永久地附接到所述框架的至少一个第一附接部分；及至少一个以可释放方式连接的第二座椅附接部分，其能够将第二座椅支撑在所述第一手推童车座椅的前部。如同在其它实施例中一样，所述座椅附接件可包括两个座椅连接器。任一个或两个座椅附接部分可为具有两个座椅连接器的单个部分或各自包括一座椅连接器的两个单独件。

[0016] 在以上实施例中的任一者中，手推童车、双人手推童车或附接件可包括以下特征中的一者或一者以上：用于以可拆卸方式接纳所述附接部分的套筒。所述座椅附接部分可包括突出部，其具有与所述套筒的互补形状以用于插入到所述套筒中。此外，所述第二座椅可与所述座椅附接件成整体。

[0017] 在各种实施例中呈现了手推童车、双人手推童车及附接件的方面，然而，所属领域的技术人员将理解各种实施例的组件的各种变化形式及可互换性，其打算包含在本发明的范围中。

附图说明

[0018] 图 1 展示单人手推童车的实施例；

[0019] 图 2 展示用以将单人手推童车转换成双人手推童车的座椅附接件的实施例；

[0020] 图 3 展示图 1 的单人手推童车附接到图 2 的座椅附接件的组合；

[0021] 图 4 展示能够将汽车座椅支撑在图 2 的附接件上的座椅附接件的实施例；

[0022] 图 5 展示图 1 的单人手推童车附接到呈三轮车样的骑乘装置形式的附接件的实施例的组合；且

[0023] 图 6A 展示用于将附件支撑在手推童车上的附件附接件，图 6B 展示用于附接到图 6A 的附件附接件的手提袋或手提包。

[0024] 图 7 展示用于支撑包括一个车轮的座椅的附接件。

[0025] 图 8 展示能够以可逆方式从单人手推童车转换成双人手推童车的手推童车的实施例，其包括不包括车轮的附接部分。

[0026] 图 9A、9B、9C、9D、9E 及 9F 展示图 8 中所示的手推童车的实施例的各种配置。

具体实施方式

[0027] 本发明涉及一种用于手推童车的附件、附接件或转换套件（下文中称“座椅附接件”）。如上文所论述，父母或监护者可能发现自己处于其中在一手推童车中运输两个儿童会更方便的情形中，但同时发现具有单人手推童车及双人手推童车两者是不方便的。所述座椅附接件的实施例解决此问题。在一个方面中，所述用于手推童车的座椅附接件的实施例能够将单人手推童车转换成双人手推童车。举例来说，所述座椅附接件可支撑例如但不限于手推童车座椅、婴儿座椅、摇篮、婴儿车、婴儿吊篮或汽车座椅的座椅。因此，父母或监护者不需要单人手推童车及双人手推童车两者。经配置以接纳用于将单人手推童车转换成双人手推童车的座椅附接件的手推童车为使用者提供方便性。可通过将所述座椅附接件附接到单人手推童车且接着附接第二座椅来将所述单人手推童车连接成双人手推童车。如此，所述用于将单人手推童车转换成双人手推童车的座椅附接件的实施例包括能够连接到手推童车框架的至少一个连接器部分及能够支撑座椅的座椅支撑元件。所述座椅附接件可

任选地包括用于额外支撑及稳定性的至少一个车轮，然而，为更方便起见，所述附接件的实施例不包含车轮。在某些实施例中，车轮可使双人手推童车稳定，但在所述附接件的其它实施例中，所述车轮可能并非合意的或必需的。举例来说，所述附接件的额外实施例包括手推车样、四车轮货车样、三轮车样的附接件或可连接到手推童车的其它骑乘玩具。三轮车样的附接件将允许儿童在手推童车的前部骑乘或被推着。

[0028] 图 1 中展示单人手推童车 10 的实施例的侧视图。注意，图 1 仅展示单人手推童车 10 的一侧，然而，大多数组件包含位于所述单人手推童车的另一侧上但未展示于图 1 中的互补组件。单人手推童车 10 包括支撑座椅 13 的框架 12。框架 12 可任选地包含至少一个（优选地为两个）折叠机构 16，其允许将手推童车 10 折叠成用于储存或运输手推童车 10 的更方便大小。

[0029] 在此实施例中，将座椅 13 展示为典型的手推童车座椅，然而，其它类型的座椅可用于单人手推童车中。座椅 13 可永久地附加到框架 12 或以可释放方式连接使得其能够被拆卸并用不同座椅来替代。如本文中所使用，“以可释放方式连接”或“以可释放方式附接”意指所述连接并非永久连接且所述连接能够由手推童车的使用者连接及断开而不需要特殊工具或特殊技能。可释放连接包含（但不限于）钮扣、搭扣件、摩擦配件、干涉配合、螺纹连接、锁定连接片、键式连接、其它扣件等。在图 1 的手推童车 10 上，框架 12 支撑在一对后车轮 14 及一对前车轮 15 上。在此实施例中，后车轮 14 为固定的且不以所述框架为轴而旋转或枢转。单人手推童车 10 上的所述对前车轮 15 枢转以使得使单人手推童车 10 转动更容易且更方便。虽然在某些手推童车中枢转车轮可为优选的，但具有固定非枢转车轮的手推童车也为常见的。应注意，单人手推童车不需要成对的前车轮或后车轮且可用单个车轮来替代前对车轮 15 或后对车轮 14。按常规，许多单人手推童车（包含伞式手推童车、慢跑手推童车、全地形手推童车以及其它手推童车）可仅包含一个前车轮。本发明的座椅附接件的实施例可能够将任何样式的手推童车转换成双人手推童车，包含具有一个或两个前车轮的手推童车。

[0030] 手推童车 10 的实施例包括两个附接框架部件 17。连接器部分优选地位于手推童车的前部上以允许座椅附接件及座椅连接到手推童车 10 的前部。附接框架部件 17 允许座椅附接件（例如用于将单人手推童车 10 转换成如图 3 中所示的双人手推童车的座椅附接件）连接到手推童车。图 3 中仅展示一个座椅附接件，手推童车 10 将使用如图 3 中所展示的两个座椅附接件或包括两个座椅支撑元件的一个座椅附接件。手推童车 10 的实施例具有左侧及右侧附接框架部件 17。手推童车 10 的座椅附接件的实施例将包括能够在附接框架部件 17 处连接到手推童车框架的对应连接器部分。虽然关于单人手推童车描述了用于手推童车的座椅附接件，但所述附接件可类似地附接到双人手推童车。因此，所述座椅附接件的实施例可用于将双人手推童车转换成三人手推童车（如果需要的话）。

[0031] 图 2 中展示本发明的座椅附接件 20 的实施例。图 2 的座椅附接件呈解锁及折叠配置。座椅附接件 20 包括：能够连接到附接框架部件 17 的一对连接器部分 21；能够支撑座椅的两个座椅附接元件 22；及车轮 23。在此实施例中，所述连接器部分连接到座椅附接件 20 的后部，从而允许座椅附接件 20 连接到手推童车（例如图 1 中所示的手推童车 10）的前部。所述座椅附接件的其它实施例可包含一个以上车轮、一个连接器部分、一个座椅支撑元件或这些元件的组合。举例来说，在具有一个车轮的手推童车的实施例中，所述附接框

架部件可位于前车轮的轮叉上。

[0032] 座椅附接件 20 包括将附接件 20 的车轮 23 连接到附接框架部件 24 的车轮支撑框架 26。每一附接框架部件 24 具有第一及第二端。所述第一端能够连接到手推童车框架且所述第二端连接到座椅支撑元件 22。座椅附接件 20 的实施例包括以枢转方式连接到两个附接框架部件 24 的车轮支撑框架 26。车轮支撑框架 26 或附接框架 24 可横跨手推童车在两个附接框架部件 17 之间的宽度。枢转连接 27 允许折叠并方便地储存或运输座椅附接件，但并非是本发明所必需的。所述枢转连接为任选的且提供更大方便性。然而，附接件的实施例可包括以可释放方式连接的车轮支撑框架或刚性框架，其可经并入以产生具有更大强度以供在其中（例如）可需要更强座椅附接件的情形中（例如在全地形或慢跑手推童车的情况下）使用的座椅附接件。可在附接框架上的任一点处连接所述车轮支撑框架，优选地在接近连接器部分 21 处或在接近附接框架 24 的中间处连接所述车轮支撑框架。

[0033] 举例来说，不具有车轮的座椅附接件的实施例可包含连接器部分 21 或附接框架部件 24 及座椅附接部件 22。在此实施例中，将不需要枢转连接 27、车轮支撑框架 26、滑动连接器 25 或车轮 23。

[0034] 座椅附接件 20 包括折叠机构，所述折叠机构包括连接到斜撑 28 的第一端的滑动连接器 25。斜撑 28 的第二端以枢转方式连接到车轮支撑框架 26。在此实施例中，可使滑动连接器 25 在附接框架部件 24 上于第一位置与第二位置之间移动。随着滑动连接器 25 移动，斜撑 28 将车轮支撑框架 26 从使用中位置推到储存位置。所述储存位置较紧凑，如图 2 中所示。另外，座椅附接件 20 的实施例包括能够将座椅附接件 20 紧固到手推童车（例如图 1 中所示的手推童车 10）的锁定机构 29。通过将滑动连接器 25 移动到其中使车轮支撑框架 26 及车轮 23 延展的使用中位置来啮合锁定机构 29。在用于手推童车 10 的座椅附接件 20 的实施例中，座椅附接件 20 的车轮以枢转方式连接到所述连接器部分，且当所述车轮处于使用中位置时，可释放连接被锁定，且当将车轮 23 移动到储存位置时，可释放连接被解锁，从而允许从手推童车 10 拆卸座椅附接件 20。可储存座椅附接件 20 且手推童车 10 可方便地用作单人手推童车。按设计，座椅附接件 20 可重新连接到手推童车 10 以用作双人手推童车。在本发明的任一实施例中，可将座椅附接部分在手推童车框架上紧固到适当位置中且锁定机构可与具有或不具有车轮的实施例一起使用。所述座椅附接件或手推童车框架可包括用于将手推童车与座椅附接件紧固在一起的锁定机构。所述锁定机构可为能够在使用期间将各组件紧固在一起的任何机构且可为（例如）摩擦锁定装置、螺纹连接、孔中栓塞 (peg in a hole) 或干涉锁定装置，例如孔或槽中销子。在图 2 中所示的实施例 20 中，在使附接件 20 从展开位置移动到折叠位置时，锁定机构 29 随车轮支撑框架 26 枢转。锁定机构 29 可滑动到图 1 中所示的手推童车 10 的附接框架部件中的孔或凹口中。如此，可通过将附接件 20 的附接部分 21 定位于手推童车 10 的附接部分 17 的槽 18 中而将附接件 20 附接到手推童车 10。可将滑动连接器 25 移动到使用中位置，移动车轮支撑框架且将锁定机构 29 定位到手推童车 10 的锁定槽 19 中。

[0035] 座椅附接件 20 的实施例的连接器部分 21 具有圆柱形形状。可将连接器部分 21 插入到图 1 的手推童车 10 的附接框架部件 17 的圆柱形凹部 18 中以紧固所述座椅附接件并将单人手推童车转换成双人手推童车，如图 3 中所示。座椅附接件的其它实施例可包含任何类型的连接器部分。所述连接器部分可具有实心或管状构造且可为任何横截面形状，

举例来说，包含（但不限于）圆形、多边形、正方形、矩形及三角形。可利用其它附接机构将所述座椅附接件连接到手推童车，例如（但不限于）U 形托架、U 形螺栓、管夹、O 形托架、螺丝、螺栓或其它夹紧或附接构件。手推童车的附接框架部件具有互补及协作形状，其允许将连接器部分紧固到手推童车的附接部分。

[0036] 在图 3 中，展示图 2 的座椅附接件 20 连接到图 1 的单人手推童车 10，从而形成双人手推童车。将双人手推童车配置展示为两个手推童车座椅 13 呈直列式配置，但还可将其它配置（例如手推童车座椅及摇篮或婴儿车）支撑在所述双人手推童车上。此外，座椅附接件的座椅支撑元件可能够将前手推童车座椅支撑在前向或后向位置中。

[0037] 手推童车 10 的实施例仅作为一种类型的手推童车的实例而展示，所述手推童车的框架可为许多可能配置中的任一者。本发明的附件的实施例可经配置以用在手推童车的任何此种配置上。举例来说，婴儿手推童车的不同实施例可不包含两个前车轮，可不包含折叠机构或可只包含仅一个折叠机构。另外，婴儿手推童车可包含婴儿手推童车 10 中不包含的额外特征。举例来说，所述手推童车可任选地包括固定前车轮，完全不同的框架配置或位于手推童车的座椅底下的储存篮。

[0038] 座椅支撑部件可为能够将座椅支撑在座椅附接件上的任何配置。图 4 中展示供与汽车座椅或其它婴儿座椅一起使用的座椅支撑部件的另一实施例。图 4 的座椅支撑部件 40 的实施例包括主要支撑件 41。主要支撑件 41 包括用于支撑座椅的中心部分的支架。座椅的另一部分可搁靠在支撑杆 42 上。在此实施例中，支撑杆 42 可经调整以容纳不同形状及大小的座椅。支撑杆 42 可在孔口 43 内滑动且当处于支撑某一座椅的所要位置中时被锁定于适当位置中。因此，座椅被支撑在两个主要支撑件 41 及支撑杆 42 上。可通过将带 44 及 45 环绕在座椅上并借助带扣或其它紧固构件将所述带锁定于此位置中来进一步将所述座椅紧固在座椅附接部件 40 中。

[0039] 图 5 中展示用于手推童车的座椅附接件的另一实施例。组合 50 包括手推童车 10 及座椅附接件 51。座椅附接件 51 为三轮车样的附接件，其包括连接器部分 52、具有座椅支撑元件 56、座椅 57 及车轮 55 的框架 53。所述三轮车样的附接件可附接到手推童车 10 以允许在手推童车 10 中推着一名儿童而一名儿童骑乘座椅附接件 51。举例来说，所述座椅附接件还可为其它形状，例如汽车、卡车或动物形状。

[0040] 图 5 的手推童车 10 的实施例包括额外附件附接部分 58。附件附接部分 58 附接到手推童车 10 的框架部件。附件附接部分 58 的实施例展示于图 6A 上。此实施例特别适用于将如图 6B 中所示的手提袋或手提包 64 附接到手推童车 10。

[0041] 当使用手推童车时，父母或监护者通常携带其它物项，例如手提包、食品杂货手提袋、蜂窝电话、尿布、清洁湿巾或者其它个人或婴儿相关物项。一些手推童车具有用于放置此些物项的底部储存篮。然而，这些储存篮可能不方便接近或一些轻量手推童车不包含此些储存物。因此，手推童车的使用者可将手提包或购物手提袋挂在手推童车的把手上。此由于容易接近而为方便的，但把手上的手提袋的重量可导致手推童车不平衡且增加手推童车向后倾倒的趋势。挂在手推童车的把手上的沉重的手提袋可甚至在座椅上有儿童的情况下也导致手推童车向后倾斜。如果手推童车正面临上坡或不平坦的地形、正被向上推过路边或由幼小的儿童占用，那么问题会更糟。举例来说，可通过上文所描述的夹紧或附接方法中的任一者将附接部分附接到手推童车的框架。优选地，在接近手推童车 10 的重心处附接

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附件附接件 58 以避免产生手推童车的不平衡条件。图 6A 中展示附件附接件 58 的实施例。展示附件附接件 58 在接近折叠机构处连接到图 1 中的手推童车 10 的手推童车框架 12。所述附件的实施例包括用于连接到手推童车框架的第一端 61 及用于以可释放方式连接到所述附件的第二端 62。第一端 61 包括可连接到手推童车 10 的框架 12 的孔口 64。在某些实施例中，孔口 64 在一角度上 - 使得附件附接部分 58 的轴线为大致水平的。附件附接件 58 可任选地包括用于将附件附接到附件附接件 58 的肋状件。如图 6A 中所示的肋状件可用任何其它锁定元件或紧固构件替换，包含（例如）摩擦配件、旋紧式配件、干涉配件。

[0042] 图 6B 中展示用于附接到附件附接件 58 的附件的一个实例。所述附件为手提袋或手提包 64。所述附件包含能够紧固到附件附接件 58 上的附接部分 62 的附接部分 65。可通过将附接部分 65 紧固到附接部分 62 而将手提袋或手提包 64 紧固在手推童车 10 上。如所展示，附接部分 65 在附件附接件 58 的圆柱形附接部分 62 上滑动。附接部分 65 可包含接纳将手提袋或手提包 64 紧固到手推童车 10 的肋状件 63 的内部环形凹部。因此，如从侧面所观看，手提袋或手提包 64 被紧固到手推童车 10 在所述手推童车的中心部分中。因此，手提袋或手提包 64 被方便地紧固到手推童车 10，同时不引起手推童车 10 的不平衡条件。

[0043] 图 8 中展示手推童车 80 的另一实施例。可在附接件上不添加另一车轮的情况下容易地将手推童车 80 从包括一个座椅的单人手推童车转换成包括两个座椅的双人手推童车。手推童车 80 包括能够支撑手推童车座椅 86 的框架 81。在此实施例中，框架 81 包括前车轮支撑部分 81a、后车轮支撑部分 81b 及把手部分 81c。手推童车 80 的实施例的框架 81 进一步包括连接前车轮支撑部分 81a、后车轮支撑部分 81b 及把手部分 81c 的折叠机构 81d。折叠机构 81d 允许将手推童车折叠成较紧凑大小以便储存或运输。图 8A 展示呈折叠配置的手推童车 80。

[0044] 手推童车 80 进一步包括至少一个前车轮 82（可在图 8A 中看到手推童车 80 的两个前车轮 82）、至少一个后车轮 83（可在图 8A 中看到手推童车 80 的两个后车轮 83）、手推童车座椅 86 及能够将第二个座椅支撑在所述手推童车座椅的前部的座椅支撑部分 84。手推童车 80 可进一步包括储存篮 87。座椅支撑部分可具有能够牢固地将座椅支撑在手推童车上的任何设计。举例来说，座椅支撑部分 84 可类似于图 2 中所示的座椅支撑部分 20，但不具有车轮 23、斜撑 28、枢转连接 27 及 / 或车轮支撑框架 26。优选地，所述座椅支撑部分能够支撑座椅使得处于所述座椅中的儿童大致高于手推童车的框架。此提供对座椅的更容易接近、不阻挡对储存篮的接近、允许座椅的更通用配置、允许将更多种的座椅附接到所述框架且允许父母或其它监护者更容易地监视并看到每一座椅中的儿童。

[0045] 手推童车 80 包括手推童车座椅 86。手推童车座椅 86 位于邻近于把手部分 81c 处。手推童车座椅 86 可以固定方式附接到或以可拆卸方式附接到框架 81。在其中手推童车座椅 86 以可拆卸方式附接到框架 81 的手推童车 80 的实施例中，手推童车座椅 86 可被拆卸及重新放置成后向配置（参见图 9A）、由座椅支撑元件 84 上的幼儿提篮 91 或汽车座椅替换（参见图 9C）或者用座椅支撑元件 84 上的婴儿车 92 替换（参见图 9D）。手推童车 80 的实施例可包括邻近于把手部分 81c 的第二座椅支撑元件 89。包括第二座椅支撑元件 89 的手推童车 80 允许座椅被容易地拆卸并重新配置成不同定向或用不同样式的座椅替换。

[0046] 手推童车 80 的实施例包括第一座椅支撑元件 84。座椅支撑元件 84 连接到手推童车 80 的前车轮支撑框架 81a。座椅支撑元件 84 邻近于框架 81 的前车轮支撑部分 81a。

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所述座椅支撑元件能够将第二手推童车座椅 85 支撑在手推童车座椅 86 的前部。此为手推童车 80 的使用者提供方便性及多用性。座椅支撑元件可以固定方式附接到或以可拆卸方式附接到前车轮支撑部分 81a。前座椅 85 可大致定位于前车轮上方，使得手推童车保持稳定。优选地，所述座椅应经定位使得手推童车的重心在前车轮与后车轮之间。如果不，那么可在附接件上放置额外车轮，如先前所描述。座椅支撑元件 84 包括座椅连接器 88。座椅连接器 88 可为多用途的通用连接器，其允许在座椅支撑元件 84 上更换不同座椅。举例来说，任何样式的座椅可经配置以连接到所述座椅连接器，例如（但不限于）手推童车座椅、婴儿座椅、摇篮、婴儿车、婴儿吊篮或汽车座椅。

[0047] 所述手推童车附接件的实施例包括连接器部分及座椅支撑元件。所述连接器部分能够将所述座椅附接件连接到框架。

[0048] 在图 8 中所示的实施例中，手推童车 80 包括第一手推童车座椅 86 及第二手推童车座椅 85。展示手推童车座椅 86 呈前向配置且展示第二手推童车座椅 85 呈后向配置。座椅支撑元件 84 能够将座椅支撑在连接到车轮支撑部分 81a 的前车轮 82 上面。优选地，前座椅大致位于前车轮上方且后座椅大致位于后车轮上方。

[0049] 虽然在图 8 的侧视图中无法看到，但所述手推童车的典型实施例将包括两个座椅连接器部分。一个座椅连接器部分将支撑座椅的每一侧。所述连接器部分可为一件式或多个部分。

[0050] 图 9A 到图 9F 展示对于本发明的手推童车可能有的各种配置。这些配置不应被视为手推童车的所有可用配置且所属领域的技术人员基于本说明书及图式集将认识到许多额外可能性。依据前文将了解，虽然本文已出于说明的目的描述了本发明的特定实施例，但可做出各种修改，此并不背离本发明的精神及范围。因此，本发明不受除所附权利要求书以外的限制。

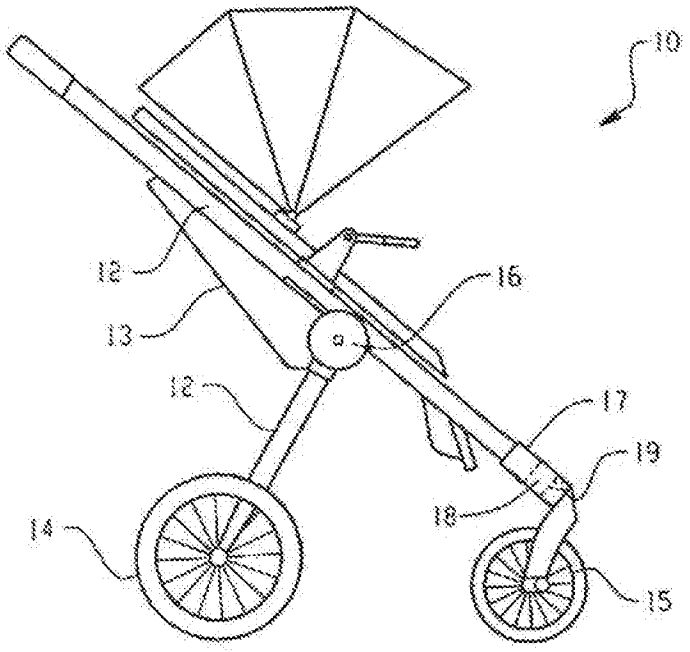

图 1

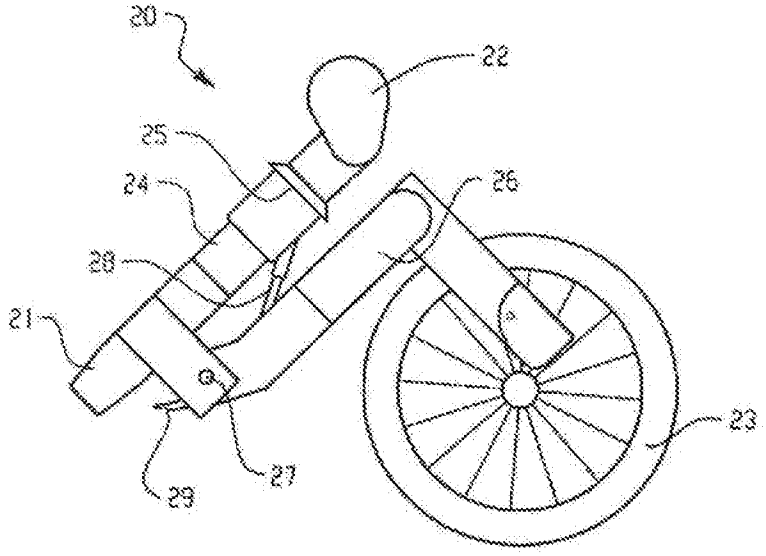

图 2

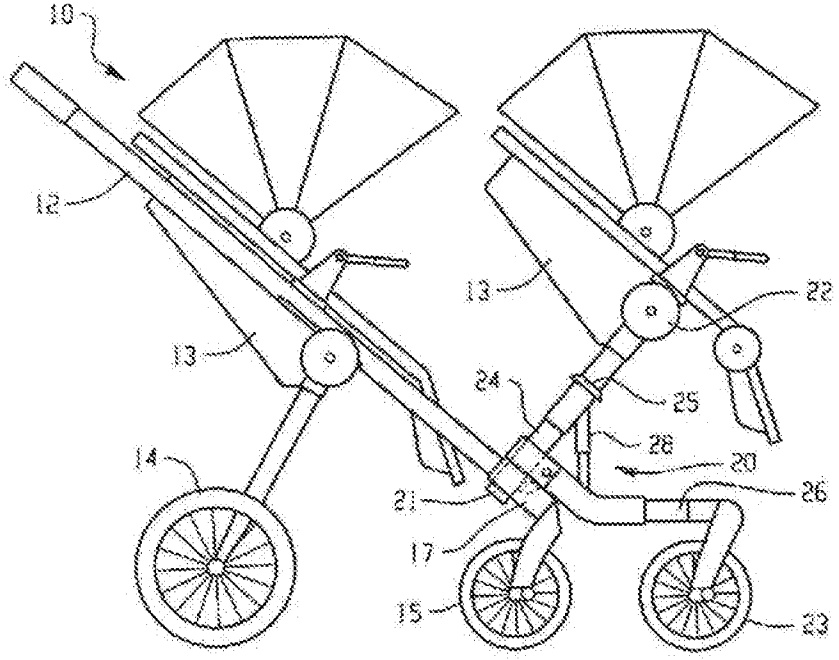

图 3

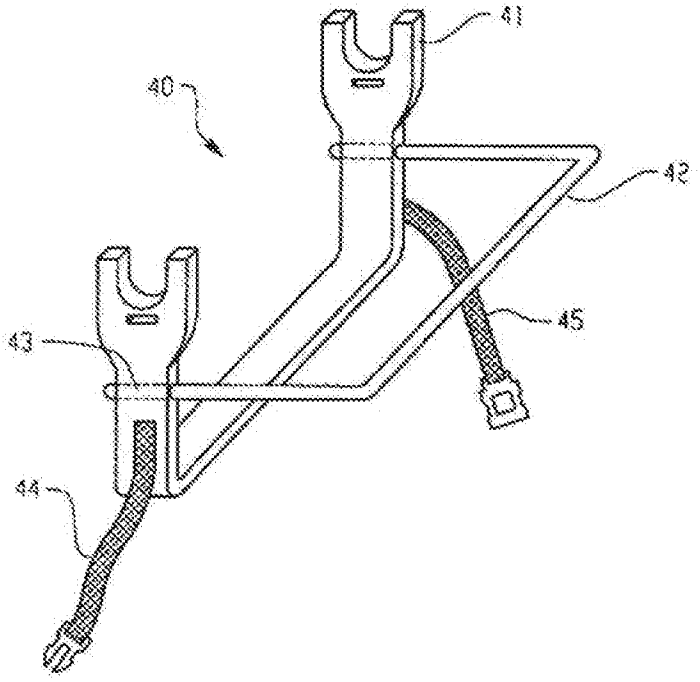

图 4

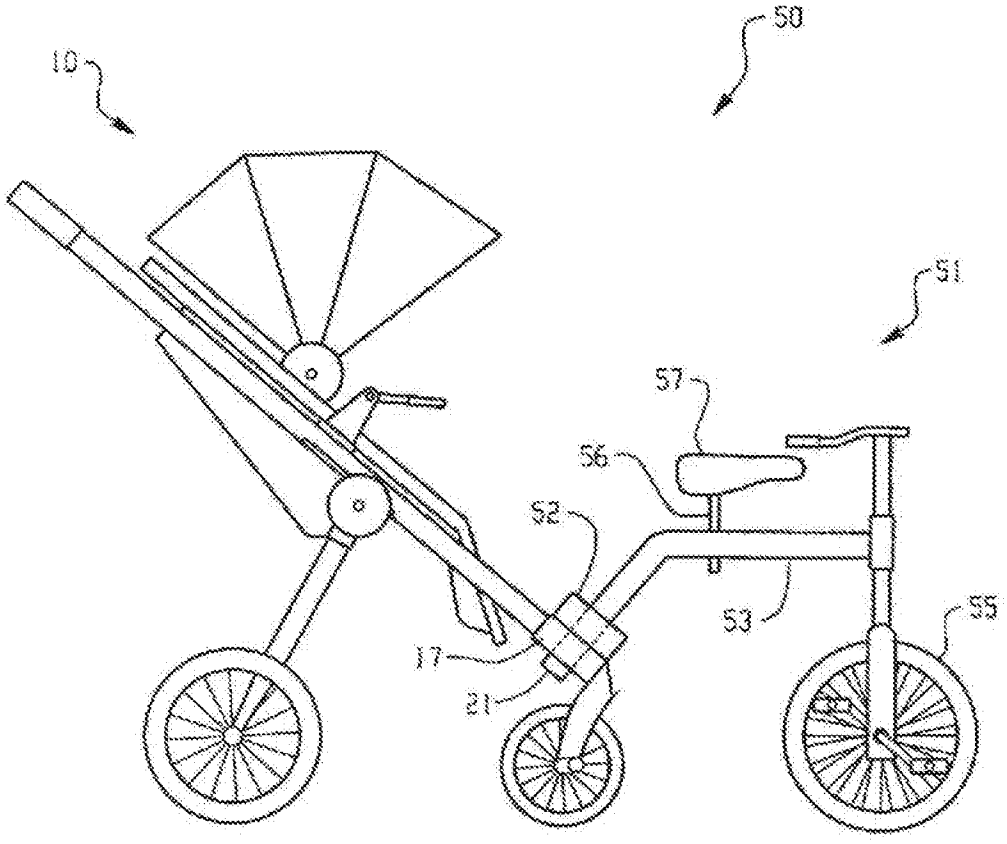

图 5

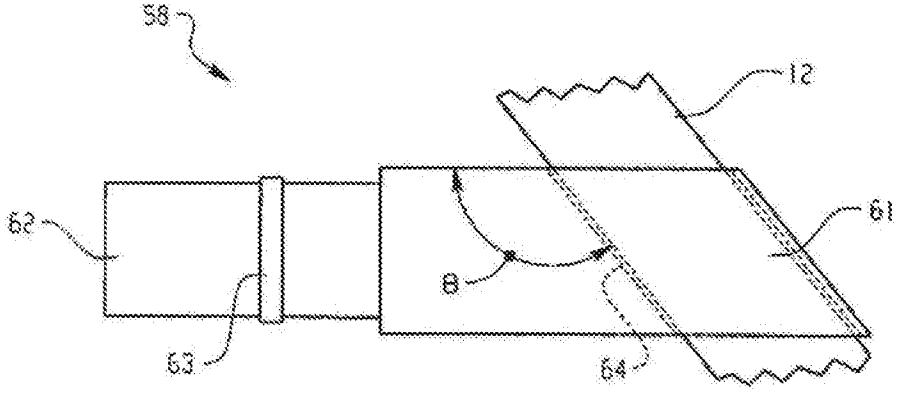

图 6A

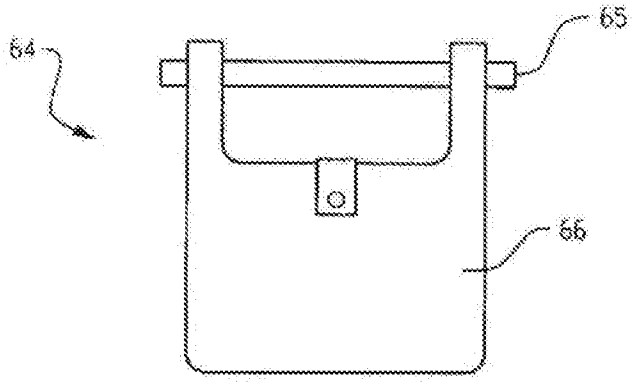

图 6B

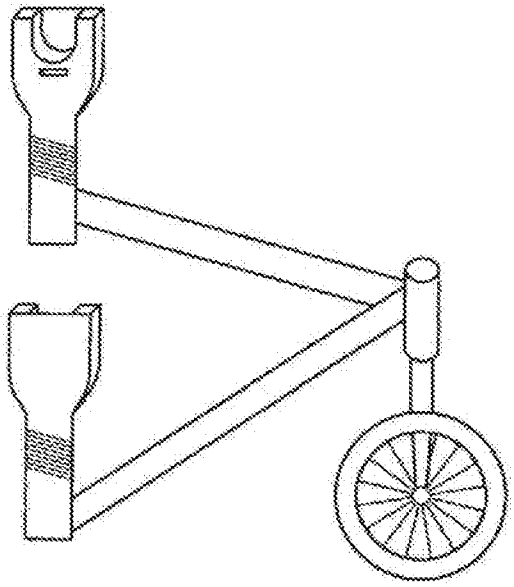

图 7

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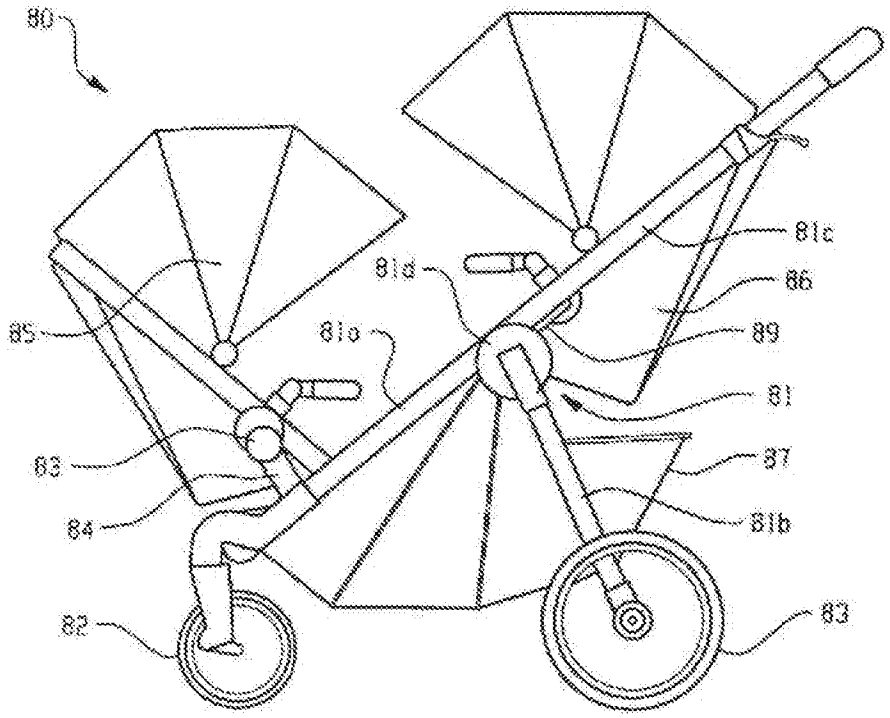
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图 8

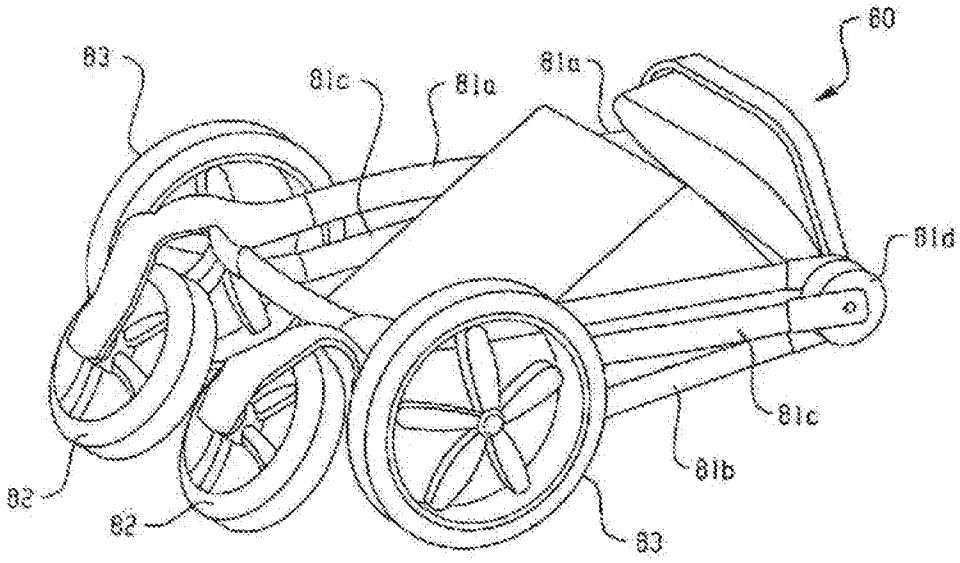
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图 8A

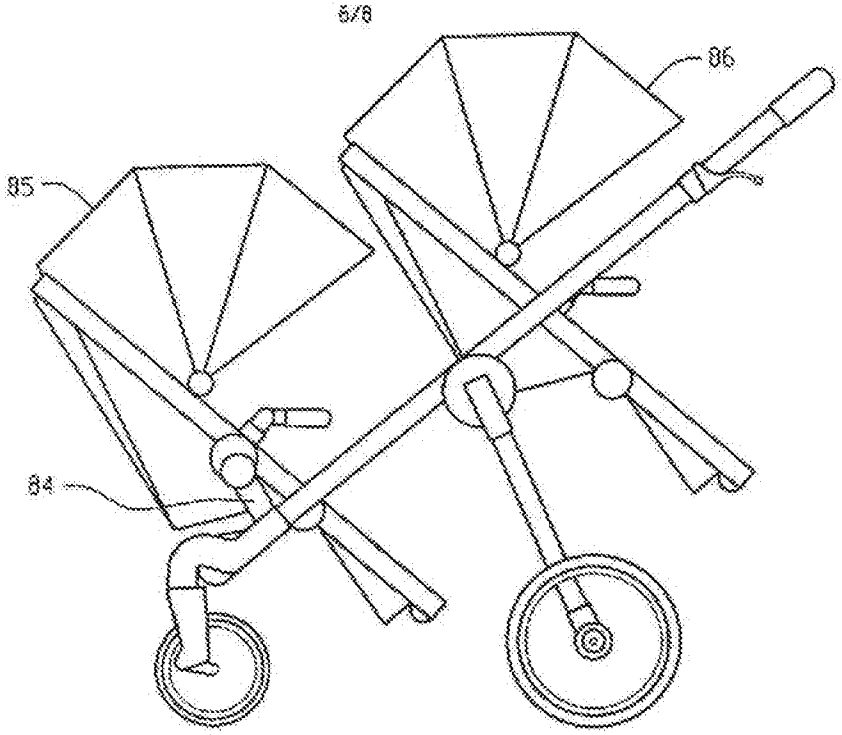

图 9A

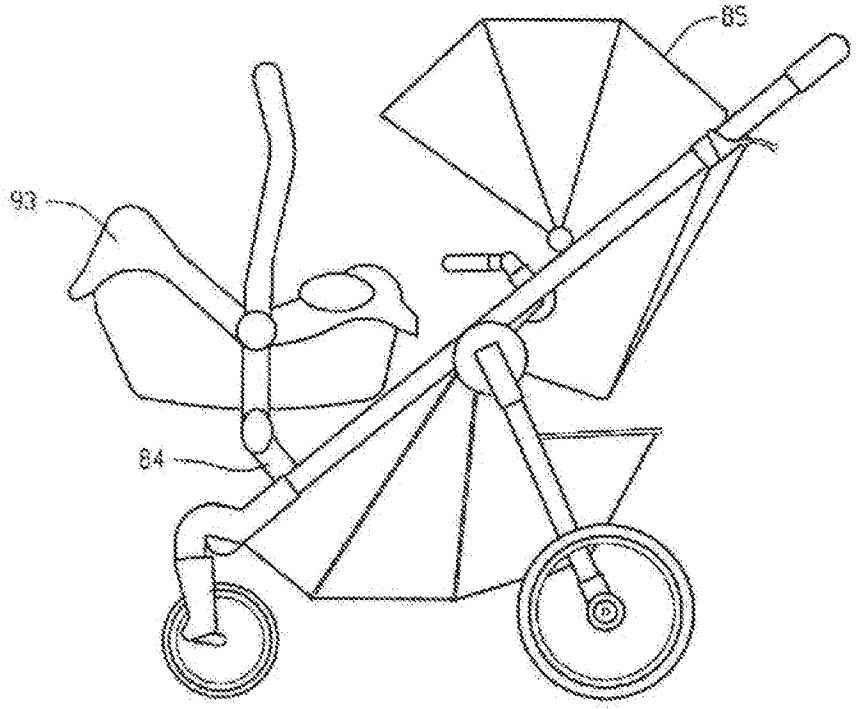

图 9B

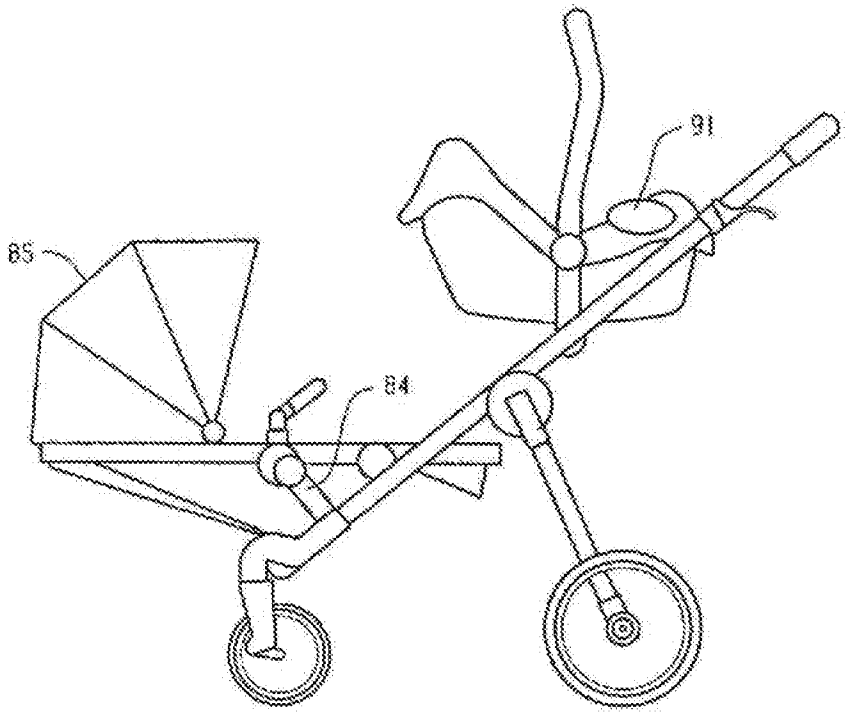

图 9C

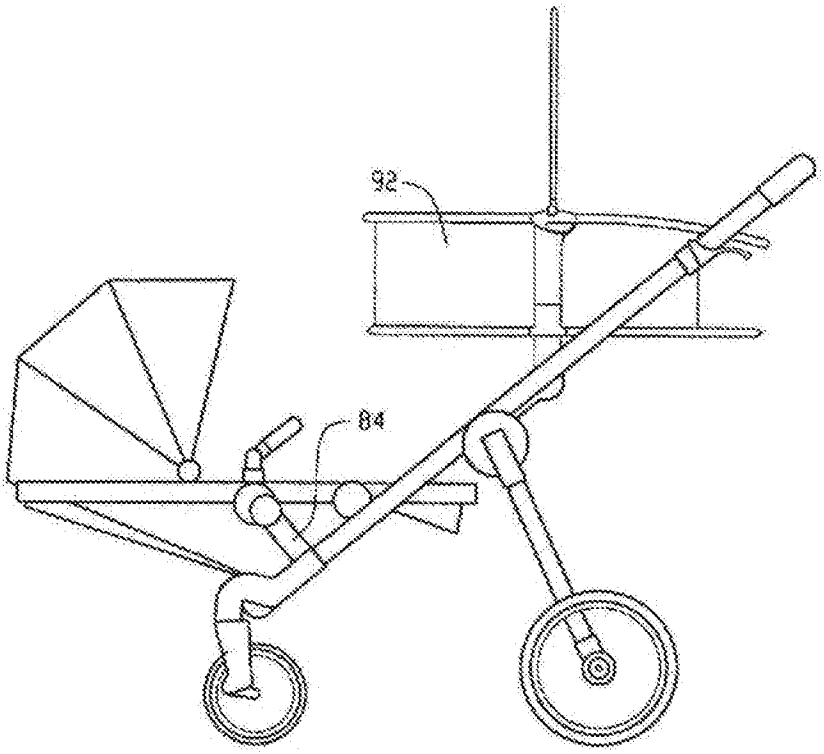

图 9D

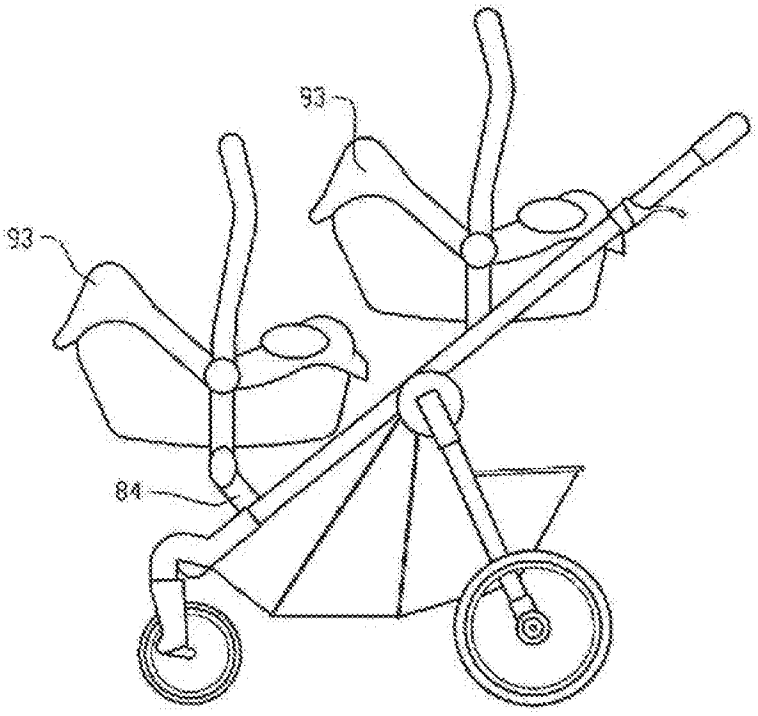

图 9B

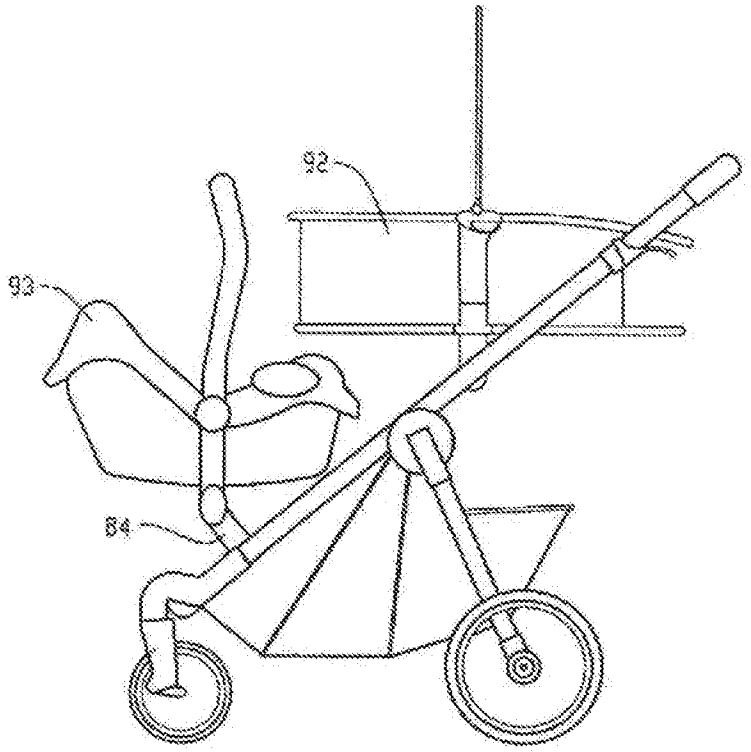

图 9F

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(54) Title: SEAT ATTACHMENT FOR A STROLLER

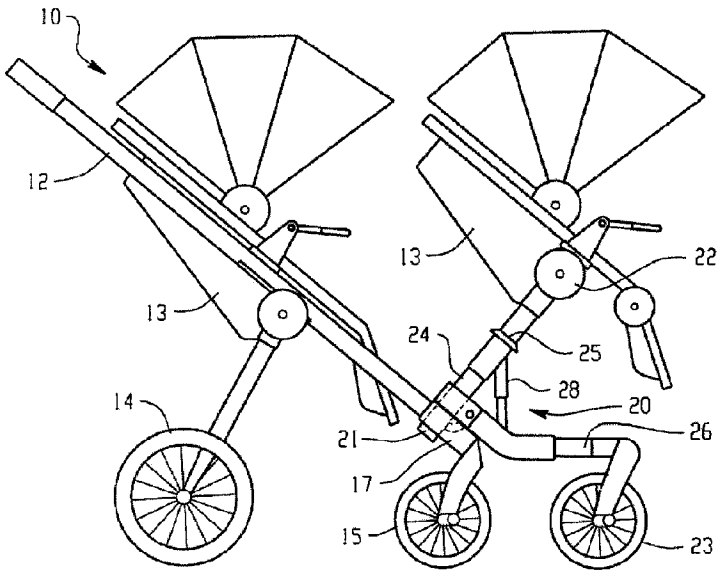

Fig. 3

(57) Abstract: The invention relates to a seat attachment for a stroller, single stroller and double strollers. Such a seat attachment may be used to reversibly convert a single stroller into a double stroller. More specifically, versions of the seat attachment relate to a seat attachment for a stroller capable of supporting a seat such as, but not limited to, a stroller seat, a baby seat, bassinet, a pram, a car seat, or a baby carrier, for example. The seat may be supported in front of a permanent seat of the stroller.

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TITLE

SEAT ATTACHMENT FOR A STROLLER

INVENTOR

Mark Zehfuss

TECHNICAL FIELD

[0001] The invention is directed to a seat attachment for a stroller, single stroller and double strollers. Such a seat attachment may be used to convert a single stroller into a double stroller. More specifically, embodiments of the invention are directed to a seat attachment for a stroller capable of supporting a seat such as, but not limited to, a stroller seat, a baby seat, bassinet, a pram, a car seat, or a baby carrier, for example. Embodiments of the seat attachment are capable of reversibly converting a single stroller into a double stroller.

BACKGROUND

[0002] Parents with multiple young children may have difficulty transporting their children from place to place. Children are slow, easily distracted and, therefore, may lag behind their parents while the parents are trying to complete shopping tasks or get exercise in a limited amount of time. In response, many parents have purchased double strollers allowing the parent or other guardian to push two children simultaneously and thus allow them to more efficiently run errands, take walks, or jog. As such, a double stroller allows the parents or guardians more freedom than they would have with only a single stroller, especially while trying to manage two sleeping children.

[0003] Though double strollers have certain advantages, double strollers also have disadvantages. Double strollers are substantially larger than single strollers and are, therefore, more difficult to maneuver through doors and down aisles in stores. Typically, the benefits of being able to accommodate two children greatly offset these disadvantages. However, when the parent or guardian has only one child with them, the benefits of the double stroller are not realized but the disadvantages still exist.

[0004] Therefore, parents often buy two or more strollers to use at different times; a single stroller for times when they only have one child with them and a double stroller for

when they need a stroller that will accommodate two children. This often creates its own set of problems. The multiple strollers must be stored and there is seldom room for both a folded double stroller and a folded single stroller in the trunk of a typical car or back of a sport utility vehicle.

[0005] Stroller manufacturers have attempted to solve this problem by providing a place for a second child to stand on the back of a single stroller or attachments that provide another seat for the second child that hangs under and slightly behind the seat of the single stroller. This provides a second seat for a child but the child is tucked close to the back of the front seat which may be uncomfortable, reduce the capacity of the under seat storage, and prevent the parent from hanging a bag on the handle bars.

[0006] There exists a need for a single stroller that may be conveniently converted to a double stroller. There is also a need for a conversion kit that converts the single stroller into a full double stroller that is capable of accommodating two children without loss of convenience for the parent or guardian.

SUMMARY OF THE INVENTION

[0007] Strollers are typically single strollers (strollers having one seat for transporting one child) or may also be double strollers (strollers having two seats for transporting two children). Embodiments of the invention are directed to a seat attachment for a stroller comprising an connector portion capable of connecting directly to a stroller frame or to an attachment frame member connected to the stroller frame; and a seat support element capable of supporting a seat. In certain embodiments, the attachment for a stroller comprises an attachment frame member having a first end and a second end. The first end may be capable of connecting the seat attachment to a stroller frame and the second end may be capable of connecting to the seat support element. The seat support element is thus capable of supporting a seat on the strolle. In more specific embodiments, the seat may be supported in either a forward or backward position.

[0008] Another embodiment comprises a stroller and seat attachment for the stroller, wherein the stroller comprises an attachment frame member connected to the frame of the stroller and the seat attachment for the stroller comprises a connector portion. The attachment frame member and the connector portion comprise components that are capable of being securely connected together. In certain embodiments, the attachment frame member and the connector portion comprise components that are capable of being securely and releasably connected together. In this manner, the seat attachment may be attached to the

stroller and a seat, as defined above, may be connected to the seat attachment, thus reversibly converting the single stroller into a double stroller.

[0009] In a further embodiment, the seat attachment for the stroller further comprises at least one wheel. The wheel may be connected to the seat attachment by a wheel support frame which may be rigidly attached or may be pivotally attached to the seat attachment. The wheel support frame may be connected to any section of the seat attachment, preferably the wheel support frame is pivotally connected to the back portion of the seat attachment in an area adjacent to the connector portion or connected near the middle of the attachment portion.

[0010] Embodiments of the seat attachment for a stroller may further comprise a folding mechanism. The folding mechanism may comprise a sliding member slidingly connected to the attachment portion and a folding frame member or strut having a first end connected to the sliding member and a second end connected to the wheel support frame. The folding mechanism allows the wheel support frame to pivot from a first position (in-use position), to a second position (a folded position). The attachment for the stroller also may comprise a locking mechanism that secures the attachment to a stroller in the in-use position and unlocks the attachment to allow the attachment to be connected or removed from the stroller when in the folded position. The locking mechanism may be a small protrusion attached to the wheel support frame that engages a corresponding aperture in the stroller or the stroller attachment portion to secure the attachment to the stroller. In the folded position, the protrusion is not engaged in the aperture.

[0011] A further aspect is directed to a double stroller. The double stroller may comprise a frame, wherein the frame comprises a handle portion, a front wheel support portion, a back wheel support portion, and a folding mechanism. Embodiments of the double stroller comprise a stroller frame comprising wheels, the frame, a first seat and a connector portion connected to the frame. The double stroller may further comprise a seat attachment frame comprising a wheel, a second seat, and a second attachment portion capable of connecting to the connector portion of the stroller frame. The second attachment portion may be releasably connected to the connector portion. Further, the second seat may be releasably connected to the seat attachment frame and is capable of supporting the second seat in either a forward or backward position.

[0012] A further embodiment of the double stroller comprises a first seat attachment capable of releasably supporting a first child seat and a second seat attachment capable of releasably supporting a second child seat. The seat attachments may comprise two seat connector portions for supporting the seat on both sides.

[0013] An still further embodiment of the double stroller comprises at least one first seat attachment adjacent to the front wheel support portion and a second seat attachment adjacent to each folding mechanism and/or the handle portion. The first seat attachment may be above at least one front wheel connected to the wheel support portion.

[0014] A still further embodiment of the stroller comprises a frame, at least one front wheel, at least one rear wheel, a first stroller seat with at least one first attachment portion permanently attached to the frame; and at least one releasably connected second seat attachment portion capable of supporting a second seat in front of the first stroller seat. As in other embodiments, the seat attachment may comprise two seat connectors. Either or both seat attachment portions may be a single part with two seat connectors or two separate pieces each comprising a seat connector.

[0015] In any of the above embodiments, the stroller, double stroller or attachment may comprise one or more of the following features; a sleeve for removably receiving the attachment portion. The seat attachment portion may comprise a protrusion having a complementary shape to the sleeve for inserting into the sleeve. Further, the second seat may be integral to the seat attachment.

[0016] Aspects of the stroller, double stroller and attachment are presented in various embodiments, however one skilled in the art will understand various variation and interchangeability of the components of the various embodiments which are intended to be included in the scope of the invention.

BRIEF DESCRIPTION OF THE FIGURES

[0017] Figure 1 shows an embodiment of a single stroller;

[0018] Figure 2 shows an embodiment of a seat attachment to convert a single stroller into a double stroller;

[0019] Figure 3 shows the combination of the single stroller of Figure 1 attached to the seat attachment of Figure 2;

[0020] Figure 4 shows an embodiment of a seat attachment capable of supporting a car seat on an attachment of Figure 2;

[0021] Figure 5 shows a combination of the single stroller of Figure 1 attached to an embodiment of the attachment in the form of a tricycle-like riding device; and

[0022] Figure 6A shows an accessory attachment for supporting an accessory on a stroller; Figure 6B shows a bag or purse for attaching to the accessory attachment of Figure 6A.

[0023] Figure 7 shows an attachment for supporting a seat comprising one wheel.

[0024] Figure 8 shows an embodiment of a stroller reversibly that is capable of being converted from a single stroller to a double stroller comprising an attachment portion that does not comprise a wheel.

[0025] Figures 9A, 9B, 9C, 9D, 9E, and 9F show various configurations of the embodiments of the stroller shown in Figure 8.

DESCRIPTION

[0026] The invention relates to an accessory, attachment, or conversion kit (hereinafter "seat attachment") for a stroller. As discussed above, parents or guardians may find themselves in a situation wherein it is more convenient to transport two children in a stroller, but at the same time find it inconvenient to have both a single stroller and double stroller. Embodiments of the seat attachment solve this problem. In one aspect, an embodiment of the seat attachment for a stroller is capable of converting a single stroller into a double stroller. The seat attachment may support a seat such as, but not limited to, a stroller seat, a baby seat, a bassinet, a pram, a baby carrier, or a car seat, for example. Therefore, the parent or guardian does not require both a single stroller and a double stroller. A stroller configured to receive a seat attachment for converting a single stroller into a double stroller provides convenience to the user. The single stroller may be connected to a double stroller by attaching the seat attachment to the single stroller and then attaching the second seat. As such, an embodiment of the seat attachment for converting a single stroller into a double stroller comprises at least one connector portion capable of connecting to a stroller frame and a seat support element capable of supporting a seat. The seat attachment may optionally comprise at least one wheel for additional support and stability, however, for more convenience, embodiments of the attachment do not include a wheel. In certain embodiments, a wheel may stabilize the double stroller, but in other embodiments of the attachment the wheel may not be desirable or necessary. Additional embodiments of the attachment comprise a cart, wagon, tricycle-like attachment, or other riding toy that may be connected to the stroller, for example. A tricycle-like attachment would allow a child to ride or be pushed in front of the stroller.

[0027] A side view of an embodiment a single stroller 10 is shown in Figure 1. As a note, Figure 1 shows only one side of the single stroller 10, however, most components include a complementary component on the other side of the single stroller but are not shown in Figure 1. The single stroller 10 comprises a frame 12 that supports seat 13. The frame 12 may, optionally, include at least one, preferably two, folding mechanism 16 that allows the stroller 10 to be folded to a more convenient size for storing or transporting the stroller 10.

[0028] In this embodiment, the seat 13 is shown as a typical stroller seat, however, other types of seats may be used in a single stroller. The seat 13 may be permanently affixed to the frame 12 or releasably connected such that it is capable of being removed and substituted with a different seat. As used herein, "releasably connected" or "releasably attached" means the connection is not a permanent connection and that the connection is capable being of connected and disconnected by the user of the stroller without requiring special tools or special skills. Releasable connections include, but are not limited to, buttons, snaps, friction fittings, interference fits, threaded connections, locking tabs, keyed connections, other fasteners, or the like. On stroller 10 of Figure 1, the frame 12 is supported on a pair of back wheels 14 and a pair of front wheels 15. In this embodiment, back wheels 14 are fixed and do not swivel or pivot on the frame. The pair of front wheels 15 on the single stroller 10 pivot to make turning the single stroller 10 easier and more convenient. Though, pivoting wheels may be preferred in certain strollers, strollers with fixed non-pivoting wheels are also common. It should be noted that a single stroller does not require pairs of front or rear wheels and either the front pair of wheels 15 or the back pair of wheels 14 may be substituted with a single wheel. Conventionally, many single strollers, including umbrella strollers, jogging strollers, all-terrain strollers, as well as other strollers may only include one front wheel. Embodiments of the seat attachment of the invention may be capable of converting any style of stroller to a double stroller, including strollers with one or two front wheels.

[0029] The embodiment of the stroller 10 comprises two attachment frame members 17. The connector portions are preferably on the front of the stroller to allow the seat attachment and the seat to be connected to the front of the stroller 10. The attachment frame members 17 allow a seat attachment such as the seat attachment for converting the single stroller 10 to a double stroller, as shown in Figure 3, to be connected to the stroller. Only one seat attachment is shown in Figure 3, the stroller 10 would use two seat attachments as shown in Figure 3 or one seat attachment comprising two seat support elements. The embodiment of the stroller 10 has a left side and right side attachment frame members 17. An embodiment

of a seat attachment of stroller 10 will comprise corresponding connector portions capable of connecting to the stroller frame at the attachment frame members 17. Though the seat attachment for the stroller is described in relation to a single stroller, the attachment may similarly be attached to a double stroller. Embodiments of the seat attachment may therefore be used to convert a double stroller into a triple stroller, if desired.

[0030] An embodiment of a seat attachment 20 of the invention is shown in Figure 2. The seat attachment of Figure 2 is in an unlocked and folded configuration. The seat attachment 20 comprises a pair of connector portions 21 capable of connecting to the attachment frame members 12, two seat attachment elements 22 capable of supporting a seat; and a wheel 23. In this embodiment, the connector portions are connected to the rear of the seat attachment 20 allowing the seat attachment 20 to be connected to the front of a stroller, such as stroller 10 shown in Figure 1. Other embodiments of the seat attachment may include more than one wheel, one connector portion, one seat support element, or combinations of these elements. In an embodiment of the stroller with one wheel, the attachment frame member may be on the forks of the front wheel, for example.

[0031] The seat attachment 20 comprises a wheel support frame 26 connecting the wheel 23 to the attachment frame member 24 of the attachment 20. Each attachment frame member 24 has a first and a second end. The first end is capable of connecting to a stroller frame and the second end is connected to the seat support element 22. The embodiment of the seat attachment 20 comprises a wheel support frame 26 that is pivotally connected to two attachment frame members 24. The wheel support frame 26 or the attachment frame 24 may span the width of the stroller between the two attachment frame members 17. The pivotal connection 27 allows the seat attachment to be folded and conveniently stored or transported but is not necessary for the invention. The pivotal connection is optional and provides more convenience, however, embodiments of the attachment may comprise a releasably connected wheel support frame or a rigid frame that may be incorporated to produce a seat attachment that has greater strength for use in situations wherein a stronger seat attachment may be desired such as with all-terrain or jogging strollers, for example. The wheel support frame may be connected at any point on the attachment frame, preferably the wheel support frame is connected near the connector portion 21 or near the middle of the attachment frame 24.

[0032] An embodiment of the seat attachment without a wheel may include connector portion 21 or attachment frame member 24, and seat attachment member 22, for example. In such an embodiment, there would be no need for pivotal connection 27, wheel support frame 26, sliding connector 25, or wheel 23.

[0033] The seat attachment 20 comprises a folding mechanism comprising a sliding connector 25 connected to a first end of strut 28. A second end of strut 28 is pivotally connected to wheel support frame 26. In such an embodiment, the sliding connector 25 may be moved between a first position and a second position on the attachment frame member 24. As the sliding connector 25 is moved, strut 28 pushes the wheel support frame 26 from an in-use position to a storage position. The storage position is more compact as shown in Figure 2. In addition, the embodiment of the seat attachment 20 comprises a locking mechanism 27 that is capable of securing the seat attachment 20 to a stroller, such as stroller 10 shown in Figure 1. The locking mechanism 29 is engaged by moving the sliding connector 25 to the in-use position in which the wheel support frame 28 and wheel 23 are extended. In an embodiment of the seat attachment 20 for the stroller 10, the wheel of the seat attachment 20 is pivotally connected to the connector portion and when the wheel is in the in-use position the releasable connection is locked and when the wheel 23 is moved to the storage position, the releasable connection is unlocked allowing the seat attachment 20 to be removed from stroller 10. The seat attachment 20 may be stored and stroller 10 may be conveniently used as a single stroller. As designed, the seat attachment 20 may be reconnected to stroller 10 for use as a double stroller. In any embodiment of the invention, the seat attachment portion may be secured into position on the stroller frame and a locking mechanism may be used with an embodiment with or without the wheel. Either the seat attachment or the stroller frame may comprise a locking mechanism for securing the stroller and seat attachment together. The locking mechanism may be any mechanism capable of securing the components together during use and may be a friction locking device, threaded connection, peg in a hole, or an interference locking device such as a pin in a hole or slot, for example. In embodiment 20 shown in Figure 2, the locking mechanism 29 pivots with wheel support frame 26 as the attachment 20 is moved from an unfolded position to a folded position. The locking mechanism 29 may slide into a hole or notch in the attachment frame member of stroller 10 shown in Figure 1. As such, the attachment 20 may be attached to stroller 10 by positioning attachment portion 21 of attachment 20 in slot 18 of attachment portion 17 of stroller 10. The sliding connector 25 may be moved to the in-use position, wheel support frame is moved and locking mechanism 29 is positioned into locking slot 19 of stroller 10.

[0034] The connector portion 21 of the embodiment of the seat attachment 20 has a cylindrical shape. The connector portion 21 may be inserted into a cylindrical recess 18 of the attachment frame member 17 of stroller 10 of Figure 1 to secure the seat attachment and convert the single stroller into a double stroller, as shown in Figure 3. Other embodiments of

the seat attachment may include any type of connector portion. The connector portion may be of a solid or tubular construction and may be any cross-sectional shape including, but not limited to, circular, polygonal, square, rectangular, and triangular, for example. Other attachment mechanisms may be utilized to connect the seat attachment to the stroller such as, but not limited to, a U-shaped bracket, a U-bolt, a pipe clamp, O-shaped bracket, screw, bolt, or other clamping or attachment means. The attachment frame member of the stroller has a complimentary and cooperating shape that allows the connector portion to be secured to the attachment portion of the stroller.

[0035] In Figure 3, the seat attachment 20 of Figure 2 is shown connected to the single stroller 10 of Figure 1 forming a double stroller. The double stroller configuration is shown with two stroller seats 13 in an inline configuration, though the other configurations, such as a stroller seat and a bassinet or a pram may also be supported on the double stroller. Further, the seat support element of the seat attachment may be capable of supporting the front stroller seat in either a forward or backward position.

[0036] The embodiment of the stroller 10 is shown only as an example of one type of stroller, the frame of the stroller may be any of many possible configurations. Embodiments of the accessory of the invention may be configured to be used on any such configuration of a stroller. For example, a different embodiment of the baby stroller may not include two front wheels, may not include a folding mechanism or may only include only one folding mechanism. In addition, the baby stroller may include additional features not included in baby stroller 10. For example, the stroller may optionally comprise fixed front wheels, an entirely different frame configuration, or a storage basket underneath the seat of the stroller.

[0037] The seat support member may be any configuration capable of supporting the seat on the seat attachment. Another embodiment of a seat support member for use with a car seat or other baby seat is shown in Figure 4. The embodiment of the seat support member 40 of Figure 4 comprises a main support 41. The main support 41 comprises a cradle for supporting a central portion of the seat. Another portion of the seat may rest against support bar 42. In this embodiment, support bar 42 may be adjusted to accommodate seats of different shapes and sizes. Support bar 42 may be slid within aperture 43 and locked in place when in the desired position to support a certain seat. The seat is, therefore, supported on two main supports 41 and support bar 42. The seat may be further secured in the seat attachment member 40 by wrapping belts 44 and 45 around the seat and locking the belts in this position with a buckle or other securing means.

[0038] Another embodiment of a seat attachment for a stroller is shown in Figure 5. The combination 50 comprises stroller 10 and seat attachment 51. Seat attachment 51 is a tricycle-like attachment comprising an connector portion 52, a frame 53 with a seat support element 56, a seat 57, and wheel 55. The tricycle-like attachment may be attached to stroller 10 to allow one child to be pushed in the stroller 10 and one child to ride the seat attachment 51. The seat attachment may be other shapes also such as cars, trucks, or animal shapes, for example.

[0039] The embodiment of the stroller 10 of Figure 5 comprises an additional accessory attachment portion 58. The accessory attachment portion 58 attaches to a frame member of stroller 10. An embodiment of the accessory attachment portion 58 is shown on Figure 6A. This embodiment is particularly useful for attaching a bag or purse 64, as shown in Figure 6B, to stroller 10.

[0040] When using a stroller, parents or guardians typically carry other items, such as purses, grocery bags, cell phones, diapers, cleaning wipes, or other personal or baby related items. Some strollers have bottom storage baskets for placing such items. However, these storage baskets can be inconvenient to access or some light weight strollers do not include such storage. Therefore, users of the stroller may hang purses or shopping bags on the handle of the stroller. This is convenient in that the bag is easy to access, but the weight of the bag on the handle may cause the stroller to be unbalanced and increase the tendency of the stroller to topple backwards. A heavy bag hung from the handle of a stroller may cause the stroller to tip backwards even with a child in the seat. The problem is worse if the stroller is facing uphill, on uneven terrain, being pushed up a curb, or occupied by a small child. The attachment portion may be attached to the frame of a stroller by any of the clamping or attachment methods described above, for example. Preferably, accessory attachment 58 is attached near the center of gravity of the stroller 10 to avoid creating an unbalanced condition of the stroller. An embodiment of the accessory attachment 58 is shown in Figure 6A. Accessory attachment 58 is shown connected to stroller frame 12 of stroller 10 in Figure 1 near the folding mechanism. Embodiments of the accessory comprise a first end 61 for connecting to a stroller frame and a second end 62 for releasably connecting to the accessory. The first end 61 comprises an aperture 64 that may be connected to frame 12 of the stroller 10. In certain embodiments, the aperture 64 is on an angle – such that when the axis of the accessory attachment portion 58 is substantially horizontal. The accessory attachment 58 may, optionally, comprise a rib for securing the accessory to the accessory attachment 58.

The rib as shown in Figure 6A may be replaced with any other locking element or securing means including a friction fitting, a screwed fitting, interference fitting, for example.

[0041] One example of an accessory for attaching to an accessory attachment 58 is shown in Figure 6B. The accessory is a bag or purse 64. The accessory includes an attachment portion 65 that is capable of being secured to the attachment portion 62 on the accessory attachment 58. The bag or purse 64 may be secured on stroller 10 by securing attachment portion 65 to attachment portion 62. The attachment portion 65, as shown, slides over the cylindrical attachment portion 62 of accessory attachment 58. Attachment portion 65 may include an interior annular recess that receives rib 63 securing the bag or purse 58 to stroller 10. The bag or purse 64 is thus secured to the stroller 10 in a center portion of the stroller as viewed from the side. Therefore, the bag or purse 64 is conveniently secured to stroller 10 while not contributing to an unbalanced condition of the stroller 10.

[0042] A further embodiment of the stroller 80 is shown in Figure 8. Stroller 80 may be easily converted from a single stroller comprising one seat to a double stroller comprising two seats without addition of another wheel on the attachment. Stroller 80 comprises a frame 81 capable of supporting the stroller seat 86. In this embodiment, the frame 81 comprises a front wheel support portion 81a, a back wheel support portion 81b, and a handle portion 81c. The frame 81 of the embodiment of the stroller 80 further comprises a folding mechanism 81d that connects front wheel support portion 81a, a back wheel support portion 81b, and a handle portion 81c. The folding mechanism 81d allows the stroller to be folded in a more compact size for storing or transportation. Figure 8A shows stroller 80 in a folded configuration.

[0043] Stroller 80 further comprises at least one front wheel 82 (both front wheels 82 of stroller 80 may be seen in Figure 8A), at least one rear wheel 83 (both rear wheels 83 of stroller 80 may be seen in Figure 8A), a stroller seat 86, and a seat support portion 84 capable of supporting a second seat in front of the stroller seat. The stroller 80 may further comprise a storage basket 87. Seat support portion may be of any design capable of securely supporting a seat on the stroller. For example, the seat support portion 84 may be similar to seat support portion 20 shown in Figure 2 without the wheel 23, the strut 28, pivotal connection 27, and/or the wheel support frame 26. Preferably, the seat support portion is capable of supporting a seat such that a child in the seat is substantially above the frame of the stroller. This provides easier access to the seat, does not block access to the storage basket, allows more versatile configurations of the seats, allows more variety of seats to be

attached to the frame, and allows the parent or other guardian to more easily monitor and see the child in each seat.

[0044] Stroller 80 comprises a stroller seat 86. The stroller seat 86 is located adjacent to handle portion 81c. The stroller seat 86 may be fixedly attached or removably attached to frame 81. In embodiments of the stroller 80 wherein stroller seat 86 is removably attached to frame 81, the stroller seat 86 may be removed and replaced in a backward facing configuration, see Figure 9A, be replaced by a infant carrier 91 or car seat on seat support element 84, see Figure 9C, or replaced with a pram 92 on seat support element 84, see Figure 9D. Embodiments of the stroller 80 may comprise a second seat support element 89 adjacent to the handle portion 81c. A stroller 80 comprising a second seat support element 89 allows the seat to be easily removed and reconfigured to a different orientation or replaced with a different style seat.

[0045] Embodiment of the stroller 80 comprises a first seat support element 84. The seat support element 84 is connected to the stroller 80 front wheel support frame 81a. The seat support element 84 is adjacent to the front wheel support portion 81a of frame 81. The seat support element is capable of supporting a second stroller seat 85 in front of the stroller seat 86. This provides convenience and versatility to a user of stroller 80. Seat support element may be fixedly attached or removably attached to front wheel support portion 81a. The front seat 85 may be positioned substantially over the front wheels so the stroller remains stable. Preferably, the seats should be positioned such that the center of gravity of the stroller is between the front and rear wheels. If not an additional wheel may be placed on the attachment as previously described. Seat support element 84 comprises a seat connector 88. Seat connector 88 may be a multipurpose general connector that allows different seats to interchanged on the seat support element 84. Any style seat may be configured to connect to the seat connector, such as but not limited to, a stroller seat, a baby seat, a bassinet, a pram, a baby carrier, or a car seat, for example.

[0046] An embodiment of the stroller attachment comprises a connector portion, and a seat support element. The connector portion is capable of connecting the seat attachment to the frame.

[0047] In the embodiment shown in Figure 8, stroller 80 comprises a first stroller seat 86 and a second stroller seat 85. Stroller seat 86 is shown in the forward facing configuration and second stroller seat 85 is shown in a backward facing configuration. The seat support element 84 is capable of supporting the seat above the front wheel 82 connected to the wheel

support portion 81a. Preferably, the front seat is located substantially over the front wheels and the back seat is located substantially over the rear wheels.

[0048] Though it can not be seen in the side view of Figure 8, a typical embodiment of the stroller will comprise two seat connector portions. One seat connector portion will support each side of the seat. The connector portion may be one piece or multiple parts.

[0049] Figures 9A through 9F show various configurations that are possible with the stroller of the invention. These configurations are not to be considered to be all available configurations of the stroller and one skilled in the art would recognize many additional possibilities based upon this specification and set of drawings. From the foregoing it will be appreciated that, although specific embodiments of the invention have been described herein for purposes of illustration, various modifications may be made without deviating from the spirit and scope of the invention. Accordingly, the invention is not limited except as by the appended claims.

CLAIMS

1. A seat attachment for a stroller, comprising:

an attachment frame member comprising a connector portion capable of connecting to a stroller frame; and

a seat support element capable of supporting a seat;

2. The seat attachment of claim 1, comprising:

a wheel.

3. The seat attachment for a stroller of claim 2, further comprising a wheel support frame connecting the wheel to the attachment frame member.

4. The seat attachment for a stroller of claim 3, wherein the wheel support frame is pivotally connected to the attachment frame member.

5. The seat attachment for a stroller of claim 4, wherein the wheel support frame is pivotally connected near the middle of the attachment frame member.

6. The seat attachment for a stroller of claim 5, further comprising a folding mechanism.

7. The seat attachment for a stroller of claim 6, wherein the folding mechanism comprises a sliding connector slidingly connected to the attachment frame member and a strut having a first end connected to the sliding member and a second end connected to the wheel support frame.

8. The seat attachment for a stroller of claim 4, wherein the wheel support frame is capable of pivoting from a first position to a second position.

9. The seat attachment for a stroller of claim 8, wherein the first position is a locked and in-use position and the second position is an unlocked and folded position.

10. The seat attachment for a stroller of claim 1, wherein the seat is a baby seat, a car seat, a stroller seat, a bassinet, or a pram.

11. The seat attachment for a stroller of claim 1, wherein the attachment frame member has a first end and a second end.

12. The seat attachment for a stroller of claim 11, wherein the first end is capable of connecting to a stroller frame.

13. The seat attachment for a stroller of claim 12, wherein the second end is connected to the seat attachment member.

14. The seat attachment for a stroller of claim 1, wherein the seat support element is capable of supporting a seat in either a forward or backward position.

15. The seat attachment for a stroller of claim 1, further comprising a stroller seat, wherein the seat support element is capable of supporting the stroller seat in either a forward or backward position.

16. A double stroller, comprising:

a stroller frame comprising wheels, a frame, a first seat and an attachment frame member connected to the frame;

a seat attachment comprising a wheel, a second seat, and a connector portion capable of connecting to the attachment frame member.

17. The double stroller of claim 12, wherein the connector portion is capable of being releasably connected to the attachment frame member.

18. The double stroller of claim 12, wherein the second seat is releasably connected to the seat support element.

19. The double stroller of claim 18, wherein the seat support element is capable of supporting the second seat in either a forward or backward position.

20. A double stroller, comprising:

a first seat attachment capable of removably supporting a child seat; and

a second seat attachment capable of supporting a child seat.

21. The double stroller of claim 20, wherein each seat attachment comprises two seat connector portions.

22. The double stroller of claim 20, wherein the child seat is one of a stroller seat, a baby carrier, a bassinet, a pram, or a car seat.

23. The double stroller of claim 20, comprising a frame, wherein the frame comprises a handle portion, a front wheel support portion and a back wheel support portion.

24. The double stroller of claim 23, wherein a first seat attachment is adjacent to the front wheel support portion.

25. The double stroller of claim 24, wherein the first seat attachment is above at least one front wheel connected to the wheel support portion.

26. The double stroller of claim 25, wherein the second seat attachment is adjacent to the handle portion.

27. The double stroller of claim 23, further comprising a folding mechanism that connects the handle portion, the front wheel support portion, and the back wheel support portion.

28. A stroller, comprising:

a frame;

at least one front wheel;

at least one rear wheel;

a stroller seat; and

a seat attachment portion capable of supporting a second seat in front of the stroller seat.

29. The stroller of claim 28, wherein the seat attachment portion comprises two seat connectors.

30. The stroller of claim 29, wherein the seat attachment portion is removably connected to the frame.

31. The stroller of claim 30, wherein the seat attachment portion comprises two portions each comprising one seat connector.

32. The stroller of claim 30, wherein the frame comprises a sleeve for removably connecting the seat attachment portion to the frame.

33. The stroller of claim 28, wherein the second seat is one seat selected from a stroller seat, an infant carrier, a bassinet, a pram, or a car seat.

34. The stroller of claim 33, wherein the second seat is integral to the seat attachment portion.

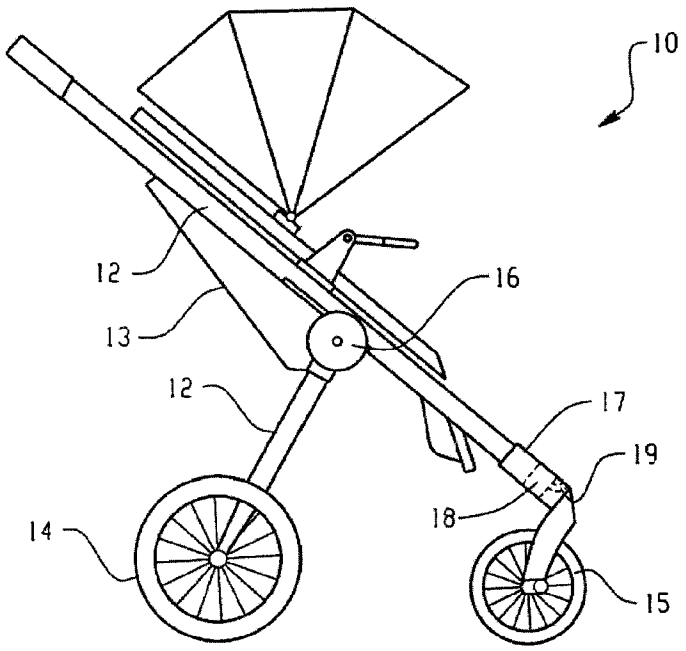


Fig. 1

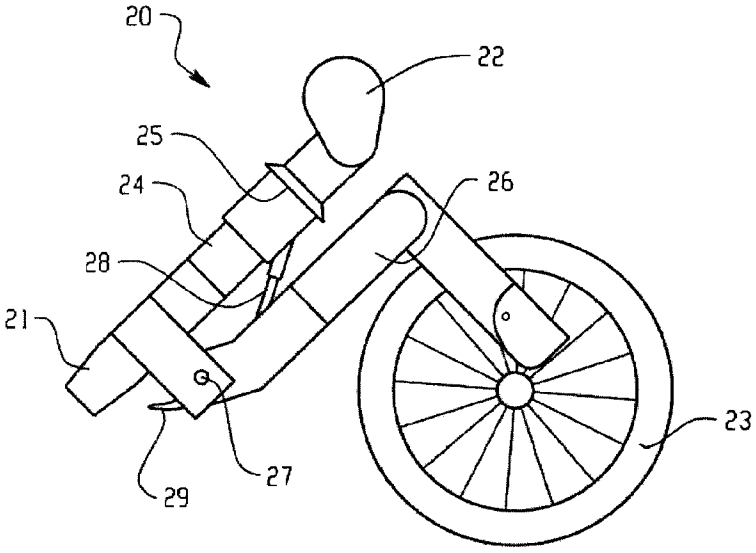


Fig. 2

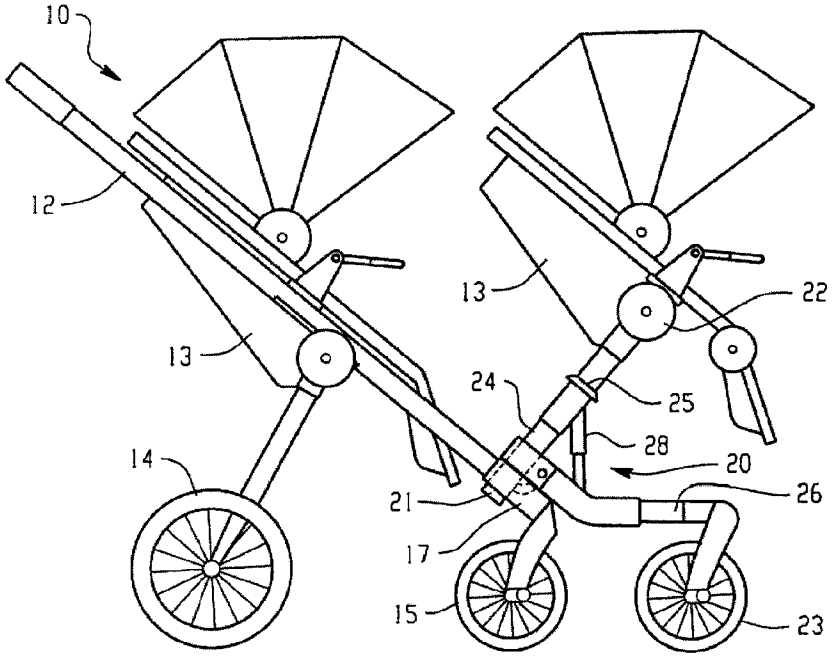


Fig. 3

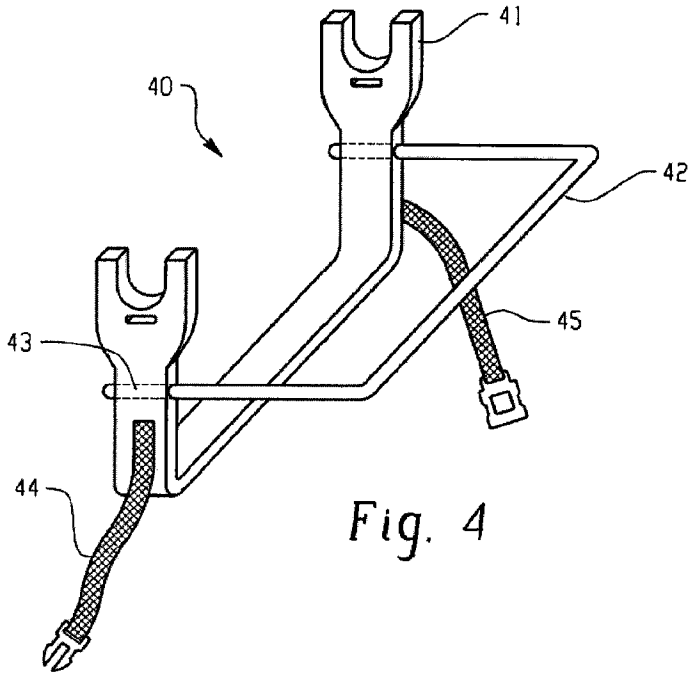


Fig. 4

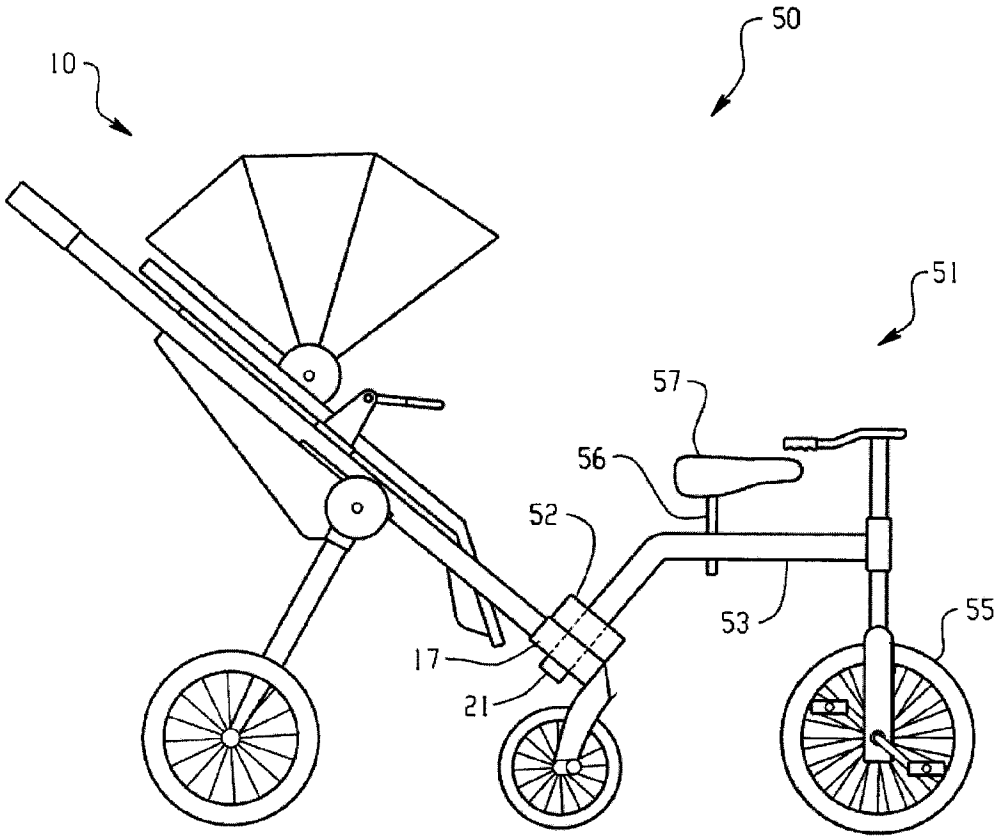


Fig. 5

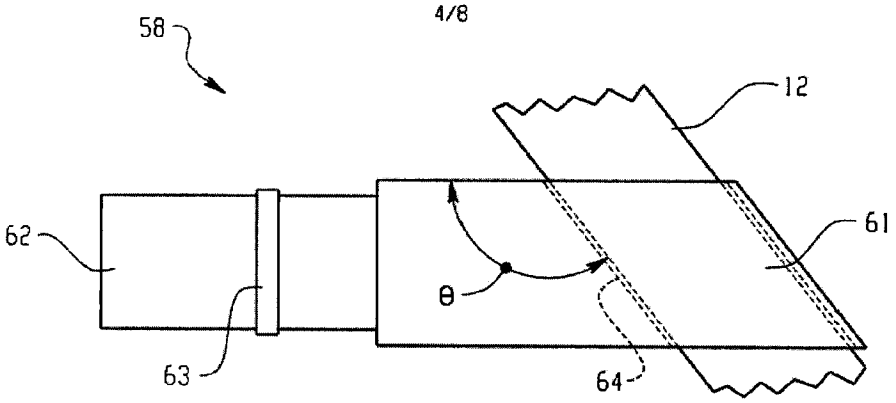


Fig. 6A

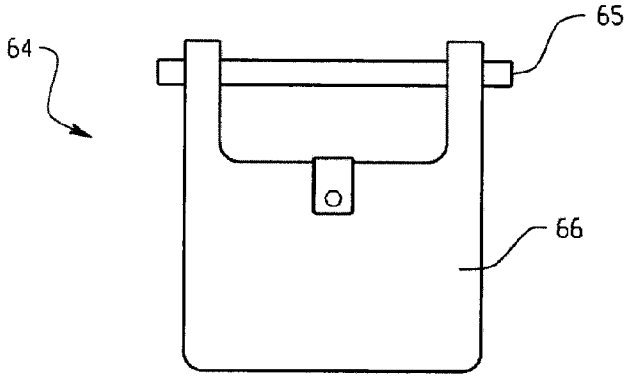


Fig. 6B

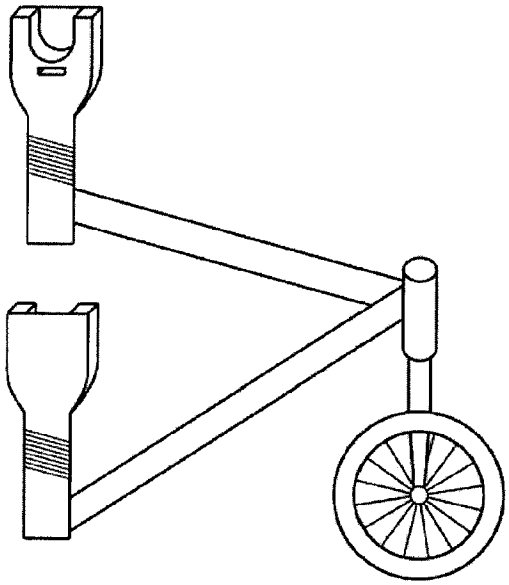


Fig. 7

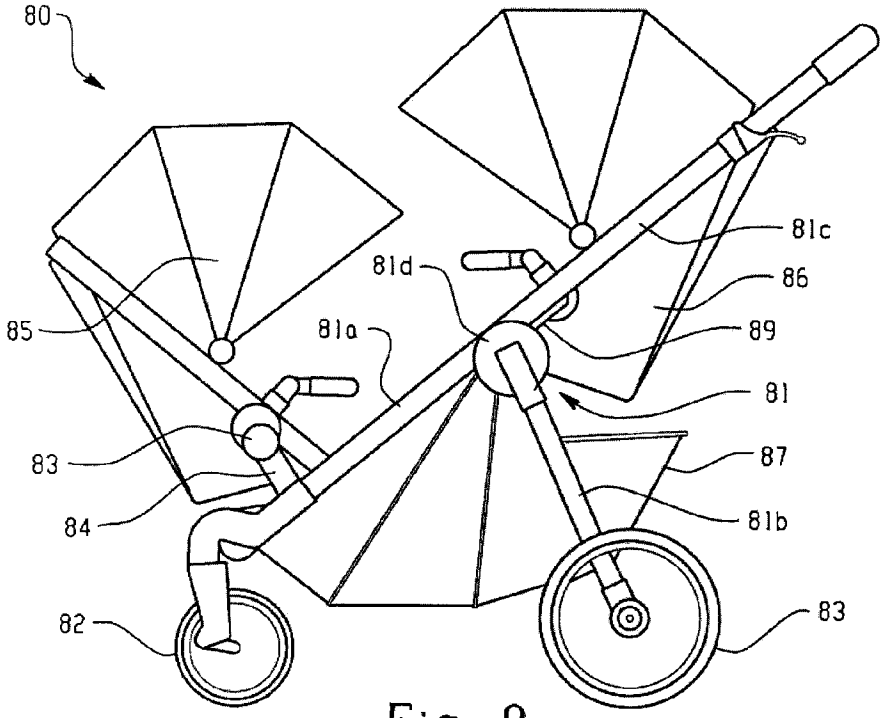
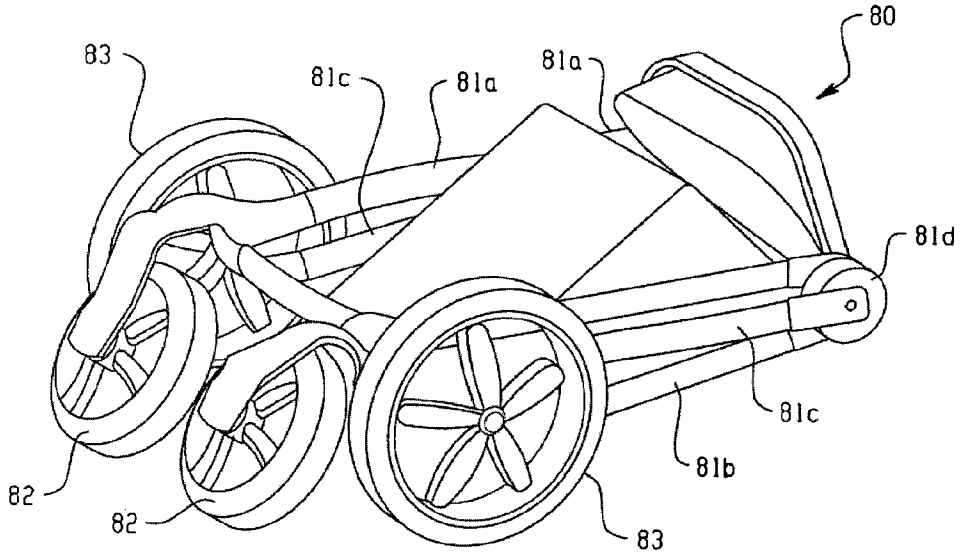

80
81c
81d
86
85
81a
89
81
83
87
84
81b
82
83

Fig. 8


80
83
81c
81a
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81d
81c
81b
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82
83

Fig. 8A

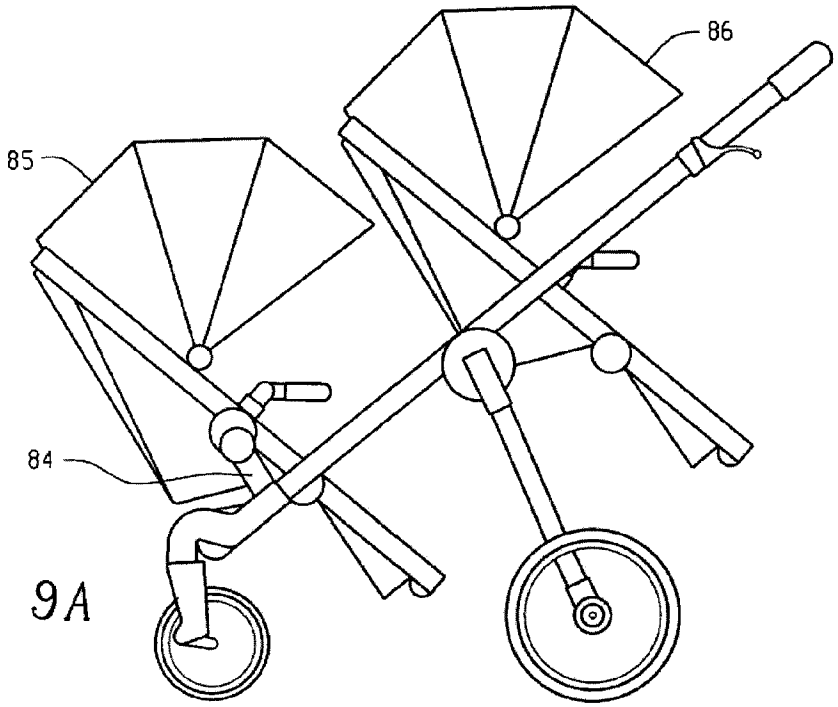

Fig. 9A

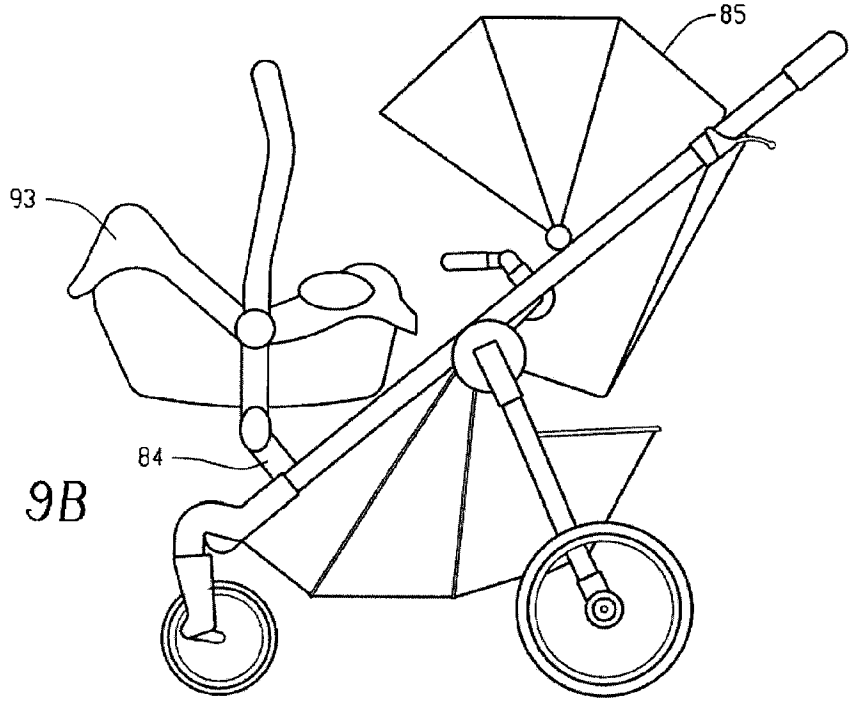

Fig. 9B

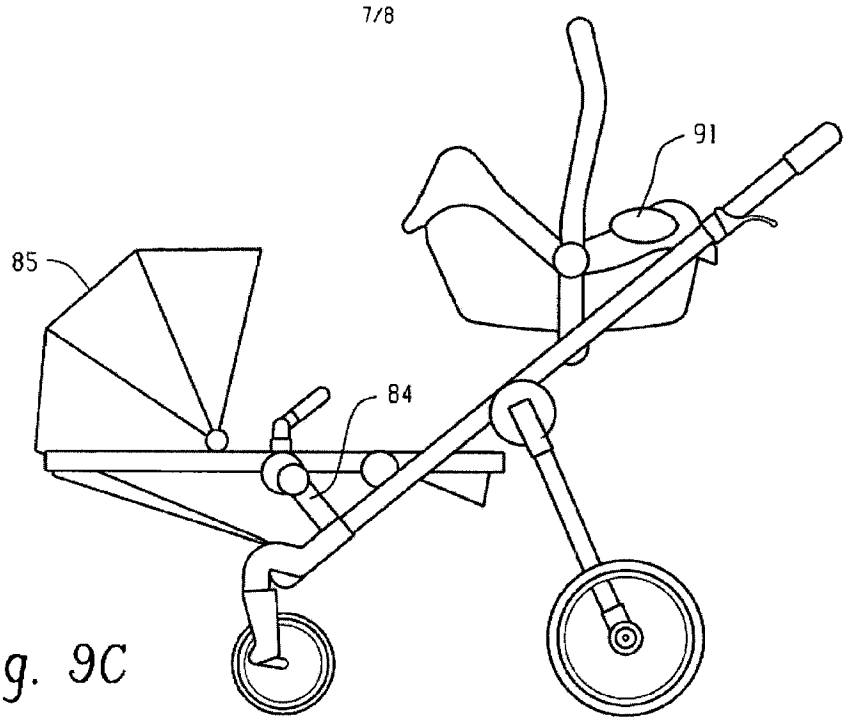

Fig. 9C

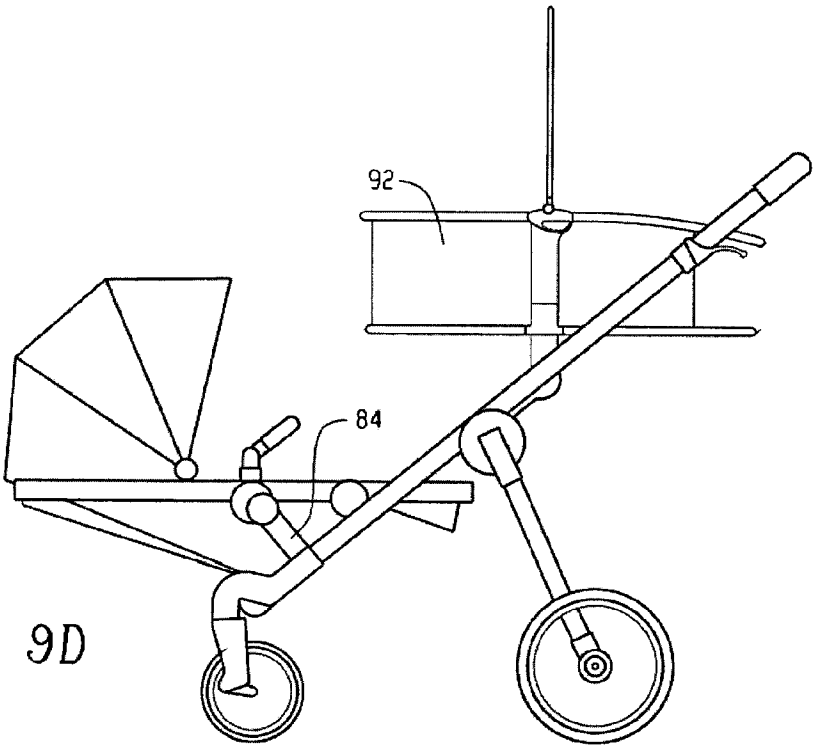

Fig. 9D

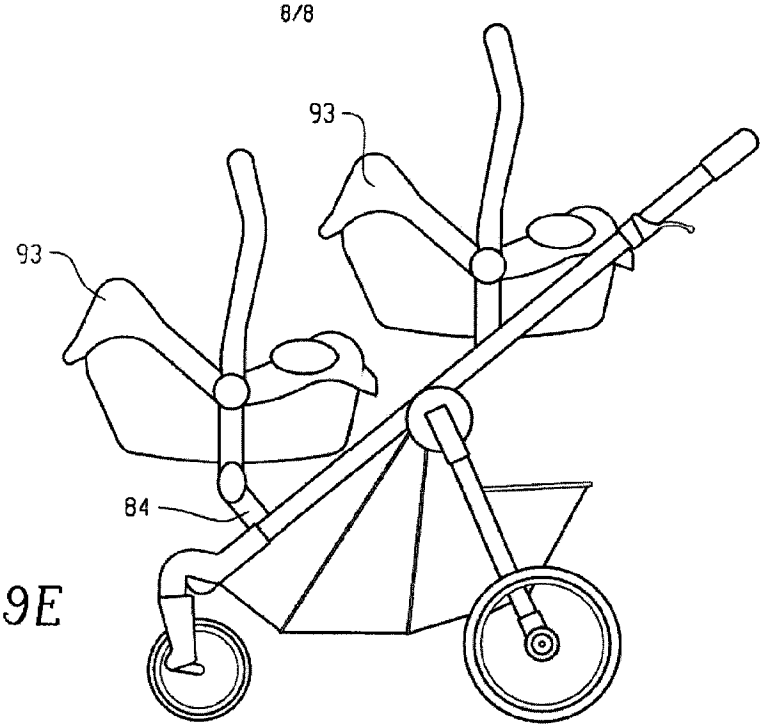

Fig. 9E

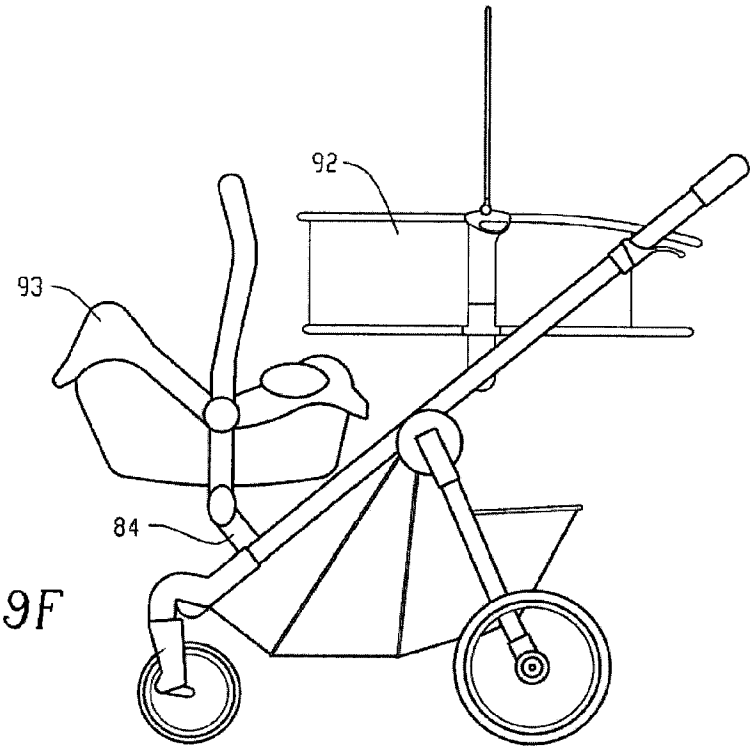

Fig. 9F

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2009/066817

A. CLASSIFICATION OF SUBJECT MATTER
IPC(8) - B62B 7/00 (2010.01)
USPC - 280/642
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC(8) - B62B 7/00; B62D 7/14, 63/00 (2010.01)
USPC - 280/642, 32.7, 47.131, 647, 648, 656, 657

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

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X -- Y	US 2007/0114738 A1 (JONES et al) 24 May 2007 (24.05.2007) entire document	1-5, 8, 11-14 ---------- 6, 7, 9, 10, 15-27
X -- Y	US 2007/0001429 A1 (MACIEJCZYK) 04 January 2007 (04.01.2007) entire document	28-31, 33, 34 ---------- 6, 7, 9, 10, 15, 24-27, 32
Y	US 5,338,096 A (HUANG) 16 August 1994 (16.08.1994) entire document	16-27
Y	US 2003/0025304 A1 (HAEGGBERG) 06 February 2003 (06.02.2003) entire document	32

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

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevance
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"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
20 August 2010	29 JAN 2010
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	Authorized officer: Blaine R. Copenheaver PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

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1. CN108674478 - BABY STROLLER CAPABLE OF BEING SWITCHED BETWEEN SINGLE-PERSON STATE AND DOUBLE-PERSON STATE

Office
China

Application Number
201810488391.4

Application Date
21.05.2018

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Publication Date
19.10.2018

Publication Kind
A

IPC
B62B 7/00 B62B 7/12

CPC
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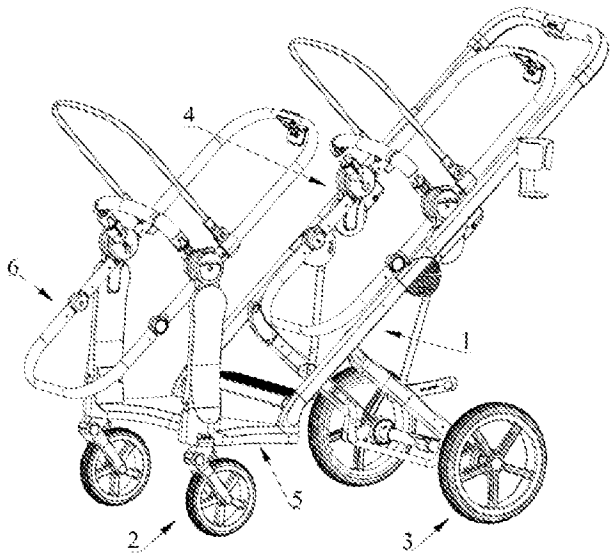
Title
[EN] Baby stroller capable of being switched between single-person state and double-person state
[ZH] 一种可单双人转换的儿童推车



Abstract
[EN] The invention discloses a baby stroller capable of being switched between the single-person state and the double-person state. The baby stroller can be quickly switched to the single-person use stateor the double-person use state conveniently. The baby stroller capable of being switched between the single-person state and the double-person state comprises a stroller frame, a front wheel componentand a rear wheel component which are arranged at the bottom of the stroller frame, and a first seat pocket component arranged on the stroller frame. The baby stroller further comprises a front bracket component and a second seat pocket component arranged on the front bracket component. The front wheel component is detachably connected to the bottom of the stroller frame. The rear portion of the front bracket component is detachably connected to the bottom of the stroller frame. The baby stroller has the single-person state and the double-person state, and when the baby stroller is in the single-person state, the front bracket component and stroller frame are separated, and the front wheel component is connected to the bottom of the stroller frame; and when the baby stroller is in the double-person state, the rear portion of the front bracket component is connected to the stroller frame, and the second seat pocket component and the first seat pocket component are arranged front and back.
[ZH] 本发明公开了一种可单双人转换的儿童推车，旨可快速转换为单人使用状态或双人使用状态，转换方便。一种可单双人转换的儿童推车，包括车架、设于所述车架底部的前轮组件和后轮组件，设于所述车架上的第一座兜组件；所述儿童推车还包括前托架组件、设于所述前托架组件上的第二座兜组件；所述前轮组件可拆卸地连接于所述车架底部；所述前托架组件的后部

UPPABABY ET AL. EX. 1068

可拆卸地连接于所述车架底部；所述儿童推车具有单人状态和双人状态，当所述儿童推车在单人状态时，所述前托架组件与所述车架相脱离，所述前轮组件连接于所述车架底部；当所述儿童推车在双人状态时，所述前托架组件的后部连接于所述车架，所述第二座兜组件和所述第一座兜组件前后设置。

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B62B 7/00(2006.01)
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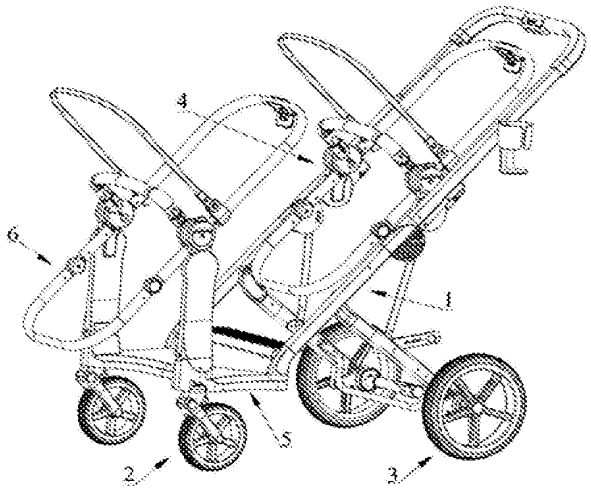
权利要求书1页 说明书4页 附图7页

(54)发明名称

一种可单双人转换的儿童推车

(57)摘要

本发明公开了一种可单双人转换的儿童推车，且可快速转换为单人使用状态或双人使用状态，转换方便。一种可单双人转换的儿童推车，包括车架、设于所述车架底部的前轮组件和后轮组件，设于所述车架上的第一座兜组件；所述儿童推车还包括前托架组件、设于所述前托架组件上的第二座兜组件；所述前轮组件可拆卸地连接于所述车架底部；所述前托架组件的后部可拆卸地连接于所述车架底部；所述儿童推车具有单人状态和双人状态，当所述儿童推车在单人状态时，所述前托架组件与所述车架相脱离，所述前轮组件连接于所述车架底部；当所述儿童推车在双人状态时，所述前托架组件的后部连接于所述车架，所述第二座兜组件和所述第一座兜组件前后设置。



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1.一种可单双人转换的儿童推车，包括车架、设于所述车架底部的前轮组件和后轮组件，设于所述车架上的第一座兜组件；其特征在于：

所述儿童推车还包括前托架组件、设于所述前托架组件上的第二座兜组件；

所述前轮组件可拆卸地连接于所述车架底部；

所述前托架组件的后部可拆卸地连接于所述车架底部；

所述儿童推车具有单人状态和双人状态，当所述儿童推车在单人状态时，所述前托架组件与所述车架相脱离，所述前轮组件连接于所述车架底部；当所述儿童推车在双人状态时，所述前托架组件的后部连接于所述车架，所述第二座兜组件和所述第一座兜组件前后设置。

2.根据权利要求1所述的儿童推车，其特征在于：所述车架底部具有第一连接部，所述前轮组件具有与所述第一连接部相配合的前轮连接件，所述前轮连接件可拆卸地连接于所述第一连接部；所述前托架组件的后部具有与所述第一连接部相配合的托架连接件，所述托架连接件可拆卸地连接于所述第一连接部。

3.根据权利要求2所述的儿童推车，其特征在于：所述前轮组件可拆卸地连接于所述车架底部或所述前托架组件的前部上，当所述儿童推车在双人状态时，所述前轮组件连接于所述前托架组件的前部。

4.根据权利要求3所述的儿童推车，其特征在于：所述前托架组件的前部具有与所述前轮连接件相配合的第二连接部，所述前轮连接件可拆卸地连接于所述第二连接部。

5.根据权利要求4所述的儿童推车，其特征在于：所述前轮连接件和所述托架连接件分别为向上延伸的连接销，所述第一连接部和所述第二连接部分别为与所述连接销相配合的连接槽。

6.根据权利要求4所述的儿童推车，其特征在于：所述连接销上设有锁槽，所述连接槽内活动地设置有锁舌，所述锁舌与所述锁槽相配合，当所述锁舌插入所述锁槽中时，所述连接销被锁定在所述连接槽内。

7.根据权利要求6所述的儿童推车，其特征在于：所述车架和/或所述前托架组件上设有用于使所述锁舌脱离所述锁槽的按钮。

8.根据权利要求1所述的儿童推车，其特征在于：所述前托架组件包括固定座及通过枢轴可转动地连接于所述固定座上的座兜接口，所述第二座兜组件可拆卸地连接于所述座兜接口，当所述儿童推车在单人状态时，所述座兜接口和所述固定座相靠拢；当所述儿童推车在双人状态时，所述座兜接口相对所述固定座展开。

9.根据权利要求8所述的儿童推车，其特征在于：所述前托架组件还包括阻尼块与阻尼销，所述座兜接口、所述固定座中的一个部件上固定设置有所述阻尼块，另一个部件上活动地设置有所述阻尼销，所述阻尼块上设有与阻尼槽，当所述儿童推车在双人状态时，所述阻尼销的端部插入所述阻尼槽中。

10.根据权利要求9所述的儿童推车，其特征在于：所述阻尼槽可滑动地设于开设在所述座兜接口或所述固定座中的安装槽中，所述安装槽内设有用于使所述阻尼销插入所述阻尼槽中的弹性件。

一种可单双人转换的儿童推车

技术领域

[0001] 本发明涉及儿童用品领域，具体涉及一种可单双人转换的儿童推车。

背景技术

[0002] 随着越来越多的家庭生养两个孩子，既能作为单人使用又可作双人使用的儿童推车越来越受欢迎。现有技术中，大多是提供单个儿童乘坐的单人推车，也有一些可同时供两个儿童同时乘坐的双人推车，而能够在双人推车与单人推车之间转换的儿童推车比较少。虽然目前市场上也出现了能够在双人推车与单人推车之间转换的儿童推车，但是由于转换需要用到的连接杆件以及需要连接的部位较多，结构比较繁琐，操作也十分地不便。

发明内容

[0003] 基上述问题，本发明的目的是提供一种可单双人转换的儿童推车，其可快速转换为单人使用状态或双人使用状态，转换方便。

[0004] 为达到上述目的，本发明采用如下技术方案：

一种可单双人转换的儿童推车，包括车架、设于所述车架底部的前轮组件和后轮组件，设于所述车架上的第一座兜组件；

所述儿童推车还包括前托架组件、设于所述前托架组件上的第二座兜组件；

所述前轮组件可拆卸地连接于所述车架底部；

所述前托架组件的后部可拆卸地连接于所述车架底部；

所述儿童推车具有单人状态和双人状态，当所述儿童推车在单人状态时，所述前托架组件与所述车架相脱离，所述前轮组件连接于所述车架底部；当所述儿童推车在双人状态时，所述前托架组件的后部连接于所述车架，所述第二座兜组件和所述第一座兜组件前后设置。

[0005] 在一实施例中，所述车架底部具有第一连接部，所述前轮组件具有与所述第一连接部相配合的前轮连接件，所述前轮连接件可拆卸地连接于所述第一连接部；所述前托架组件的后部设有与所述第一连接部相配合的托架连接件，所述托架连接件可拆卸地连接于所述第一连接部。

[0006] 在一实施例中，所述前轮组件可拆卸地连接于所述车架底部或所述前托架组件的前部上，当所述儿童推车在双人状态时，所述前轮组件连接于所述前托架组件的前部。

[0007] 在一实施例中，所述前托架组件的前部具有与所述前轮连接件相配合的第二连接部，所述前轮连接件可拆卸地连接于所述第二连接部。

[0008] 在一实施例中，所述前轮连接件和所述托架连接件分别为向上延伸的连接销，所述第一连接部和所述第二连接部分别为与所述连接销相配合的连接槽。

[0009] 在一实施例中，所述连接销上设有锁槽，所述连接槽内活动地设置有锁舌，所述锁舌与所述锁槽相配合，当所述锁舌插入所述锁槽中时，所述连接销被锁定在所述连接槽内。

[0010] 在一实施例中，所述车架和/或所述前托架组件上设有用于使所述锁舌脱离所述

锁槽的按钮。

[0011] 在一实施例中，所述前托架组件包括固定座及通过枢轴可转动地连接于所述固定座上的座兜接口，所述第二座兜组件可拆卸地连接于所述座兜接口，当所述儿童推车在单人状态时，所述座兜接口和所述固定座相靠拢；当所述儿童推车在双人状态时，所述座兜接口相对所述固定座展开。

[0012] 在一实施例中，所述前托架组件还包括阻尼块与阻尼销，所述座兜接口、所述固定座中的一个部件上固定设置有所述阻尼块，另一个部件上活动地设置有所述阻尼销，所述阻尼块上设有与阻尼槽，当所述儿童推车在双人状态时，所述阻尼销的端部插入所述阻尼槽中。

[0013] 在一实施例中，所述阻尼槽可滑动地设于开设在所述座兜接口或所述固定座中的安装槽中，所述安装槽内设有用于使所述阻尼销插入所述阻尼槽中的弹性件。

[0014] 结合上述，本发明采用以上技术方案，相比现有技术具有如下优点：

本发明提供的可单双人转换的儿童推车，由于前轮组件可自车架拆卸，而将前托架组件连接到车架上以提供设置第二座兜组件的空间，可快速地在单人状态和双人状态之间转换；而且由于在单人状态时，前托架组件自车架上拆卸，使得单人状态时推车较轻便。

附图说明

[0015] 为了更清楚地说明本发明的技术方案，下面将对实施例描述中所需要使用的附图作简单地介绍，显而易见地，下面描述中的附图仅仅是本发明的一些实施例，对于本领域普通技术人员来讲，在不付出创造性劳动的前提下，还可以根据这些附图获得其他的附图。

[0016] 图1为根据本发明的一种儿童推车在单人状态时的立体示意图；

图2为根据本发明的一种儿童推车在双人状态时的立体示意图；

图3为图2所示的儿童推车的侧视图；

图4为前托架组件和前轮组件的立体示意图；

图5为前托架组件和前轮组件的连接过程示意图；

图6为前托架组件在折叠后的示意图；

图7为前托架组件的剖视图。

[0017] 其中，1、车架；11、按钮；2、前轮组件；21、连接销；210、锁槽；3、后轮组件；4、第一座兜组件；5、前托架组件；50、连接槽；51、连接销；510、锁槽；52、固定座；520、安装槽；53、座兜接口；54、枢轴；55、阻尼块；550、阻尼槽；56、阻尼销；57、弹性件；58、按钮；6、第二座兜组件。

具体实施方式

[0018] 下面结合附图对本发明的较佳实施例进行详细阐述，以使本发明的优点和特征能更易于被本领域的技术人员理解。

[0019] 图1-7示出了根据本发明的一种可单双人转换的儿童推车，具有供单人使用的单人状态和供双人使用的双人状态，并可在两个状态之间快速转换。参照图1-7所示，该可单双人转换的儿童推车，包括车架1、设于车架1底部的前轮组件2和后轮组件3以及设于车架1上的第一座兜组件4。该儿童推车还包括前托架组件5以及设于前托架组件5上的第二座兜组件6。其中，前轮组件2可拆卸地连接于车架1底部或前托架组件5的前部上；前托架组件5

的后部可拆卸地连接于车架1底部。当儿童推车在单人状态时，前托架组件5与车架1相脱离，前轮组件2连接于车架1底部，仅第一座兜组件4可用于供儿童乘坐，仅可供单人使用，如图1所示。当儿童推车在双人状态时，前托架组件5的后部连接于车架1，前轮连接于前托架组件5的前部，第二座兜组件6设置于前托架组件5上且第二座兜组件6和第一座兜组件4前后设置，分别供儿童乘坐，可供双人使用，如图2所示。

[0020] 前轮组件2具有前轮连接件，车架1底部设有与前轮连接件相配合的第一连接部，前轮连接件与车架1的第一连接部相可拆卸连接。结合图5所示，具体到本实施例中，前轮连接件为向上延伸的连接销21，第一连接部为开设于车架1底部的自车架1下表面向上延伸的连接槽，所述连接销21与所述连接槽相配合并可拆卸地插接。此外，当前轮组件2连接于车架1上后，通过一锁定机构将连接销21锁定在连接槽内，连接销21的侧表面上设有锁槽210，锁定机构包括可插设于锁槽210中的锁舌(图中未示出)，通过将锁舌插入锁槽210中而阻止连接销21脱出连接槽。锁舌活动地设置在连接槽中，车架1上还活动地设有用于驱使所述锁舌脱离连接槽的按钮11，当按下按钮11后，带动锁舌脱离连接销21的锁槽210，连接销21被释放而可从连接槽中脱出，从而可将前轮组件2自车架1上快速拆下。

[0021] 结合图4-7所示，前托架组件5包括固定座52以及座兜接口53。前托架组件5的固定座52前部设有与连接销21相配合的第二连接部，前轮连接件与固定座52的第二连接部相可拆卸连接。具体到本实施例中，第二连接部为开设于固定座52前部的自前托架组件5下表面向上延伸的连接槽50，所述连接销21与该连接槽50相配合并可拆卸地插接，该连接槽50的形状与车架1上的所述连接槽形状一致。此外，当前轮组件2连接于前托架组件5的固定座52上后，通过另一锁定机构将连接销21锁定在连接槽50内，锁定机构包括可插设于锁槽210中的另一锁舌(图中未示出)，通过将锁舌插入连接槽50中而阻止连接销21脱出连接槽50。该锁舌活动地设置在连接槽50中，固定座52上还活动地设有用于驱使所述锁舌脱离连接槽50的按钮58，当按下按钮58后，带动锁舌脱离连接销21的锁槽210，连接销21被释放而可从连接槽50中脱出，从而可将前轮组件2自前托架组件5的固定座52上快速拆下。

[0022] 结合图4-7所示，前托架组件5的固定座52后部上设有前托架连接件，前托架连接件可拆卸地连接于车架1底部，优选连接于车架1上的所述连接槽50。本实施例中，前托架连接件为与所述的连接销21形状一致的连接销51，该连接销51与车架1上的连接槽相配合且可拆卸地插接。该连接销51的侧表面上也开设有锁槽510，车架1连接槽内的锁舌可插入连接销51的锁槽510中将其锁定，并可通过按下车架1上的按钮11使锁舌脱离锁槽510。

[0023] 所述座兜接口53的数量为两个并分别位于固定座52的左右两侧，第二座兜组件6可拆卸地连接于两个座兜接口53。座兜接口53通过一个枢轴54可转动地连接于固定座52，枢轴54的轴心线沿儿童推车的前后方向水平延伸，从而使得前托架组件5可在自车架1上拆卸后折叠，以减小存放空间。当儿童推车在单人状态时，第二座兜组件6脱离座兜接口53，两侧座兜接口53靠拢在固定座52上，前托架组件5被折叠，折叠扁平，携带方便，如图4和5所示；当儿童推车在双人状态时，座兜接口53分别相对固定座52展开并大体沿上下方向延伸，第二座兜组件6连接于两个座兜接口53上，如图6所示。

[0024] 前托架组件5还包括阻尼块55和阻尼销56，其中，阻尼块55固定嵌设在座兜接口53中，固定座52上设有安装槽520，阻尼销56可滑动地设于安装槽520中。阻尼块55上设有阻尼槽550，阻尼销56的一端部可插入阻尼槽550中，阻尼槽550的槽壁为斜面或弧面以允许阻尼

销56自阻尼槽550中脱出。安装槽520内设有用于使阻尼块55插入阻尼槽550的弹性件，弹性件具体为一端与阻尼销56的另一端部相接而另一端与安装槽520的槽壁相接的弹簧57。在座兜接口53靠拢或展开的过程中，阻尼销56脱离阻尼槽550，座兜接口53相对固定座52转动，此过程中弹簧57被压缩；在座兜接口53展开后，阻尼槽550正对阻尼销56，阻尼销56在弹簧57的复位力驱使下插入阻尼槽550中，使座兜接口53维持在当前状态，即维持在直立状态而不会歪倒。阻尼块55由耐磨材料制成。

[0025] 该可单双人转换的儿童推车的使用过程如下：

参照图1所示，单人状态时，前轮组件2的连接销21插入车架1的连接槽中并锁定，从而使得前轮组件2连接在车架1上，仅车架1上的第一座兜组件4可供使用。

[0026] 需要转换为双人状态时，按下车架1上的按钮11将前轮组件2的连接销21解锁，并自车架1的连接槽中拔出；将前托架组件5的连接销51插入车架1的连接槽中并锁定，将前轮组件2的连接销21插入前托架组件5的连接槽50中并锁定，将第二座兜组件6连接在前托架组件5上，前后设置的第二座兜组件6和第一座兜组件4都可供使用，如图2所示。

[0027] 需要转换为单人状态时，按下前托架组件5上的按钮58将前轮组件2的连接销21解锁，并自前托架组件5的连接槽50中拔出；按下车架1上的按钮11将前托架组件5的连接销21解锁，并自车架1的连接槽50中拔出；将前轮组件2的连接销21插入车架1的连接槽中并锁定，转换为图1所示的状态。

[0028] 本发明提供的可单双人转换的儿童推车，由于前轮组件2可自车架1上拆卸，而将前托架组件5连接到车架1上以提供设置第二座兜组件6的空间，可快速地在单人状态和双人状态之间转换；而且由于在单人状态时，前托架组件5自车架1上拆卸，使得单人状态时推车较轻便。

[0029] 上述实施例只为说明本发明的技术构思及特点，是优选的实施方式，其目的在于熟悉此项技术的人士能够了解本发明的内容并据以实施，并不能以此限定本发明的保护范围。凡根据本发明所作的等效变换或修饰，都应涵盖在本发明的保护范围之内。

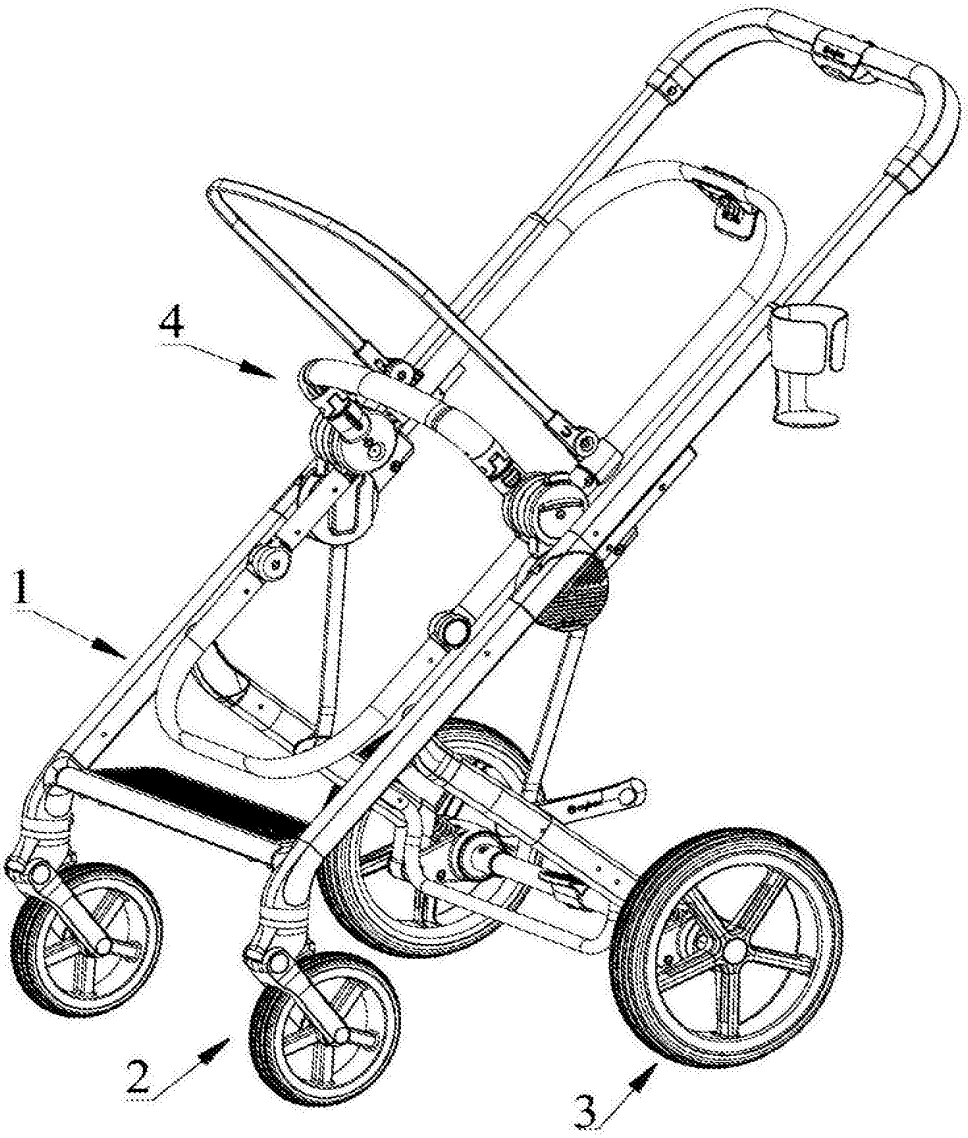

图1

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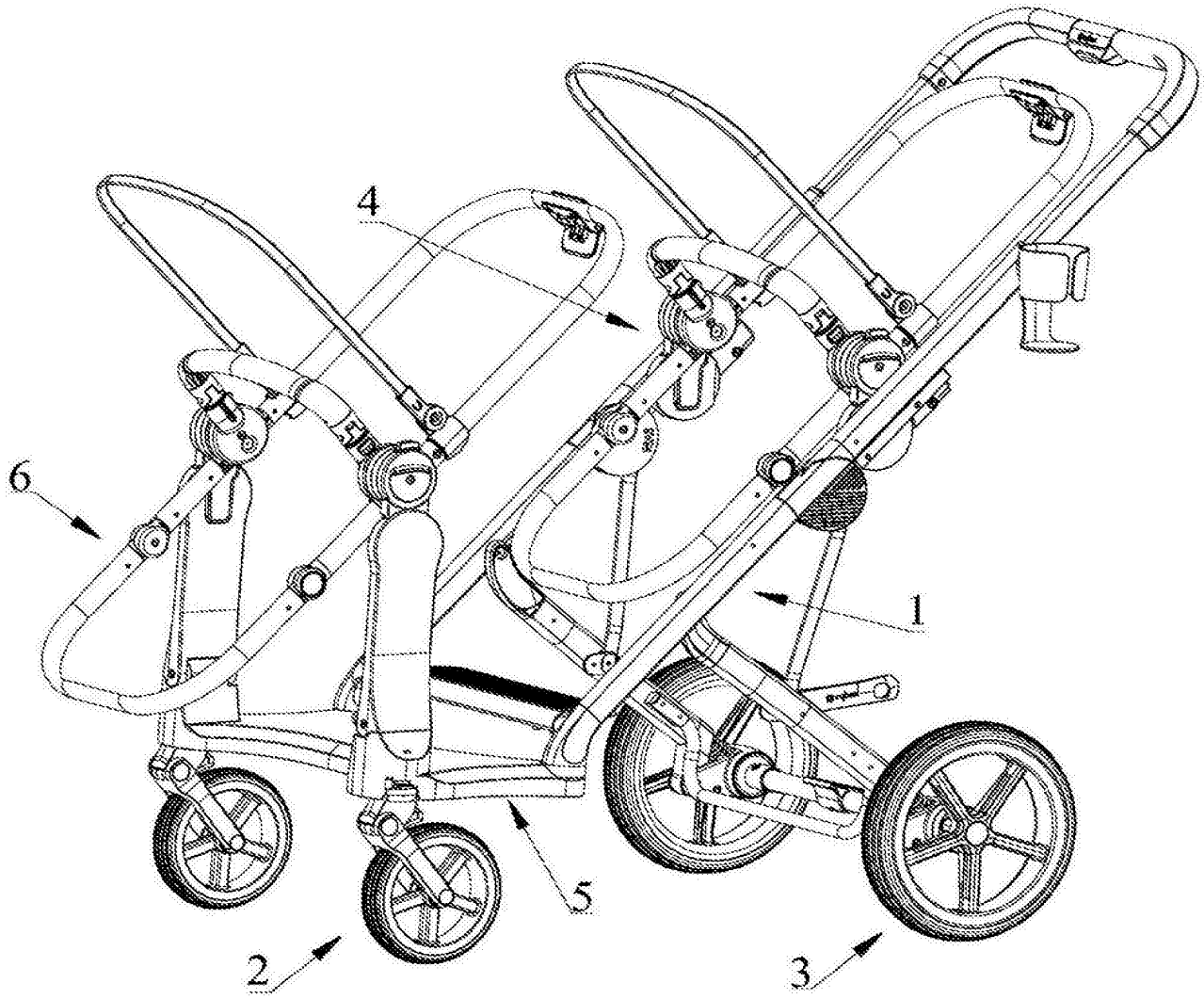

图2

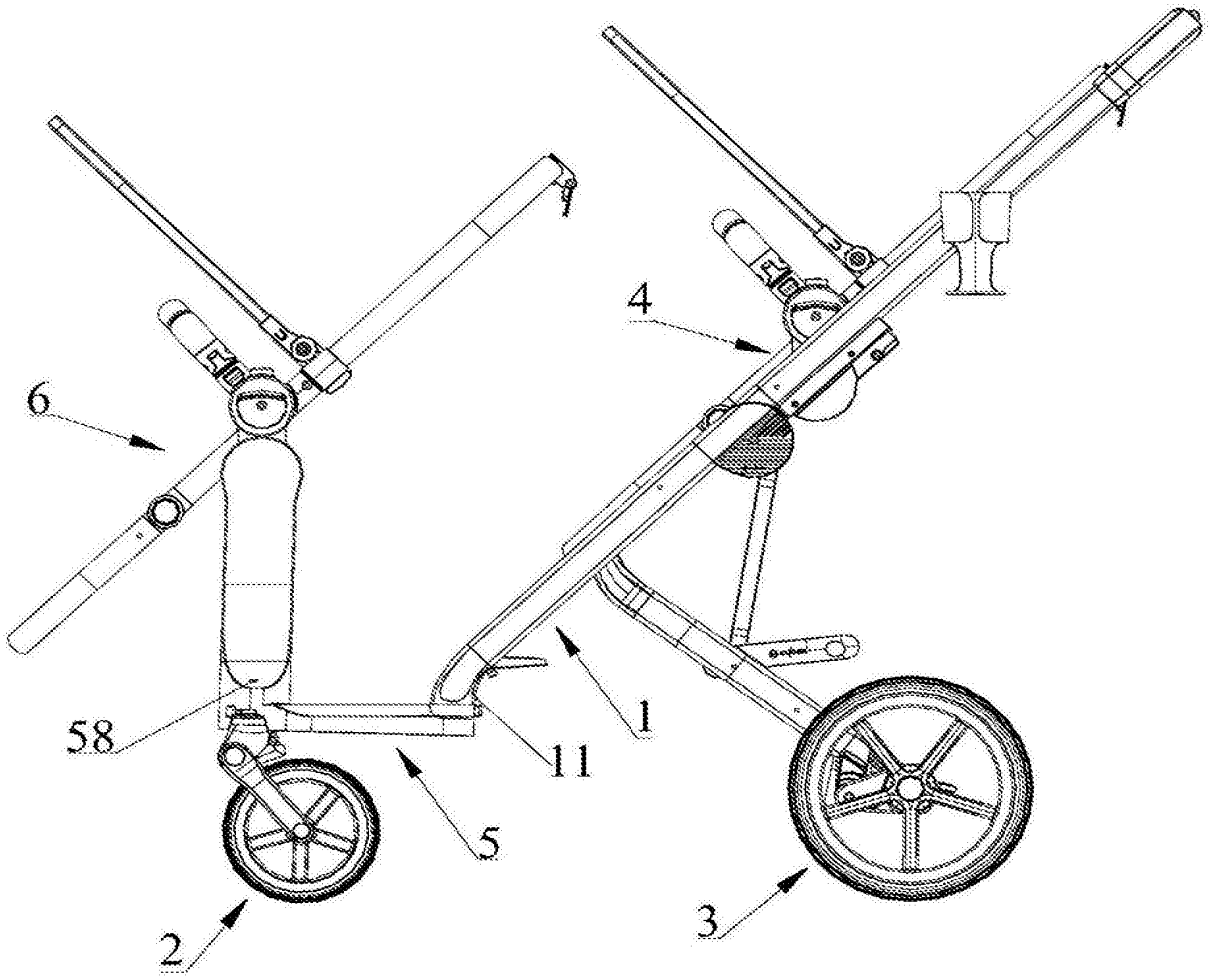

图3

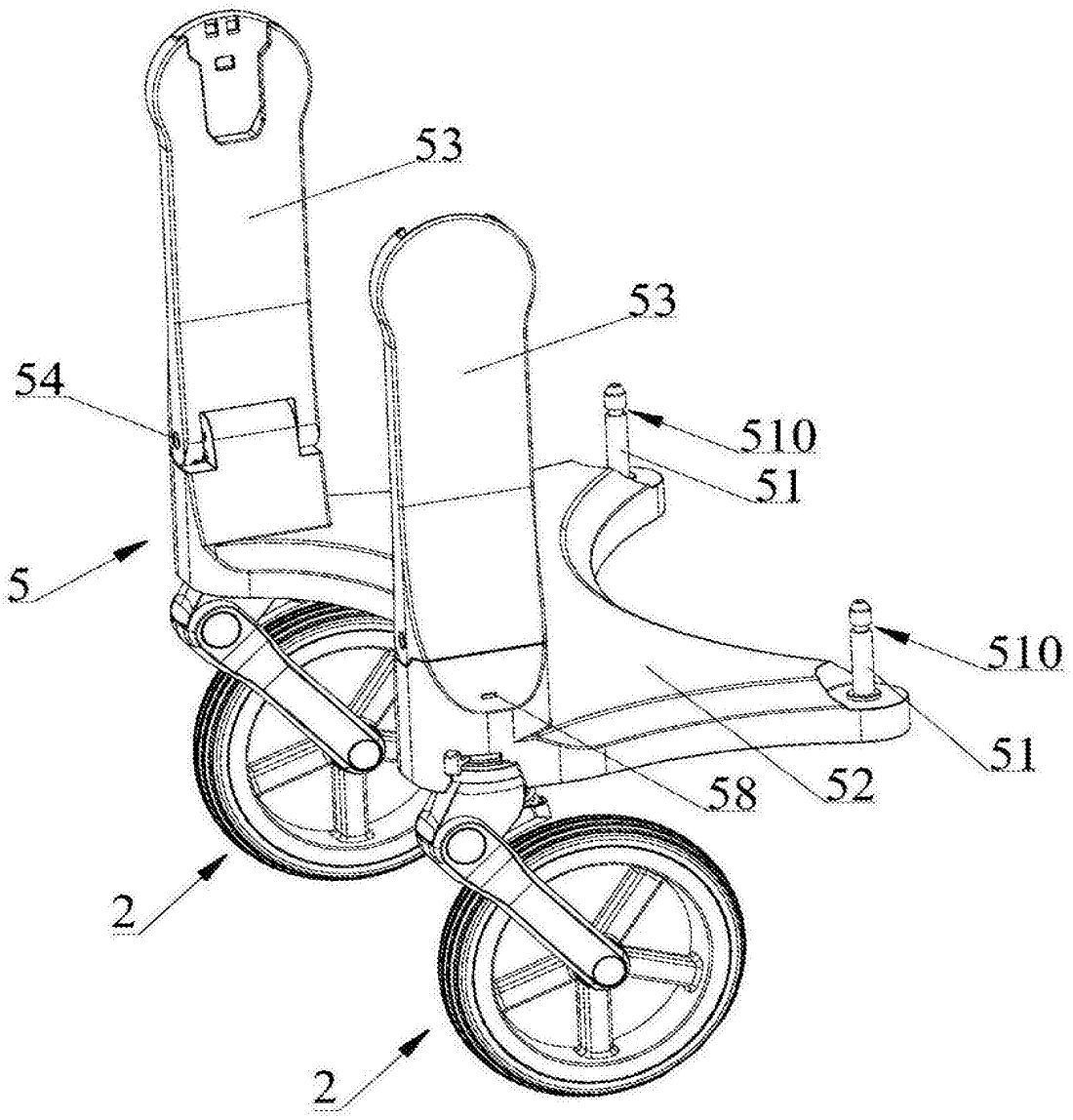

图4

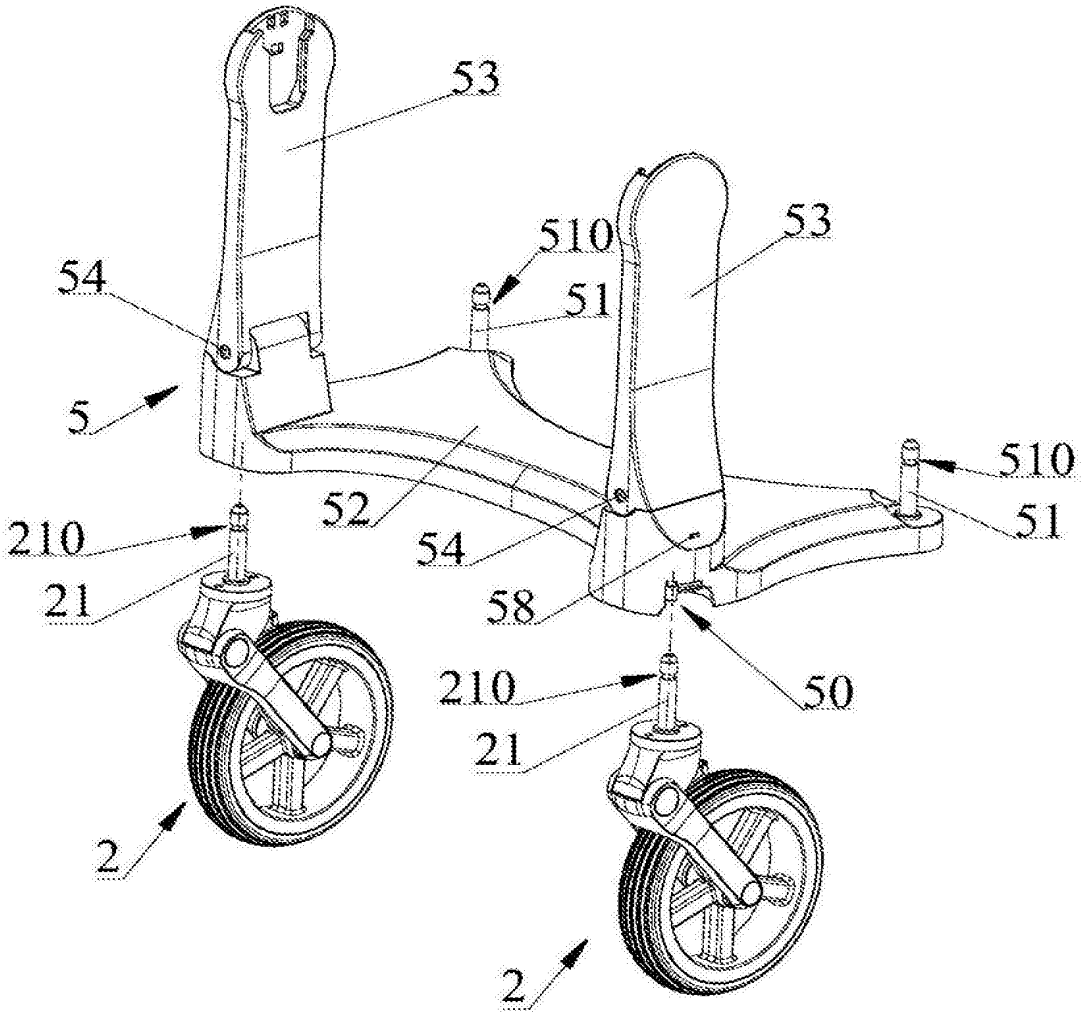

图5

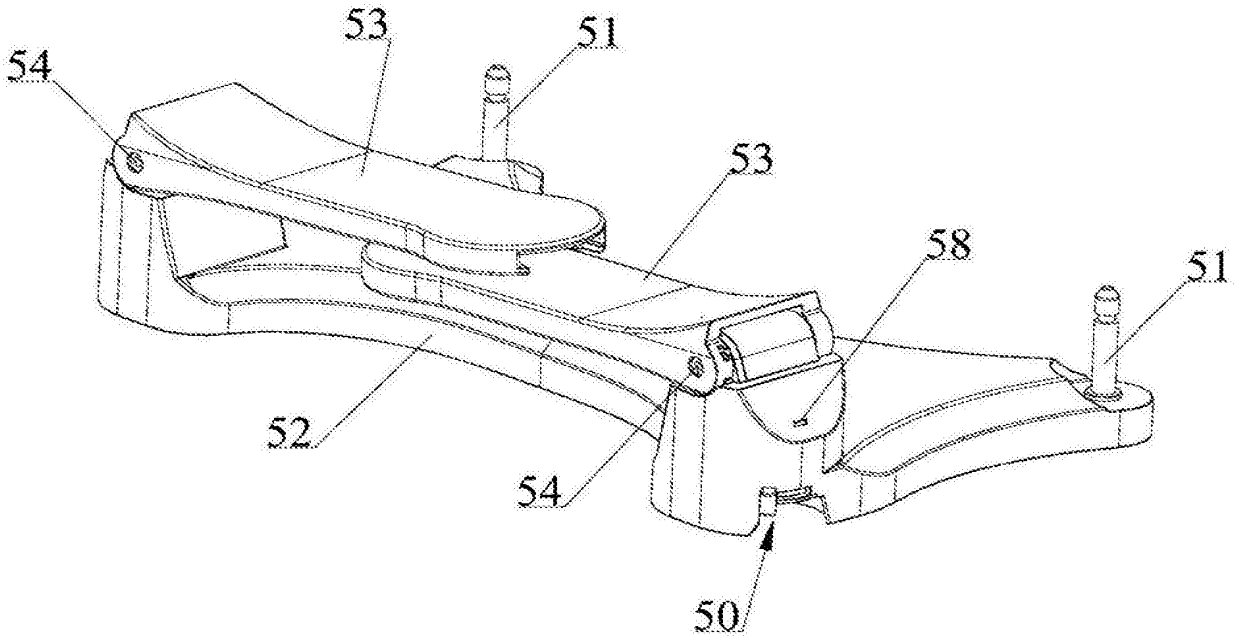

图6

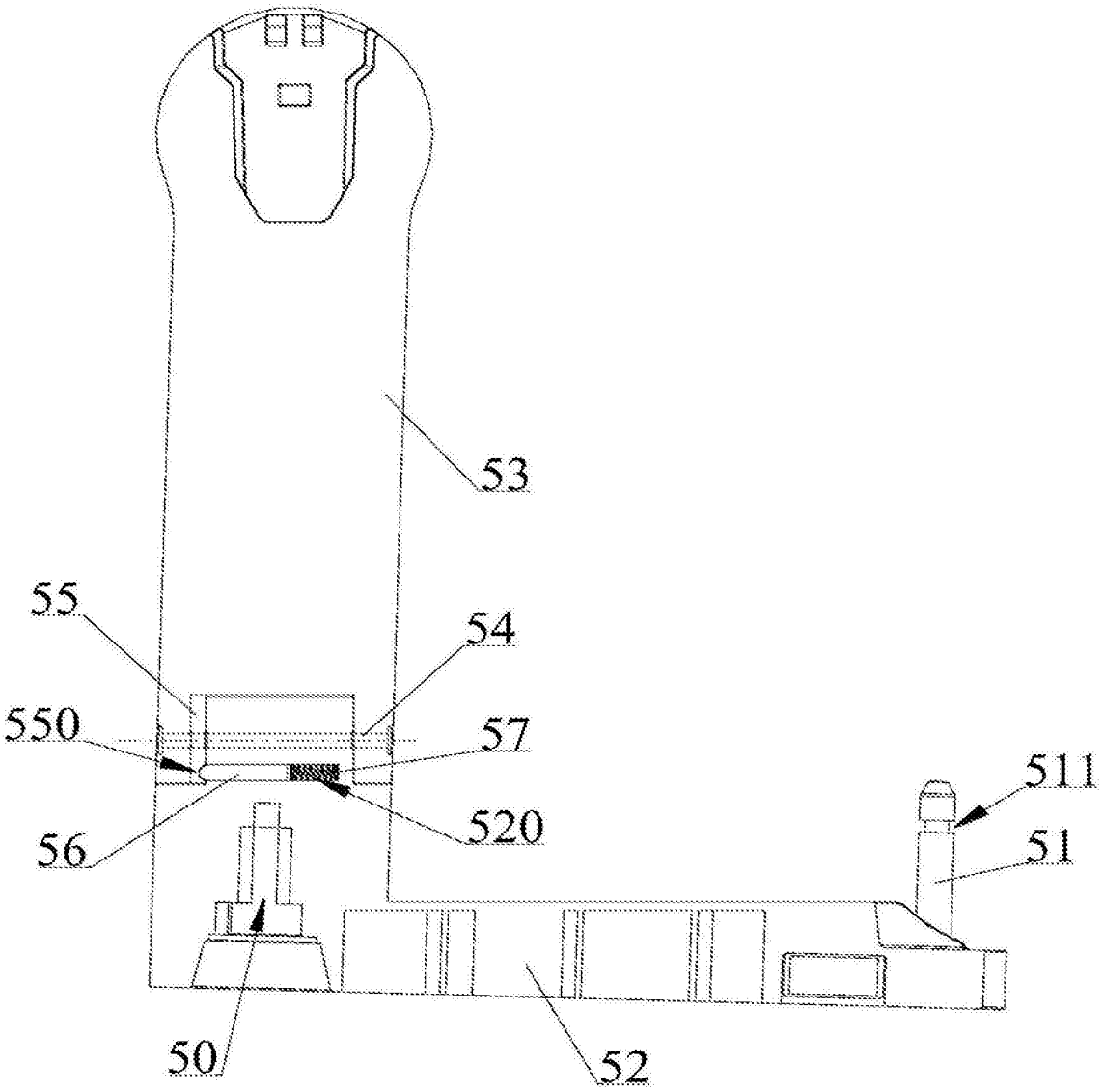

图7

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1. CN113135216 - BABY STROLLER AND SEAT HEIGHT ADJUSTING MECHANISM THEREOF

Office
China

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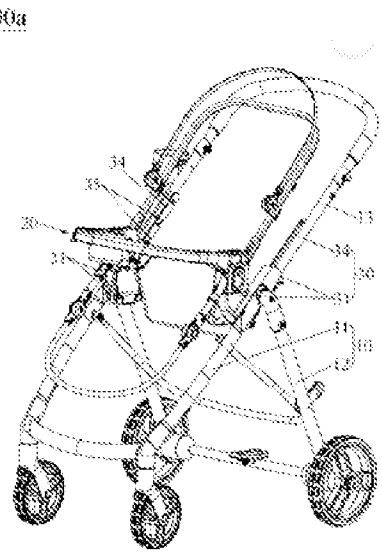
Title
[EN] Baby stroller and seat height adjusting mechanism thereof
[ZH] 婴儿推车及其座椅高度调整机构



Abstract
[EN] The invention discloses a seat height adjusting mechanism which is arranged on a frame of a cart and comprises a bearing seat used for being connected with a seat in an assembled mode. The bearing seat is arranged on the frame in a sliding mode in the vertical direction of the frame, and the height position of the seat on the bearing seat on the frame is adjusted by means of vertical sliding of the bearing seat relative to the frame. According to the seat height adjusting mechanism, the height position of the seat on the bearing seat on the frame can be adjusted through up-and-down sliding of the bearing seat relative to the frame, and the requirements of children with different heights can be better met. In addition, the invention further discloses a cart with the seat height adjusting mechanism.
[ZH] 本发明公开了一种座椅高度调整机构，设于推车的车架上，包括用于与座椅组接的承载座。承载座沿车架的上下方向滑设于车架上，借由承载座相对车架的上下滑移而调整承载座上的座椅在车架上的高度位置。本发明的座椅高度调整机构能通过承载座相对车架的上下滑移而调整承载座上的座椅在车架上的高度位置，更好地满足不同身高的儿童要求。另，本发明还公开了一种具有该座椅高度调整机构的推车。

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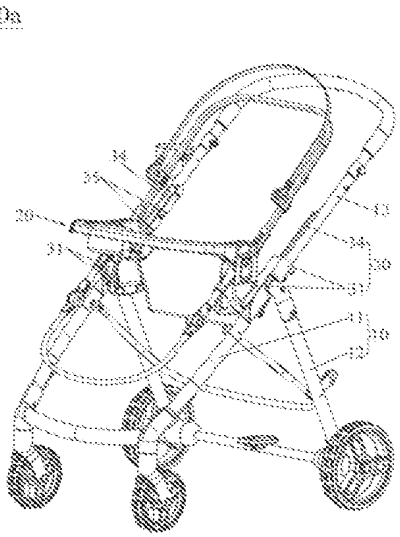
权利要求书4页 说明书12页 附图32页

(54)发明名称

婴儿推车及其座椅高度调整机构

(57)摘要

本发明公开了一种座椅高度调整机构，设于推车的车架上，包括用于与座椅组接的承载座。承载座沿车架的上下方向滑设于车架上，借由承载座相对车架的上下滑移而调整承载座上的座椅在车架上的高度位置。本发明的座椅高度调整机构能通过承载座相对车架的上下滑移而调整承载座上的座椅在车架上的高度位置，更好地满足不同身高的儿童要求。另，本发明还公开了一种具有该座椅高度调整机构的推车。



CN 113135216 A

1.一种座椅高度调整机构，设于婴儿推车的车架上，其特征在于，所述座椅高度调整机构包括用于与座椅组接的承载座，所述承载座沿所述车架的上下方向滑设于所述车架上，借由所述承载座相对所述车架的上下滑移而调整所述承载座上的座椅在所述车架上的高度位置。

2.根据权利要求1所述的座椅高度调整机构，其特征在于，还包括锁定件、与所述锁定件连动的释锁操作件及安装于所述车架上的固定件，所述承载座滑设于所述固定件，所述锁定件安装于所述固定件及承载座中的一者并至少具有一锁合位置和一释锁位置，所述固定件及承载座中的另一者至少设有两个沿所述承载座的滑移方向彼此间隔开的段位配锁部，所述锁定件在选择性地与任一所述段位配锁部锁合时处于所述锁合位置，所述释锁操作件连动所述锁定件脱离与任一所述段位配锁部锁合，以使所述锁定件处于所述释锁位置。

3.根据权利要求1所述的座椅高度调整机构，其特征在于，还包括至少两个沿所述承载座的滑移方向彼此间隔开的锁定件、同时与所有所述锁定件一起连动的释锁操作件及安装于所述车架上的固定件，所述承载座滑设于所述固定件，所述锁定件安装于所述固定件及承载座中的一者并至少具有一锁合位置和一释锁位置，所述固定件及承载座中的另一者设有段位配锁部，任一所述锁定件在选择性地与所述段位配锁部锁合时处于所述锁合位置，所述释锁操作件连动所有所述锁定件一起做释锁运动，由任一所述锁定件脱离与所述段位配锁部锁合而处于所述释锁位置。

4.根据权利要求2或3所述的座椅高度调整机构，其特征在于，还包括复位弹性件，所述复位弹性件设于所述锁定件和具有该锁定件的承载座或固定件上，所述复位弹性件恒具有驱使所述锁定件由所述释锁位置切换至所述锁合位置的趋势。

5.根据权利要求4所述的座椅高度调整机构，其特征在于，所述锁定件及段位配锁部中至少一者具有相对所述承载座的滑移方向倾斜的倾斜结构，在所述承载座向上滑移过程中，借由所述倾斜结构而使所述锁定件由所述锁合位置切换至所述释锁位置。

6.根据权利要求5所述的座椅高度调整机构，其特征在于，安装于所述承载座上的锁定件之倾斜结构位于该锁定件的上侧，对应地，所述固定件所开设的段位配锁部之倾斜结构位于该段位配锁部的上侧；或者，安装于所述固定件上的锁定件之倾斜结构位于该锁定件的下侧，对应地，所述承载座所开设的段位配锁部之倾斜结构位于该段位配锁部的下侧。

7.根据权利要求2或3所述的座椅高度调整机构，其特征在于，所述锁定件呈滑移布置，所述锁定件的滑移方向与所述承载座的滑移方向相交错。

8.根据权利要求7所述的座椅高度调整机构，其特征在于，所述释锁操作件与所述锁定件共同为一体式结构。

9.根据权利要求7所述的座椅高度调整机构，其特征在于，所述释锁操作件与所述锁定件之间彼此独立。

10.根据权利要求9所述的座椅高度调整机构，其特征在于，还包括柔性的牵引件，所述释锁操作件通过所述牵引件连动所述锁定件。

11.根据权利要求10所述的座椅高度调整机构，其特征在于，所述牵引件的第一端与安装在所述车架上的释锁操作件连接，所述牵引件的第二端与安装在所述固定件上的锁定件连接。

12.根据权利要求11所述的座椅高度调整机构，其特征在于，还包括枢接于所述车架上的转盘，所述转盘具有分布于所述转盘之中心线两侧的第一安装部和第二安装部，所述释锁操作件与所述第一安装部连接，所述牵引件的第一端与所述第二安装部连接。

13.根据权利要求12所述的座椅高度调整机构，其特征在于，还包括推拉杆，所述推拉杆沿所述承载座的滑移方向滑设于所述固定件或承载座上，所述牵引件的第二端安装于所述推拉杆上，所述推拉杆与所述锁定件连动。

14.根据权利要求10所述的座椅高度调整机构，其特征在于，所述牵引件的第一端与安装在所述座椅上的释锁操作件连接，所述牵引件的第二端与安装在所述承载座上的锁定件连接。

15.根据权利要求14所述的座椅高度调整机构，其特征在于，还包括活动设于所述座椅上的传动件，所述传动件与所述释锁操作件连动，所述牵引件的第一端安装于所述传动件上。

16.根据权利要求15所述的座椅高度调整机构，其特征在于，所述释锁操作件及传动件各滑设于所述座椅上，且所述释锁操作件与所述传动件两者的滑设方向相交。

17.根据权利要求2或3所述的座椅高度调整机构，其特征在于，所述锁定件呈枢摆布置，所述释锁操作件与所述锁定件共同为一体式结构。

18.根据权利要求2或3所述的座椅高度调整机构，其特征在于，所述锁定件及释锁操作件二者各可枢摆地安装于所述承载座或固定件上，借助所述释锁操作件的枢摆而连动所述锁定件做释锁运动。

19.根据权利要求1所述的座椅高度调整机构，其特征在于，所述段位锁合部为槽孔结构。

20.根据权利要求1所述的座椅高度调整机构，其特征在于，所述承载座绕一枢转中心线枢接于所述车架，所述承载座至少具有沿所述承载座的旋转方向彼此隔开的第一组接头和第二组接头，所述第一组接头至所述枢转中心线的距离与所述第二组接头至所述枢转中心线的距离相异，所述座椅可拆卸地安装于所述第一组接头或第二组接头。

21.根据权利要求20所述的座椅高度调整机构，其特征在于，所述第一组接头与所述第二组接头之间所夹的圆心角为90度。

22.一种婴儿推车，包括车架和座椅，所述车架包含前脚、后脚和车手，所述前脚、后脚和车手三者之间可展收操作，其特征在于，所述婴儿推车还包括座椅高度调整机构，所述座椅高度调整机构包含承载座，所述承载座沿所述车架的上下方向滑设于所述车架上，所述座椅组接于所述承载座上，借由所述承载座相对所述车架的上下滑移而调整所述承载座上的座椅在所述车架上的高度位置。

23.根据权利要求22所述的婴儿推车，其特征在于，所述承载座沿所述车架的上下方向滑设于所述车手、前脚或后脚上。

24.根据权利要求22所述的婴儿推车，其特征在于，所述座椅高度调整机构还包括锁定件、与所述锁定件连动的释锁操作件及安装于所述车架上的固定件，所述承载座滑设于所述固定件，所述锁定件安装于所述固定件及承载座中的一者并至少具有一锁合位置和一释锁位置，所述固定件及承载座中的另一者至少设有两个沿所述承载座的滑移方向彼此间隔开的段位配锁部，所述锁定件在选择性地与任一所述段位配锁部锁合时处于所述锁合位

置，所述释锁操作件连动所述锁定件脱离与任一所述段位配锁部锁合，以使所述锁定件处于所述释锁位置。

25.根据权利要求22所述的婴儿推车，其特征在于，所述座椅高度调整机构还包括至少两个沿所述承载座的滑移方向彼此间隔开的锁定件、同时与所有所述锁定件一起连动的释锁操作件及安装于所述车架上的固定件，所述承载座滑设于所述固定件，所述锁定件安装于所述固定件及承载座中的一者并至少具有一锁合位置和一释锁位置，所述固定件及承载座中的另一者设有段位配锁部，任一所述锁定件在选择性地与所述段位配锁部锁合时处于所述锁合位置，所述释锁操作件连动所有所述锁定件一起做释锁运动，由任一所述锁定件脱离与所述段位配锁部锁合而处于所述释锁位置。

26.根据权利要求24或25所述的婴儿推车，其特征在于，所述座椅高度调整机构还包括复位弹性件，所述复位弹性件设于所述锁定件和具有该锁定件的承载座或固定件上，所述复位弹性件恒具有驱使所述锁定件由所述释锁位置切换至所述锁合位置的趋势。

27.根据权利要求26所述的婴儿推车，其特征在于，所述锁定件及段位配锁部中至少一者具有相对所述承载座的滑移方向倾斜的倾斜结构，在所述承载座向上滑移过程中，借由所述倾斜结构而使所述锁定件由所述锁合位置切换至所述释锁位置。

28.根据权利要求27所述的婴儿推车，其特征在于，安装于所述承载座上的锁定件之倾斜结构位于该锁定件的上侧，对应地，所述固定件所开设的段位配锁部之倾斜结构位于该段位配锁部的上侧；或者，安装于所述固定件上的锁定件之倾斜结构位于该锁定件的下侧，对应地，所述承载座所开设的段位配锁部之倾斜结构位于该段位配锁部的下侧。

29.根据权利要求24或25所述的婴儿推车，其特征在于，所述锁定件呈滑移布置，所述锁定件的滑移方向与所述承载座的滑移方向相交错。

30.根据权利要求29所述的婴儿推车，其特征在于，所述释锁操作件与所述锁定件共同为一体式结构，所述座椅与所述承载座可拆卸地组接。

31.根据权利要求29所述的婴儿推车，其特征在于，所述座椅高度调整机构还包括柔性的牵引件，所述释锁操作件与所述锁定件之间彼此独立，所述释锁操作件通过所述牵引件连动所述锁定件。

32.根据权利要求31所述的婴儿推车，其特征在于，所述牵引件的第一端与安装在所述车手上的释锁操作件连接，所述牵引件的第二端与安装在所述固定件上的锁定件连接。

33.根据权利要求32所述的婴儿推车，其特征在于，所述座椅高度调整机构还包括枢接于所述车手上的转盘，所述转盘具有分布于所述转盘之中心线两侧的第一安装部和第二安装部，所述释锁操作件与所述第一安装部连接，所述牵引件的第一端与所述第二安装部连接，所述座椅与所述承载座可拆卸地组接。

34.根据权利要求33所述的婴儿推车，其特征在于，所述座椅高度调整机构还包括推拉杆，所述推拉杆沿所述承载座的滑移方向滑设于所述固定件或承载座上，所述牵引件的第二端安装于所述推拉杆上，所述推拉杆与所述锁定件连动。

35.根据权利要求31所述的婴儿推车，其特征在于，所述座椅高度调整机构还包括活动设于所述座椅上的传动件，所述传动件与所述释锁操作件连动，所述牵引件的第一端安装于所述传动件上，所述牵引件的第二端与安装在所述承载座上的锁定件连接。

36.根据权利要求35所述的婴儿推车，其特征在于，所述释锁操作件及传动件各滑设于

所述座椅上，且所述释锁操作件与所述传动件两者的滑设方向相交。

37.根据权利要求24或25所述的婴儿推车，其特征在于，所述锁定件呈枢摆布置，所述释锁操作件与所述锁定件共同为一体式结构。

38.根据权利要求24或25所述的婴儿推车，其特征在于，所述锁定件及释锁操作件二者各可枢摆地安装于所述承载座或固定件上，借助所述释锁操作件的枢摆而连动所述锁定件做释锁运动。

39.根据权利要求22所述的婴儿推车，其特征在于，所述承载座绕一枢转中心线枢接于所述车架，所述承载座至少具有沿所述承载座的旋转方向彼此隔开的第一组接头和第二组接头，所述第一组接头至所述枢转中心线的距离与所述第二组接头至所述枢转中心线的距离相异，所述座椅可拆卸地安装于所述第一组接头或第二组接头。

婴儿推车及其座椅高度调整机构

技术领域

[0001] 本发明涉及婴幼儿用品领域，尤其涉及一种婴儿推车及其座椅高度调整机构。

背景技术

[0002] 随着经济的不断发展及科学技术的不断进步，为人们的生活提供极其丰富的物质消费品，而婴儿推车就是诸多的物质消费品中的一种。

[0003] 其中，使用者通过婴儿推车的使用，十分便于使用者对婴儿外出的照顾，因此，使得婴儿推车受到人们所追捧。

[0004] 但是，在现有的婴儿推车中，其座椅在车架上的位置是不可调整的，因此，使得现有的座椅无法根据婴儿的身高变化而调整座椅在车架上的高度位置，故使得现有的婴儿推车的通用性差。

[0005] 因此，急需要一种能根据婴儿的身高变化而灵活调整座椅高度位置的婴儿推车及其座椅高度调整机构来克服上述的。

发明内容

[0006] 本发明的一目的在于提供一种能根据婴儿的身高变化而灵活调整座椅高度位置的座椅高度调整机构。

[0007] 本发明的另一目的在于提供一种能根据婴儿的身高变化而灵活调整座椅高度位置的婴儿推车。

[0008] 为实现上述目的，本发明的座椅高度调整机构设于婴儿推车的车架上，包括用于与座椅组接的承载座。承载座沿车架的上下方向滑设于车架上，借由承载座相对车架的上下滑移而调整承载座上的座椅在车架上的高度位置。

[0009] 较佳地，本发明的座椅高度调整机构还包括锁定件、与锁定件连动的释锁操作件及安装于车架上的固定件，承载座滑设于固定件，锁定件安装于固定件及承载座中的一者并至少具有一锁合位置和一释锁位置，固定件及承载座中的另一者至少设有两个沿承载座的滑移方向彼此间隔开的段位配锁部，锁定件在选择性地与任一段位配锁部锁合时处于锁合位置，释锁操作件连动锁定件脱离与任一段位配锁部锁合，以使锁定件处于释锁位置。

[0010] 较佳地，本发明的座椅高度调整机构还包括至少两个沿承载座的滑移方向彼此间隔开的锁定件、同时与所有锁定件一起连动的释锁操作件及安装于车架上的固定件，承载座滑设于固定件，锁定件安装于固定件及承载座中的一者并至少具有一锁合位置和一释锁位置，固定件及承载座中的另一者设有段位配锁部，任一锁定件在选择性地与段位配锁部锁合时处于锁合位置，释锁操作件连动所有锁定件一起做释锁运动，由任一锁定件脱离与段位配锁部锁合而处于释锁位置。

[0011] 较佳地，本发明的座椅高度调整机构还包括复位弹性件，复位弹性件设于锁定件和具有该锁定件的承载座或固定件上，复位弹性件恒具有驱使锁定件由释锁位置切换至锁合位置的趋势。

[0012] 较佳地，锁定件及段位配锁部中至少一者具有相对承载座的滑移方向倾斜的倾斜结构，在承载座向上滑移过程中，借由倾斜结构而使锁定件由锁合位置切换至释锁位置。

[0013] 较佳地，安装于承载座上的锁定件之倾斜结构位于该锁定件的上侧，对应地，固定件所开设的段位配锁部之倾斜结构位于该段位配锁部的上侧；或者，安装于固定件上的锁定件之倾斜结构位于该锁定件的下侧，对应地，承载座所开设的段位配锁部之倾斜结构位于该段位配锁部的下侧。

[0014] 较佳地，锁定件呈滑移布置，锁定件的滑移方向与承载座的滑移方向相交错。

[0015] 较佳地，释锁操作件与锁定件共同为一体式结构。

[0016] 较佳地，释锁操作件与锁定件之间彼此独立。

[0017] 较佳地，本发明的座椅高度调整机构还包括柔性的牵引件，释锁操作件通过牵引件连动锁定件。

[0018] 较佳地，牵引件的第一端与安装在车架上的释锁操作件连接，牵引件的第二端与安装在固定件上的锁定件连接。

[0019] 较佳地，本发明的座椅高度调整机构还包括枢接于车架上的转盘，转盘具有分布于转盘之中心线两侧的第一安装部和第二安装部，释锁操作件与第一安装部连接，牵引件的第一端与第二安装部连接。

[0020] 较佳地，本发明的座椅高度调整机构还包括推拉杆，推拉杆沿承载座的滑移方向滑设于固定件或承载座上，牵引件的第二端安装于推拉杆上，推拉杆与锁定件连动。

[0021] 较佳地，牵引件的第一端与安装在座椅上的释锁操作件连接，牵引件的第二端与安装在承载座上的锁定件连接。

[0022] 较佳地，本发明的座椅高度调整机构还包括活动设于座椅上的传动件，传动件与释锁操作件连动，牵引件的第一端安装于传动件上。

[0023] 较佳地，释锁操作件及传动件各滑设于座椅上，且释锁操作件与传动件两者的滑设方向相交。

[0024] 较佳地，锁定件呈枢摆布置，释锁操作件与锁定件共同为一体式结构。

[0025] 较佳地，锁定件及释锁操作件二者各可枢摆地安装于承载座或固定件上，借助释锁操作件的枢摆而连动锁定件做释锁运动。

[0026] 较佳，段位锁合部为槽孔结构。

[0027] 较佳地，承载座绕一枢转中心线枢接于车架，承载座至少具有沿承载座的旋转方向彼此隔开的第一组接头和第二组接头，第一组接头至枢转中心线的距离与第二组接头至枢转中心线的距离相异，座椅可拆卸地安装于第一组接头或第二组接头。

[0028] 较佳地，第一组接头与第二组接头之间所夹的圆心角为90度。

[0029] 为实现上述的目的，本发明的婴儿推车包括车架、座椅及座椅高度调整机构。车架包含前脚、后脚和车手，前脚、后脚和车手三者之间可展收操作；座椅高度调整机构包含承载座，承载座沿车架的上下方向滑设于车架上，座椅组接于承载座上，借由承载座相对车架的上下滑移而调整承载座上的座椅在车架上的高度位置。

[0030] 较佳地，承载座沿车架的上下方向滑设于车手、前脚或后脚上。

[0031] 较佳地，座椅高度调整机构还包括锁定件、与锁定件连动的释锁操作件及安装于车架上的固定件，承载座滑设于固定件，锁定件安装于固定件及承载座中的一者并至少具

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有一锁合位置和一释锁位置，固定件及承载座中的另一者至少设有两个沿承载座的滑移方向彼此间隔开的段位配锁部，锁定件在选择性地与任一段位配锁部锁合时处于锁合位置，释锁操作件连动锁定件脱离与任一段位配锁部锁合，以使锁定件处于释锁位置。

[0032] 较佳地，座椅高度调整机构还包括至少两个沿承载座的滑移方向彼此间隔开的锁定件、同时与所有锁定件一起连动的释锁操作件及安装于车架上的固定件，承载座滑设于固定件，锁定件安装于固定件及承载座中的一者并至少具有一锁合位置和一释锁位置，固定件及承载座中的另一者设有段位配锁部，任一锁定件在选择性地与段位配锁部锁合时处于锁合位置，释锁操作件连动所有锁定件一起做释锁运动，由任一锁定件脱离与段位配锁部锁合而处于释锁位置。

[0033] 较佳地，座椅高度调整机构还包括复位弹性件，复位弹性件设于锁定件和具有该锁定件的承载座或固定件上，复位弹性件恒具有驱使锁定件由释锁位置切换至锁合位置的趋势。

[0034] 较佳地，锁定件及段位配锁部中至少一者具有相对承载座的滑移方向倾斜的倾斜结构，在承载座向上滑移过程中，借由倾斜结构而使锁定件由锁合位置切换至释锁位置。

[0035] 较佳地，安装于承载座上的锁定件之倾斜结构位于该锁定件的上侧，对应地，固定件所开设的段位配锁部之倾斜结构位于该段位配锁部的上侧；或者，安装于固定件上的锁定件之倾斜结构位于该锁定件的下侧，对应地，承载座所开设的段位配锁部之倾斜结构位于该段位配锁部的下侧。

[0036] 较佳地，锁定件呈滑移布置，锁定件的滑移方向与承载座的滑移方向相交错。

[0037] 较佳地，释锁操作件与锁定件共同为一体式结构，座椅与承载座可拆卸地组接。

[0038] 较佳地，座椅高度调整机构还包括柔性的牵引件，释锁操作件与锁定件之间彼此独立，释锁操作件通过牵引件连动锁定件。

[0039] 较佳地，牵引件的第一端与安装在车手上的释锁操作件连接，牵引件的第二端与安装在固定件上的锁定件连接。

[0040] 较佳地，座椅高度调整机构还包括枢接于车手上的转盘，转盘具有分布于转盘之中心线两侧的第一安装部和第二安装部，释锁操作件与第一安装部连接，牵引件的第一端与第二安装部连接，座椅与承载座可拆卸地组接。

[0041] 较佳地，座椅高度调整机构还包括推拉杆，推拉杆沿承载座的滑移方向滑设于固定件或承载座上，牵引件的第二端安装于推拉杆上，推拉杆与锁定件连动。

[0042] 较佳地，座椅高度调整机构还包括活动设于座椅上的传动件，传动件与释锁操作件连动，牵引件的第一端安装于传动件上，牵引件的第二端与安装在承载座上的锁定件连接。

[0043] 较佳地，释锁操作件及传动件各滑设于座椅上，且释锁操作件与传动件两者的滑设方向相交。

[0044] 较佳地，锁定件呈枢摆布置，释锁操作件与锁定件共同为一体式结构。

[0045] 较佳地，锁定件及释锁操作件二者各可枢摆地安装于承载座或固定件上，借助释锁操作件的枢摆而连动锁定件做释锁运动。

[0046] 较佳地，承载座绕一枢转中心线枢接于车架，承载座至少具有沿承载座的旋转方向彼此隔开的第一组接头和第二组接头，第一组接头至枢转中心线的距离与第二组接头至

枢转中心线的距离相异，座椅可拆卸地安装于第一组接头或第二组接头。

[0047] 与现有技术相比，由于承载座沿车架的上下方向滑设车架，故借由承载座相对车架的上下滑移而调整承载座上的座椅在车架上的高度位置，因此，可以根据婴儿的身高而灵活地通过承载座相对车架的上下滑移，从而达到调整承载座上的座椅在车架上的高度位置，一方面便于操作人员的调整操作，另一方面提高通用性。

附图说明

[0048] 图1是本发明第一实施例的婴儿推车的立体结构示意图。

[0049] 图2是图1所示的婴儿推车在另一角度时的立体结构示意图。

[0050] 图3是图1所示的婴儿推车在隐藏座椅后的立体结构示意图。

[0051] 图4是图2所示的婴儿推车在隐藏座椅后的立体结构示意图。

[0052] 图5是图1所示的婴儿推车中的固定件的立体结构示意图。

[0053] 图6是图1所示的婴儿推车中的锁定件与释锁操作件共同为一体的立体结构示意图。

[0054] 图7是对图1所示的婴儿推车剖切并显示出锁定件在与段位配锁部锁合而处于锁合位置时的内部结构示意图。

[0055] 图8是对图1所示的婴儿推车剖切并显示出锁定件在与段位配锁部释锁而处于释锁位置时的内部结构示意图。

[0056] 图9是本发明第二实施例的婴儿推车的立体结构示意图。

[0057] 图10是图9所示的婴儿推车在另一角度时的立体结构示意图。

[0058] 图11是图9所示的婴儿推车在又一角度时的立体结构示意图。

[0059] 图12是本发明第三实施例的婴儿推车在隐藏部分前脚后的立体结构示意图。

[0060] 图13是图12所示的婴儿推车在另一角度时的立体结构示意图。

[0061] 图14是图12所示的婴儿推车在又一角度时的立体结构示意图。

[0062] 图15是图14所示的婴儿推车在隐藏座椅后的立体结构示意图。

[0063] 图16是图12所示的婴儿推车中的承载座、锁定件及释锁操作件安装在一起时的立体结构示意图。

[0064] 图17是本发明第四实施例的婴儿推车的立体结构示意图。

[0065] 图18是图17所示的婴儿推车中的释锁操作件、转盘、牵引件、推拉杆及锁定件在连动时的结构示意图。

[0066] 图19是图17所示的婴儿推车在隐藏后脚时的立体结构示意图。

[0067] 图20是图19中A部分的放大图。

[0068] 图21是本发明第五实施例的婴儿推车在座椅组接于第一组接头上时的立体结构示意图。

[0069] 图22是本发明第五实施例的婴儿推车在座椅组接于第二组接头上时的立体结构示意图。

[0070] 图23是图21所示的婴儿推车在隐藏座椅后的立体结构示意图。

[0071] 图24是图22所示的婴儿推车在隐藏座椅后的立体结构示意图。

[0072] 图25是本发明第六实施例的婴儿推车的立本结构示意图。

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[0073] 图26是图25所示的婴儿推车在另一角度时的立体结构示意图。

[0074] 图27是图25所示的婴儿推车在又一角度时的立体结构示意图。

[0075] 图28是图25所示的婴儿推车在隐藏座椅后的立体结构示意图。

[0076] 图29本发明第六实施例的婴儿推车中的释锁操作件、传动件及牵引件安装在一起时的立体结构示意图。

[0077] 图30本发明第六实施例的婴儿推车在锁定件与一个段位配锁部锁合时的立体结构示意图。

[0078] 图31本发明第六实施例的婴儿推车在锁定件与一个段位配锁部释锁时的立体结构示意图。

[0079] 图32是图30所示的婴儿推车的立体分解图。

[0080] 图33是图31所示的婴儿推车的立体分解图。

具体实施方式

[0081] 为了详细说明本发明的技术内容、构造特征，以下结合实施方式并配合附图作进一步说明。

[0082] 请参阅图1至图8，本发明第一实施例的婴儿推车100a包车架10、座椅20及座椅高度调整机构30。车架10包含前脚11、后脚12和车手13，前脚11、后脚12和车手13三者之间可展收操作，以便于车架10的收折操作；较优的是，车手13向下依次与后脚12及前脚11枢接，使得车手13与前脚11的枢接处位于车手13与后脚12的枢接处的前下方，在确保车架10收折操作便捷的条件下简化前脚11、后脚12和车手13三者枢接的结构，但不以此为限。座椅高度调整机构30包含承载座31，承载座31活动地设于车架10，座椅20组接于承载座31上，使得座椅20通过承载座31而组装于车架10上，因此，借由承载座31相对车架10的活动，从而调整承载座31上的座椅20在车架10上的高度位置。具体地，于本实施例中，承载座31是沿车架10的上下方向滑设于车手13，使得承载座31可沿着车手13做上下滑移，故在承载座31沿着车手13上下滑移过程中，使得承载座31相对车架10的上下滑移，从而调整承载座31上的座椅20在车架10上的高度位置。可理解的是，根据实际需要，承载座31还可沿车架10的上下方向滑设于前脚11或后脚12上，故不以此为限。当车架10不包含前脚11、后脚12及车手13时，此时的承载座31便是沿车架10的上下方向滑设于车架10上，借由承载座31相对车架10的上下滑移而调整承载座31上的座椅20在车架10上的高度位置，故不以上述的举例为限。更具体地，如下：

[0083] 如图3至图8所示，为确保调整后的承载座31在车手13上的位置可靠性，还便于操作人员对承载座31的调整操作，座椅高度调整机构30还包括锁定件32、与锁定件32连动的释锁操作件33及安装于车手13上的固定件34。承载座31滑设于固定件34，以使得承载座31通过滑设于固定件34上而达到滑设于车手13处的目的；较优的是，承载座31还与固定件34相互套装配合，且固定件34为直杆结构，以增加承载座31与固定件34之间滑动可靠性，但不以此为限。锁定件32安装于承载座31上，由承载座31为锁定件32提供支撑，且锁定件32至少具有如图7所示的锁合位置和图8所示的释锁位置，固定件34至少设有两个沿承载座31的滑移方向（见图5中双箭头B所指）彼此间隔开的段位配锁部35。锁定件32在选择性地与任一段位配锁部35锁合时处于锁合位置，状态见图7所示；释锁操作件33连动锁定件32脱离与任一

段位配锁部35锁合，以使锁定件32处于释锁位置，状态见图8所示；举例而言，段位配锁部35为槽孔结构，例如凹槽、盲孔或通孔，它的形状是与锁定件32的形状相匹配，但这都是本领域所熟知的，故在此不再详述。

[0084] 如图7及图8所示，为使锁定件32在常态下能自动地往锁合位置切换，座椅高度调整机构30还包括复位弹性件36，复位弹性件36恒具有驱使锁定件32由释锁位置切换至锁合位置的趋势；具体地，由于锁定件32是安装于承载座31上，故复位弹性件36设于锁定件32和具有该锁定件32的承载座31上，以简化复位弹性件36、锁定件32及承载座31三者的安装关系，当锁定件32安装于固定件34上时，此时的复位弹性件36却是设于锁定件32与固定件34上，故不以此为限；举例而言，锁定件32呈滑移布置，锁定件32的滑移方向（见图7及图8中双箭头D所指）与承载座31的滑移方向（见图7及图8中双箭头B所指）相交错，这样设计能简化锁定件32对承载座31的厚度占用量。由于锁定件32呈滑移布置，对应的，复位弹性件36选择为压缩弹簧或拉伸弹簧，以进一步地简化复位弹性件36、锁定件32及承载座31三者的安装关系，但不限于此。可理解的是，根据实际需要，锁定件32还可安装于固定件34处，对应地，承载座31开设有至少两个段位配锁部35，一样能实现承载座31的段位调整及锁定的目的，但不以此为限。另，当承载座31滑设于前脚11时，此时的固定件34安装于车架10的前脚11上，当承载座31滑设于后脚11时，此时的固定件34安装于后脚11上，故不以上述的举例为限。

[0085] 如图5至图8所示，锁定件32具有相对承载座31的滑移方向倾斜的倾斜结构321，段位配锁部35也具有相对承载座31的滑移方向倾斜的倾斜结构351，在承载座31向上滑移过程中，借由倾斜结构321、351而使锁定件32由锁合位置切换至释锁位置，这样设计的目的是：在承载座31向上调整时，此时不需要使用者对释锁操作件33进行操作，只需要使用者直接向上拉动座椅20，即可以实现承载座31向上的调整目的，这是由于锁定件32的倾斜结构321与段位配锁部35的倾斜结构351在承载座31向上滑移过程中相互顶推，从而使锁定件32克服复位弹性件36的弹力而滑移内缩，因而使得锁定件32与对齐的段位配锁部35之间释锁，因而允许承载座31向上调整。具体地，安装于承载座31上的锁定件32之倾斜结构321位于该锁定件32的上侧，对应地，固定件34所开设的段位配锁部35之倾斜结构351位于该段位配锁部35的上侧，状态见图7或图8所示。需要说明的是，根据实际需要，可将安装于固定件34上的锁定件32之倾斜结构321设计成位于该锁定件32的下侧，对应地，可将承载座31所开设的段位配锁部35之倾斜结构351设计成位于该段位配锁部351的下侧，但不以此为限；另，根据实际需要，可由锁定件32或段位配锁部35所具有倾斜结构，一样能实现“使用者不需要对释锁操作件33进行操作，只需要使用者向上直接拉动座椅20的上端便可向上调整承载座31”的目的，故不以此为限。

[0086] 如图6及图7所示，释锁操作件33与锁定件32共同为一体式结构，这样设计的目的是实现通过释锁操作件33对锁定件32进行近距离释锁的目的，并简化释锁操作件33与锁定件32两者的结构；由于释锁操作件33与锁定件32共同一体式结构，此时的释锁操作件33通过锁定件32安装于承载座31处，但不以此为限。可理解的是，根据实际需要，可将与释锁操作件33共同为一体式结构的锁定件32呈枢摆布置，使得释锁操作件33和锁定件32一起相对承载座31枢摆而实现锁定件32与段位配锁部35之间的锁合或释锁的目的，但不以此为限。为便于用户装拆座椅20，第一实施例的婴儿推车100a中的座椅20与承载座31可拆卸地组

接，当然，根据实际需要，座椅20与承载座31可做成不可拆卸的，故不以此为限。

[0087] 结合图1至图8，对本发明第一实施例的婴儿推车100a的工作原理进行说明：当需要向上调整座椅20在车架10的高度位置时，使用者直接向上拉动座椅20，使得作用于座椅20上的作用力传递至承载座31处，从而使得承载座31具有向上滑移的趋势；而具有向上滑移趋势的承载座31借助锁定件32的倾斜结构321与段位配锁部35的倾斜结构351的相互顶推作用下，使得锁定件32克服复位弹性件36的弹力而滑移内缩，从而使得锁定件32与其对齐一个的段位配锁部35之间释锁，因而允许承载座31连同座椅20一起向上调整，直到锁定件32重新再与另一个段位配锁部35相对齐为止，此时的锁定件32在复位弹性件36的复位弹力作用下自动地与对齐的段位配锁部35相锁合，以固定调整位置后的承载座31在车手13上的位置。当要向下调整座椅20在车架10的高度位置时，由使用者对释锁操作件33进行操作，由释锁操作件33连同锁定件32一起克服复位弹性件36的弹性力而与对齐的段位配锁部35之间释锁，从而允许承载座31连同座椅20一起向下调整。

[0088] 请参阅图9至图11，本发明第二实施例的婴儿推车100b与第一实施例的婴儿推车100a的结构基本相同，区别点仅在于两者中的座椅高度调整机构30在车架10的安装位置稍有区别，具体如下：

[0089] 于第二实施例中，座椅高度调整机构30的承载座31是滑设于车架10的后脚12处，具体地，座椅高度调整机构30的固定件34安装于后脚12处，使得承载座31滑设于后脚12的固定件34处；而于第一实施例中，座椅高度调整机构30的承载座31是滑设于车架10的车手13处，具体是座椅高度调整机构30的固定件34安装于车手13处，使得承载座31滑设于车手13的固定件34处。

[0090] 虽然，第一实施例及第二实施例两者中的座椅高度调整机构30在车架10上的安装位置稍有区别，但是，第一实施例与第二实施例两者中的座椅高度调整机构30的结构完全相同，故两者的座椅10高度调整原理相同，故在此不再对第二实施例的婴儿推车100b的工作原理进行详细的描述。值得注意的是，虽然第一实施例及第二实施例中的座椅高度调整机构10仅展示承载座31滑设于车手13或后脚12处，当然，根据实际需要，第一实施例及第二实施例中的座椅高度调整机构10的承载座31还可以滑设于前脚11处，故不以上述的举例为限；此外，还需要说明的是，当承载座31滑设于前脚11处时，此时的固定件34是安装于前脚11处，以实现承载座31通过固定件34滑设于前脚11处的目的。

[0091] 请参阅图12至图16，本发明第三实施例的婴儿推车100c与第一实施例的婴儿推车100a的结构基本相同，区别点在于两者中的座椅高度调整机构的具体结构，下面就它们的区别处进行说明：

[0092] (1)于第三实施例中，座椅高度调整机构30`包含承载座31，该承载座31是滑设于前脚11，具体是滑设于前脚11的固定件34处，以借助滑设于固定件34而达到滑设于前脚11处的目的；

[0093] 而于第一实施例中，座椅高度调整机构30包含承载座31，承载座31是滑设于车手13处，具体是滑设于车手13的固定件34处。

[0094] 需要说明的是，根据实际需要，第三实施例的承载座31还可以滑设于后脚12或车手13处，故不以上述的举例为限。

[0095] (2)于第三实施例中，座椅高度调整机构30`包含释锁操作件33`和锁定件32`，释

锁操作件33`与锁定件32`之间彼此独立，即释锁操作件33`为独立模块，锁定件32`也是独立模块，使得释锁操作件33`与锁定件32`之间通过连动结构而一起连动；而于第一实施例中，座椅高度调整机构30包含释锁操作件33和锁定件32，释锁操作件33和锁定件32共同为一体式结构，因此，第一实施例中的释锁操作件33与锁定件32之间不是通过第三方来实现连动关系。

[0096] (3)于第三实施例中，锁定件32`及释锁操作件33`二者各可枢摆地安装于承载座31，借助释锁操作件33`的枢摆而连动锁定件32`做释锁运动；具体是，如图15及图16所示，承载座31设有第一套装柱311及第二套装柱312，锁定件32`的中部套装于第一套装柱311处，释锁操作件33`套装于第二套装柱312处，释锁操作件33`还与锁定件32`相互嵌设及连动，复位弹性件36`套装于第一套装柱311，且复位弹性件36`的一端与锁定件32`抵接，复位弹性件36`的另一端与承载座31抵接，举例而言，复位弹性件36`为扭簧，当然，根据实际需要而选择为拉簧或压缩弹簧等，故不以此为限；因此，于第三实施例中，通过释锁操作件33`的枢摆去连动锁定件32`的枢摆，由枢摆的锁定件32`与段位配锁部35相释锁。可理解的是，当锁定件32`及释锁操作件33`二者各可枢摆地安装于固定件34处时，此时的第一套装柱311及第二套装柱312由固定件34所设有。

[0097] 而于第一实施例中，锁定件32呈滑移布置，锁定件32还与释锁操作件33共同为一体式结构，因此，于第一实施例中，通过释锁操作件33去带动锁定件32的滑移，从而由滑移锁定件32与段位配锁部35相释锁。

[0098] 除了上述的区别外，其它与第一实施例的相同，故在此不再赘述。

[0099] 结合图12至图16，对本发明第三实施例的婴儿推车100c的工作原理进行说明：当需要向上调整座椅20在车架10的高度位置时，使用者直接向上拉动座椅20，使得作用于座椅20上的作用力传递至承载座31处，从而使得承载座31具有向上滑移的趋势；具有向上滑移趋势的承载座31借助锁定件32`的倾斜结构321与段位配锁部35的倾斜结构351的相互顶推作用下，使得锁定件32`克服复位弹性件36`的弹力而枢摆内缩，从而使得锁定件32`与其对齐的一个段位配锁部35之间相释锁，因而允许承载座31连同座椅20一起向上调整，直到锁定件32`重新再与另一个段位配锁部35相对齐为止，此时的锁定件32`在复位弹性件36`的复位弹力作用下自动地与其对齐的另一个段位配锁部35相锁合，以固定调整位置后的承载座31在车手13上的位置。当要向下调整座椅20在车架10的高度位置时，由使用者对释锁操作件33`进行操作，由释锁操作件33`连动锁定件32`一起克服复位弹性件36`的弹性力而与对齐的段位配锁部35之间释锁，从而允许承载座31连同座椅20一起向下调整。

[0100] 请参阅图17至图20，本发明第四实施例的婴儿推车100d和第一实施例的婴儿推车100a两者的车架10及座椅20的结构相同，且第四实施例的婴儿推车100d和第一实施例的婴儿推车100a两者中的座椅高度调整机构都包含承载座31、锁定件32、释锁操作件33及固定件34，承载座31滑设于固定件34处，而固定件34安装于车手13处。不同点如下：

[0101] (1)于第四实施例中，锁定件32至少为两个并沿承载座31的滑移方向彼此间隔开，释锁操作件33同时与所有锁定件32一起连动，即是说，由同一释锁操作件33同时连动所有锁定件32一起运动，锁定件32安装于固定件34并至少具有一锁合位置(见图18和图20)和一释锁位置，承载座31设有段位配锁部35，因此，任一锁定件32在选择性地与段位配锁部35锁合时处于锁合位置，状态见图18及图20所示，而释锁操作件33连动所有锁定件32一起做释

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锁运动，由任一锁定件32脱离与段位配锁部35锁合而处于释锁位置；可理解的是，根据实际需要，锁定件32可安装于承载座31处，对应地，固定件34设有段位配锁部35处，故不以上述的举例为限。

[0102] 而于第一实施例中，锁定件32安装于承载座31上并至少具有一锁合位置和一释锁位置，固定件34至少设有沿承载座31的滑移方向彼此间隔开的段位配锁部35，锁定件32在选择性地与任一段位配锁部35锁合时处于锁合位置；释锁操作件33连动锁定件32脱离与任一段位配锁部35锁合。

[0103] (2)于第四实施例中，释锁操作件33与锁定件32之间彼此独立，即释锁操作件33为独立模块，锁定件32也是独立模块，使得释锁操作件33与锁定件32之间通过连动结构(如下面描述到的牵引件37、转盘38及推拉杆39a)而一起连动；而于第一实施例中，释锁操作件33与锁定件32共同为一体式结构，因此释锁操作件33与锁定件32之间不设有牵引件37、转盘38及推拉杆39a。

[0104] (3)于第四实施例中，座椅高度调整机构30``还包括柔性的牵引件37，释锁操作件33通过牵引件37连动锁定件32，以实现对锁定件32的远距离控制目的；具体地，牵引件37的第一端与安装在车手13上的释锁操作件33连接，牵引件37的第二端与安装在固定件34上的锁定件32连接；更具体地，座椅高度调整机构30``还包括枢接于车手13上的转盘38，转盘38具有分布于转盘38之中心线L两侧的第一安装部381和第二安装部382，释锁操作件33与第一安装部381连接，牵引件37的第一端与第二安装部382连接，以通过释锁操作件33的滑移而转换成转盘38绕中心线L的转动，从而由转动的转盘38通过牵引件37拉动锁定件32做释锁的目的；为更可靠地带动所有锁定件32一起运动，故座椅高度调整机构30``还包括推拉杆39a，推拉杆39a沿承载座31的滑移方向滑设于固定件34上，牵引件37的第二端安装于推拉杆39a上，推拉杆39a与锁定件32连动。

[0105] 而于第一实施例中，由于座椅高度调整机构30的锁定件32与释锁操作件33共同为一体式结构，锁定件32与释锁操作件33之间不设有牵引件37、转盘38及推拉杆39a，故高度调整机构30不设有牵引件37、转盘39及推拉杆39a。

[0106] (4)于第四实施例中，复位弹性件36直接设于推拉杆39a与固定件34之间，使得复位弹性件36通过推拉杆39a去带动锁定件32复位；而于第一实施例中，复位弹性件36直接设于锁定件32及该锁定件所在的承载座31或固定件34之间，故由复位弹性件36直接带动锁定件32复位。

[0107] (5)于第四实施例中，如图18及图20所示，仅由锁定件32具有倾斜结构321；而于第一实施例中，锁定件32及段位配锁部35各具有倾斜结构321、351。

[0108] 除了上述的区别外，其它与第一实施例相同，故在此不再赘述。需要说明的是，第四实施例的座椅高度调整机构30``中的承载座31根据实际需要还可以滑设于车架10的前脚11或后脚12，对应地，座椅高度调整机构30`中的固定件34安装于前脚11或后脚12，故不以上述的举例为限。

[0109] 结合图17至图20，对本发明第四实施例的婴儿推车100d的工作原理进行说明：当需要向上调整座椅20在车架10的高度位置时，使用者直接向上拉动座椅20，使得作用于座椅20上的作用力传递至承载座31处，从而使得承载座31具有向上滑移的趋势；具有向上滑移趋势的承载座31借助段位配锁部35对与该段位配锁部35相对齐的锁定件32之倾斜结构

321的顶推作用下，使得所有锁定件32一起滑移内缩的同时，还连动推拉杆39a克服复位弹性件36的弹性力而向上滑移，从而使得段位配锁部35和对齐该段位配锁部35的一个锁定件32之间释锁，因而允许承载座31连同座椅20一起向上调整，直到段位配锁部35重新与另一个锁定件32相对齐为止，此时的推拉杆39a在复位弹性件36的弹性力作用下向下滑移，由滑移的推拉杆39a连动段位配锁部35自动地与其对齐的一个锁定件32相锁合，以固定调整位置后的承载座31在车手13上的位置。当要向下调整座椅20在车架10的高度位置时，由使用者对释锁操作件33进行操作，由释锁操作件33带动转盘38绕中心线L转动，从而由转动的转盘38通过牵引件37拉动推拉杆39a克服复位弹性件36的弹性力而向上滑移，从而由向上滑移的推拉杆39a连动所有的锁定件32一起滑移内缩，使段位配锁部35与对齐该段位配锁部35的一个锁定件32释锁，从而允许承载座31连同座椅20一起向下调整。

[0110] 请参阅图21至图24，本发明第五实施例的婴儿推车100e包车架10、座椅20及座椅高度调整机构40。车架10包含前脚11、后脚12和车手13，前脚11、后脚12和车手13三者之间可展收操作，以便于车架10的收折操作；较优的是，车手13向下依次与后脚12及前脚11枢接，使得车手13与前脚11的枢接处位于车手13与后脚12的枢接处的前下方，以在确保车架10收折操作便捷的条件下简化前脚11、后脚12和车手13三者枢接的结构，但不以此为限。座椅高度调整机构40包含承载座41，承载座41绕一枢转中心线C枢接于车架10，承载座41至少具有沿承载座41的旋转方向彼此隔开的第一组接头41a和第二组接头41b，第一组接头41a至枢转中心线C的距离与第二组接头41b至枢转中心线C的距离相异，此时，座椅20可拆卸地安装于第一组接头41a或第二组接头41b；举例而言，第一组接头41a至枢转中心线C的距离小于第二组接头41b至枢转中心线C的距离，这样使得组接于第一组接头41a上的座椅20在车架10上的高度比组接于第二组接头41b上的座椅20在车架10上的高度低，因此，通过旋转承载座31，便于调换第一组接头41a和第二组接头41b之间的位置，所以，使得座椅20于车架10上的高度调整更方便；具体地，车手13、前脚11及承载座31三者同轴枢接，更便于承载座31的旋转操作；举例而言，第一组接头41a与第二组接头41b之间所夹的圆心角为90度，即是说，第一组接头41a与第二组接头41b之间的位置调换仅需要承载座31旋转90度即可，另，此角度设置能尽量地避免第一组接头41a及第二组接头41b中一者在第一组接头41a及第二组接头41b中另一者与座椅20组接时造成障碍。需要说明的是，座椅20在与第一组接头41a组接时，此时的第二组接头41b处于空闲状态，同理，当座椅20在与第二组接头41b组接时，此时的第一组接头41a处于空闲状态，因此，第五实施例的婴儿推车100e中的座椅20与承载座31之间设计成可拆卸式的。

[0111] 需要说明的是，于第一实施例中，座椅高度调整机构30中的承载座31是滑移布置；而于第五实施例中，座椅高度调整机构40的承载座41是枢摆布置，因此，为确保旋转后的承载座41的位置，可将第一至第四实施例中的座椅高度调整机构30除承载座31外的余下结构转用过来，即由释锁操作件33连动锁定件32对承载座41与固定件34之间的释锁目的。且可理解的是，根据实际需要，第五实施例中的座椅高度调整机构40之承载座41可枢绕一枢转中心线C枢接于车架10中的前脚11、后脚11或车手13处，故不以上述的举例为限。

[0112] 结合图21至图24，对本发明第五实施例的婴儿推车100e的工作原理进行说明：当将图21所示的座椅20调整至图22所示的位置时，此时先将座椅20从图21所示的第一组接头41a拆下；接着，逆时针旋转承载座41，使第一组接头41a与第二组接头41b互换位置；然后，

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再将座椅20组接于第二组接头41b处，状态见图22所示。当要将图22所示的座椅20位置调整至图21所示的位置时，此时先将座椅20从图22所示的第二组接头41a拆下；接着，顺时针旋转承载座41，使第一组接头41a与第二组接头41b互换位置；然后，再将座椅20组接于第一组接头41a处，状态见图21所示。

[0113] 请参阅图25至图33，本发明第六实施例的婴儿推车100f与第一实施例的婴儿推车100a两者的车架10及座椅20的结构相同，且第六实施例的婴儿推车100f和第一实施例的婴儿推车100a两者的座椅高度调整机构都包含承载座31、锁定件32、释锁操作件33及固定件34，承载座31滑设于固定件34处，而固定件34安装于车手13处。不同点如下：

[0114] (1)于第六实施例中，释锁操作件33与锁定件32之间彼此独立，即释锁操作件33为独立模块，锁定件32也是独立模块，使得释锁操作件33与锁定件32之间通过连动结构(如下面描述到的传动件39b及牵引件37)而一起连动。而于第一实施例中，释锁操作件33与锁定件32共同为一体式结构，故释锁操作件33与锁定件32之间不设有传动件39a和牵引件37。

[0115] (2)于第六实施例中，座椅高度调整机构30```还包括柔性的牵引件37，释锁操作件33通过牵引件37连动锁定件32，以实现对锁定件32的远距离控制目的；具体地，牵引件37的第一端与安装在座椅20上的释锁操作件33连接，牵引件37的第二端与安装在承载座31上的锁定件32连接；更具体地，座椅高度调整机构30```还包括活动设于座椅20上的传动件39a，传动件39a与释锁操作件33连动，牵引件32的第一端安装于传动件39a上，由释锁操作件33通过传动件39a和牵引件32去拉动锁定件32做释锁运动的目的。由于传动件39a与释锁操作件33之间的连动关系已为本领域所熟知的，故在此不再描述。举例而言，释锁操作件33及传动件39a各滑设于座椅20上，且释锁操作件33与传动件39a两者的滑设方向相交，因此，通过释锁操作件33的滑移而连动传动件39a做拉扯牵引件37的运动，或者松开对牵引件37拉扯的运动。由于第一实施例的释锁操作件33与锁定件32之间不设有牵引件37及传动件39a，故释锁操作件33与锁定件32之间不具有上述的连接关系。

[0116] (3)于第六实施例中，由于释锁操作件33安装于座椅20上，故此时的座椅20与承载座31不可拆组接。而于第一实施例中，座椅20与承载座31之间可以做成可拆卸的，当然，也可以做成不可拆的。

[0117] 除上述的区别外，其它与第一实施例相同，故在此不再赘述。另，需要说明的是，于第六实施例中，座椅高度调整机构30```中的承载座31根据实际需要而滑设于车架10的前脚11或后脚12，具体是座椅高度调整机构30```中的固定件34安装于车架10的前脚11或后脚12，从而使得承载座31通过滑设于固定件34而达到滑设于前脚11或后脚12处。

[0118] 结合图25至图32，对本发明第六实施例的婴儿推车100f的工作原理进行说明：当需要向上调整座椅20在车架10的高度位置时，使用者直接向上拉动座椅20，使得作用于座椅20上的作用力传递至承载座31处，从而使得承载座31具有向上滑移的趋势；具有向上滑移趋势的承载座31借助锁定件32的倾斜结构321与段位配锁部35的倾斜结构351之间的相互顶推作用，使得锁定件32克服复位弹性件36而滑移内缩，从而使得锁定件32与其对齐的一个段位配锁部35之间释锁，因而允许承载座31连同座椅20一起向上调整，直到锁定件32重新再与另一个段位配锁部35相对齐为止；此时，在复位弹性件36的弹性力作用下，使得锁定件32自动地与对齐的另一个段位配锁部35相锁合，以固定调整位置后的承载座31在车手13上的位置。当要向下调整座椅20在车架10的高度位置时，由使用者对释锁操作件33进行

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操作，由释锁操作件33带动通过传动件39a及牵引件37拉动锁定件32克服复位弹性件36而滑移内缩，使得锁定件32与其对齐的另一个段位配锁部35之间释锁，从而允许承载座31连同座椅20一起向下调整。

[0119] 与现有技术相比，由于承载座31、41沿车架10的上下方向滑设于车架10上，故借由承载座31、41相对车架10的上下滑移而调整承载座31、41上的座椅20在车架10上的高度位置，因此，可以根据婴儿的身高而灵活地通过承载座31、41相对车架10的上下滑移，从而达到调整承载座31、41上的座椅20在车架10上的高度位置，一方面便于操作人员的调整操作，另一方面提高通用性。

[0120] 上所揭露的仅为本发明的优选实施例而已，当然不能以此来限定本发明之权利范围，因此依本发明申请专利范围所作的等同变化，仍属本发明所涵盖的范围。

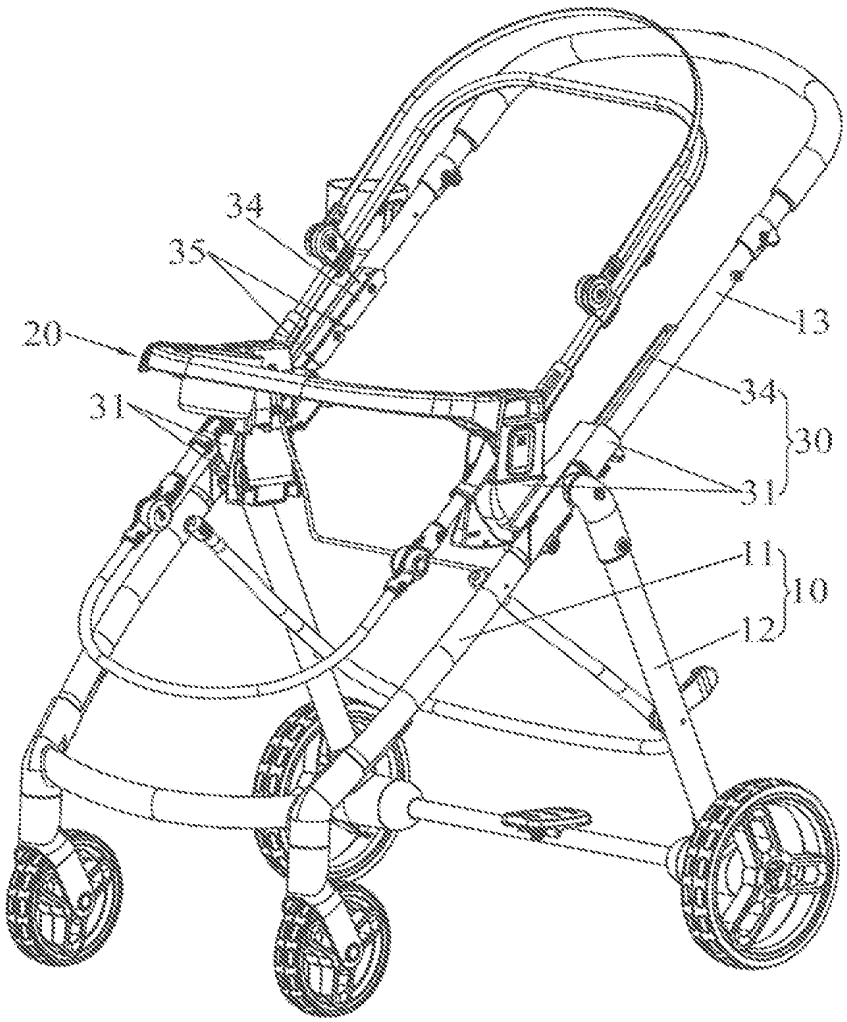

图1

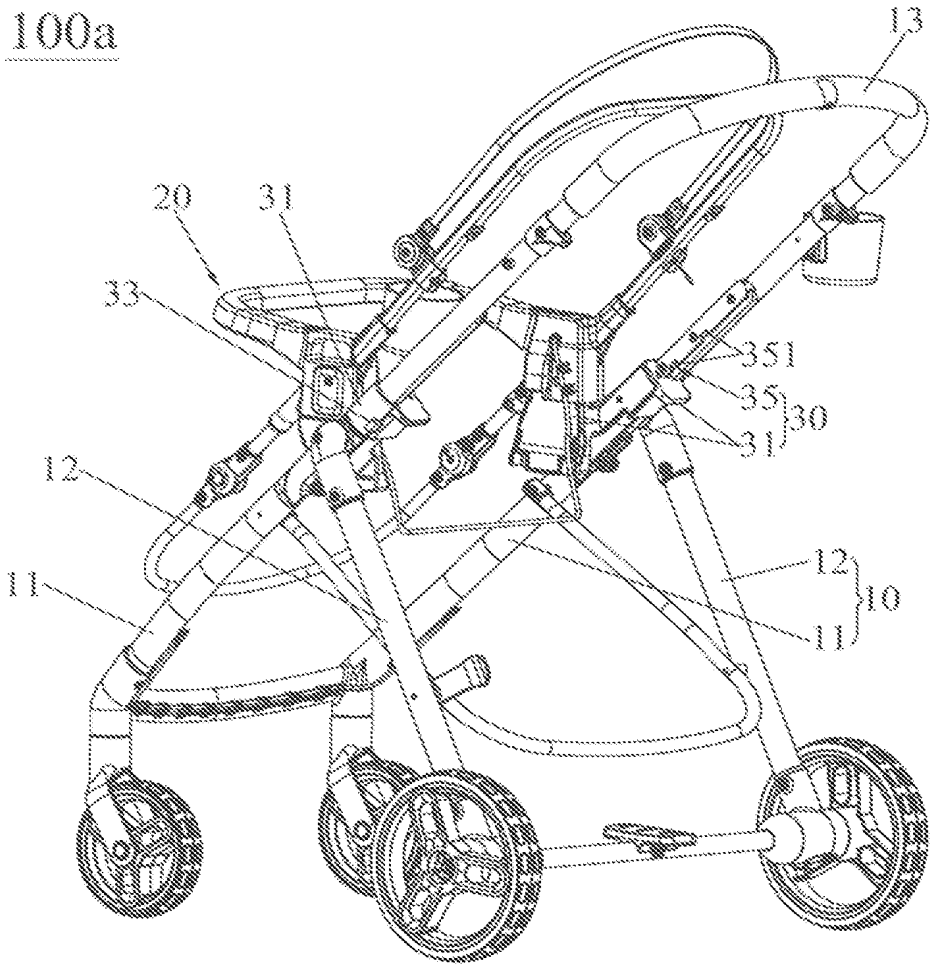

图2

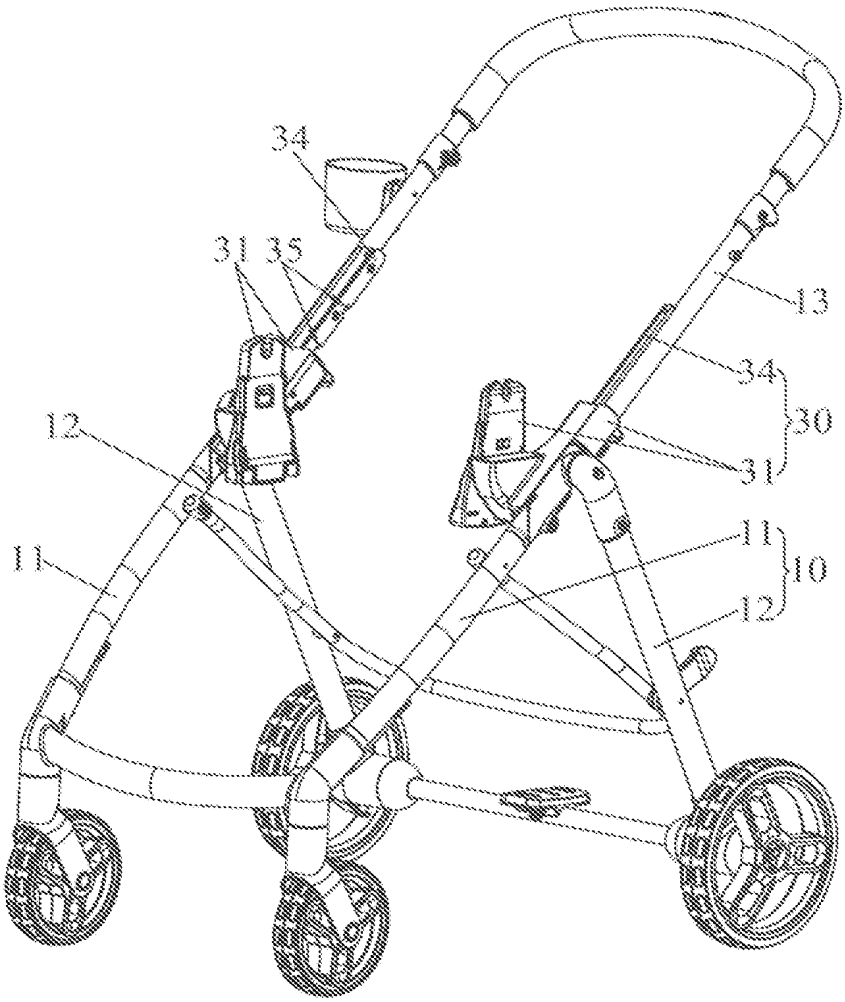

图3

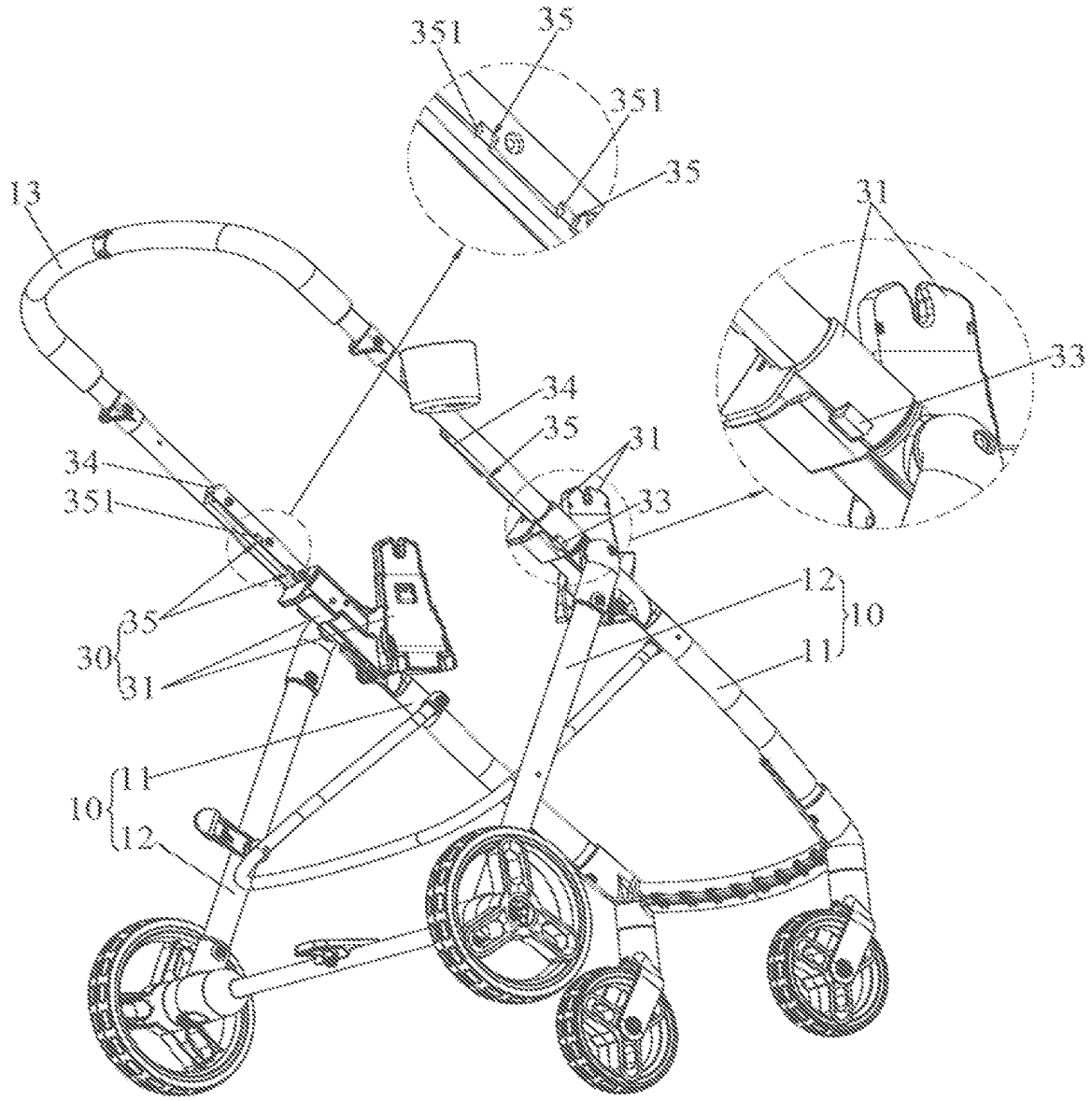

图4

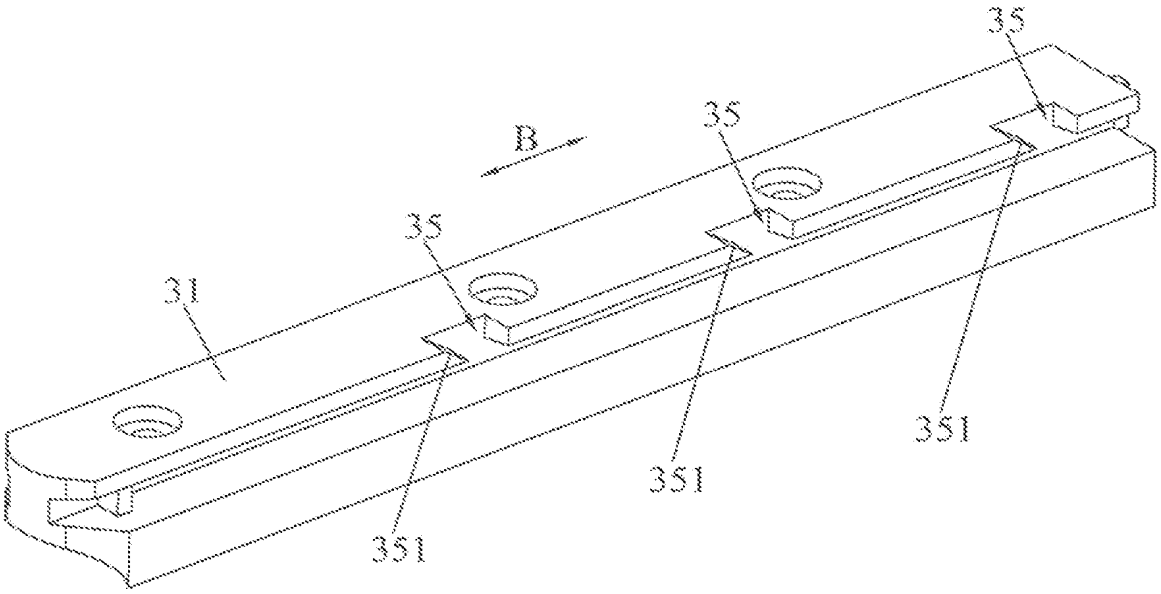

图5

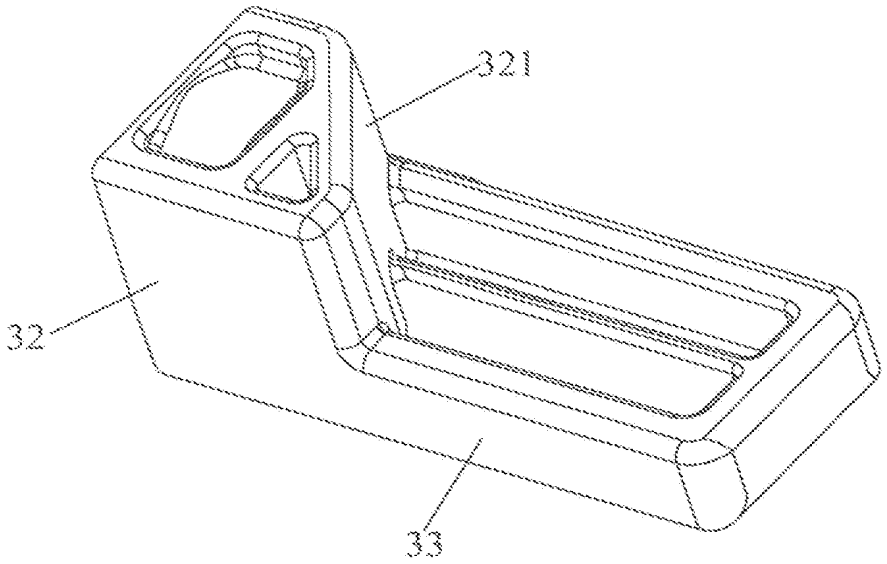

图6

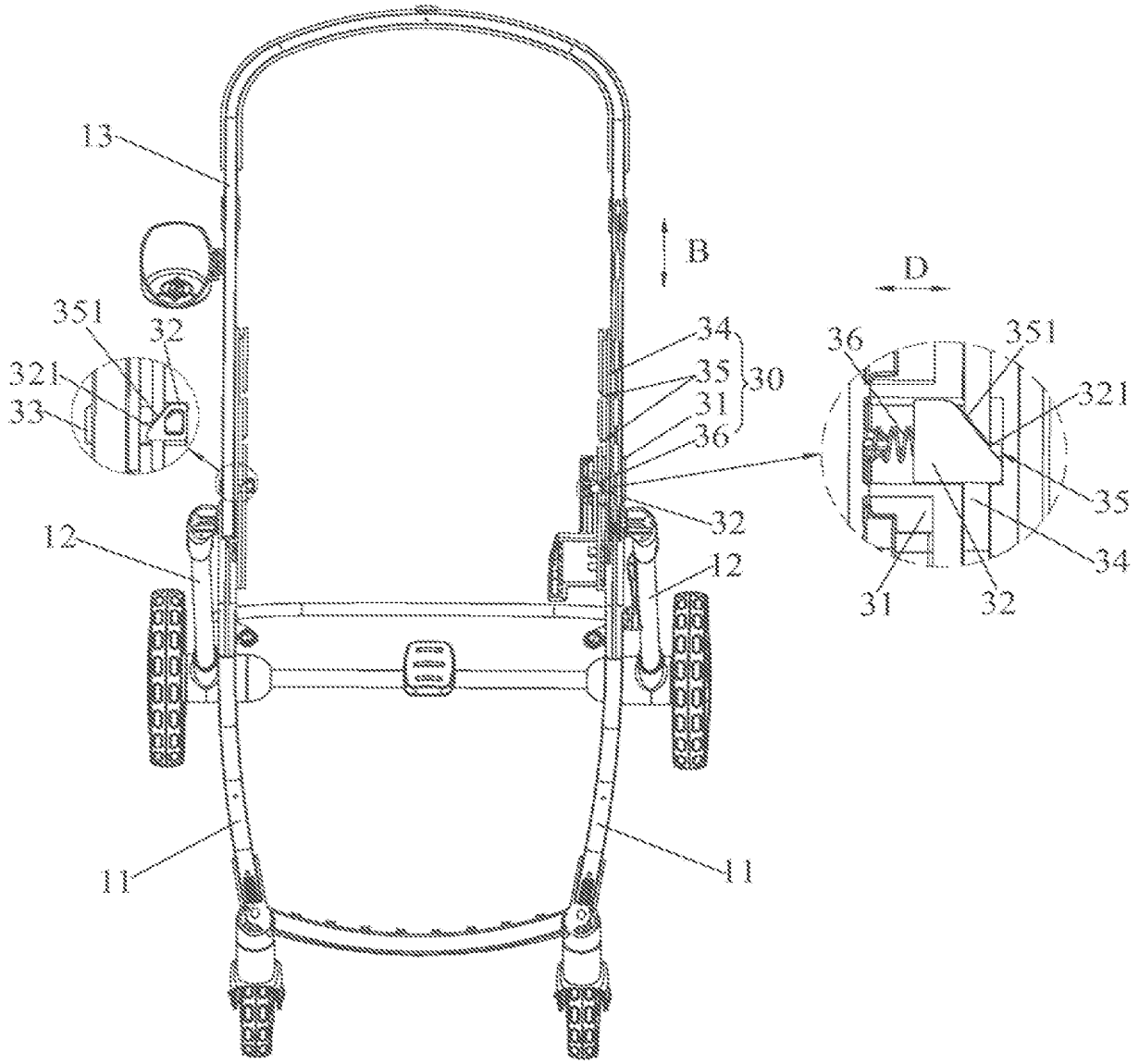
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图7

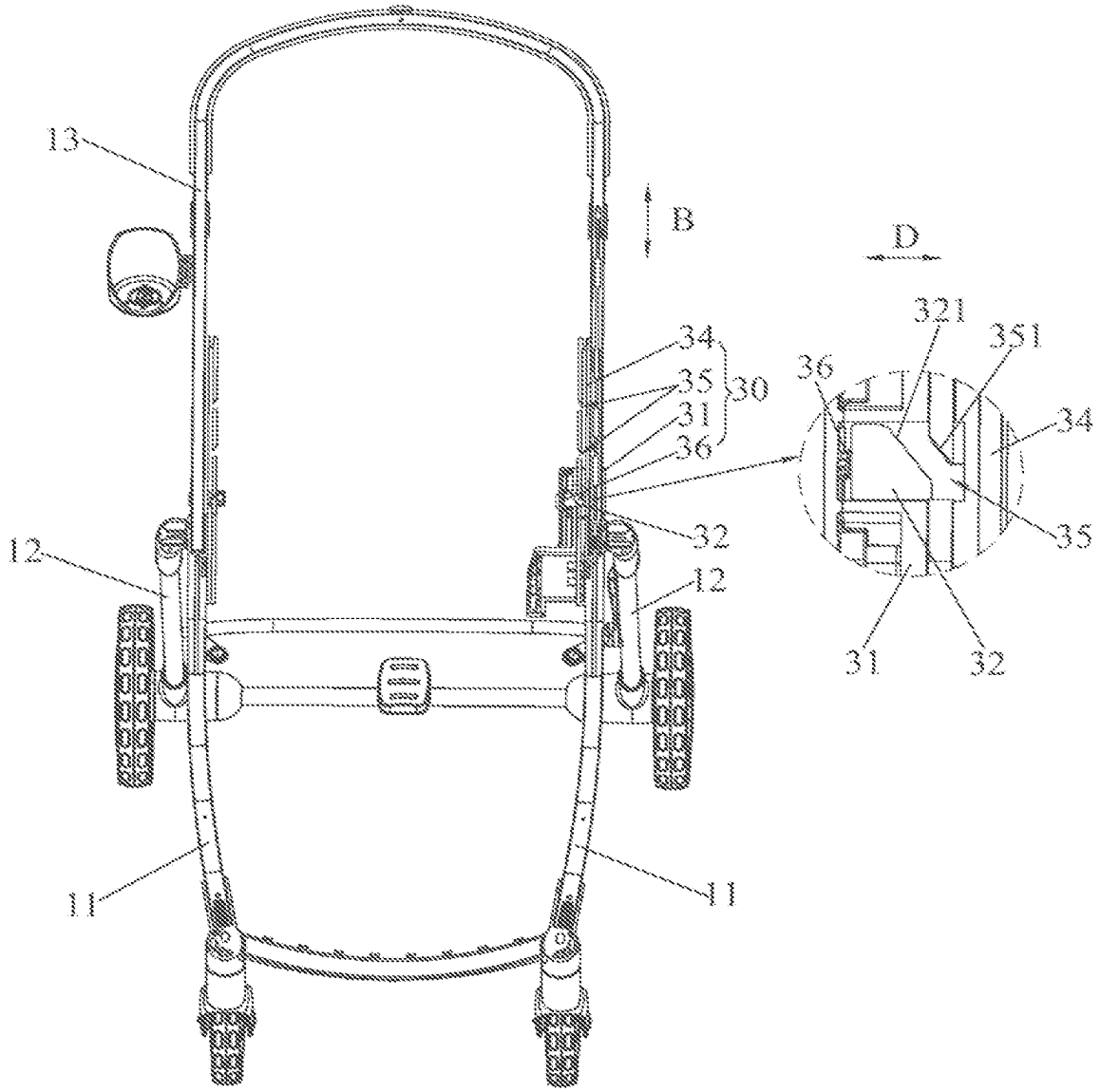


图8

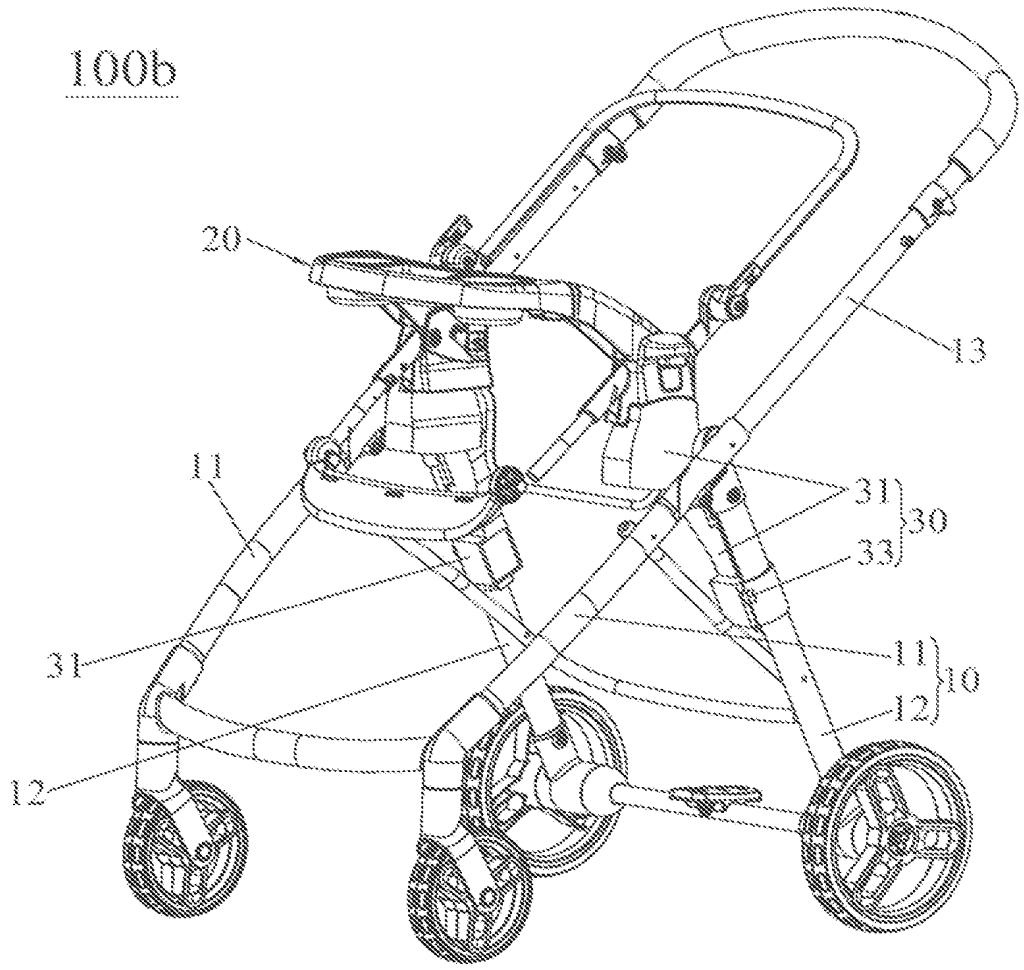


图9

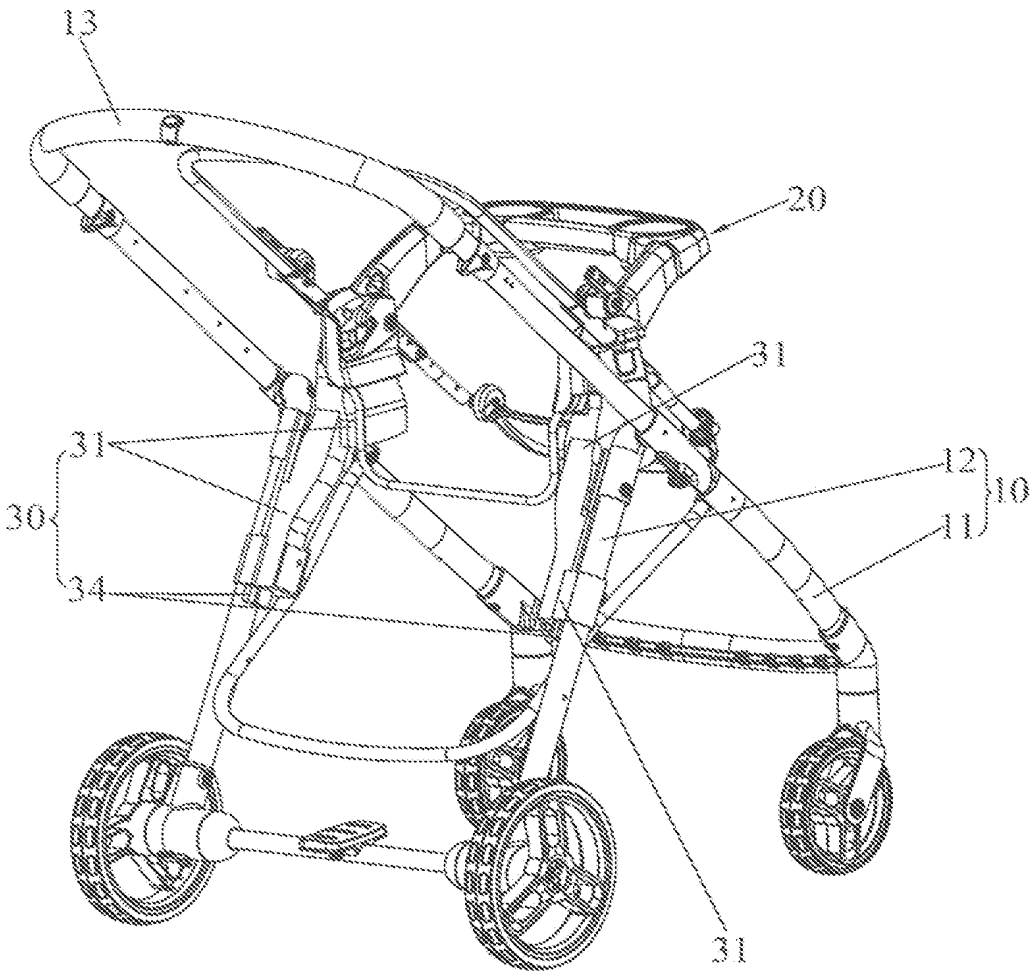


图10

100b

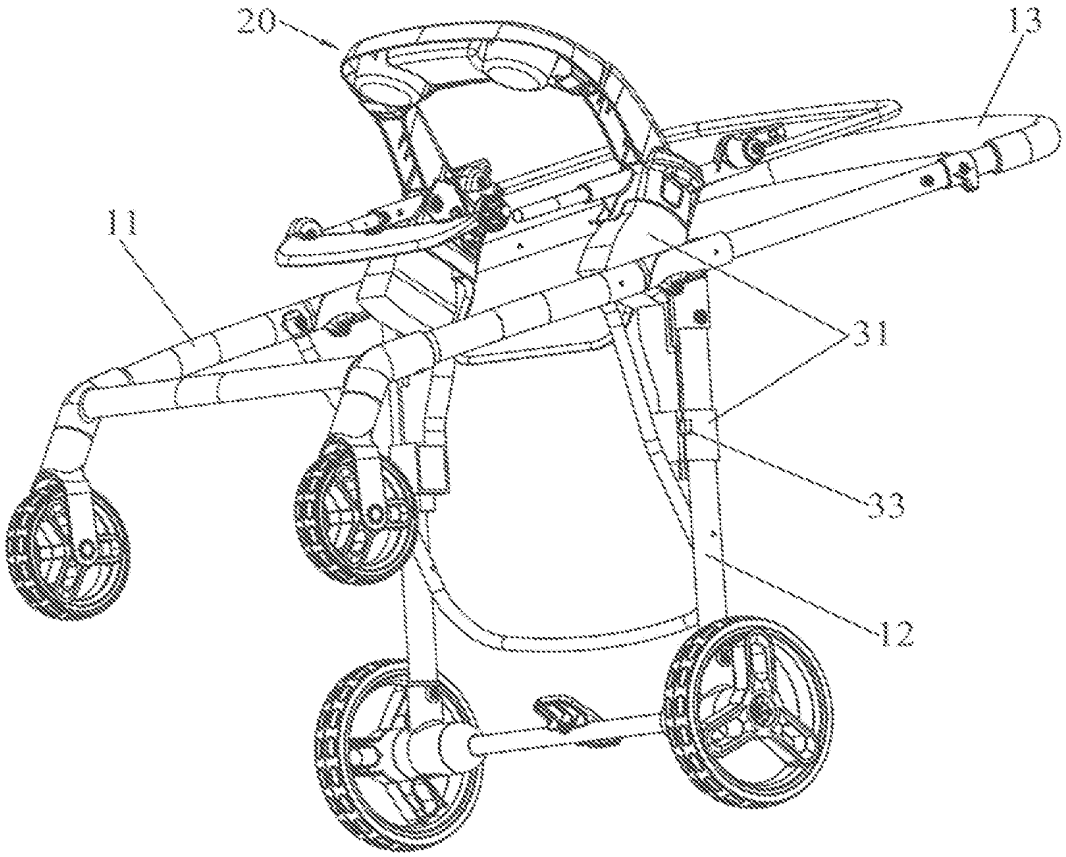


图11

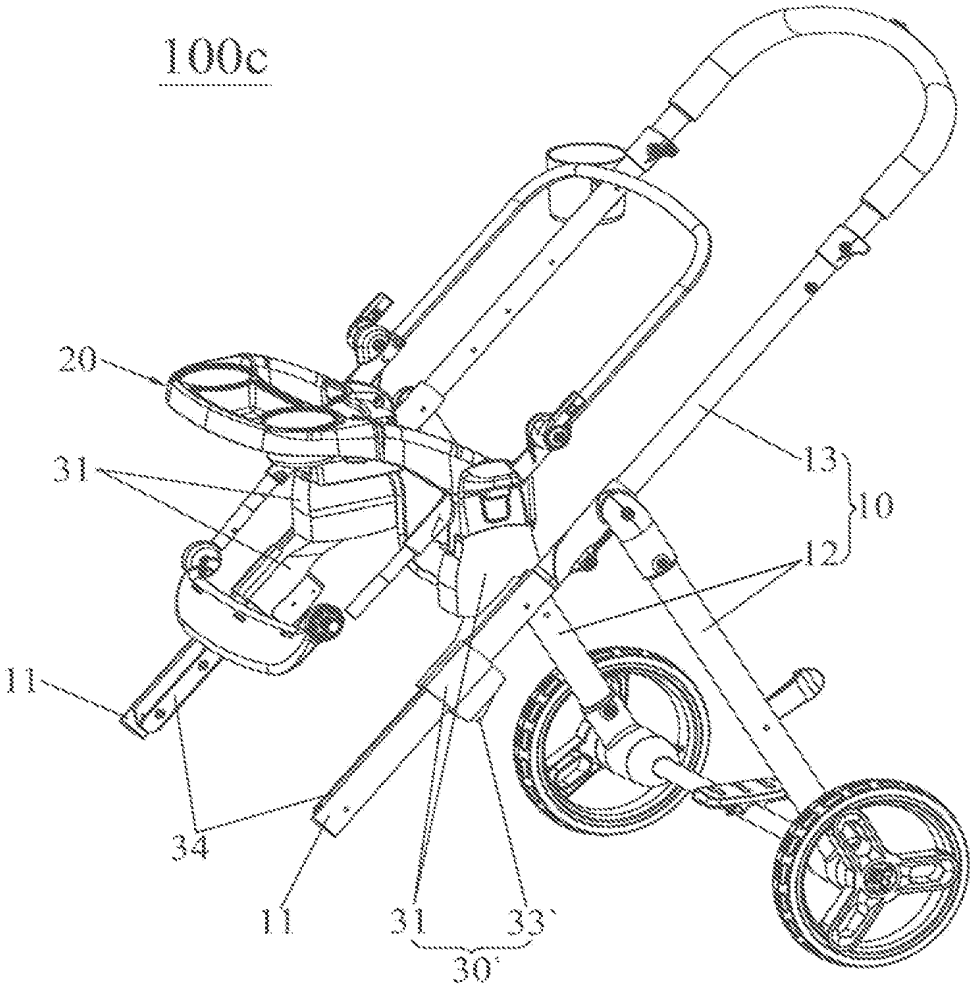
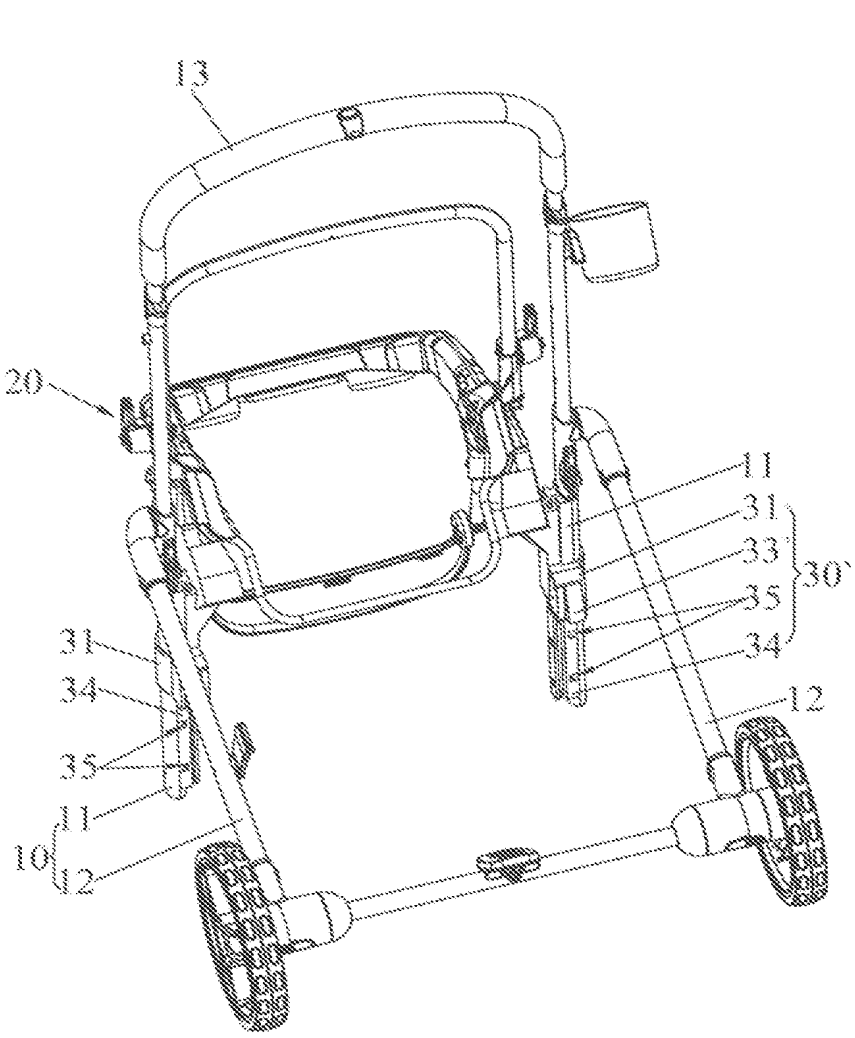


图12



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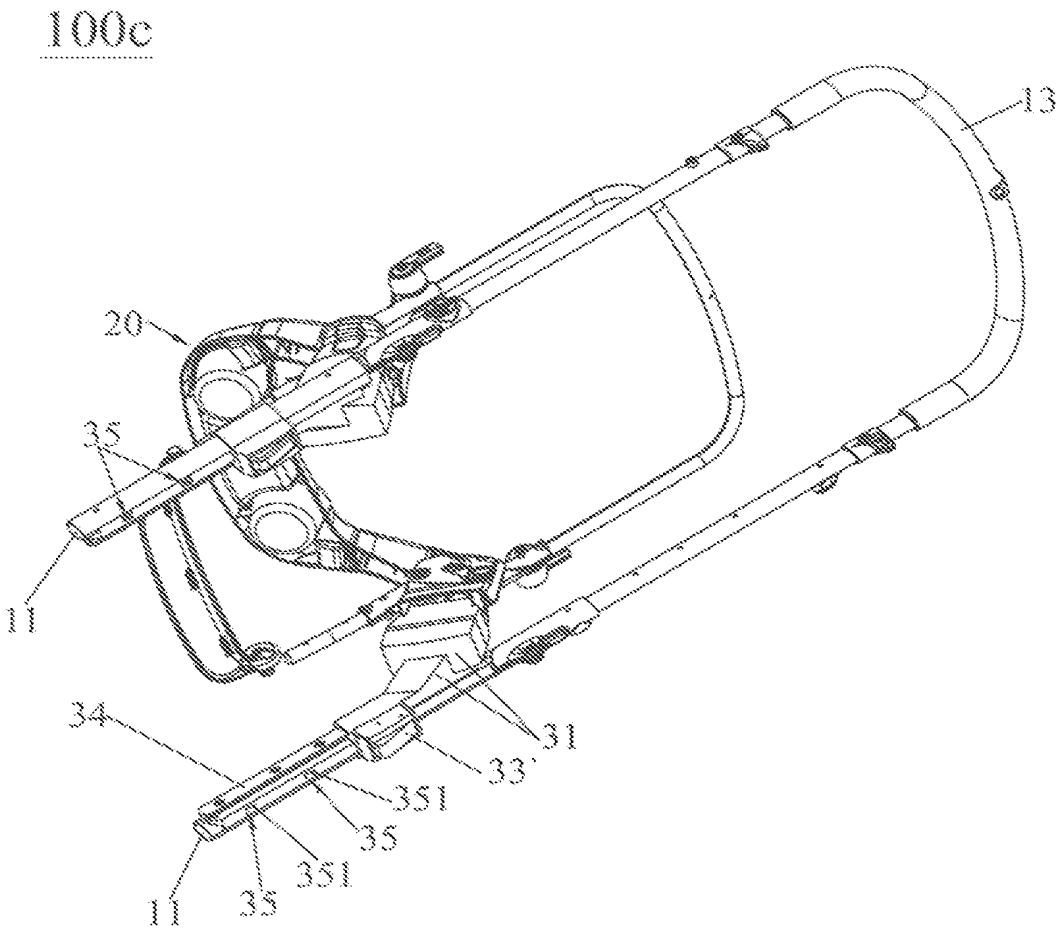

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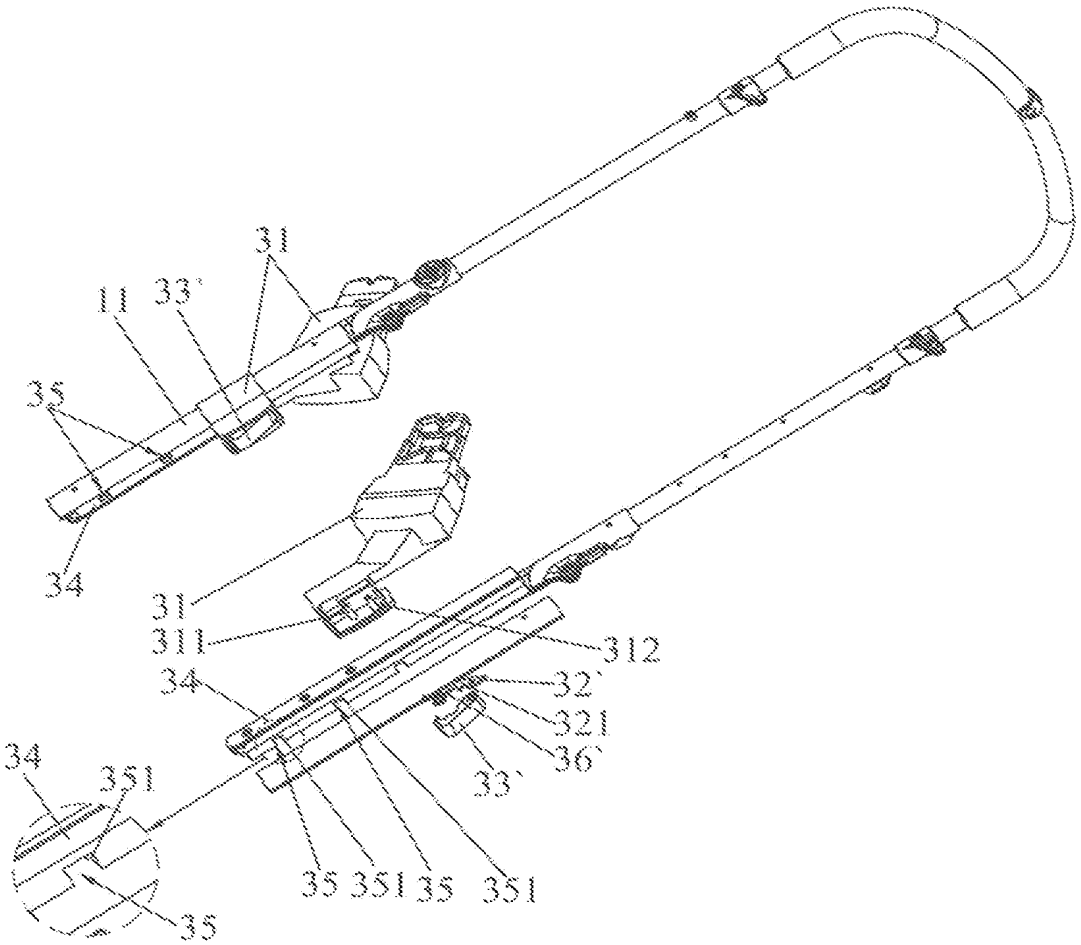

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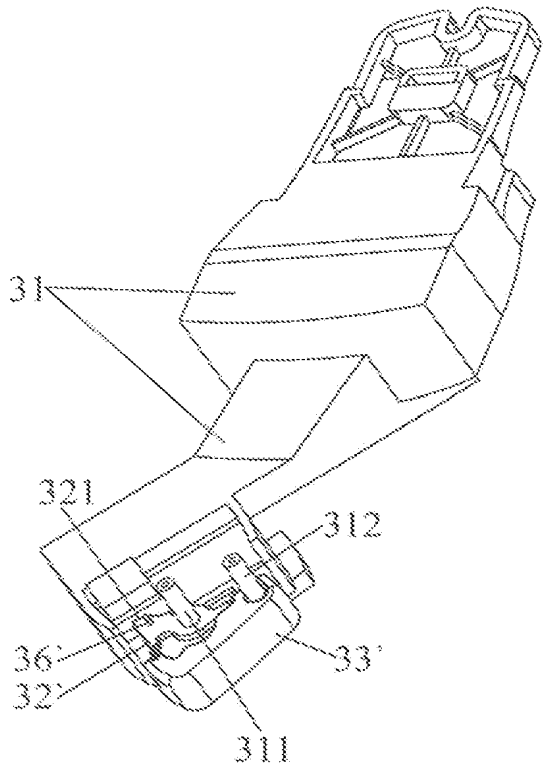

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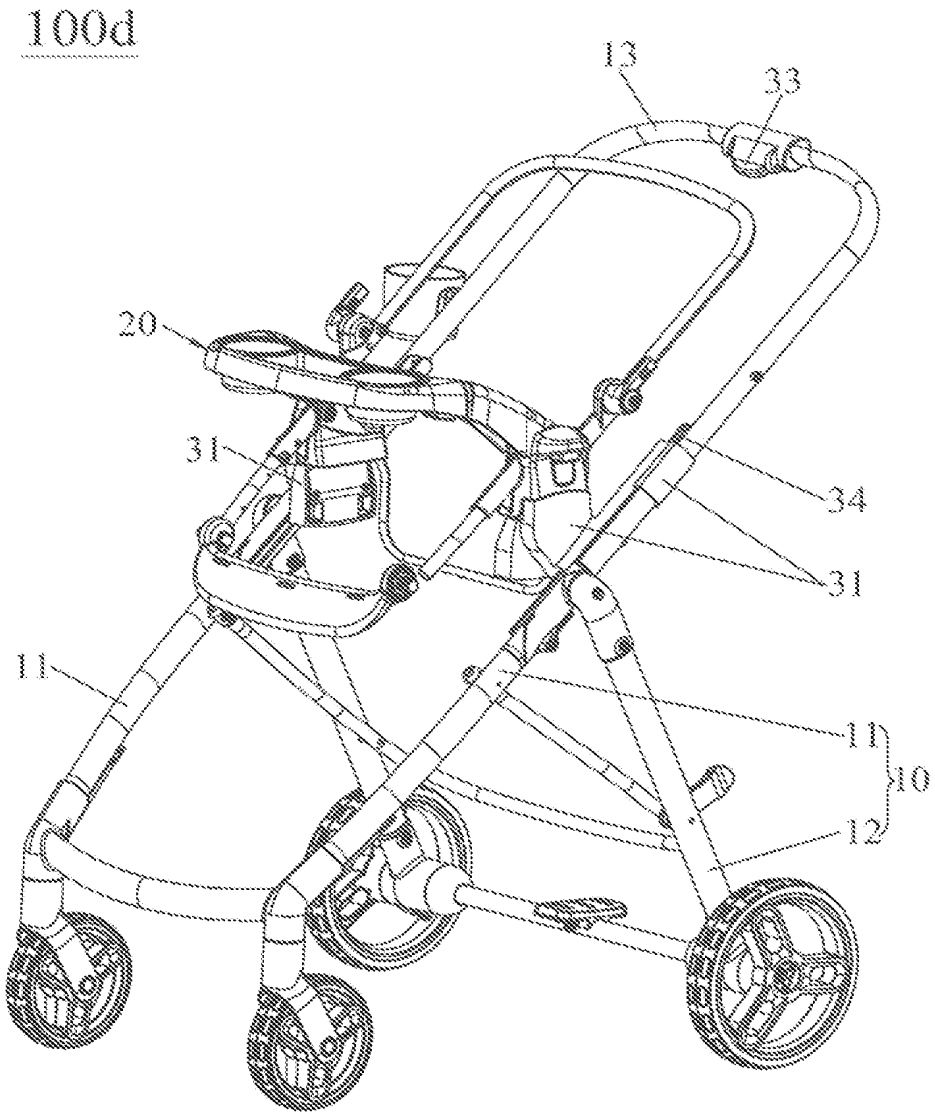

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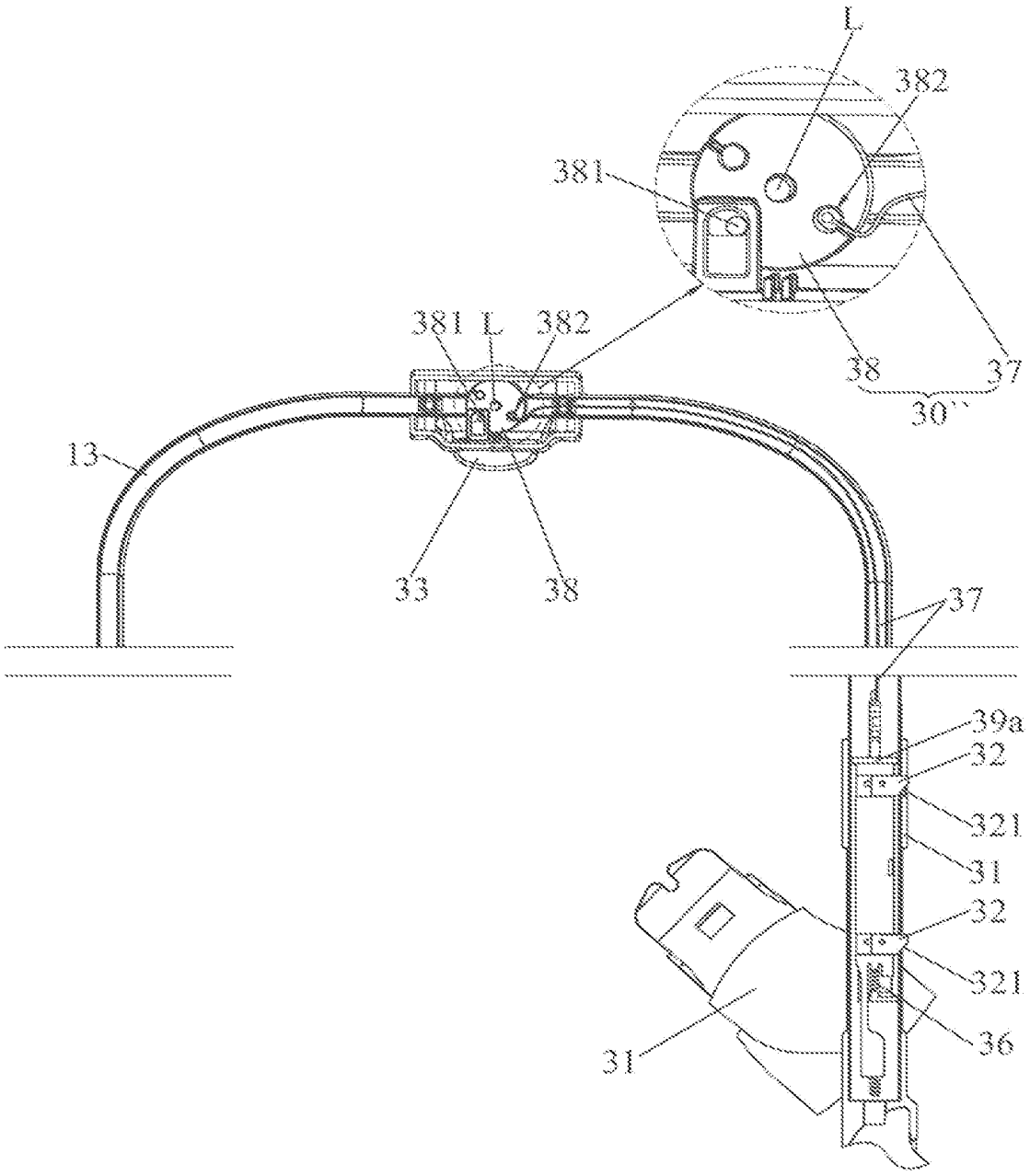

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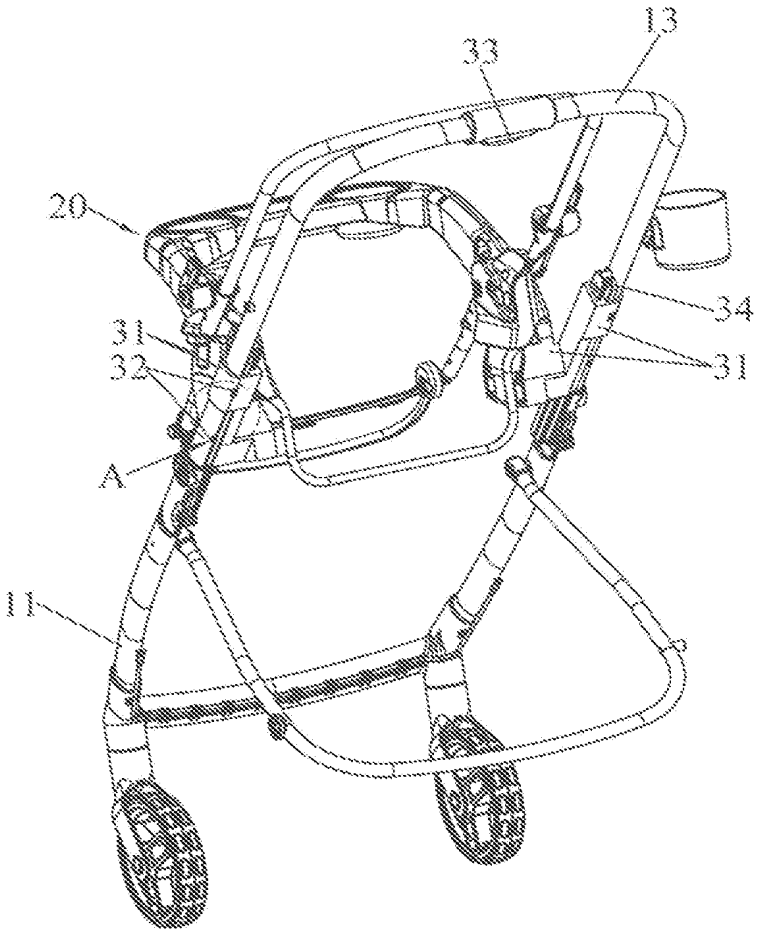

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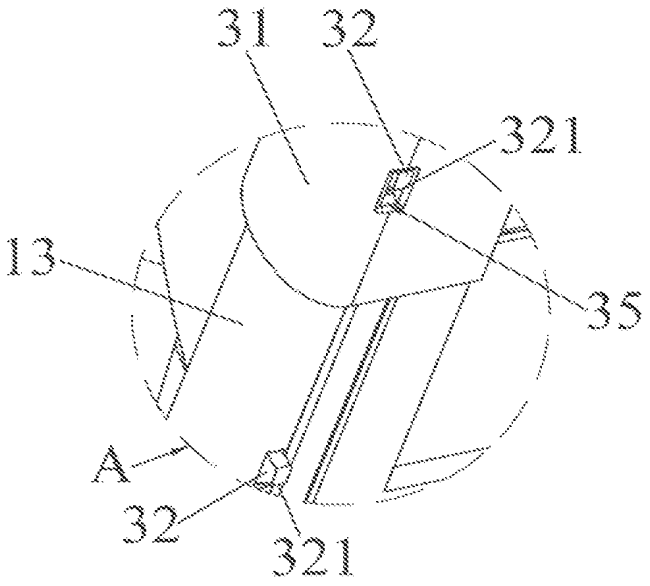

图20

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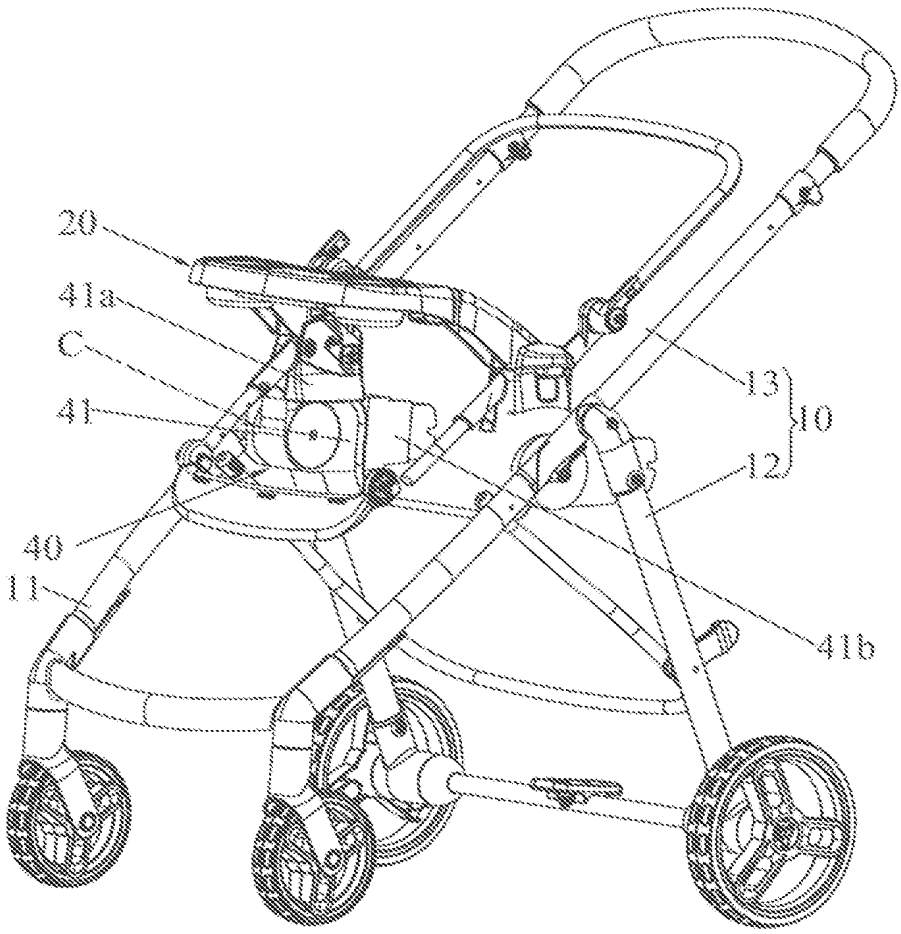

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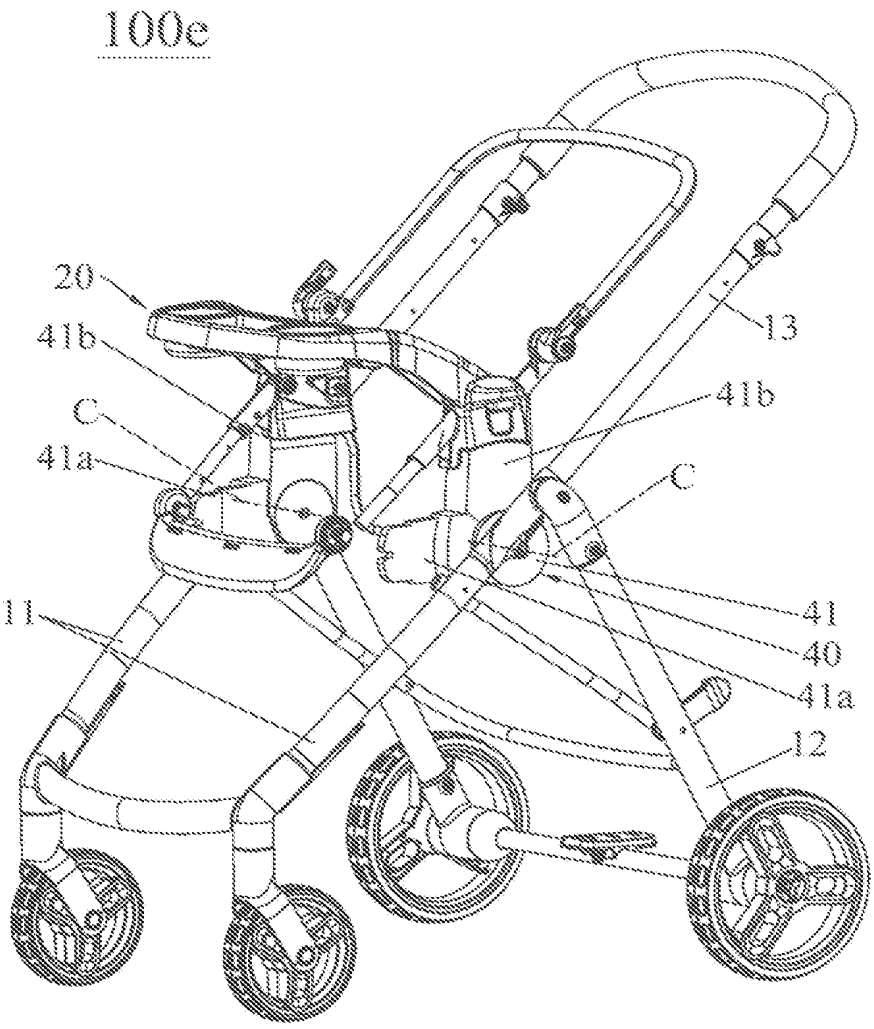

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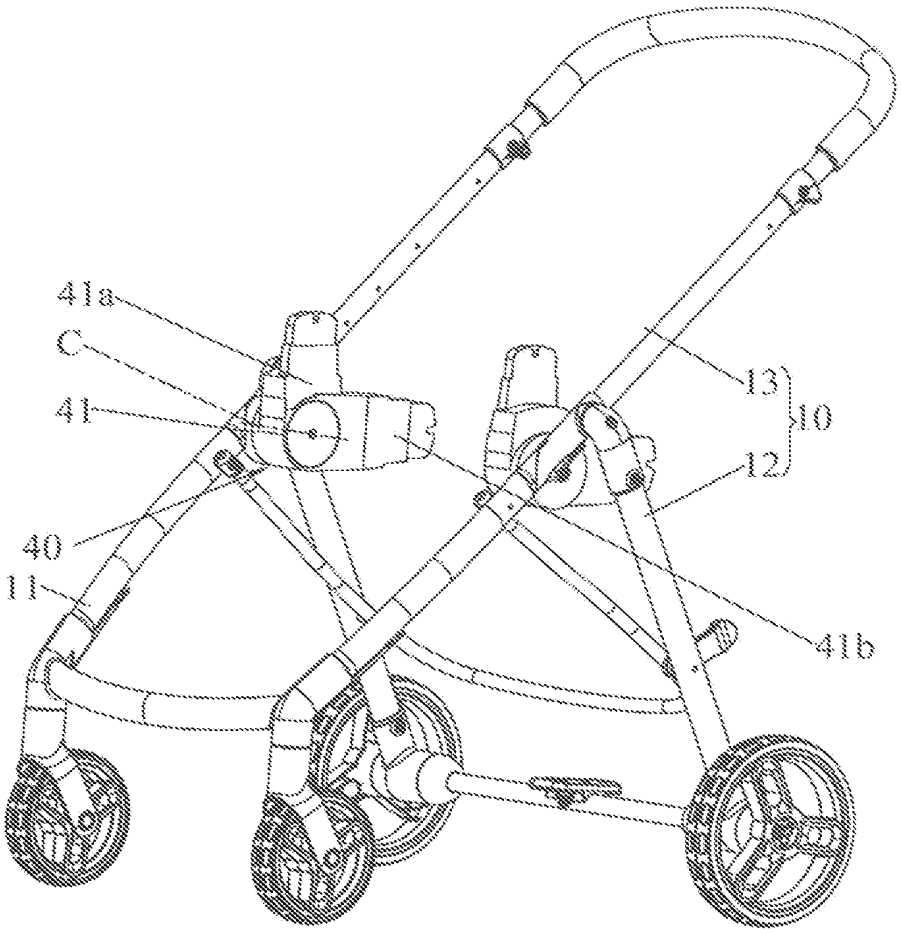

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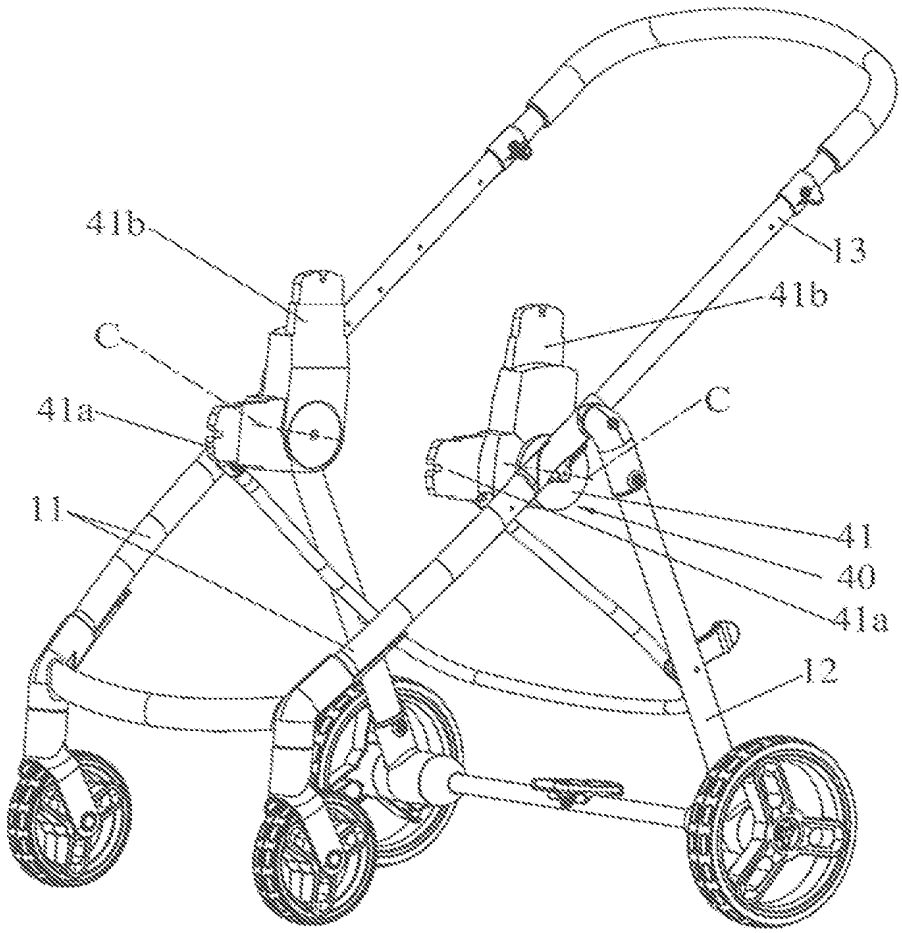

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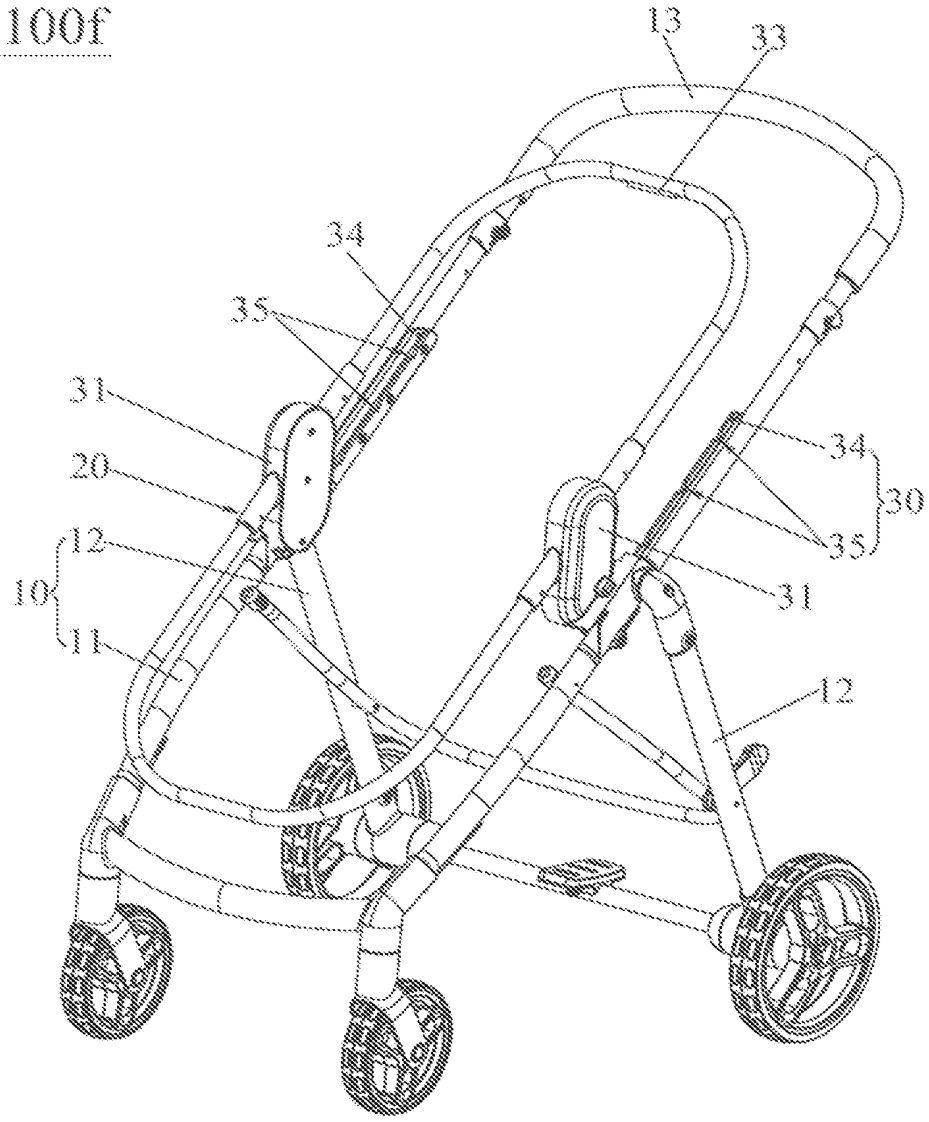

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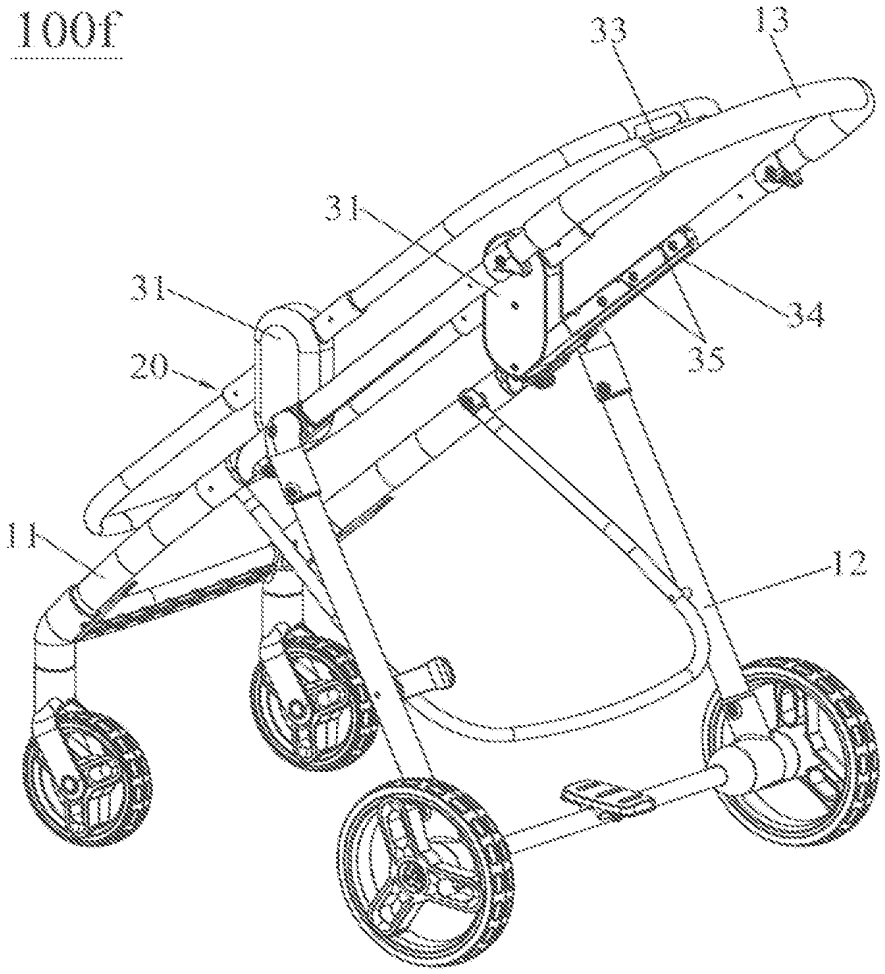

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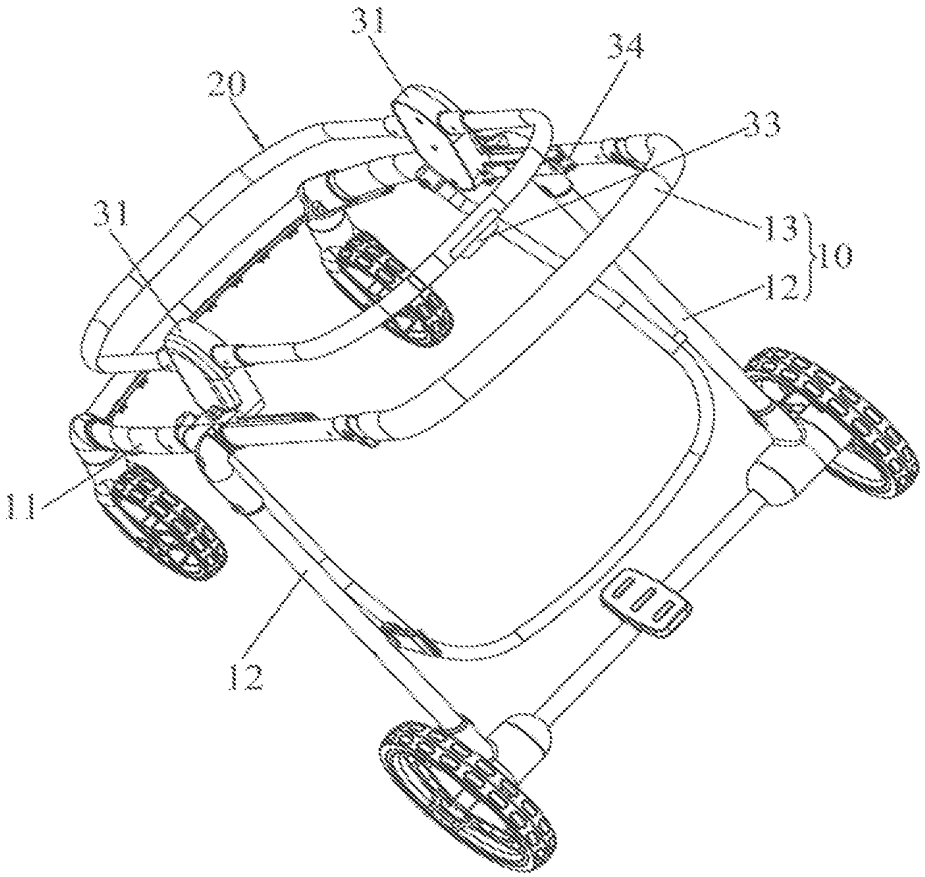

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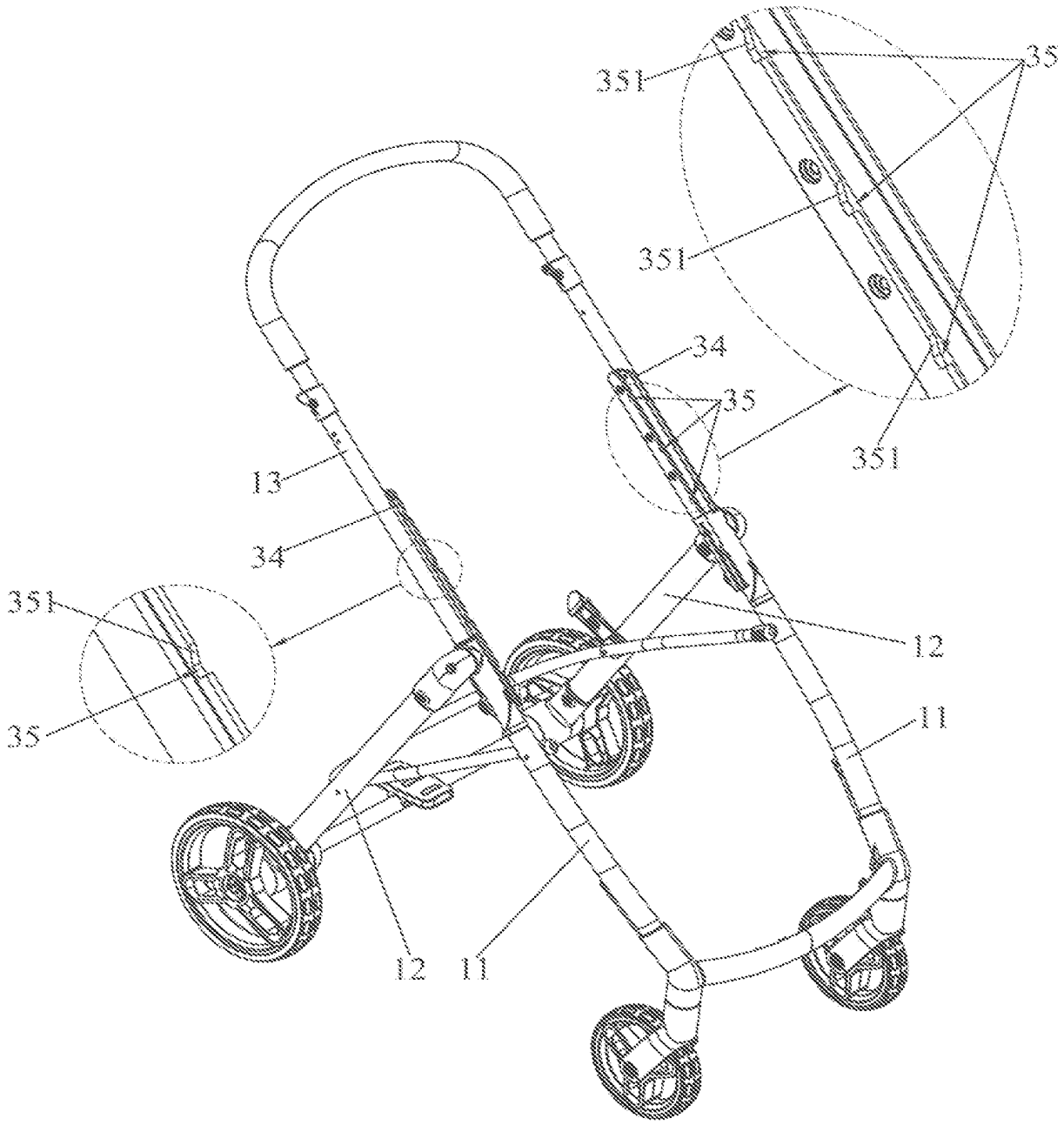

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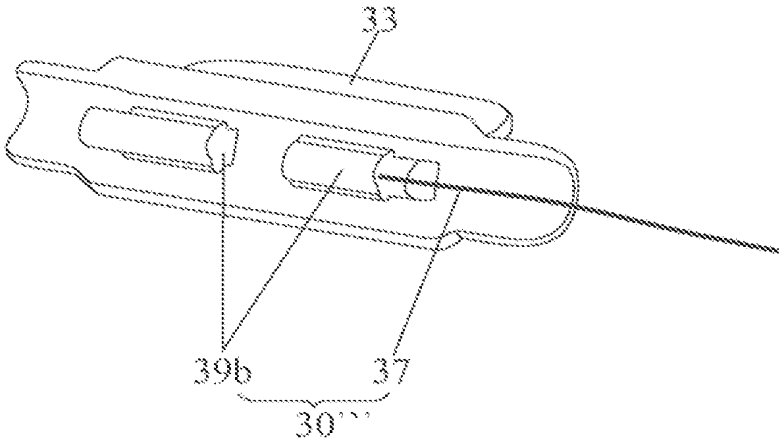

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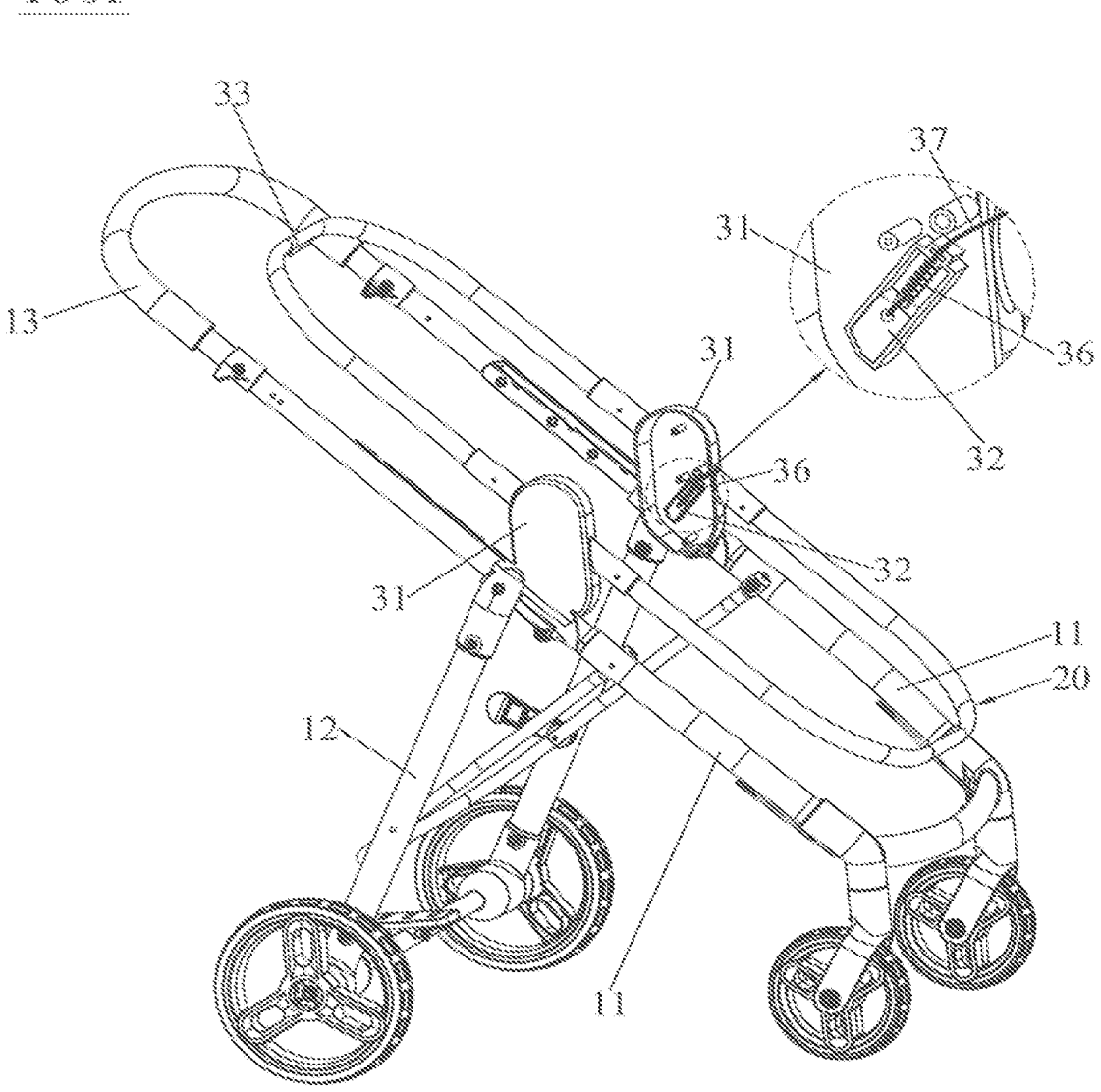

图30

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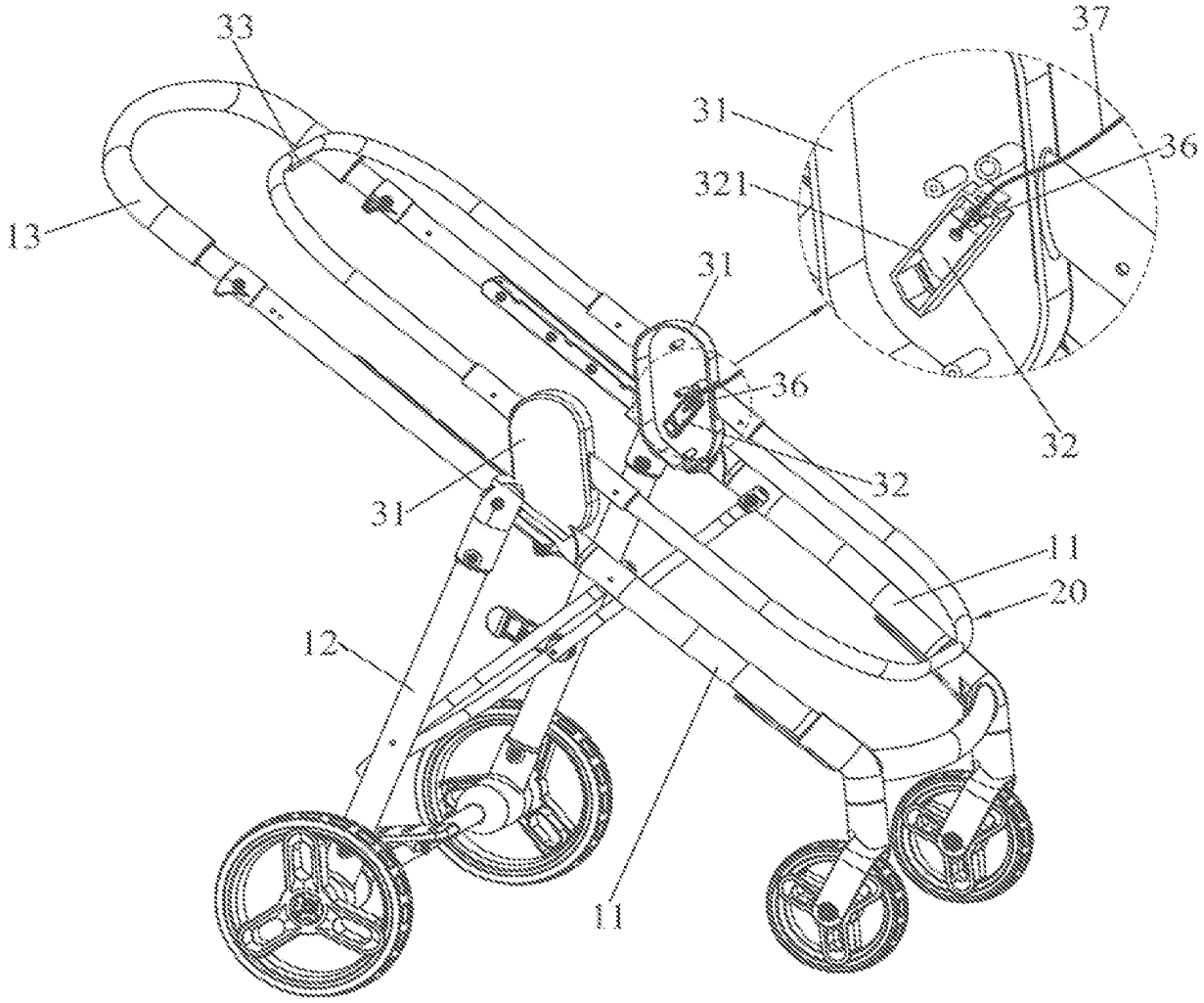

图31

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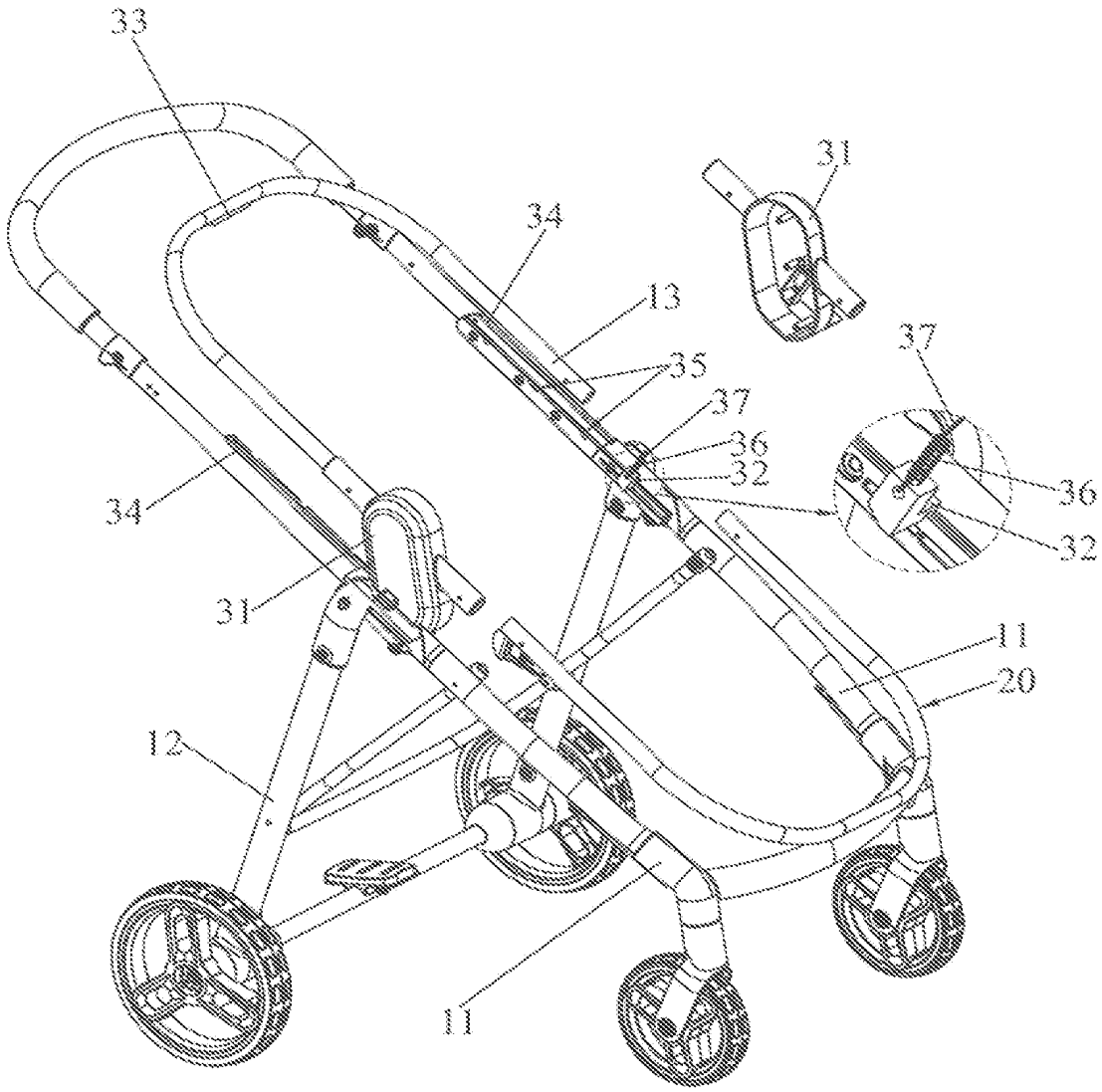

图32

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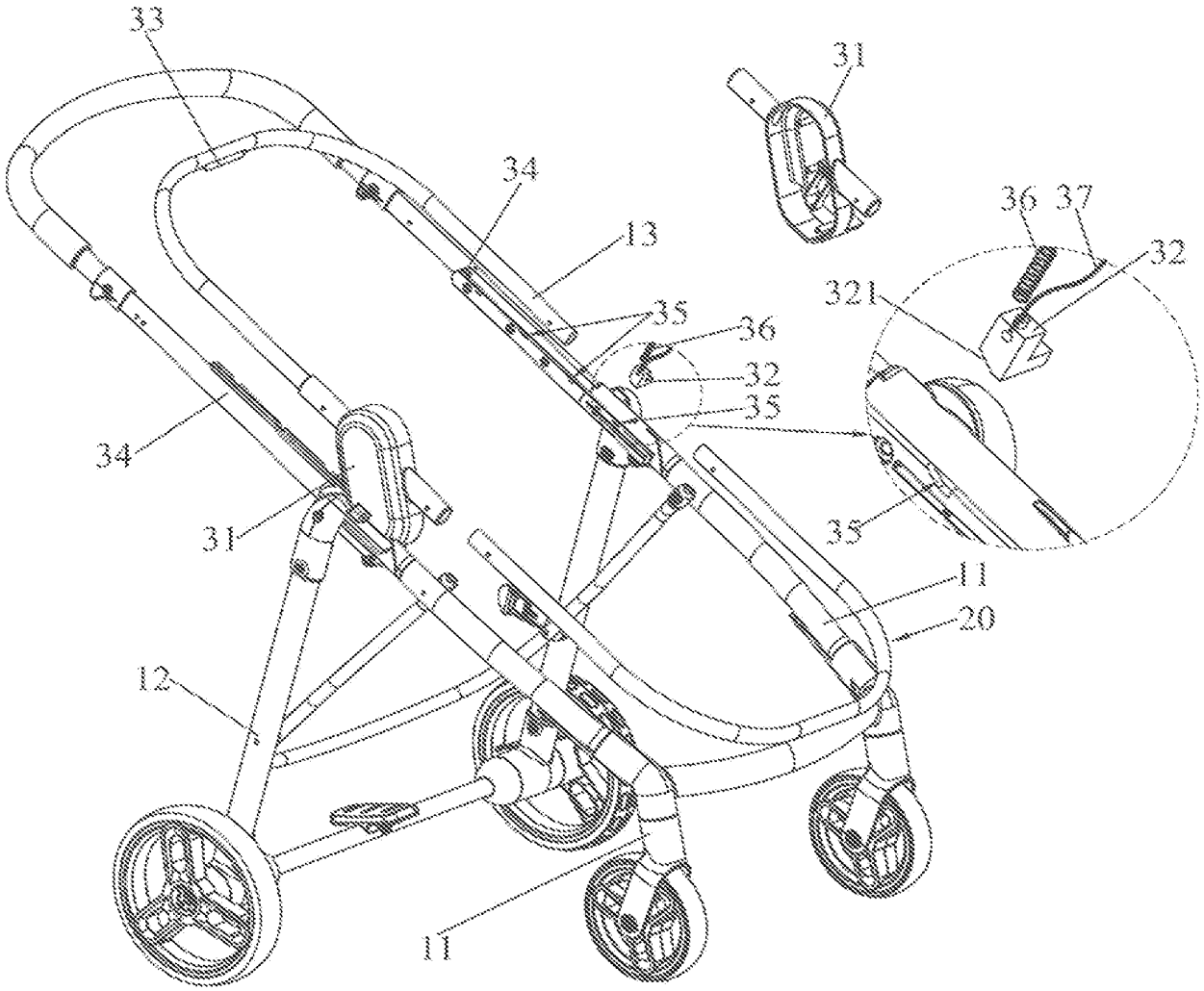

图33

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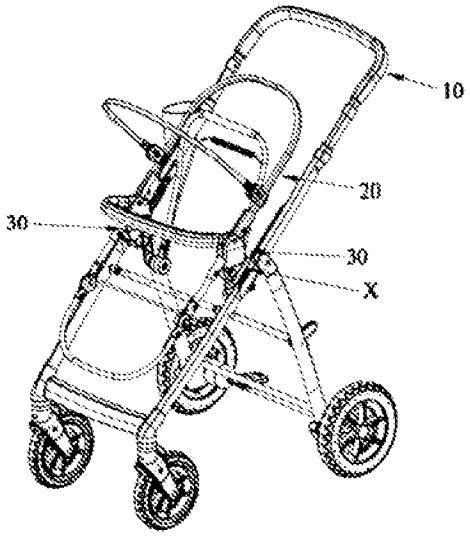
Priority Data
201911289305.8 13.12.2019 CN

Title
[DE] Stroller apparatus



Abstract
[DE]
The present invention discloses a stroller comprising a frame, a support used for carrying a small child, and a height adjustment mechanism, wherein the height adjustment mechanism comprises a connecting base, an engagement member, an engaging member, and a release operating member, the connection base is mounted to the carrier and has a pressure structure, the engaging holder is mounted on the frame, wherein the engaging holder has at least one first adjustment position and a second adjustment position above the first adjustment position with respect to the frame, a first step portion for engaging the engaging member is arranged on the frame to hold the engaging member in the second adjustment position, the engaging member is disposed on the engaging member, when the pressure structure is mounted on the frame for use of the carrier in the forward direction, the engaging member is pushed to disengage from the first step portion, and thus switch the engagement holder from the second adjustment position to the first adjustment position. In the stroller of the present invention, the relative height of the support in the frame can be limited and adjusted by the type of assembly The invention also relates to a method for producing the same. embedded image

Related patent documents
CN112960031

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Einstellposition und eine zu der ersten Einstellposition g aufweist.

(19) Deutsches Patent- und Markenamt

(10) **DE 10 2020 132 658 A1** 2021.06.17

(12) # Offenlegungsschrift

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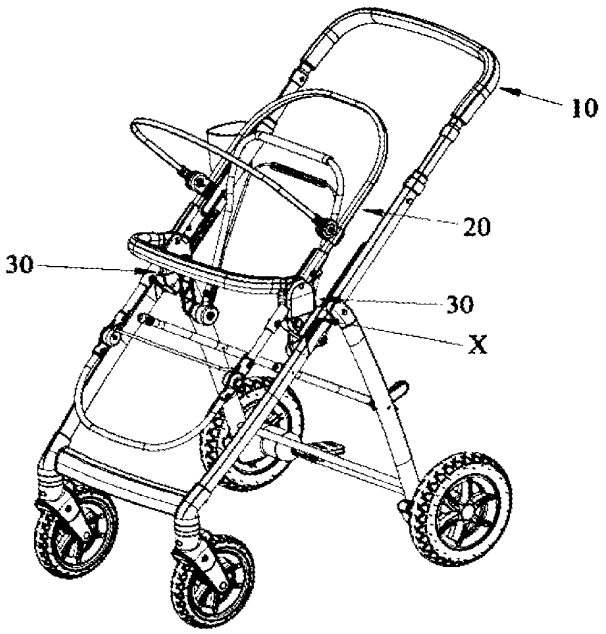
Prüfungsantrag gemäß § 44 PatG ist gestellt.

Die folgenden Angaben sind den vom Anmelder eingereichten Unterlagen entnommen.

(54) Bezeichnung: **Kinderwagenvorrichtung**

(57) Zusammenfassung: Die vorliegende Erfindung offenbart einen Kinderwagen, der einen Rahmen, einen zum Tragen eines Kleinkindes genutzten Träger sowie einen Höhenverstellmechanismus umfasst, wobei der Höhenverstellmechanismus einen Verbindungssockel, einen Eingreifhalter, ein Eingreifbauteil sowie ein Freigabebedienelement umfasst, der Verbindungssockel am Träger montiert ist und eine Druckstruktur aufweist, der Eingreifhalter auf dem Rahmen montiert ist, wobei der Eingreifhalter mindestens eine erste Einstellposition und eine zweite Einstellposition über der ersten Einstellposition gegenüber dem Rahmen aufweist, an dem Rahmen ein erster Stufenabschnitt zum Eingreifen des Eingreifbauteils angeordnet ist, um den Eingreifhalter in der zweiten Einstellposition zu halten, das Eingreifbauteil an dem Eingreifhalter angeordnet ist, wobei, wenn die Druckstruktur zur Verwendung des Trägers in Vorwärtsrichtung auf dem Rahmen montiert ist, das Eingreifbauteil geschoben wird, um aus dem ersten Stufenabschnitt auszurasten, und so den Eingreifhalter von der zweiten Einstellposition in die erste Einstellposition umzuschalten. Bei dem Kinderwagen der vorliegenden Erfindung kann die durch die Art der Montage relative Höhe des Trägers im Rahmen begrenzt und eingestellt werden.



Beschreibung

Technisches Gebiet

[0001] Die vorliegende Erfindung betrifft das technische Gebiet Kinderartikel, insbesondere einen Kinderwagen.

Stand der Technik

[0002] Der herkömmliche Kinderwagen bietet im Wesentlichen eine Sitzmöglichkeit für Kleinkinder und wird von Erwachsenen geschoben. Wenn ein Kleinkind in einem Kinderwagen sitzt, befindet sich ein Erwachsener für gewöhnlich hinter der Sitzposition des Kleinkinds. Daher ist, wenn der Kinderwagen geschoben wird, die Vorderseite des Kleinkinds nicht zu sehen. Außerdem kann sich das Kleinkind sicherer fühlen, wenn es einen Fam ilienangehörigen sehen kann, während es im Kinderwagen sitzt. Um die vorstehend genannten Anforderungen zu erfüllen, haben Hersteller verschiedene Kinderwagen herausgebracht, die in Vorwärtsrichtung und in Rückwärtsrichtung verwendet werden können, wobei das Wesentliche dabei ist, dass der Kleinkindsitz sowohl für die Verwendung in Vorwärts richtung als auch in Rückwärtsrichtung montiert werden kann. Wenn der Kleinkindsitz in Vorwärtsrichtung verwendet wird, wird zumeist gewünscht, den Sitz etwas höher zu stellen, damit sich Fam ilienangehörige und Kleinkind näher sind, wird jedoch der Kleinkindsitz in Vorwärtsrichtung verwendet, und der Kleinkindsitz ist zu hoch eingestellt ist, kann der Wagen nur unter Schwierigkeiten den Stabilitätstest bestehen, weshalb es angesichts von Sicherheitsüberlegungen sinnvoll ist, die Höhe des Kleinkindsitzes bei Verwendung in Vorwärts richtung zu begrenzen. Jedoch ist es bei den derzeitigen Kinderwagen nicht möglich, die relative Höhe von Kleinkindsitzen zum Rahmen bei der Vorwärtsverwendung des Kleinkindsitzes auf dem Rahmen zu begrenzen.

[0003] Daher besteht ein dringender Bedarf für einen Kinderwagen, bei dem die relative Höhe zwischen Träger und Rahmen bei Verwendung des Trägers auf dem Rahmen in Vorwärts richtung begrenzt werden kann, um die vorstehend genannten Nachteile zu überwinden.

Gegenstand der Erfindung

[0004] Zweck dieser Erfindung ist es, einen Kinderwagen bereitzustellen, bei dem die relative Höhe zwischen Träger und Rahmen bei Verwendung des Trägers auf dem Rahmen in Vorwärtsrichtung begrenzt werden kann.

[0005] Um den vorstehend genannten Zweck zu erfüllen, umfasst der Kinderwagen gemäß der vorliegenden Erfindung einen Rahmen, einen zum Tragen eines Kleinkinds verwendeten Träger sowie einen Höhenverstellmechanismus zum Einstellen der Position des Trägers auf dem Rahmen, wobei der Höhenverstellmechanismus einen Verbindungssockel, einen Eingreifhalter und ein Eingreifbauteil sowie ein mit dem Eingreifbauteil verbundenes Freigabebedienelement umfasst, wobei der Verbindungssockel entweder an dem Träger oder dem Rahmen montiert ist und über eine Druckstruktur (Profil) zum selektiven Drücken des Eingreifbauteils zum Bewegen in eine Freigaberichtung umfasst, wobei der Eingreifhalter beweglich an dem anderen von Träger und Rahmen montiert ist, der Träger über einen lösbaren Eingriff mit dem Eingreifhalter zur Verwendung in Vorwärtsrichtung oder zur Verwendung in Rückwärtsrichtung am Rahmen montiert ist, wobei der Eingreifhalter gegenüber dem Rahmen oder dem Träger mindestens eine erste Einstellposition und eine zweite Einstellposition oberhalb der ersten Einstellposition aufweist, an dem Träger oder dem Rahmen, wo der Eingreifhalter angeordnet ist, ein erster Stufenabschnitt zum Eingreifen des Eingreifbauteils angeordnet ist, um den Eingreifhalter in der zweiten Einstellposition zu halten, wobei das Eingreifbauteil in dem Eingreifhalter montiert ist, wobei die Druckstruktur von dem Eingreifbauteil versetzt ist, wenn der Träger zur Verwendung in Rückwärtsrichtung auf dem Rahmen montiert wird, wobei die Druckstruktur, wenn der Träger zur Verwendung in Vorwärts richtung auf dem Rahmen montiert wird, das Eingreifbauteil zum Lösen des Eingriffs mit dem ersten Stufenabschnitt in Bewegung schiebt, wodurch der Eingreifhalter von der zweiten Einstellposition in die erste Einstellposition umgeschaltet wird.

[0006] Vorzugsweise hat außerdem der Träger oder Rahmen, wo der Eingreifhalter angeordnet ist, einen zweiten Stufenabschnitt zum Eingreifen des Eingreifbauteils zum Halten des Eingreifhalters in der ersten Einstellposition, und wenn der Träger am Rahmen zur Verwendung in Rückwärtsrichtung montiert ist, führt das Eingreifbauteil aufgrund der Verbindung des Freigabebedienelements eine Freigabebewegung durch, so dass der Eingreifhalter zwischen der ersten Einstellposition und der zweiten Einstellposition umgeschaltet wird.

[0007] Vorzugsweise ist das Eingreifbauteil in Eingriff mit dem zweiten Stufenabschnitt, wenn der Träger zur Verwendung in Vorwärtsrichtung auf dem Rahmen montiert ist und sich der Eingreifhalter in der ersten Einstellposition befindet.

[0008] Vorzugsweise umfasst das Eingreifbauteil ein Eingreifelement und ein Auslöseelement, wobei das Freigabebedienelement mit dem Eingreifelement verbunden ist, wobei das Eingreifelement teleskopisch in dem Eingreifhalter angeordnet ist, wobei das Eingreifelement selektiv in den ersten Stufenabschnitt oder den zweiten Stufenabschnitt eingreift, wobei

die Druckstruktur das Auslöseelement in Bewegung drückt, wenn der Träger zur Verwendung in Vorwärtsrichtung am Rahmen montiert wird, so dass das sich bewegende Auslöseelement mit dem Eingreifelement zum Einschieben in den Eingreifhalter koppelt.

[0009] Vorzugsweise ist das Auslöseelement verschieblich und teleskopisch an dem Eingreifhalter angeordnet.

[0010] Vorzugsweise umfasst das Eingreifbauteil ferner ein Verbindungselement, wobei das erste Ende des Verbindungselements mit dem Freigabebedienelement und das zweite Ende des Verbindungselements mit dem Eingreifelement verbunden ist.

[0011] Vorzugsweise drückt die Druckstruktur auf das Auslöseelement, so dass es in den Eingreifhalter gleitet, wenn der Träger für den Vorwärtseinsatz auf dem Rahmen montiert wird, wobei das Auslöseelement während des Gleitvorgangs in den Eingreifhalter das Verbindungselement derart in Bewegung schiebt, dass das sich bewegende Verbindungselement das Eingreifelement antreibt, sich in den Eingreifhalter zurückzuziehen.

[0012] Vorzugsweise kreuzt sich die Gleitrichtung des Auslöseelements mit der Bewegungsrichtung des Verbindungselements.

[0013] Vorzugsweise ist in dem Eingreifhalter eine Führungsschiene angeordnet, wobei das Auslöseelement verschieblich auf der Führungsschiene montiert ist.

[0014] Vorzugsweise umfasst das Eingreifbauteil außerdem ein zwischen dem Freigabebedienelement und dem Eingreifhalter angeordnetes Freigaberückstellelement, wobei das Freigaberückstellelement die stetige Tendenz hat, das Freigabebedienelement aus dem Eingreifhalter herauszuschieben.

[0015] Vorzugsweise umfasst das Eingreifbauteil außerdem ein zwischen dem Auslöseelement und dem Eingreifhalter angeordnetes Auslöserückstellelement, wobei das Auslöserückstellelement die stetige Tendenz hat das Auslöseelement aus dem Eingreifhalter herauszuschieben.

[0016] Vorzugsweise ist an dem Träger oder dem Rahmen, wo der Eingreifhalter angeordnet ist, eine Gleitschiene angebracht, wobei der Eingreifhalter gleitend an der Gleitschiene montiert ist, wobei der erste Stufenabschnitt und der zweite Stufenabschnitt an der Gleitschiene angeordnet sind.

[0017] Vorzugsweise sind an der Gleitschiene außerdem mehrere voneinander beabstandete Feineinstellungsstufenabschnitte angeordnet, wobei sich die Feineinstellungsstufenabschnitte zwischen dem ersten Stufenabschnitt und dem zweiten Stufenabschnitt befinden.

[0018] Vorzugsweise löst das Eingreifbauteil außerdem, wenn der Träger zur Verwendung in Vorwärtsrichtung am Rahmen montiert ist, das Eingreifen mit dem Feineinstellungsstufenabschnitt, der an den ersten Stufenabschnitt angrenzt, aus.

[0019] Vorzugsweise haben der erste Stufenabschnitt, der zweite Stufenabschnitt und die Feineinstellungsstufenabschnitte jeweils eine Schlitzstruktur.

[0020] Vorzugsweise weist die untere Seitenwand des ersten Stufenabschnitts und eine untere Seitenwand des an den ersten Stufenabschnitt angrenzenden Feineinstellungsstufenabschnitts jeweils eine Schräge zum nach vorne Herausgleiten auf, die von oben nach unten nach außen geneigt ist.

[0021] Vorzugsweise weist eine obere Seitenwand bei mindestens einem ersten Stufenabschnitt, zweiten Stufenabschnitt und/oder Feineinstellungsstufenabschnitt jeweils eine Schräge zum nach hinten Gleiten auf, die von oben nach unten nach innen geneigt ist, wobei das Eingreifelement eine dazu passende Schräge zum Gleiten hat, die mit der Schräge zum nach hinten Gleiten zusamm enwirkt.

[0022] Vorzugsweise weist der Verbindungssockel eine Eingreifeinführkammer auf, wobei sich die Druckstruktur in der Eingreifeinführkammer befindet, und der Eingreifhalter teilweise in der Eingreifeinführkammer eingeführt ist.

[0023] Vorzugsweise umfasst der Eingreifhalter eine Einführkammer, wobei der Verbindungssockel ein Montageteil und einen am Montageteil nach außen vorstehenden Eingriffskörperabschnitt umfasst, wobei sich die Druckstruktur an dem Montageteil befindet, wobei der Eingriffskörperabschnitt teilweise in die Einführkammer eingeführt ist.

[0024] Vorzugsweise ist die Druckstruktur ein Vorsprung, eine Rippe oder ein Anschlag.

[0025] Vorzugsweise ist das Auslöseelement schwenkbar an dem Eingreifhalter montiert, wobei das Auslöseelement ein Kontaktende und ein Druckende aufweist, wobei das Kontaktende teleskopisch an dem Eingreifhalter angeordnet ist, und das Druckende an das Eingreifelement anstößt.

[0026] Vorzugsweise umfasst das Eingreifbauteil außerdem ein zwischen dem Eingreifelement und dem Eingreifhalter montiertes Eingriffsrückstellelement, wobei das Eingriffsrückstellelement tendenziell

stets das Eingreifelement aus dem Eingreifhalter herausschiebt.

[0027] Vorzugsweise ist an dem Träger oder dem Rahmen, wo der Eingreifhalter angeordnet ist, eine Gleitschiene angeordnet, wobei der Eingreifhalter gleitend auf der Gleitschiene montiert ist, wobei der erste Stufenabschnitt an der Gleitschiene montiert ist.

[0028] Vorzugsweise weist das untere Ende der Gleitschiene ein Blockierungsteil auf, der das Herausgleiten dem Eingreifhalter blockiert.

[0029] Vorzugsweise ist der Träger ein Kindersitz, eine Babywanne oder ein Autosicherheitss itz.

[0030] Verglichen mit dem Stand der Technik umfasst der Höhenverstellmechanismus des Kinderwagens nach der vorliegenden Erfindung einen Verbindungssockel, einen Eingreifhalter, ein Eingreifbauteil sowie ein mit dem Eingreifbauteil verbundenes Freigabebedienelement, wobei der Verbindungssockel am Träger montiert ist und eine Druckstruktur zum selektiven Drücken des Eingreifbauteils in eine Freigaberichtung aufweist, wobei der Eingreifhalter beweglich auf dem Rahmen montiert ist, der Träger über einen lösbaren Eingriff mit dem Eingreifhalter zur Verwendung in Vorwärtsrichtung oder zur Verwendung in Rückwärtsrichtung am Rahmen montiert ist, wobei der Eingreifhalter mindestens eine erste Einstellposition und eine zweite Einstellposition über der ersten Einstellposition gegenüber dem Rahmen aufweist, wobei an dem Rahmen ein erster Stufenabschnitt zum Eingreifen des Eingreifbauteils angeordnet ist, um den Eingreifhalter in der zweiten Einstellposition zu halten, wobei das Eingreifbauteil an dem Eingreifhalter angeordnet ist, die Druckstruktur von dem Eingreifbauteil versetzt ist, wenn der Träger am Rahmen zur Verwendung in Rückwärtsrichtung montiert ist; wenn der Träger in Vorwärtsrichtung am Rahmen montiert wird, schiebt die Druckstruktur das Eingreifbauteil zum Lösen des Eingriffs mit dem ersten Stufenabschnitts in Bewegung, wodurch der Eingreifhalter von der zweiten Einstellposition in die erste Einstellposition umgeschaltet wird, so dass, wenn der Träger zur Verwendung in Vorwärtsrichtung am Rahmen montiert ist, automatisch die Einbauhöhe des Trägers am Rahmen begrenzt werden kann; wird der Träger zur Verwendung in Rückwärtsrichtung auf dem Rahmen montiert, wird die Einbauhöhe des Trägers am Rahmen nicht begrenzt, weshalb bei dem Kinderwagen, gemäß der vorliegenden Erfindung, die relative Höhe zwischen Träger und Rahmen bei Verwendung des Trägers auf dem Rahmen in Vorwärtsrichtung begrenzt wird.

Figurenliste

Fig. 1 ist ein schematisches Diagramm einer dreidimensionalen Struktur eines Kinderwagens, der auf einem Rahmen in einer Vorwärtsverwendungsposition in der ersten durch die vorliegende Erfindung bereitgestellten Ausführungsform zusammengebaut ist.

Fig. 2 ist ein schematisches Diagramm einer dreidimensionalen Struktur eines Kinderwagens, der auf einem Rahmen in einer Rückwärtsverwendungsposition in der ersten, durch die vorliegende Erfindung bereitgestellten Ausführungsform, aufgebaut ist.

Fig. 3 ist eine Vorderansicht des in **Fig. 1** dargestellten Kinderwagens.

Fig. 4 ist ein schematisches Diagramm der dreidimensionalen Struktur des Rahmens in dem Kinderwagen in der ersten Ausführungsform, die durch die vorliegende Erfindung bereitgestellt wird.

Fig. 5 ist eine schematische Ansicht der dreidimensionalen Struktur des in **Fig. 4** gezeigten Rahmens aus einem anderen Winkel.

Fig. 6 ist ein schematisches Diagramm der dreidimensionalen Struktur des Trägers in dem Kinderwagen in der ersten Ausführungsform, die durch die vorliegende Erfindung bereitgestellt wird.

Fig. 7 ist eine Unteransicht des in **Fig. 6** dargestellten Trägers.

Fig. 8 ist ein vergrößertes schematisches Diagramm der Struktur bei A in **Fig. 7**.

Fig. 9 ist ein dreidimensionales Strukturdiagramm des Eingreifhalters auf dem in **Fig. 5** gezeigten Rahmen, wobei die Gehäuseplatte auf einer Seite verborgen ist.

Fig. 10 ist ein vergrößertes schematisches Diagramm der Struktur bei B in **Fig. 9**

Fig. 11 ist eine Querschnittsansicht entlang der in **Fig. 9** dargestellten Linie C-C.

Fig. 12 ist eine vergrößerte schematische Darstellung der Struktur bei D in **Fig. 11**.

Fig. 13 ist schematische Darstellung der Struktur von **Fig. 11**, wenn sich der Eingreifhalter in der zweiten Einstellposition befindet und das Eingreifelement den ersten Stufenabschnitt verlässt und in Vorwärtsrichtung aus der geneigten Fläche herausgleitet.

Fig. 14 ist eine vergrößerte schematische Darstellung der Struktur bei E in **Fig. 13**.

Fig. 15 ist ein schematisches Diagramm der dreidimensionalen Struktur des Kinderwagens

in der zweiten Ausführungsform, die durch die vorliegende Erfindung bereitgestellt wird, in der der Träger in dem Kinderwagen zur Vorwärtsverwendung auf dem Rahmen montiert ist.

Fig. 16 ist ein schematisches Diagramm der dreidimensionalen Struktur eines Rahmens in dem Kinderwagen in der zweiten Ausführungsform der vorliegenden Erfindung.

Fig. 17 ist ein schematisches Diagramm der dreidimensionalen Struktur des Eingreifhalters auf dem in **Fig. 16** dargestellten Rahmen, wobei die Gehäuseplatte auf einer Seite verborgen ist.

Fig. 18 ist ein vergrößertes schematisches Diagramm der Struktur bei F in **Fig. 17**.

Fig. 19 ist ein schematisches Diagramm der dreidimensionalen Struktur des Trägers in dem Kinderwagen in der zweiten Ausführungsform der vorliegenden Erfindung.

Fig. 20 ist ein dreidimensionales Strukturdiagramm des in **Fig. 16** gezeigten Rahmens, wobei der obere Griff, der untere Griff, der untere Stützgriff und die Räder verborgen sind.

Fig. 21 ist eine Querschnittsansicht entlang der in **Fig. 20** dargestellten Linie G-G.

Fig. 22 ist ein vergrößertes schematisches Diagramm der Struktur bei H in **Fig. 21**.

Fig. 23 ist ein schematisches Diagramm der Struktur, wenn das Eingreifelement in der ersten Einstellposition einrastet, wenn der Eingreifhalter von **Fig. 21** in der zweiten Einstellposition gehalten wird.

Fig. 24 ist ein vergrößertes schematisches Diagramm der Struktur bei I in **Fig. 21**

Fig. 25 ist ein schematisches Diagramm der Struktur, wenn nur der erste Positionsabschnitt auf der Gleitschiene des in **Fig. 21** gezeigten Rahmens angeordnet ist und der Eingreifhalter in der ersten Einstellposition gehalten wird.

Fig. 26 ist ein vergrößertes schematisches Diagramm der Struktur bei J in **Fig. 25**.

Fig. 27 ist ein schematisches Diagramm der Struktur, wenn das Eingreifelement bei dem ersten Stufenabschnitt einrastet, der in **Fig. 25** gezeigte Eingreifhalter in der zweiten Einstellposition gehalten wird.

Fig. 28 ist ein vergrößertes schematisches Diagramm der Struktur bei K in **Fig. 27**.

Konkrete Ausführungsformen

[0031] Zur genaueren Beschreibung des technischen Inhalts, der Konstruktionsmerkmale der vorliegenden Erfindung wird im Folgenden anhand von Ausführungsformen und den zugehörigen Figuren eine eingehendere Beschreibung vorgenommen.

[0032] Wie **Fig. 1** bis **Fig. 10** zeigen, umfasst der Kinderwagen **100** der vorliegenden Erfindung einen Rahmen **10**, einen zum Tragen eines Kleinkinds genutzten Träger **20** sowie einen Höhenverstellmechanismus **30** zum Einstellen der Position des Trägers **20** im Rahmen **10**, wobei der Höhenverstellmechanismus **30** einen Verbindungssockel **31**, einen Eingreifhalter **32** und ein Eingreifbauteil **33** sowie ein mit dem Eingreifbauteil **33** verbundenes Freigabebedienelement **34** umfasst, wobei der Verbindungssockel **31** am Träger **20** montiert ist und ein, zum wahlweisen Schieben des Eingreifbauteils **33** in Richtung der Entriegelung, bewegliches Profil **311** aufweist, wobei der Eingreifhalter **32** beweglich an dem Rahmen **10** montiert ist, wobei der Träger **20** über einen lösbaren Eingriff zwischen dem Verbindungssockel **31** und dem Eingreifhalter **32** zur Verwendung in Vorwärtsrichtung oder zur Verwendung in Rückwärtsrichtung am Rahmen **10** montiert ist, wobei der Eingreifhalter **32** mindestens eine erste Einstellposition X und eine zweite Einstellposition Y über der ersten Einstellposition X relativzum Rahmen **10** aufweist, wobei an dem Rahmen **10** ein erster Stufenabschnitt **11** zum Eingreifen des Eingreifbauteils **33** angeordnet ist, um den Eingreifhalter **32** in der zweiten Einstellposition Y zu halten, wobei das Eingreifbauteil an dem Eingreifhalter angeordnet ist, wobei das Profil **311** von dem Eingreifbauteil **33** versetzt ist, wenn der Träger **20** am Rahmen **10** zur Verwendung in Rückwärtsrichtung montiert wird; wenn das Profil **311** zur Verwendung des Trägers **20** in Vorwärtsrichtung am Rahmen **10** montiert wird, wird das Eingreifbauteil **33** verschoben, um den Eingriff mit dem ersten Stufenabschnitt **11** zu lösen, um so den Eingreifhalter **32** von der zweiten Einstellposition Y in die erste Einstellposition X umzuschalten, so dass, wenn der Träger **20** zur Verwendung in Vorwärtsrichtung am Rahmen **10** montiert ist, automatisch die Einbauhöhe des Trägers **20** am Rahmen **10** begrenzt werden kann, und wenn der Träger **20** zur Verwendung in Rückwärtsrichtung am Rahmen **10** montiert ist, die Einbauhöhe des Trägers **20** am Rahmen **10** nicht begrenzt wird, weshalb bei dem Kinderwagen **100** der vorliegenden Erfindung die relative Höhe zwischen Träger **20** und Rahmen **10** bei Verwendung des Trägers **20** auf dem Rahmen **10** in Vorwärts richtung begrenzt werden kann.

[0033] Vorzugsweise kann je nach tatsächlichem Bedarf der Verbindungssockel **31** am Rahmen **10** montiert sein, wobei der Eingreifhalter **32** beweglich auf dem Träger **20** montiert ist, entsprechend weist der Eingreifhalter **32** mindestens eine erste Einstellposition X sowie eine zweite Einstellposition Y auf, die oberhalb der Einstellposition X relativ zum Träger **20** angeordnet sind, und auf dem Träger **20** ist ein erster Stufenabschnitt **11** angeordnet, um den Eingreifhalter **32** in der zweiten Einstellposition Yzu hal-

ten, gleichermaßen kann die Höheneinstellung des Trägers **20** relativ zum Rahmen **10** vorgenommen werden, ohne darauf beschränkt zu sein. Beispielsweise gibt das Freigabebedienelement **34** während des Zurückziehens die Befestigung des Eingreifbauteils **33** am Rahmen **10** und am Träger **20** frei, um die Einstellung des Eingreifhalters **32** zwischen der ersten Einstellposition X und der zweiten Einstellposition Yzu ermöglichen und die Einstellung der Höhe des Trägers **20** am Rahmen **10** zu erleichtern, und während das Freigabebedienelement **34** aus dem Eingreifhalter **32** herausfährt, rastet das Eingreifbauteil **33** in dem Träger **20** ein, um ein Bewegen des Eingreifhalters **32** an dem Rahmen **10** zu verhindern, und führt so dazu, dass der Träger **20** in einer bestimmten Position am Rahmen **10** gehalten wird, ohne jedoch darauf beschränkt zu sein. Außerdem gibt es im Wesentlichen zwei Arten Träger **20**, wobei eine Art einen Kleinkindsitz als Träger **20** bereitgestellt ist, wie beispielsweise der in **Fig. 6** gezeigten Sitz, natürlich kann es auch ein Autosicherheitssitz sein, der in einem Auto verwendet wird, ohne jedoch darauf beschränkt zu sein; die andere Art stellt einen Träger **20** mit einer Babywanne zum Hineinlegen eines Kleinkinds bereit, ohne jedoch darauf beschränkt zu sein. Da die Struktur des Trägers **20** in dem Fachgebiet gut bekannt ist, dürfte es zu verstehen sein, dass daher hier nicht im Detail darauf eingegangen wird. Konkrete Beschreibung wie folgt:

[0034] Wie **Fig. 4**, **Fig. 5** und **Fig. 11** bis **Fig. 14** zeigen, ist an dem Rahmen **10** außerdem ein zweiter Stufenabschnitt **12** für das Eingreifbauteil **33** angeordnet, um den Eingreifhalter **32** in der ersten Einstellposition X zu halten, wobei, wenn der Träger **20** zur Verwendung in Rückwärtsrichtung auf dem Rahmen **10** montiert ist, das Eingreifbauteil **33** bei Betätigen des Freigabebedienelements **34** eine Ausrast- oder Einrastbewegung ausführt, um den Eingreifhalter **32** zwischen der ersten Einstellposition X und der zweiten Einstellposition Y umzuschalten, und sofort bewirkt, dass, wenn der Eingreifhalter **32** die erste Einstellposition X erreicht hat, das Eingreifbauteil **33** in den zweiten Stufenabschnitt **12** eingreifen kann, wobei, wenn der Eingreifhalter **32** die zweite Einstellposition Y erreicht hat, das Eingreifbauteil **33** in den ersten Stufenabschnitt **11** eingreifen und so die feste und stabile Montage des Trägers **20** auf dem Rahmen **10** zur Verwendung in Rückwärtsrichtung gewährleisten kann. Konkret bedeutet das, dass der Träger **20**, wenn er zur Verwendung in Vorwärts richtung auf dem Rahmen **10** montiert ist, das Eingreifbauteil **33** in den zweiten Stufenabschnitt **12** einrastet, wenn sich der Eingreifhalter **32** an der ersten Einstellposition X befindet, so dass das Eingreifbauteil **33** in den zweiten Stufenabschnitt **12** einrastet und ein Herunterrutschen des Trägers **20** vom Rahmen **10** verhindert und bewirkt, dass der Träger **20** fest und stabil auf dem Rahmen **10** befestigt ist, wenn der Träger **20** zur Verwendung in Rückwärtsrichtung die zweite Einstellposition Y erreicht hat.

[0035] Wie **Fig. 4** bis **Fig. 14** zeigen, umfasst das Eingreifbauteil **33** ein Eingreifelement **331**, ein Auslöseelement **332** und ein Verbindungselement **333**, wobei das Freigabebedienelement **34** sich mit dem Eingreifelement **331** bewegt, wobei das Eingreifelement **331** teleskopisch in dem Eingreifhalter **32** angeordnet ist, wobei das Eingreifelement **331** wahlweise in den ersten Stufenabschnitt **11** oder zweiten Stufenabschnitt **12** einrastet, so dass das Profil **311** das Auslöseelement **332** in Bewegung drückt, wenn der Träger **20** zur Verwendung in Vorwärtsrichtung am Rahmen **10** montiert wird, wobei das bewegliche Auslöseelement **332** das Eingreifelement **331** in den Eingreifhalter **32** zurückzieht, weshalb die Struktur des Eingreifbauteils **33** einfach, leicht zu arrangieren und zu montieren ist. Konkret gesagt, ist das erste Ende des Verbindungselements **333** mit dem Freigabebedienelement **34** und das zweite Ende des Verbindungselements **333** mit dem Eingreifelement **331** verbunden, um die Bewegung von Freigabebedienelement **34** und Eingreifelement **331** zu synchronisieren und ein schnelles Entriegeln zu erleichtern. Vorzugsweise bestehen Eingreifelement **331**, Auslöseelement **332** und Verbindungselement **333** aus Metall oder sind in einem Stück gegossen, ohne darauf beschränkt zu sein.

[0036] Wie **Fig. 7** bis **Fig. 10** zeigen, ist das Auslöseelement **332** gleitend und teleskopisch an dem Eingreifhalter **32** angeordnet, so dass sich das Auslöseelement **332** noch schneller zusammen mit dem Eingreifelement **331** bewegt, beispielsweise ist in dem Eingreifhalter **32** eine Führungsschiene **321** angeordnet, wobei das Auslöseelement **332** gleitend auf der Führungsschiene **321** montiert ist, wobei natürlich je nach tatsächlichem Bedarf die Führungsschiene **321** auch durch das Auslöseelement **332** selbst bereitgestellt sein kann, so dass sie hierauf nicht beschränkt ist. Konkret gesagt, schiebt das Profil **311** das Auslöseelement **332** gleitend in den Eingreifhalter **32**, wenn der Träger **20** zur Verwendung in Vorwärtsrichtung am Rahmen **10** montiert wird, wobei das Auslöseelement **332** auf das Verbindungselement **333** drückt, um sich zu bewegen, während es in den Eingreifhalter **32** gleitet, und das sich bewegende Verbindungselement **333** treibt das Eingreifelement **331** an, sich in den Eingreifhalter **32** zurückzuziehen, so dass sich das Eingreifbauteil **33** während des Entriegelns glatt und kontinuierlich bewegt, und in Abhängigkeit des Drucks des Auslöseelements **332** auf das Verbindungselement **333** wird bewirkt, dass das Eingreifelement **331** glatt in den Eingreifhalter **32** für die Entriegelung zurückgezogen werden kann. Genauer gesagt, kreuzt sich die Gleitrichtung des Auslöseelements **332** mit der Bewegungsrichtung des Verbindungselements **333** und bewirkt, dass sich Auslöseelement **332** und Verbindungsele-

ment **333** nicht gegenseitig beeinträchtigen und das Eingreifelement **331** effektiv und reibungslos bewegt werden kann. Um das in den Eingreifhalter **32** zurückgezogene Freigabebedienelement **34** und das Auslöseelement **332** automatisch herauszuziehen und die Position zurückzusetzen, umfasst das Eingreifbauteils **33** außerdem ein zwischen dem Freigabebedienelement **34** und dem Eingreifhalter **32** angeordnetes Freigaberückstellelement **334** sowie ein zwischen Auslöseelement **332** und Eingreifhalter **32** angeordnetes Auslöserückstellelement **335**, wobei das Freigaberückstellelement **334** tendenziell stets das Freigabebedienelement **34** aus dem Eingreifhalter **32** herausschiebt, und das Auslöserückstellelement **335** tendenziell stets das Auslöseelement **332** aus dem Eingreifhalter **32** herausschiebt. Beispielsweise sind das Freigaberückstellelement **334** und/oder das Auslöserückstellelement **335** elastische Elemente, wie beispielsweise Druckfedern oder Zugfedern ohne darauf beschränkt zu sein, natürlich können je nach tatsächlichem Bedarf Freigaberückstellelement **334** und Auslöserückstellelement **335** wahlweise auch magnetische Elemente sein, und durch Montieren eines magnetischen Elements an dem Eingreifhalter **32** und eines anderen magnetischen Elements an dem entsprechenden Freigabebedienelement **34** und/oder Auslöseelement **332**, kann mithilfe der Abstoßung der Pole ein automatisches Zurücksetzen des Auslöseelements **332** und des Freigabebedienelements **34** erreicht werden, ohne jedoch darauf beschränkt zu sein.

[0037] Wie **Fig. 4**, **Fig. 5** und **Fig. 9** bis **Fig. 14** zeigen, ist am Rahmen **10** eine Gleitschiene **13** montiert, der Eingreifhalter **32** ist verschiebbar auf der Gleitschiene **13** angeordnet, der erste Stufenabschnitt **11** und der zweite Stufenabschnitt **12** sind auf der Gleitschiene **13** montiert, wodurch die Positionseinstellung des Eingreifhalters **32** auf dem Rahmen **10** erleichtert wird. Beispielsweise ist die Gleitschiene **13** hervorstehend am oberen Lenkgriff des Rahmens **10** montiert, um die Montage der Gleitschiene **13** zu erleichtern, ohne jedoch darauf beschränkt zu sein. Konkret gesagt, sind auf der Gleitschiene **13** außerdem mehrere voneinander beabstandete Feineinstellungsstufenabschnitte **14** angeordnet, wobei sich die Feineinstellungsstufenabschnitte **14** zwischen dem ersten Stufenabschnitt **11** und dem zweiten Stufenabschnitt **12** befinden, so dass, wenn der Träger **20** auf dem Rahmen **10** montiert wird, das Eingreifbauteil **33** abgesehen von einem wahlweisen Eingreifen in den ersten Stufenabschnitt **11** oder den zweiten Stufenabschnitt **12** auch wahlweise in einen der Feineinstellungsstufenabschnitte **14** einrasten kann, um die Position des Trägers **20** auf dem Rahmen **10** flexibler einzustellen. Beispielsweise sind zwischen dem ersten Stufenabschnitt **11** und dem zweiten Stufenabschnitt **12** drei Feineinstellungsstufenabschnitte **14** angeordnet, was dazu führt, dass der Eingreifhalter **32** auf dem Rahmen **10** in fünf Positionen eingestellt werden kann, was die Verwendung des Trägers **20** noch flexibler und veränderbarer macht. Wenn insbesondere der Träger **20** zur Verwendung in Vorwärtsrichtung auf dem Rahmen **10** montiert ist, rastet das Eingreifbauteil **33** aus dem an den ersten Stufenabschnitt **11** angrenzenden Feineinstellungsstufenabschnitt **14** aus, und beschränkt im nächsten Schritt die Höhe, wenn der Träger **20** zur Verwendung in Vorwärtsrichtung am Rahmen **10** montiert ist, um die Sicherheit bei der Verwendung des Kinderwagens **100** zu gewährleisten. Beispielsweise weisen der erste Stufenabschnitt **11**, der zweite Stufenabschnitt **12** und die Feineinstellungsstufenabschnitte **14** Schlitzstrukturen auf, so dass das Eingreifelement **331** einfach wahlweise in den ersten Stufenabschnitt **11**, den zweiten Stufenabschnitt **12** oder einen der Feineinstellungsstufenabschnitte **14** einrasten kann, um den Eingreifhalter **32** in einer bestimmten Position auf dem Rahmen **10** zu halten.

[0038] Wie **Fig. 7** bis **Fig. 14** zeigen, weisen die untere Seitenwand des ersten Stufenabschnitts **11** sowie die untere Seitenwand des an den ersten Stufenabschnitt **11** angrenzenden Feineinstellungsstufenabschnitts **14** jeweils eine Schräge zum nach vorne Herausgleiten **15** auf, die schräg von oben nach unten nach außen angeordnet ist und wenn der Träger **20** zur Verwendung in Vorwärtsrichtung am Rahmen **10** montiert wird und das Eingreifelement **331** sich bis zum ersten Stufenabschnitt **11** oder bis zu dem an den ersten Stufenabschnitt **11** angrenzenden Feineinstellungsstufenabschnitt **14** erstreckt, zieht sich das bewegliche Auslöseelement **332** aufgrund des Drucks des Profils **311** auf das Auslöseelement **332** und damit verbundene Eingreifelement **331** in den Eingreifhalter **32** zurück, wobei zu diesem Zeitpunkt das Eingreifelement **331** nach außen gleitet und schließlich an Schräge zum nach vorne Herausgleiten **15** anstößt, so dass das Eingreifelement **331** automatisch nach unten weggleitet und nur in eines der darunterliegenden Feineinstellungsstufenabschnitte **14** oder den zweiten Stufenabschnitt **12** einrasten kann, wodurch automatisch, je nach Montageart des Trägers **20**, die Höhe zwischen dem Träger **20** und dem Rahmen **10** begrenzt wird. Um sicherzustellen, dass das Eingreifelement **331**, wenn der Träger **20** rückwärts auf dem Rahmen montiert ist, so ausgewählt werden kann, dass es in einem ersten Stufenabschnitt **11**, einem zweiten Stufenabschnitt **12** oder einem der Feineinstellungsstufenabschnitte **14** einrastet, erstreckt sich die Schräge zum nach vorne Herausgleiten **15** nicht bis zur Unterseite des Schlitzes, weshalb zwischen der Schräge zum nach vorne Herausgleiten **15** und der Unterseite des Schlitzes zusätzlich eine Stützseitenwand **16** angeordnet ist; wird der Träger **20** in Rückwärts richtung auf dem Rahmen **10** montiert, wird das sich am ersten Stufenabschnitt **11** oder am sich daran angrenzenden Feineinstellungsstufenabschnitt **14** befindende Eingreifelement **331** von der Stützseitenwand **16** getra-

gen, so dass das Eingreifelement **331** stabil in einem beliebigen Schlitz zum Einrasten gebracht werden kann, und es wird sichergestellt, wenn der Träger **20** in Rückwärtsrichtung auf dem Rahmen **10** montiert ist, dass der Eingreifhalter **32** den Zweck einer fünfstufigen Positionseinstellung relativ zum Rahmen **10** erfüllen kann. Konkret bedeutet das, dass die oberen Seitenwände von mindestens einem der ersten Stufenabschnitte **11**, des zweiten Stufenabschnitts **12** und des Feineinstellungsstufenabschnitts **14** jeweils eine Schräge zum nach hinten Gleiten **17** aufweisen, die schräg von oben nach unten nach innen angeordnet ist, wobei das Eingreifelement **331** eine mit der Schräge zum nach hinten Gleiten **17** zusammenpassende Schräge zum Gleiten **3311** aufweist, so dass, wenn der Träger **20** in Rückwärtsrichtung auf dem Rahmen **10** montiert ist, und wenn das Eingreifelement **331** von der niedrigen Position des Schlitzes auf die obere Position des Schlitzes umgestellt wird, kann das Eingreifelement **331** leicht aus der unteren Position des Schlitzes, in der es sich befindet, gelöst werden, da die Schräge zum nach hinten Gleiten **17** mit der entsprechenden Schräge zum Gleiten **3311** synchron gleitet, so dass während des gesamten Bedienvorgangs das Freigabebedienelement **34** nicht gedrückt werden muss, und der Träger **20** direkt nach oben bewegt werden kann, wodurch die Bedienung einfach und schnell ist.

[0039] Wie **Fig. 7** bis **Fig. 10** zeigen, weist der Verbindungssockel **31** eine Einsteckkammer **312** auf, wobei sich das Profil **311** in der Einsteckkammer **312** befindet, der Eingreifhalter **32** teilweise in die Einsteckkammer **312** eingeführt ist, wobei vorzugsweise zu diesem Zeitpunkt das Profil **311** und das Auslöseelement **332** gegenständig angeordnet sind, so dass der Verbindungssockel **31** und der Eingreifhalter **32** schnell und gleichmäßig das Auslöseelement **332** in den Eingreifhalter **32** drücken, wenn sie eingerastet sind, und es ist verständlich, dass die Strukturen des Verbindungssockels **31** und des Eingreifhalters **32** auf dem Fachgebiet wohlbekannt sind und daher nicht weiter im Detail beschrieben werden. Beispielsweise ist das Profil **311** eine in der Einsteckkammer **312** angeordnete Rippe, so dass die Struktur des Profils **311** einfach ist und sie leicht zu montieren und anzuordnen ist. Natürlich kann je nach tatsächlichem Bedarf das Profil **311** auch als ein Vorsprung oder Block in der Einsteckkammer **312** angeordnet sein, wodurch der gleiche Effekt bewirkt werden kann, das Auslöseelem ent 332 zu drücken, ohne jedoch darauf beschränkt zu sein.

[0040] Nachstehend wird, wie in **Fig. 1** bis **Fig. 14** gezeigt, die Funktionsweise der ersten Ausführungsform beschrieben, wobei, wenn der Träger **20** zur Verwendung in Rückwärtsrichtung auf dem Rahmen **10** montiert ist, der Eingreifhalter **32** teilweise in die Einsteckkammer **312** eingeführt wird, zu diesem Zeitpunkt das Profil **311** und das Auslöseelement **332** in der Einsteckkammer **312** versetzt zueinander sind, das Eingreifelement **331** wahlweise in den ersten Stufenabschnitt **11**, den zweiten Abschnitt **12** oder einen der Feineinstellungsstufenabschnitte **14** einrasten kann.

[0041] Das Freigabebedienelement **34** wird bedient, um sich in Richtung des Eingreifhalters **32** zurückzuziehen, und das Freigabebedienelement **34**, das eine Rückzugsbewegung ausführt, bewegt sich in Verbindung mit dem Verbindungselement **333**, wobei das sich bewegende Verbindungselement **333** die Bewegung auf das Eingreifelement **331** überträgt, um zu bewirken, sich in den Eingreifhalter **32** zurückzuziehen, so dass das Eingreifelement **331** aus dem Schlitz, in dem es sich befindet, gelöst wird, woraufhin der Träger **20** leicht bedient werden kann, um sich relativ zum Rahmen **10** auf und ab zu bewegen und die Montageposition auf dem Rahmen **10** einstellen zu können; der Eingreifhalter **32** kann daraufhin in fünf Stufenpositionen relativ zum Rahmen eingestellt werden und das Eingreifelement **331** kann wahlweise in einen der fünf Schlitze einrasten. Danach wird das Freigabebedienelement **34** gelöst, wobei durch die Einwirkung des Freigaberückstellelements **334** das Eingreifelement **331** und das Freigaberückstellelement **334** erneut aus dem Eingreifhalter **32** herausgeschoben werden, wobei das Eingreifelement **331** in den dazu ausgerichteten Schlitz eingeführt wird und in diesen Schlitz einrastet und so die Höheneinstellung des Trägers **20** vollendet. Natürlich kann zu diesem Zeitpunkt die Position des Trägers **20** auf dem Rahmen **10** auch durch direktes Schieben des Trägers **20** nach oben eingestellt werden.

[0042] Wenn der Träger **20** zur Verwendung in Vorwärtsrichtung auf dem Rahmen **10** montiert ist, ist der Eingreifhalter **32** teilweise in die Einsteckkammer **312** des Verbindungssockels **31** eingeführt, zu diesem Zeitpunkt ist das sich in der Einsteckkammer **312** befindende Profil **311** dem Auslöseelement **332** direkt gegenüberliegend angeordnet, das Profil **311** drückt auf das Auslöseelement **332**, um in den Eingreifhalter **32** zu gleiten, und während der Gleitbewegung des Auslöseelements **332** in den Eingreifhalter **32**, wird der Verbindungssockel **31** angeschoben, und das sich bewegende Verbindungselement **333** treibt das Eingreifelement **331** in den Eingreifhalter **32** hinein, so dass, wenn sich das Eingreifelement **331** bis zum ersten Stufenabschnitt **11** oder dem an den ersten Stufenabschnitt **11** angrenzenden Feineinstellungsstufenabschnitt **14** erstreckt, erstreckt sich das Eingreifelement **331** nach außen und stößt an der Schräge zum nach vorne Herausgleiten **15** an, so dass das Eingreifelement **331** automatisch nach unten weggleitet und nur in eines der darunterliegenden Feineinstellungsstufenabschnitte **14** oder den zweiten Stufenabschnitt **12** eingreifen kann, wodurch automatisch, je nach Montageart des Trägers **20**, die

Höhe zwischen dem Träger **20** und dem Rahmen **10** begrenzt wird.

[0043] Das Funktionsprinzip ist wie vorstehend beschrieben.

[0044] Wie **Fig. 15** bis **Fig. 24** zeigen, entspricht die Struktur des Kinderwagens **100'** der zweiten Ausführungsform im Wesentlichen der Struktur des Kinderwagens **100** der ersten Ausführungsform mit den folgenden Unterschieden:

(1) Der Höhenverstellm echanism us 30' umfasst einen Verbindungssockel **31'**, einen Eingreifhalter **32'** und ein Eingreifbauteil **33'**, wobei das Auslöseelement **332'** schwenkbar in dem Eingreifhalter **32** montiert ist, wobei das Auslöseelement **332'** ein Kontaktende **3321** und ein Druckende **3322** aufweist, wobei das Kontaktende **3321** teleskopisch an dem Eingreifhalter **32** angeordnet ist, und das Druckende **3332** an das Eingreifelement **331** anstößt und das Freigabebedienelement **34** am Eingreifelement **331** montiert und damit verbunden ist;

(2) Wenn bei der vorliegenden Ausführungsform der Träger **20** zur Verwendung in Vorwärtsrichtung am Rahmen **10** montiert wird, ist das Eingreifbauteil **33'**, wenn sich der Eingreifhalter **32'** in der ersten Einstellposition X befindet, vom zweiten Stufenabschnitt **12** getrennt;

(3) Das Eingreifbauteil **33'** umfasst außerdem ein zwischen dem Eingreifelement **331** und dem Eingreifhalter **32'** montiertes Freigaberückstellelement **334'**, wobei das Freigaberückstellelement **334'** tendenziell stets das Eingreifelement **331** aus dem Eingreifhalter **32** herausschiebt;

(4) Der Eingreifhalter **32'** verfügt über eine Einführkammer **321'**, der Verbindungssockel **31'** umfasst ein Montageteil **311'** und einen am Montageteil **311'** nach außen vorstehenden Eingriffskörper **312'**, wobei sich das Profil **311** an dem Montageteil **311'** befindet, und der Eingriffskörper **312'** teilweise in die Einführkammer **321'** eingeführt ist, und das Profil **311** ein Vorsprung oder Block ist, ohne jedoch darauf beschränkt zu sein;

(6) Das untere Ende der Gleitschiene 13weist einen Blockierungsteil **131** auf, der das Herausgleiten des Eingreifhalters **32'** blockiert.

[0045] Außer den vorstehend genannten Unterschieden entspricht der Rest der ersten Ausführungsform und wird daher hier nicht wiederholt.

[0046] Im Folgenden wird beispielhaft die Arbeitsweise der zweiten Ausführungsform beschrieben: Wie **Fig. 14** bis **Fig. 24** zeigen, wird der Eingriffskörper **312'** an dem Verbindungssockel **31'** in der Einführkammer **321'** im Eingreifhalter **32'** eingeführt, wenn der Träger **20** zur Verwendung in Rückwärtsrichtung am Rahmen **10** montiert ist, wobei zu diesem Zeitpunkt das sich an dem Montageteil **311'** befindende Profil **311** zu dem Kontaktende **3221** in dem Auslöseelement **332'** versetzt ist und das Eingreifelement **331** wahlweise in den ersten Stufenabschnitt **11** oder den zweiten Stufenabschnitt **12** eingreift.

[0047] Das Freigabebedienelement **34** wird betätigt, um sich in den Eingreifhalter **32** zurückzuziehen, und das Freigabebedienelement **34**, das mit dem Eingreifelement **331** verbunden ist und eine Bewegung zum Einziehen in den Eingreifhalter **32'** ausführt, bewirkt, dass das Eingreifelement **331** sich aus dem Schlitz, in dem es sich befindet, löst, woraufhin der Träger **20** leicht bedient werden kann, um sich relativ zum Rahmen **10** auf und ab zu bewegen, und um die Montageposition auf dem Rahmen **10** einstellen zu können, so dass zu dem Zeitpunkt der Eingreifhalter **32** relativ zum Rahmen in zwei Höhenpositionen eingestellt und wahlweise in einen der zwei Schlitze einrasten kann.

[0048] Danach wird das Freigabebedienelement **34** gelöst, wobei durch die Einwirkung des Freigaberückstellelements **334** das Eingreifelement **331** und das Freigaberückstellelement **334** erneut aus dem Eingreifhalter **32** herausgeschoben werden, wobei das Eingreifelement **331** in den dazu ausgerichteten Schlitz eingeführt wird und in diesen Schlitz eingreift und so die Höheneinstellung des Trägers **20** vollendet. Natürlich kann zu diesem Zeitpunkt die Position des Trägers **20** auf dem Rahmen **10** auch durch direktes Schieben des Trägers **20** nach oben eingestellt werden.

[0049] Wenn der Träger **20** zur Verwendung in Vorwärts richtung auf dem Rahmen **10** montiert ist, wobei der Verbindungssockel **31'** teilweise in die Einführkammer **321'** in dem Eingreifhalter **32'** eingeführt ist, sind zu diesem Zeitpunkt das sich am Montageteil **311'** befindende Profil **311** und das Kontaktende **3321** im Auslöseelement **332'** gegenständig angeordnet, wobei das Profil **311** das Auslöseelement **332'** umdreht und bewirkt, dass das Kontaktende **3321** im Auslöseelement **332'** in den Eingreifhalter gedreht wird, wobei das Druckende **3322** in dem Auslöseelement **332'** dementsprechend das Eingreifelement **331** in den Eingreifhalter **32'** zurückzieht, und wenn der Träger **20** zur Verwendung in Vorwärts richtung auf dem Rahmen **10** montiert ist, das Eingreifelement **331** deshalb überhaupt nicht in den ersten Stufenabschnitt **11** oder den zweiten Stufenabschnitt **12** einrasten kann, wobei der Eingreifhalter **32'** in der ersten Einstellposition X gehalten wird, der Eingreifhalter **32'** aber von dem Blockierungsteil **131** blockiert wird und nicht aus der Gleitschiene **13** herausgleiten kann. Das Funktionsprinzip ist wie vorstehend beschrieben.

[0050] Wie in **Fig. 25** bis **Fig. 28** dargestellt, kann auf der Grundlage der vorliegenden Ausführungs-

form je nach tatsächlichem Bedarf die Montage des zweiten Stufenabschnitts **12** an der Gleitschiene **13** weggelassen werden und es kann nur der erste Stufenabschnitt **11** angeordnet werden, um die Struktur des Kinderwagens **100'** noch weiter zu vereinfachen. Wenn der Träger **20** zur Verwendung in Rückwärtsrichtung auf dem Rahmen **10** montiert ist, ist der Verbindungssockel **31'** teilweise in die Einführkammer **321'** in den Eingreifhalter **32'** eingeführt, wobei zu diesem Zeitpunkt das sich an dem Montageteil **311'** befindende Profil **311** von dem Kontaktende **3221** in dem Auslöseelement **332'** versetzt ist und das Eingreifelement **331** wahlweise in den ersten Stufenabschnitt **11** einrastet und die Position in der zweiten Einstellposition Y hält, wobei der Eingreifhalter **32'** auch durch das Blockierungsteil **131** getragen werden kann und die Position in der ersten Einstellposition X hält, wobei zu diesem Zeitpunkt der Eingreifhalter **32'** wahlweise durch Verwenden einer Befestigung wie einer Bindung befestigt sein und die Position in der ersten Einstellposition X halten kann, ohne jedoch darauf beschränkt zu sein. Wenn der Träger **20** zur Verwendung in Vorwärts richtung auf dem Rahmen **10** montiert ist, wobei der Eingriffskörper **312'** teilweise in die Einführkammer **321'** in dem Eingreifhalter **32'** eingeführt ist, sind zu diesem Zeitpunkt das sich am Montageteil **311'** befindende Profil **311** und das Auslöseelement332' im Kontaktelement gegenständig angeordnet, wobei das Profil **311** das Auslöseelement **332'** umdreht und bewirkt, dass das Kontaktende **3321** im Auslöseelement **332'** in den Eingreifhalter gedreht wird, wobei das Druckende **3322** in dem Auslöseelement **332'** dementsprechend das Eingreifelement **331** in den Eingreifhalter **32'** zurückzieht, und wenn der Träger **20** zur Verwendung in Vorwärtsrichtung auf dem Rahmen **10** montiert ist, das Eingreifelement **331** daher überhaupt nicht in den ersten Stufenabschnitt **11** oder den zweiten Stufenabschnitt **12** einrasten kann, wobei der Eingreifhalter **32'** in der ersten Einstellposition X gehalten wird, der Eingreifhalter **32'** aber von dem Blockierungsteil **131** blockiert wird und nicht aus der Gleitschiene **13** herausgleiten kann, wobei der Eingreifhalter **32'** in der Position der ersten Einstellposition X gehalten wird, wobei zu diesem Zeitpunkt der Eingreifhalter **32'** wahlweise durch Verwenden einer Befestigung wie einer Bindung befestigt und die Position in der ersten Einstellposition X halten kann, ohne jedoch darauf beschränkt zu sein.

[0051] Verglichen mit dem Stand der Technik ist, kann die Montagehöhe des Trägers **20** auf dem Rahmen **10** automatisch begrenzt werden, und wenn der Träger **20** in Rückwärtsrichtung auf dem Rahmen **10** montiert ist, wird die Montagehöhe des Trägers **20** auf dem Rahmen **10** nicht begrenzt, so dass der Kinderwagen **100** (**100'**) der vorliegenden Erfindung die Höhe des Trägers **20** relativ zum Rahmen **10** gemäß der Vorwärtsverwendung des Trägers **20** auf dem Rahmen **10** begrenzen kann, da der Höhenverstellmechanismus **30** des Kinderwagens **100** (**100'**) nach der vorliegenden Erfindung einen Verbindungssockel **31** (**31'**), einen Eingreifhalter **32** (**32'**), ein Eingreifbauteil **33** (**33'**) sowie ein sich mit dem Eingreifbauteil 33 (**33'**) gemeinsam bewegendes Freigabebedienelement **34** umfasst, wobei der Verbindungssockel **31** (**31'**) am Träger **20** montiert ist und ein Profil **311** aufweist, das wahlweise das Eingreifbauteil33 (**33'**) in Richtung Ausrasten drückt, wobei der Eingreifhalter **32** (**32'**) beweglich in dem Rahmen **10** montiert ist, der Träger **20** mithilfe des abnehmbaren Eingreifbauteils zwischen Verbindungssockel **31** (**31'**) und Eingreifhalter **32** (**32'**) zur Verwendung in Vorwärtsrichtung oder zur Verwendung in Rückwärtsrichtung auf dem Rahmen **10** montiert ist, wobei der Eingreifhalter **32** (**32'**) mindestens eine erste Einstellposition X und eine zweite Einstellposition Y über der ersten Einstellposition X relativ zum Rahmen **10** aufweist, an dem Rahmen **10** ein erster Stufenabschnitt **11** zum Eingreifen des Eingreifbauteils **33** (**33'**) angeordnet ist, um den Eingreifhalter **32** (**32'**) in der zweiten Einstellposition Y zu halten, wobei das Eingreifbauteil **33** (**33'**) in dem Eingreifhalter **32** (**32'**) angeordnet ist, das Profil **311** von dem Eingreifbauteil **33** (**33'**) versetzt angeordnet ist, wenn der Träger **20** auf dem Rahmen **10** zur Verwendung in Rückwärtsrichtung montiert wird; wenn das Profil **311** zur Verwendung des Trägers **20** in Vorwärtsrichtung auf dem Rahmen **10** montiert ist, wird das Eingreifbauteils **33** (**33'**) geschoben, sich aus dem ersten Stufenabschnitt **11** zu lösen, um so den Eingreifhalter **32** (**32'**) von der zweiten Einstellposition Y in die erste Einstellposition X umzuschalten, so dass, wenn der Träger **20** zur Verwendung in Vorwärtsrichtung auf dem Rahmen **10** montiert ist, automatisch die Einbauhöhe des Trägers **20** auf dem Rahmen **10** begrenzt werden kann, und ist der Träger **20** zur Verwendung in Rückwärtsrichtung auf dem Rahmen **10** montiert, wird die Einbauhöhe des Trägers **20** auf dem Rahmen **10** nicht begrenzt, sodass bei dem Kinderwagen **100** (**100'**) gemäß der vorliegenden Erfindung die relative Höhe zwischen Träger **20** und Rahmen **10** bei Verwendung des Trägers **20** auf dem Rahmen **10** in Vorwärtsrichtung begrenzt werden kann.

[0052] Die vorstehenden Offenbarungen sind nur bevorzugte Ausführungsformen der vorliegenden Erfindung und können nicht dazu dienen den Umfang der vorliegenden Erfindung einzuschränken. Daher fallen äquivalente Änderungen, die gemäß den Patentansprüchen der vorliegenden Erfindung vorgenommen werden, unter den Umfang der vorliegenden Erfindung.

Patentansprüche

1. Kinderwagen, umfassend einen Rahmen, einen Träger zum Tragen eines Babys sowie einen Höhenverstellmechanismus zum Einstellen der Position des Trägers auf dem Rahmen, **dadurch gekenn-**

zeichnet, dass der Höhenverstellmechanismus einen Verbindungssockel, einen Eingreifhalter, ein Eingreifbauteil und ein mit dem Eingreifbauteil verbundenes Freigabebedienelement umfasst, der Verbindungssockel entweder an dem Träger oder dem Rahmen montiert ist und eine Druckstruktur zum selektiven Drücken des Eingreifbauteils zum Bewegen in eine Freigaberichtung umfasst,
wobei der Eingreifhalter beweglich an dem anderen von Träger und Rahmen montiert ist, der Träger über einen lösbaren Eingriff mit dem Eingreifhalter zur Verwendung in Vorwärtsrichtung oder zur Verwendung in Rückwärtsrichtung am Rahmen montiert ist,
wobei der Eingreifhalter gegenüber dem Rahmen oder dem Träger, wo der Eingreifhalter angeordnet ist, mindestens eine erste Einstellposition und eine zweite Einstellposition über der ersten Einstellposition aufweist,
an dem Träger oder dem Rahmen, wo der Eingreifhalter angeordnet ist, ein erster Stufenabschnitt zum Eingreifen des Eingreifbauteils angeordnet ist, um den Eingreifhalter in der zweiten Einstellposition zu halten,
wobei das Eingreifbauteil in dem Eingreifhalter montiert ist, wobei die Druckstruktur von dem Eingreifbauteil versetzt ist, wenn der Träger zur Verwendung in Rückwärtsrichtung auf dem Rahmen montiert ist; und
wobei die Druckstruktur, wenn der Träger zur Verwendung in Vorwärtsrichtung auf dem Rahmen montiert ist, das Eingreifbauteil zum Lösen des Eingriffs mit dem ersten Stufenabschnitt schiebt, wodurch der Eingreifhalter von der zweiten Einstellposition in die erste Einstellposition umgeschaltet wird.

2. Kinderwagen nach Anspruch 1, wobei der Träger oder der Rahmen, wo der Eingreifhalter angeordnet ist, ferner mit einem zweiten Stufenabschnitt zum Eingreifen des Eingreifbauteils zum Halten des Eingreifhalters in der ersten Einstellposition ausgestattet ist, und wenn der Träger am Rahmen zur Verwendung in Rückwärtsrichtung montiert ist, führt das Eingreifbauteil aufgrund der Verbindung des Freigabebedienelements eine Freigabebewegung durch, so dass der Eingreifhalter zwischen der ersten Einstellposition und der zweiten Einstellposition umgeschaltet wird.

3. Kinderwagen nach Anspruch 2, wobei, wenn der Träger zur Verwendung in Vorwärtsrichtung auf dem Rahmen montiert ist, das Eingreifbauteil in Eingriff mit dem zweiten Stufenabschnitt ist, wenn sich der Eingreifhalter in der ersten Einstellposition befindet.

4. Kinderwagen nach Anspruch 2, wobei das Eingreifbauteil ein Eingreifelement und ein Auslöseelement umfasst, wobei das Freigabebedienelement mit dem Eingreifelement verbunden ist, wobei das Eingreifelement teleskopisch in dem Eingreifhalter angeordnet ist, wobei das Eingreifelement selektiv mit dem ersten Stufenabschnitt oder dem zweiten Stufenabschnitt in Eingriff steht, wobei die Druckstruktur das Auslöseelement in Bewegung drückt, wenn der Träger zur Verwendung in Vorwärtsrichtung am Rahmen montiert ist, so dass das sich bewegende Auslöseelement mit dem Eingreifelement zum Zurückziehen in den Eingreifhalter verbunden ist.

5. Kinderwagen nach Anspruch 4, wobei das Auslöseelement verschieblich und teleskopisch an dem Eingreifhalter angeordnet ist.

6. Kinderwagen nach Anspruch 4, wobei das Eingreifbauteil ferner ein Verbindungselement umfasst, wobei das erste Ende des Verbindungselements mit dem Freigabebedienelement und das zweite Ende des Verbindungselements mit dem Eingreifelement verbunden ist.

7. Kinderwagen nach Anspruch 6, wobei die Druckstruktur auf das Auslöseelement drückt, so dass es in den Eingreifhalter gleitet, wenn der Träger zur Verwendung in Vorwärtsrichtung auf dem Rahmen montiert ist, wobei das Auslöseelement während des Gleitvorgangs in den Eingreifhalter das Verbindungselement derart in Bewegung schiebt, dass das sich bewegende Verbindungselement das Eingreifelement antreibt, sich in den Eingreifhalter zurückzuziehen.

8. Kinderwagen nach Anspruch 6, wobei sich die Gleitrichtung des Auslöseelements mit der Bewegungsrichtung des Verbindungselements kreuzt.

9. Kinderwagen nach Anspruch 5, wobei in dem Eingreifhalter eine Führungsschiene angeordnet ist und das Auslöseelement verschieblich an der Führungsschiene montiert ist.

10. Kinderwagen nach Anspruch 4, wobei das Eingreifbauteil ferner ein zwischen dem Freigabebedienelement und dem Eingreifhalter angeordnetes Freigaberückstellelement umfasst, und das Freigaberückstellelement die stetige Tendenz hat, das Freigabebedienelement dazu zu treiben, sich aus dem Eingreifhalter heraus zu erstrecken.

11. Kinderwagen nach Anspruch 4, wobei das Eingreifbauteil ferner ein zwischen dem Auslöseelement und dem Eingreifhalter angeordnetes Auslöserückstellelement umfasst, wobei das Auslöserückstellelement eine stetige Tendenz hat, das Auslöseelement dazu zu treiben, sich aus dem Eingreifhalter heraus zu erstrecken.

12. Kinderwagen nach Anspruch 2, wobei an dem Träger oder dem Rahmen, wo der Eingreifhalter angeordnet ist, eine Führungsschiene angebracht ist, wobei der Eingreifhalter gleitend an der Führungsschiene montiert ist, wobei der erste Stufenabschnitt

und der zweite Stufenabschnitt an der Führungsschiene angeordnet sind.

13. Kinderwagen nach Anspruch 12, wobei an der Führungsschiene außerdem mehrere voneinander beabstandete Feineinstellungsstufenabschnitte angeordnet sind, wobei sich die Feineinstellungsstufenabschnitte zwischen dem ersten Stufenabschnitt und dem zweiten Stufenabschnitt befinden.

14. Kinderwagen nach Anspruch 13, wobei das Eingreifbauteil, wenn der Träger zur Verwendung in Vorwärts richtung am Rahmen montiert ist, auch den Eingriff mit dem Feineinstellungsstufenabschnitt, der an den ersten Stufenabschnitt angrenzt, löst.

15. Kinderwagen nach Anspruch 13, wobei der erste Stufenabschnitt, der zweite Stufenabschnitt und die Feineinstellungsstufenabschnitte jeweils eine Schlitzstruktur haben.

16. Kinderwagen nach Anspruch 13, wobei eine untere Seitenwand des ersten Stufenabschnitts und eine untere Seitenwand des an den ersten Stufenabschnitt angrenzenden Feineinstellungsstufenabschnitts jeweils eine Schräge zum nach vorne Herausgleiten aufweist, die von oben nach unten nach außen geneigt ist.

17. Kinderwagen nach Anspruch 13, wobei eine obere Seitenwand des ersten Stufenabschnitts, zweiten Stufenabschnitts und/oder zumindest eines Feineinstellungsstufenabschnitts jeweils eine Schräge zum nach hinten Gleiten aufweist, die von oben nach unten nach innen geneigt ist, wobei das Eingreifelement eine dazu passende Schräge zum Gleiten hat, die mit der Schräge zum nach hinten Gleiten zusammenwirkt.

18. Kinderwagen nach Anspruch 1, wobei der Verbindungssockel eine Eingreifeinführkammer aufweist, die Druckstruktur sich in der Eingreifeinführkammer befindet, und der Eingreifhalter teilweise in der Eingreifeinführkammer eingeführt ist.

19. Kinderwagen nach Anspruch 1, wobei der Eingreifhalter eine Einführkammer aufweist, der Verbindungssockel ein Montageteil und einen am Montageteil nach außen vorstehenden Eingriffskörperabschnitt umfasst, wobei sich die Druckstruktur an dem Montageteil befindet, und der Eingriffskörperabschnitt teilweise in die Einführkammer eingeführt ist.

20. Kinderwagen nach Anspruch 1, wobei die Druckstruktur ein Vorsprung, eine Rippe oder ein Anschlag ist.

21. Kinderwagen nach Anspruch 4, wobei das Auslöseelement schwenkbar in dem Eingreifhalter montiert ist, das Auslöseelement ein Kontaktende und ein Druckende aufweist, das Kontaktende teleskopisch an dem Eingreifhalter angeordnet ist und das Druckende an das Eingreifelement anstößt.

22. Kinderwagen nach Anspruch 4, wobei das Eingreifbauteil ferner ein zwischen dem Eingreifelement und dem Eingreifhalter angeordnetes Eingriffsrückstellelement umfasst, und das Eingriffsrückstellelement die stetige Tendenz hat, das Eingreifelement dazu zu treiben, sich aus dem Eingreifhalter heraus zu erstrecken.

23. Kinderwagen nach Anspruch 1, wobei an dem Träger oder dem Rahmen, wo der Eingreifhalter angeordnet ist, eine Gleitschiene angebracht ist, der Eingreifhalter gleitend auf der Gleitschiene montiert ist, und der erste Stufenabschnitt an der Gleitschiene angeordnet ist.

24. Kinderwagen nach Anspruch 12 oder Anspruch 23, wobei ein unteres Ende der Gleitschiene einen Blockierungsteil aufweist, der das Herausgleiten aus dem Eingreifhalter blockiert.

25. Kinderwagen nach Anspruch 1, wobei der Träger ein Kindersitz, eine Babywanne oder ein Autosicherheitssitz ist.

Es folgen 28 Seiten Zeichnungen

Anhängende Zeichnungen

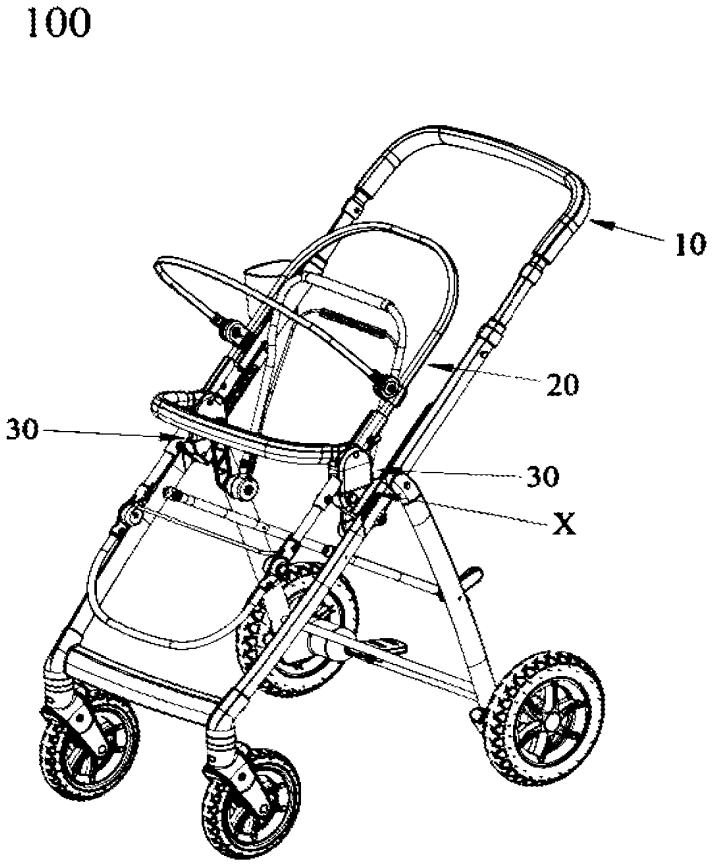
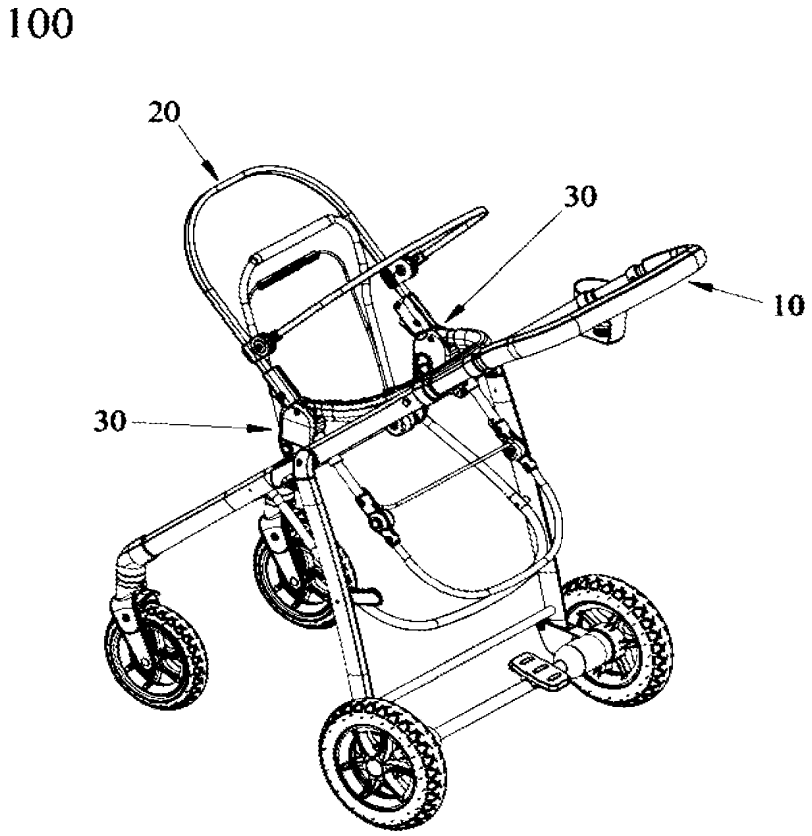


FIG. 1



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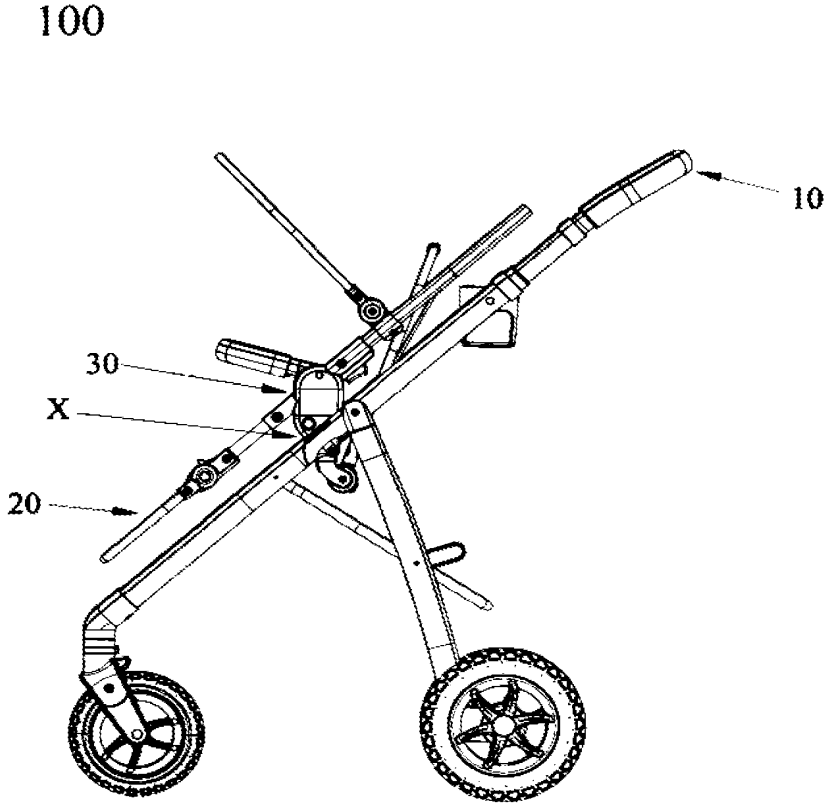

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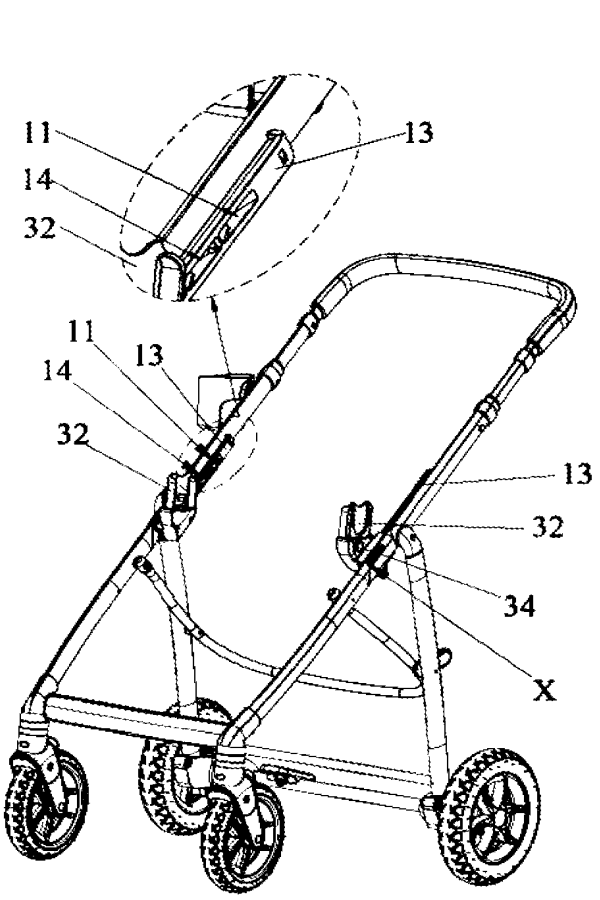

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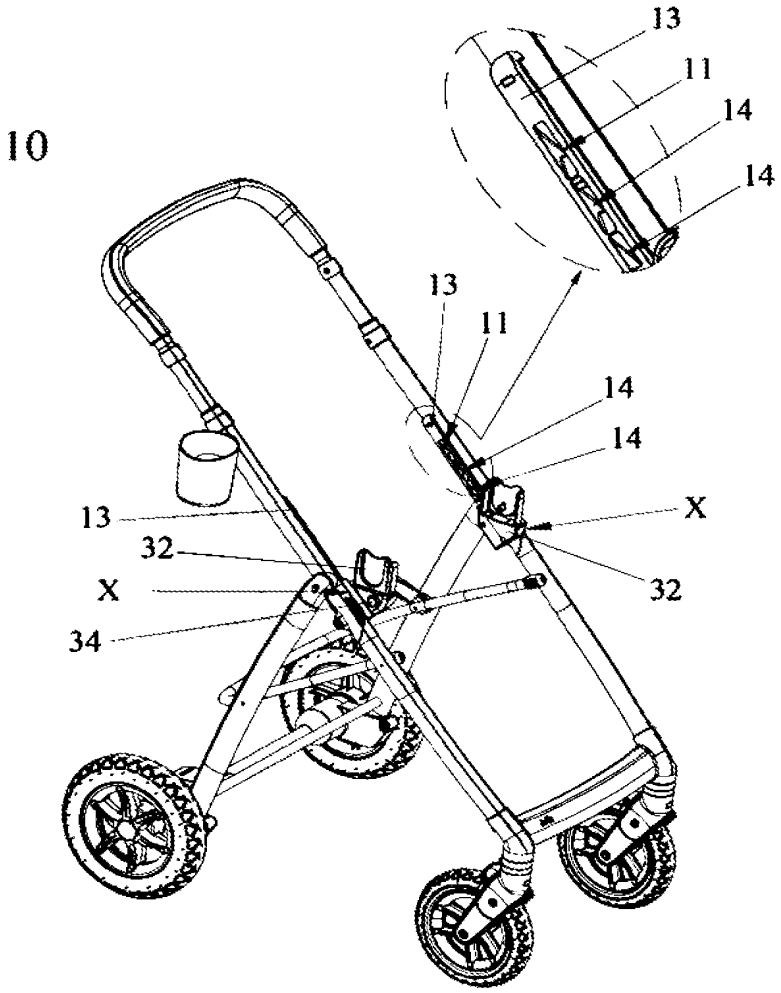

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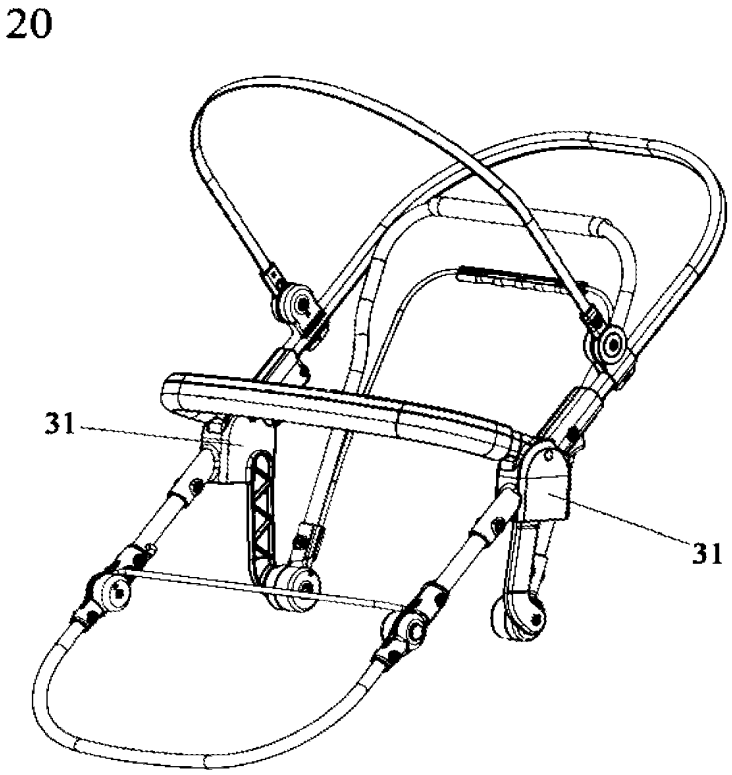

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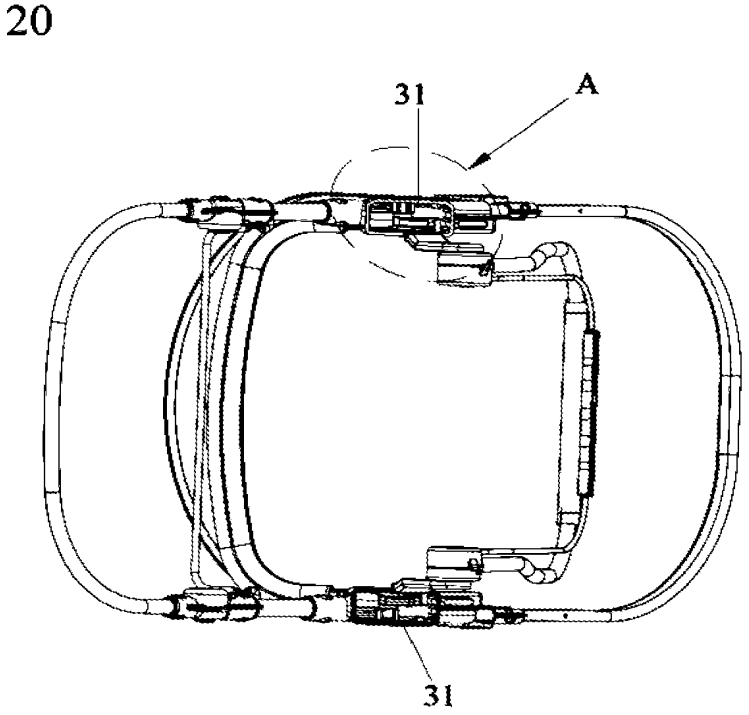

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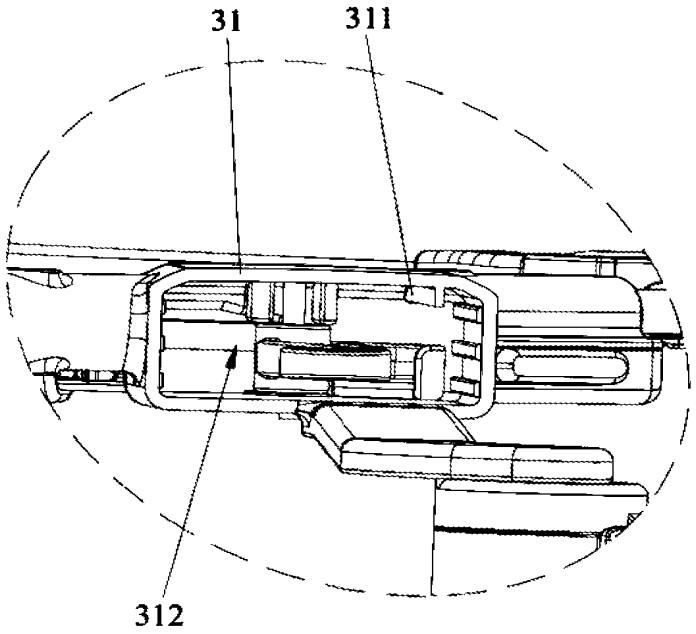
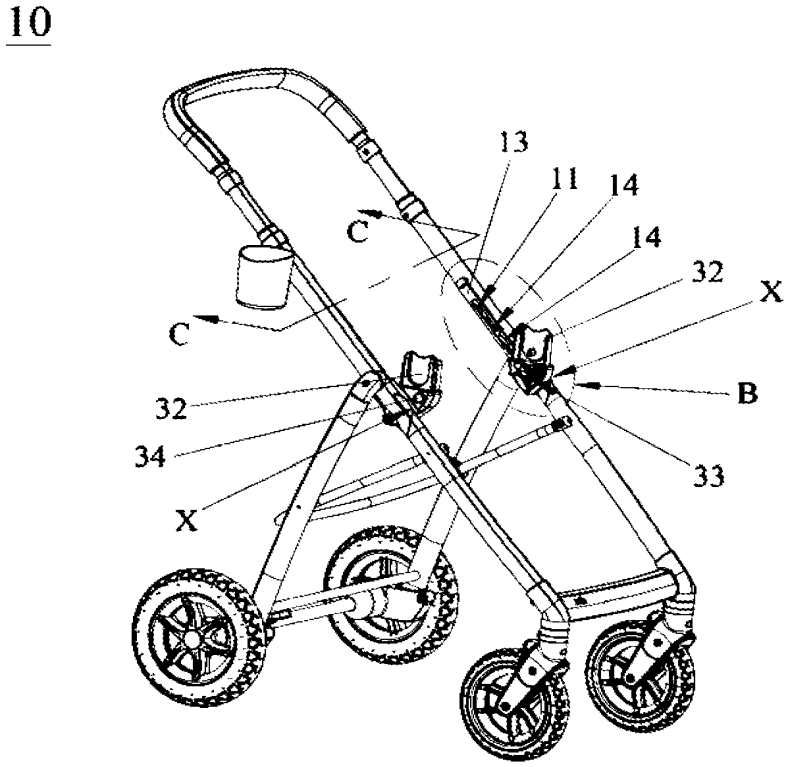


FIG. 8



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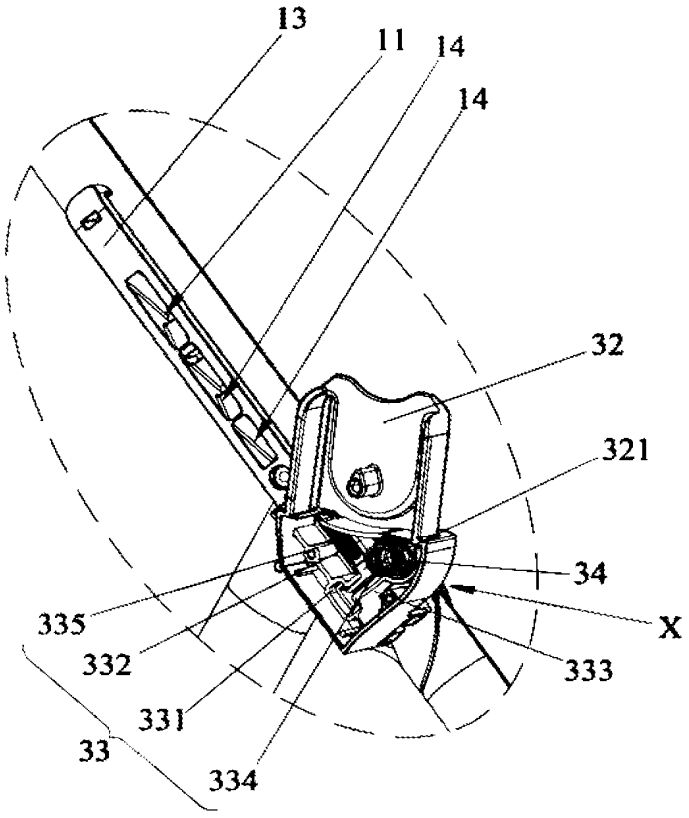

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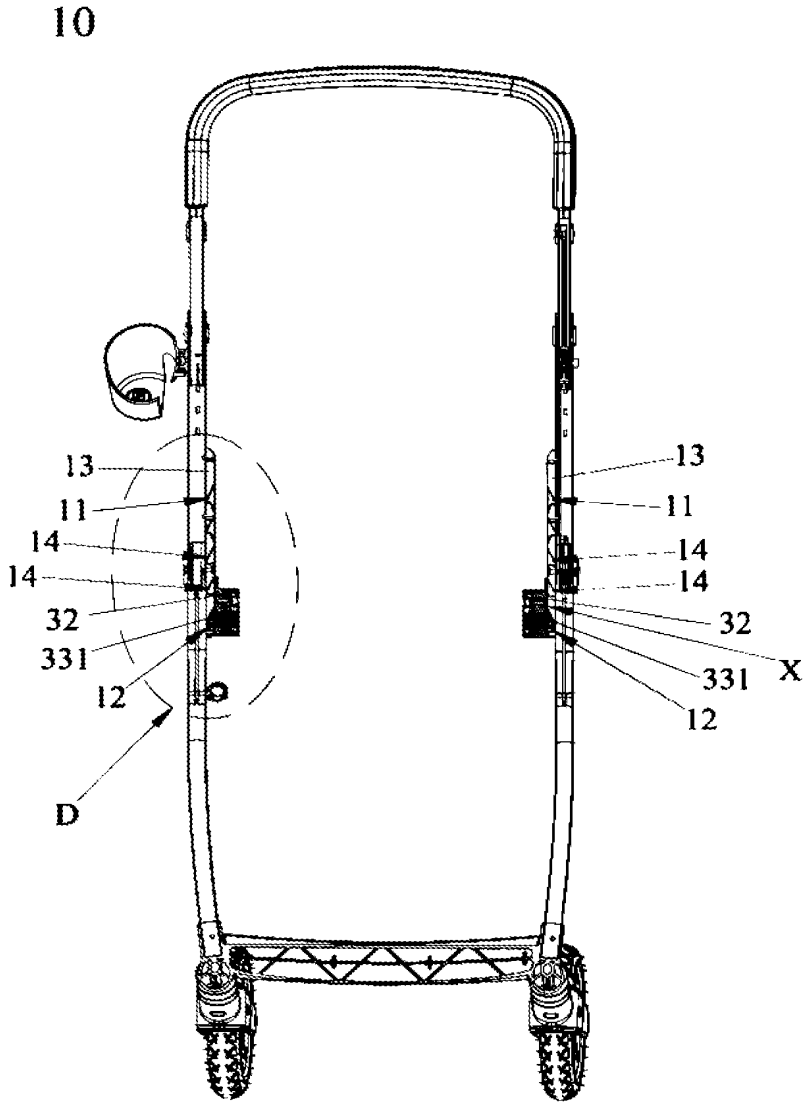

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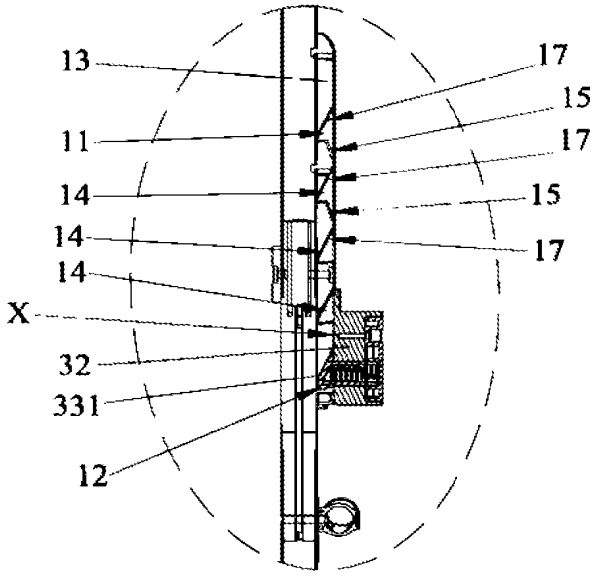

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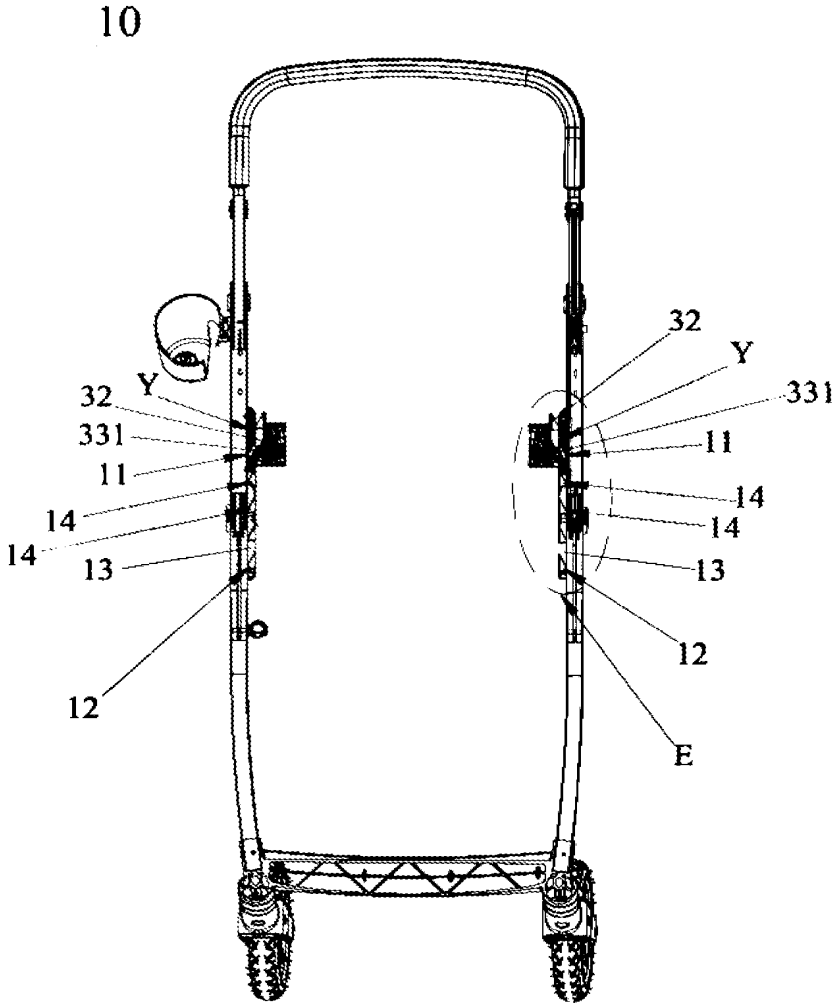

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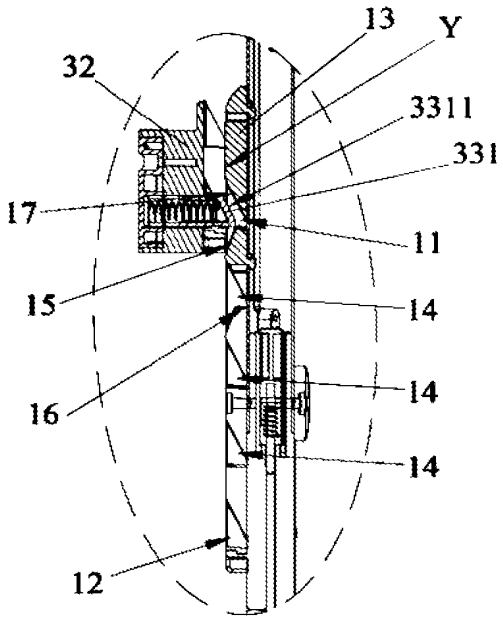

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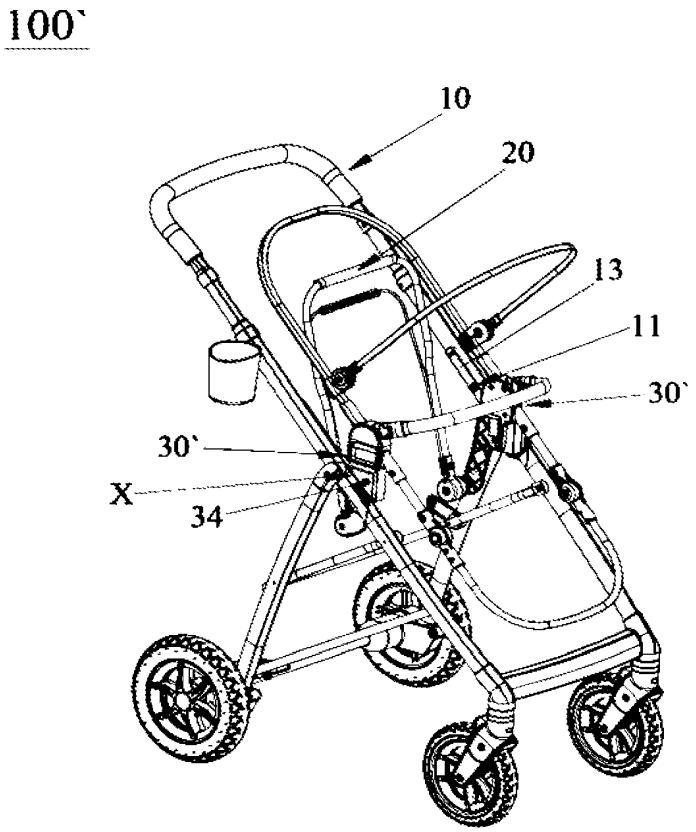

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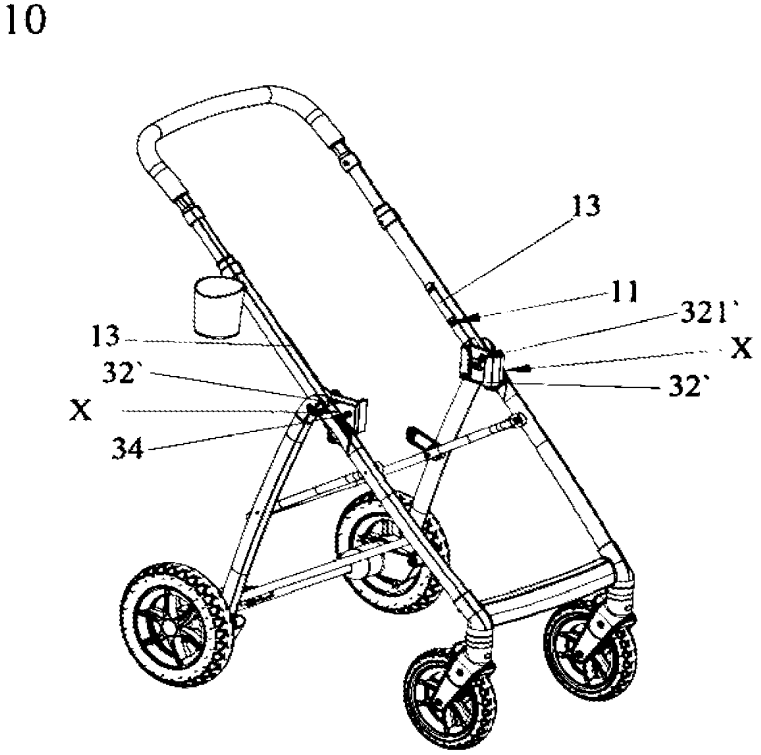

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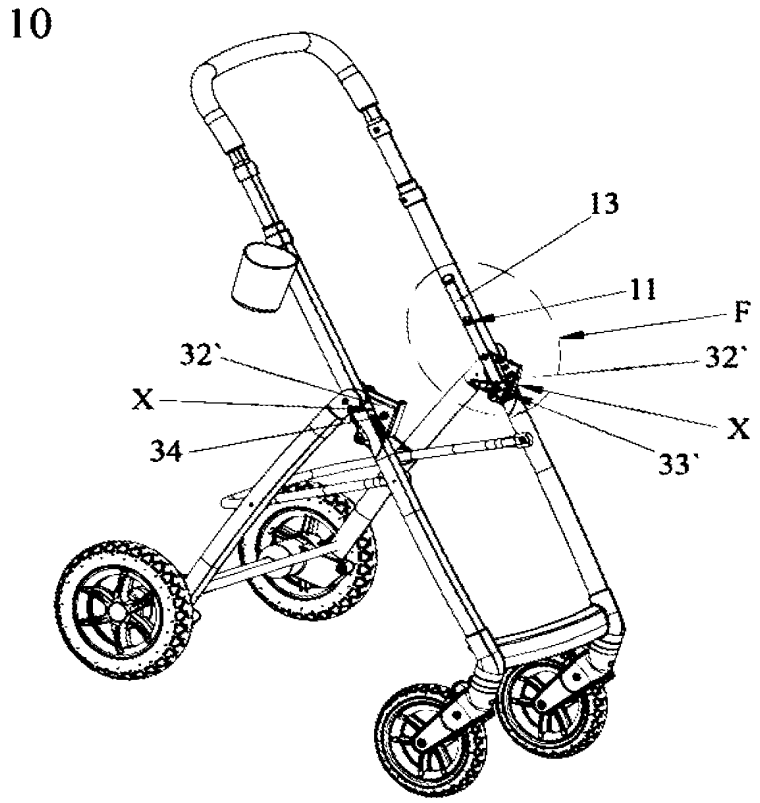

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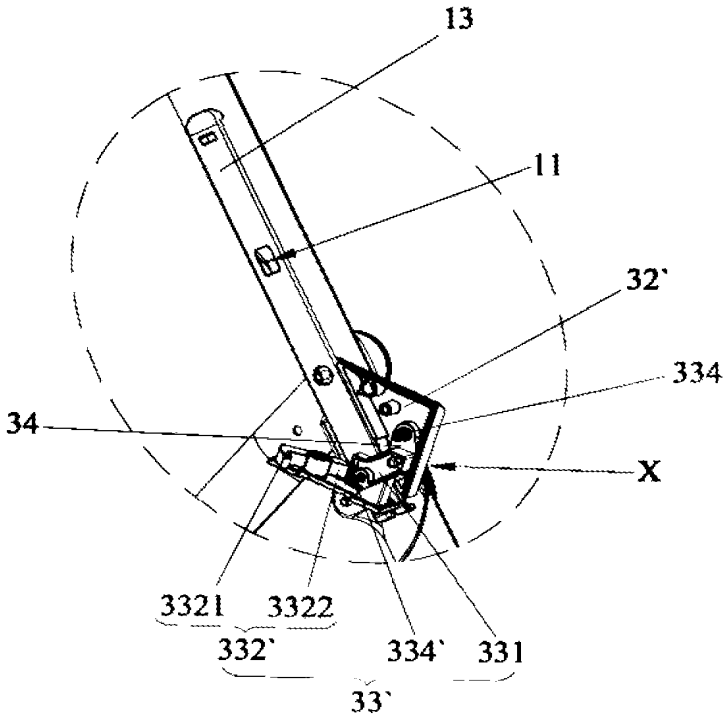

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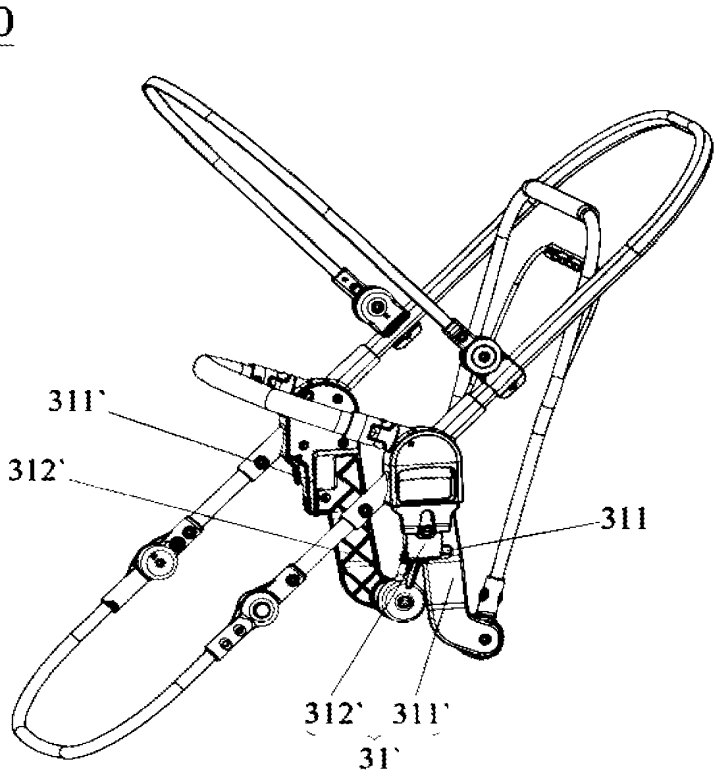

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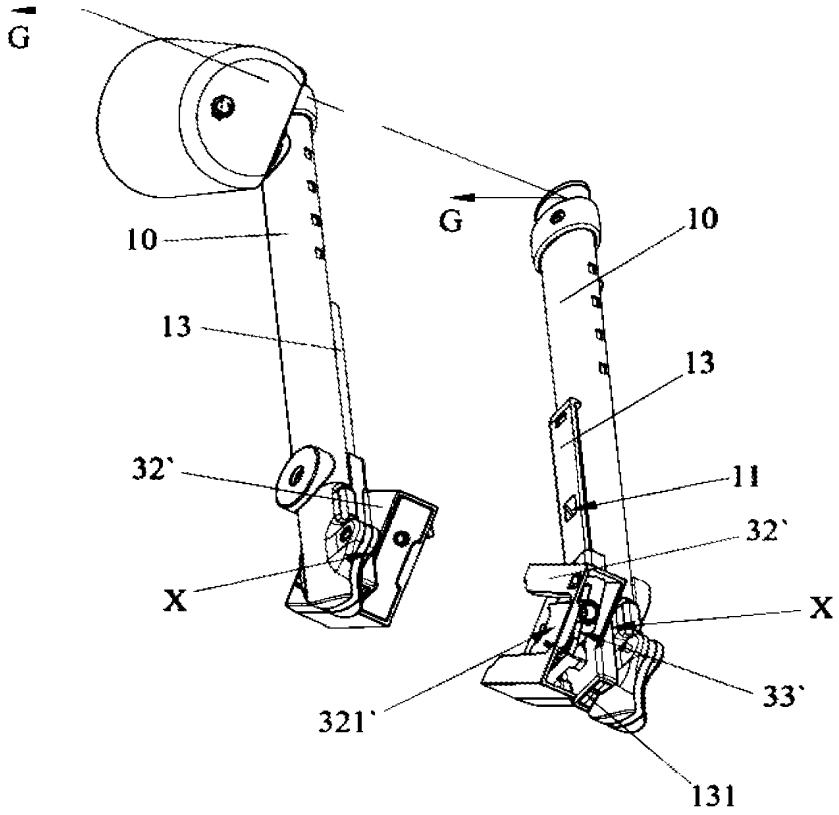

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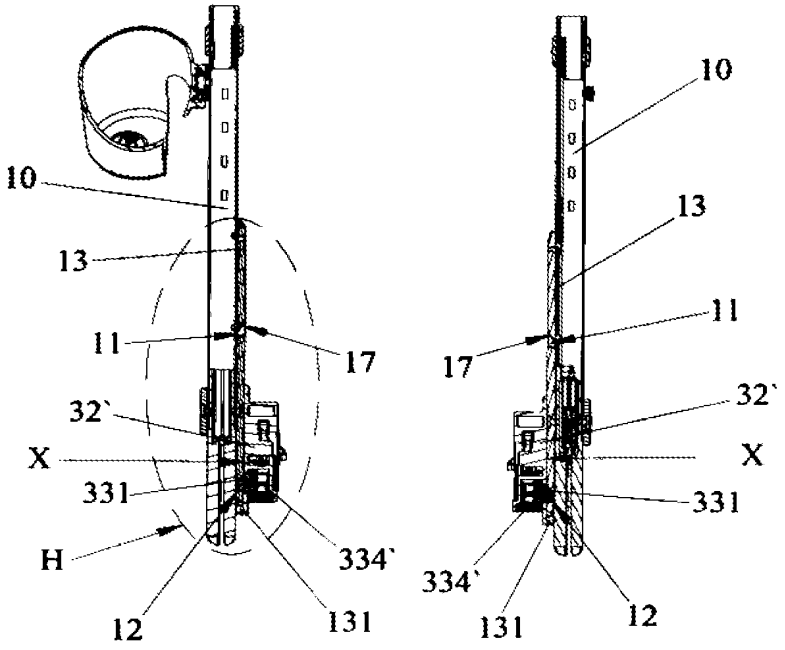

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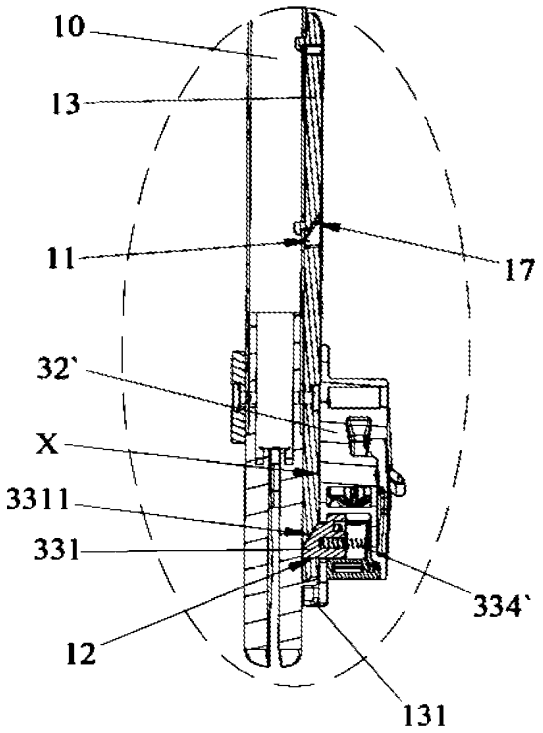

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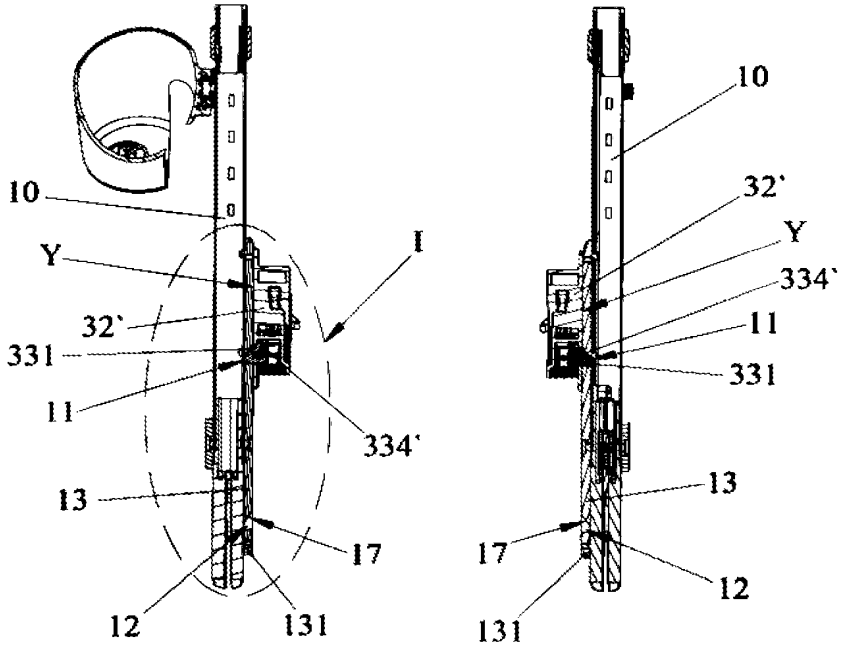
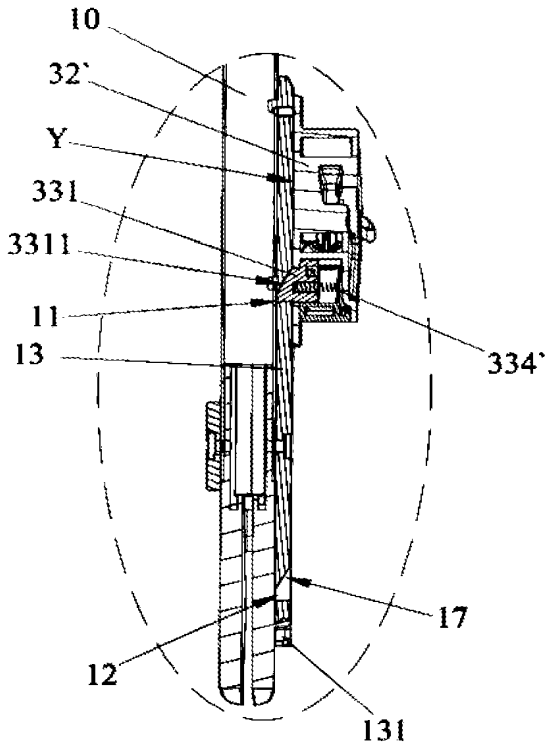


FIG. 23



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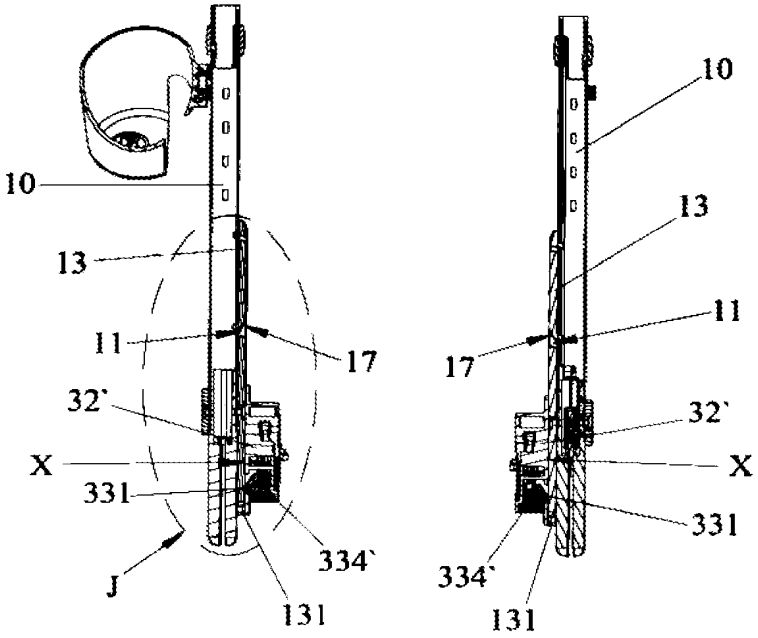

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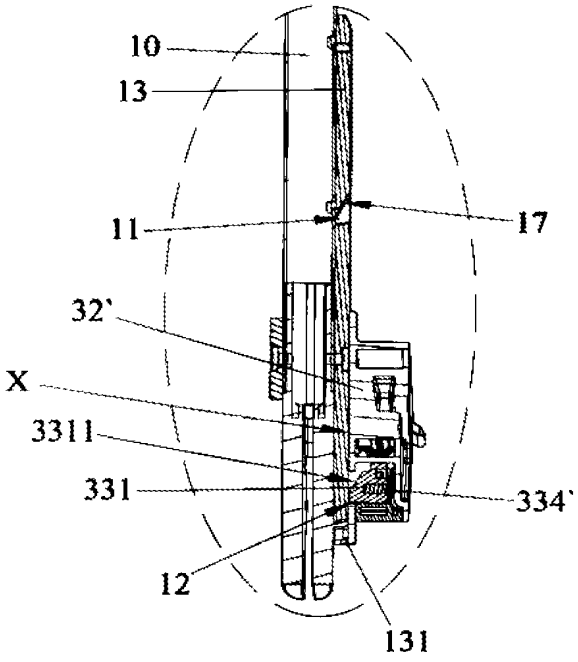

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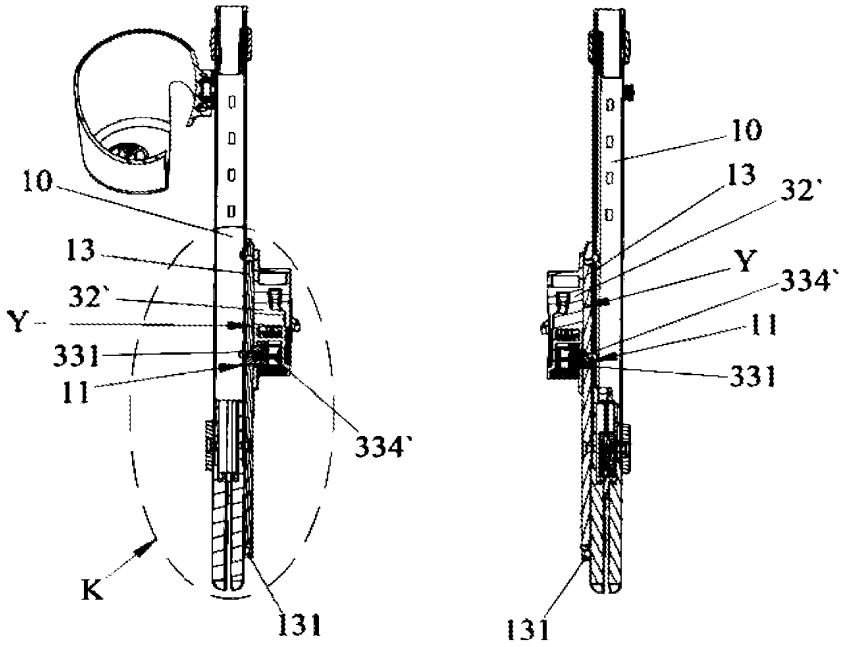

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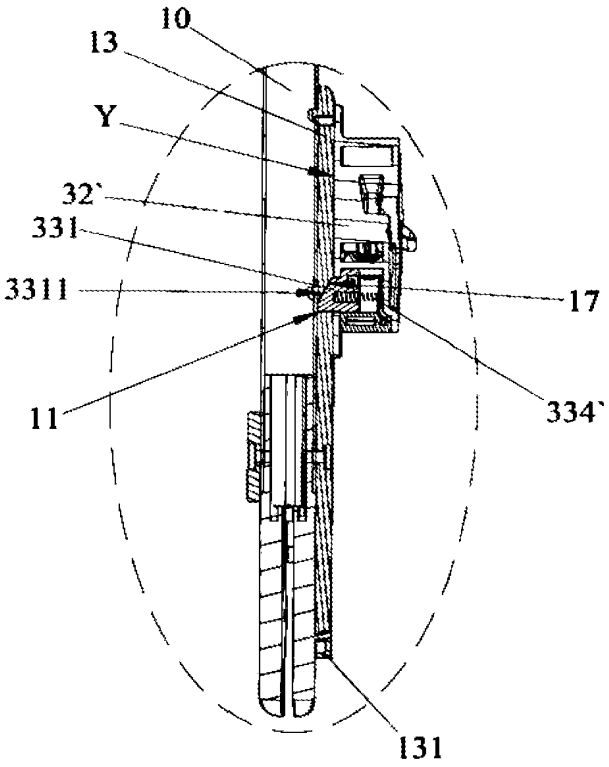

FIG. 28

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US 9346479 B1

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Other: **EPODOC, WPI**
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Other: **None**

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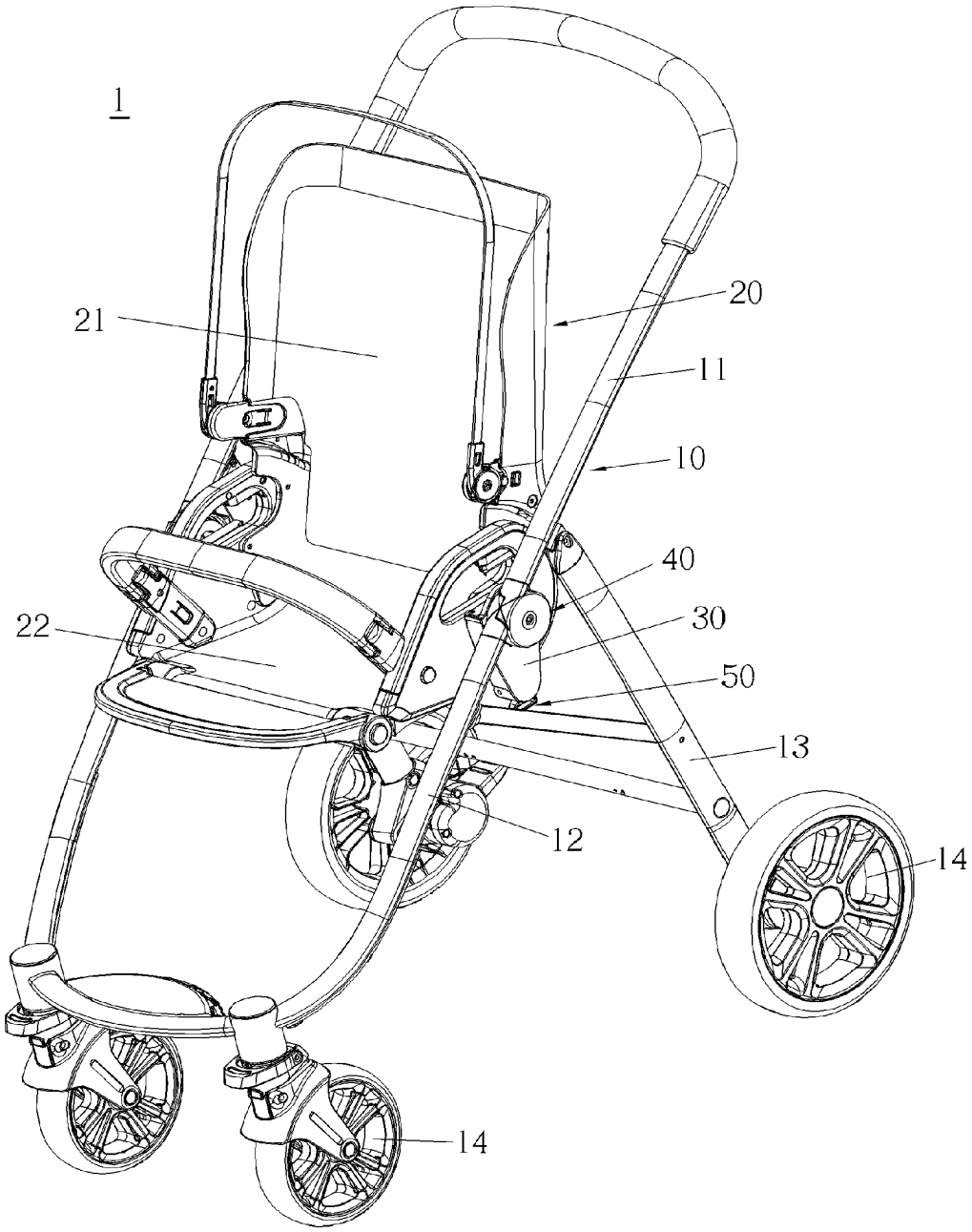
GB 2544377 B



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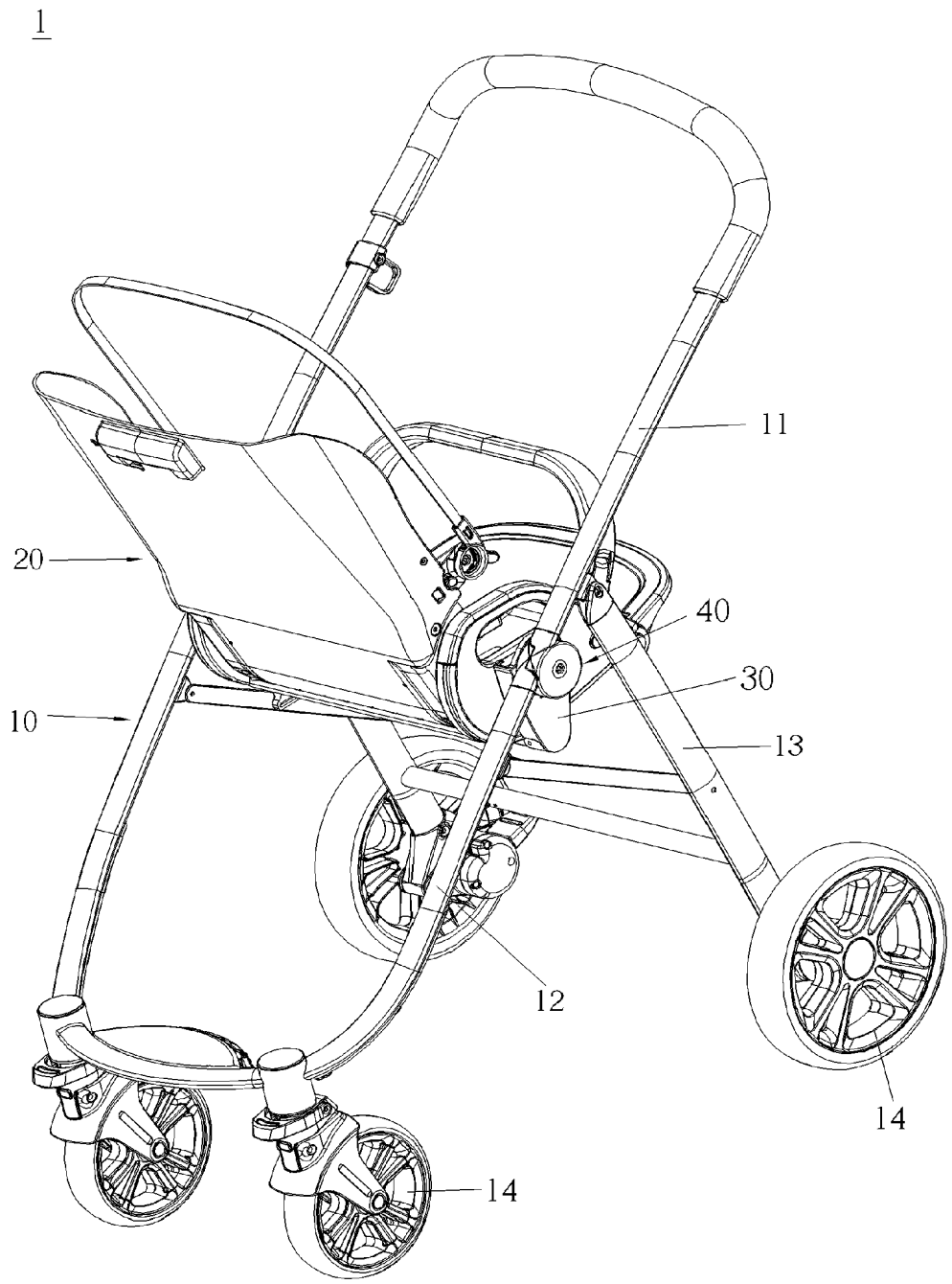

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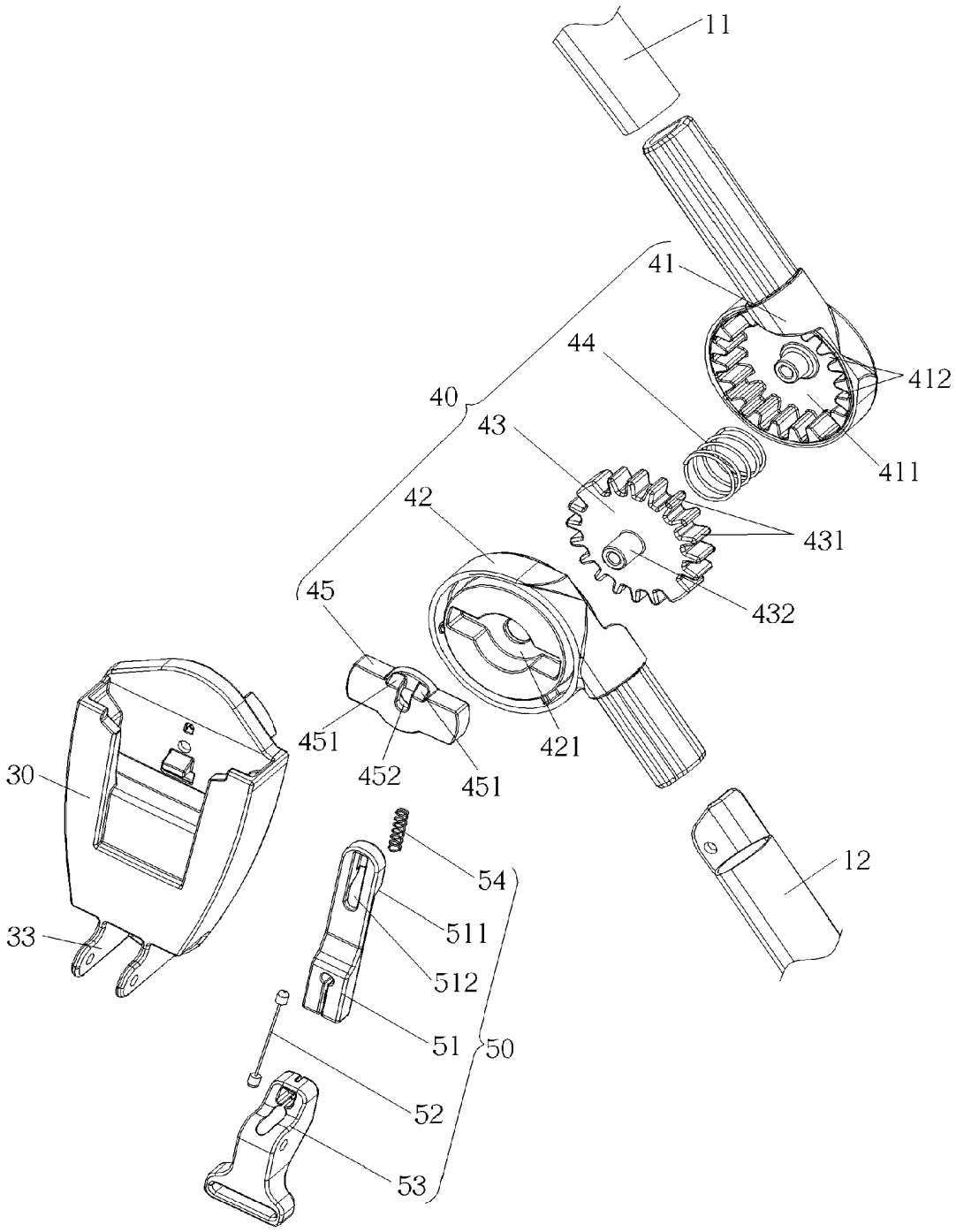
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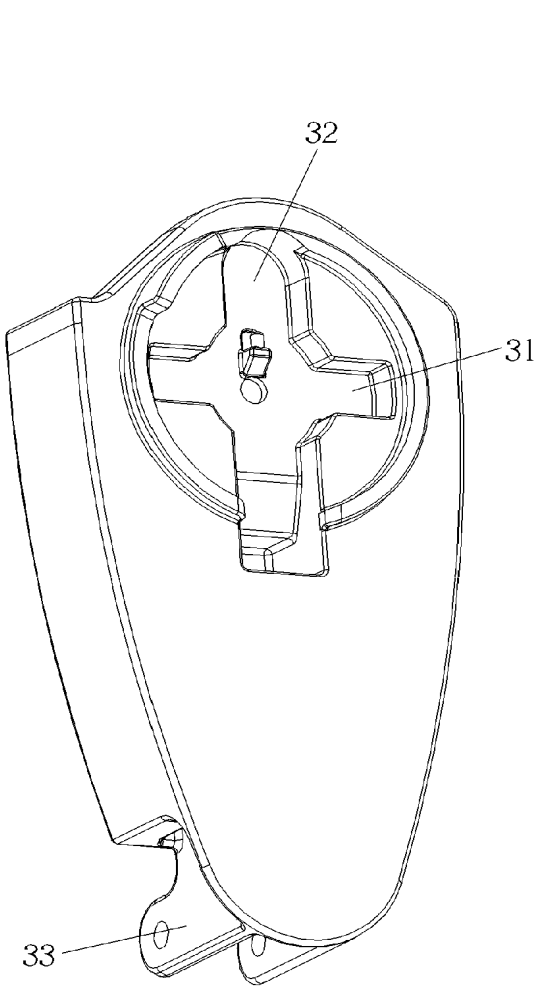
FIG. 3



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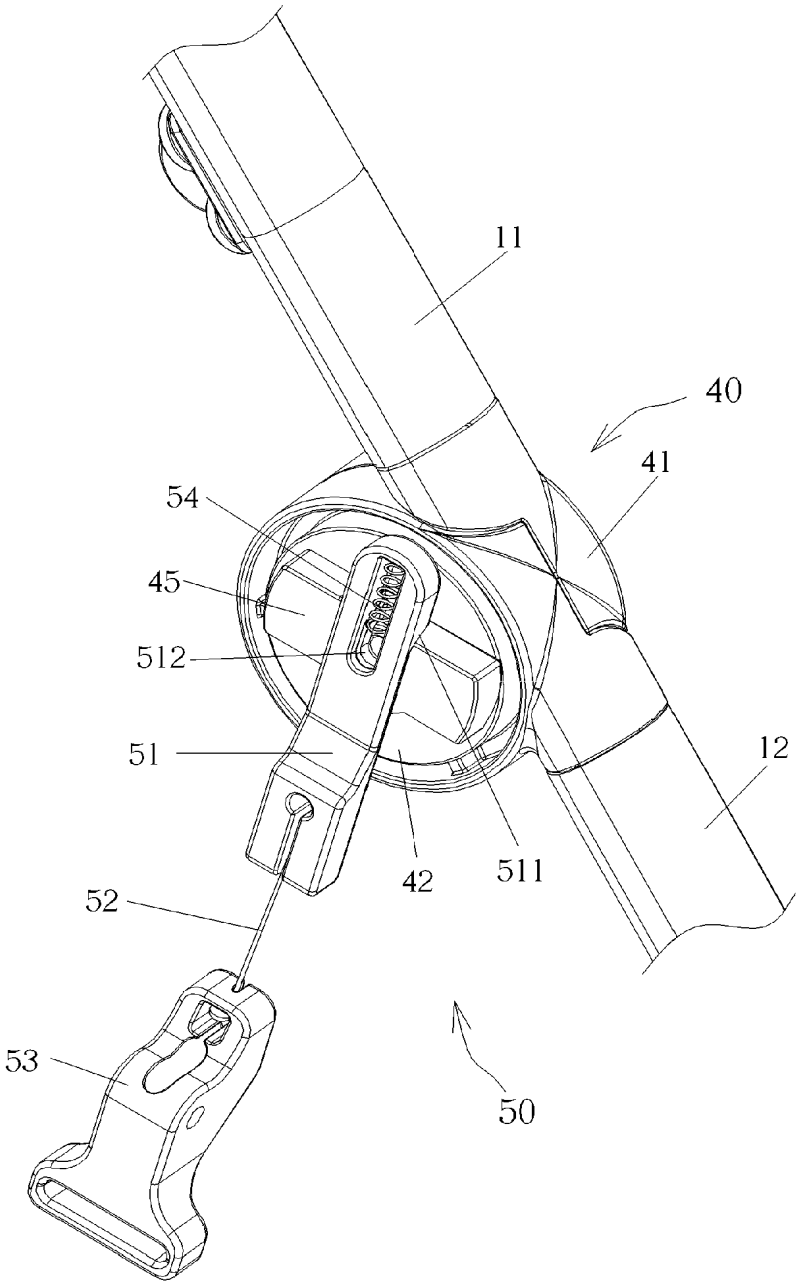

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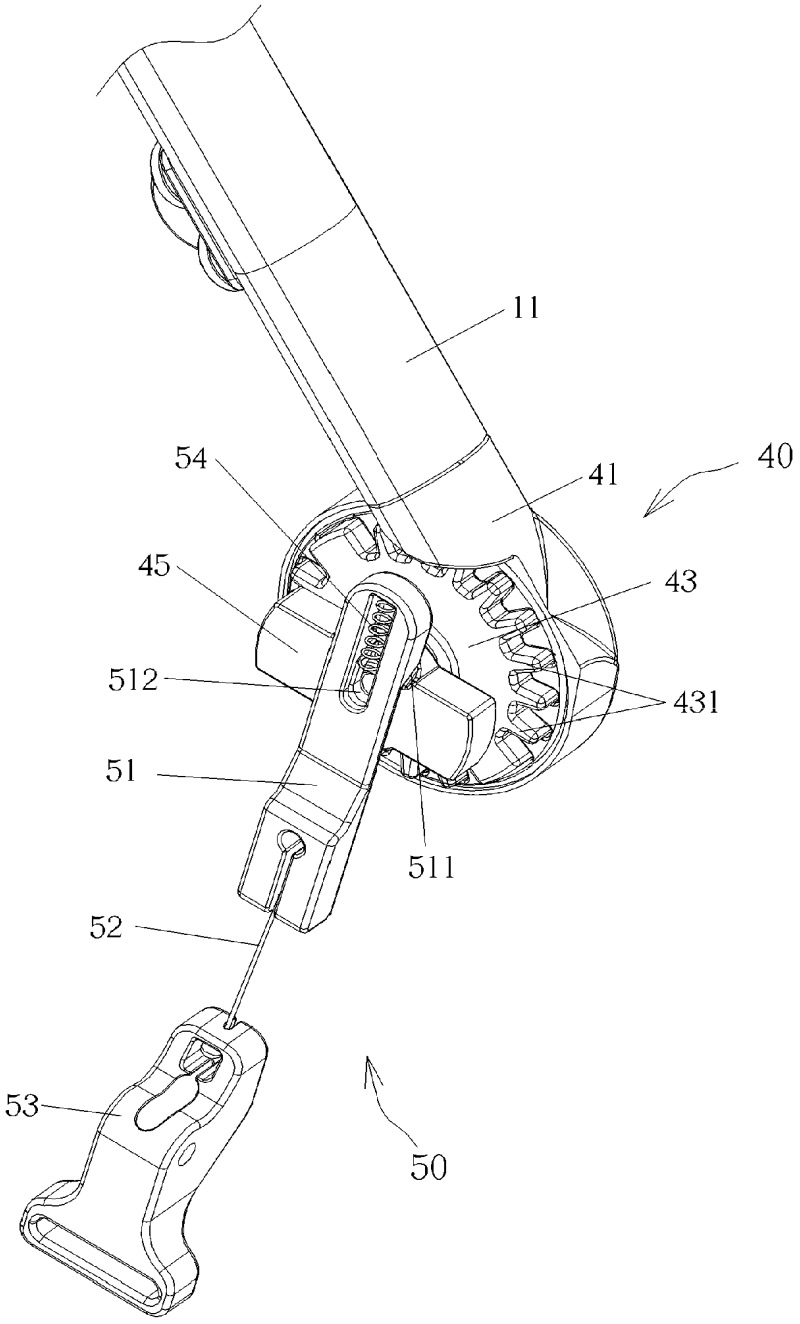

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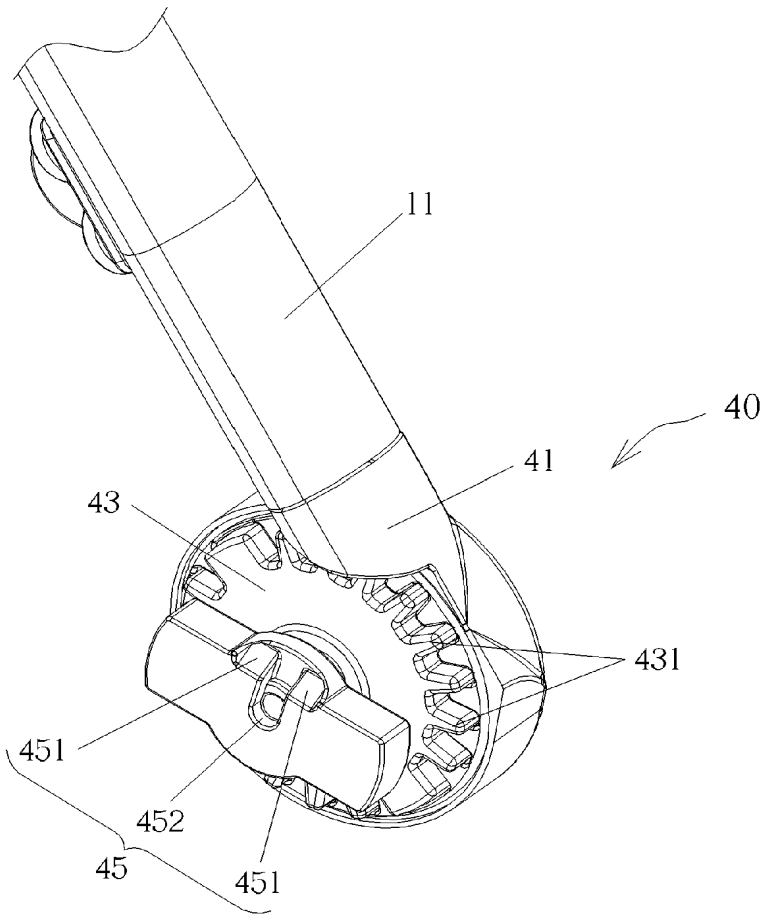

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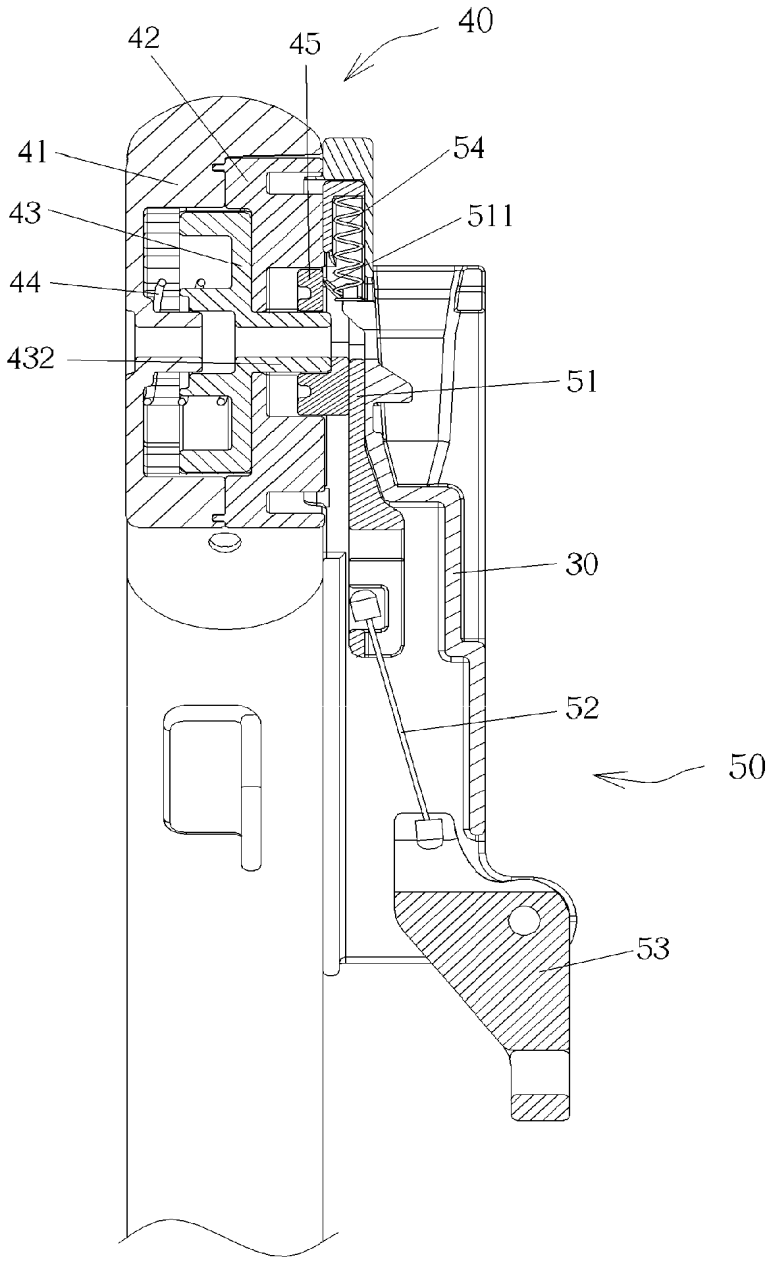

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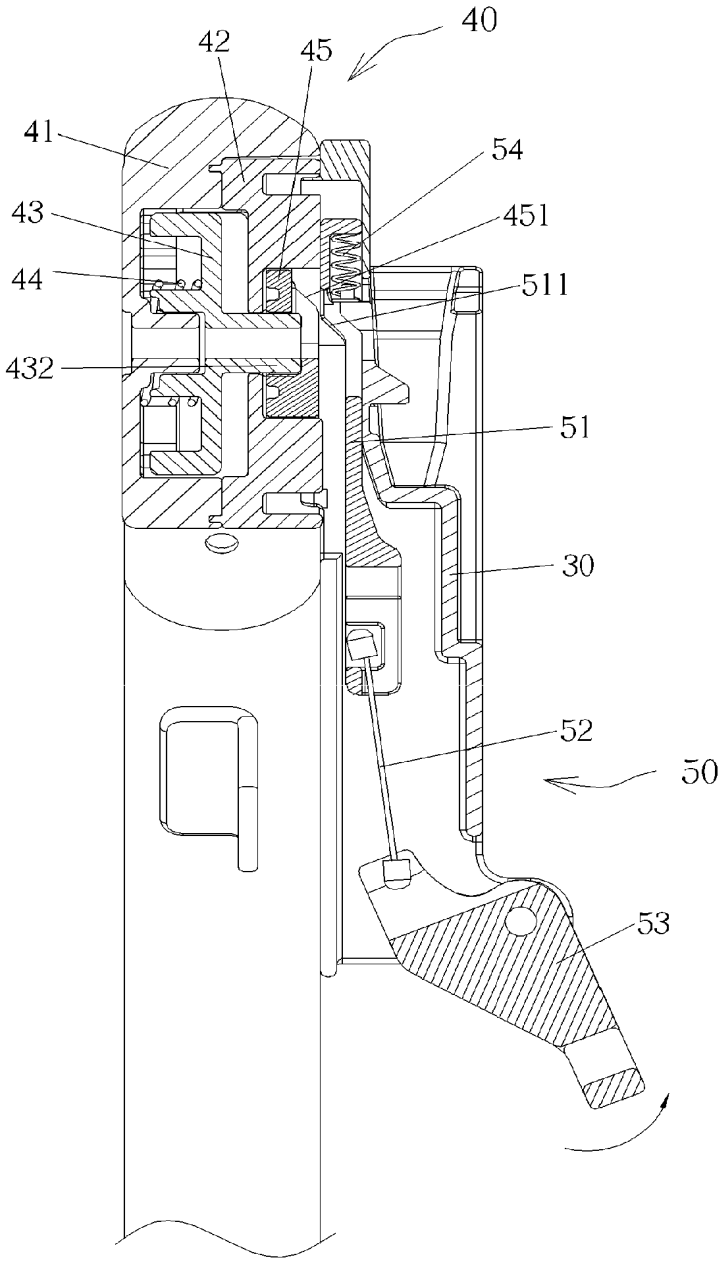


FIG. 9

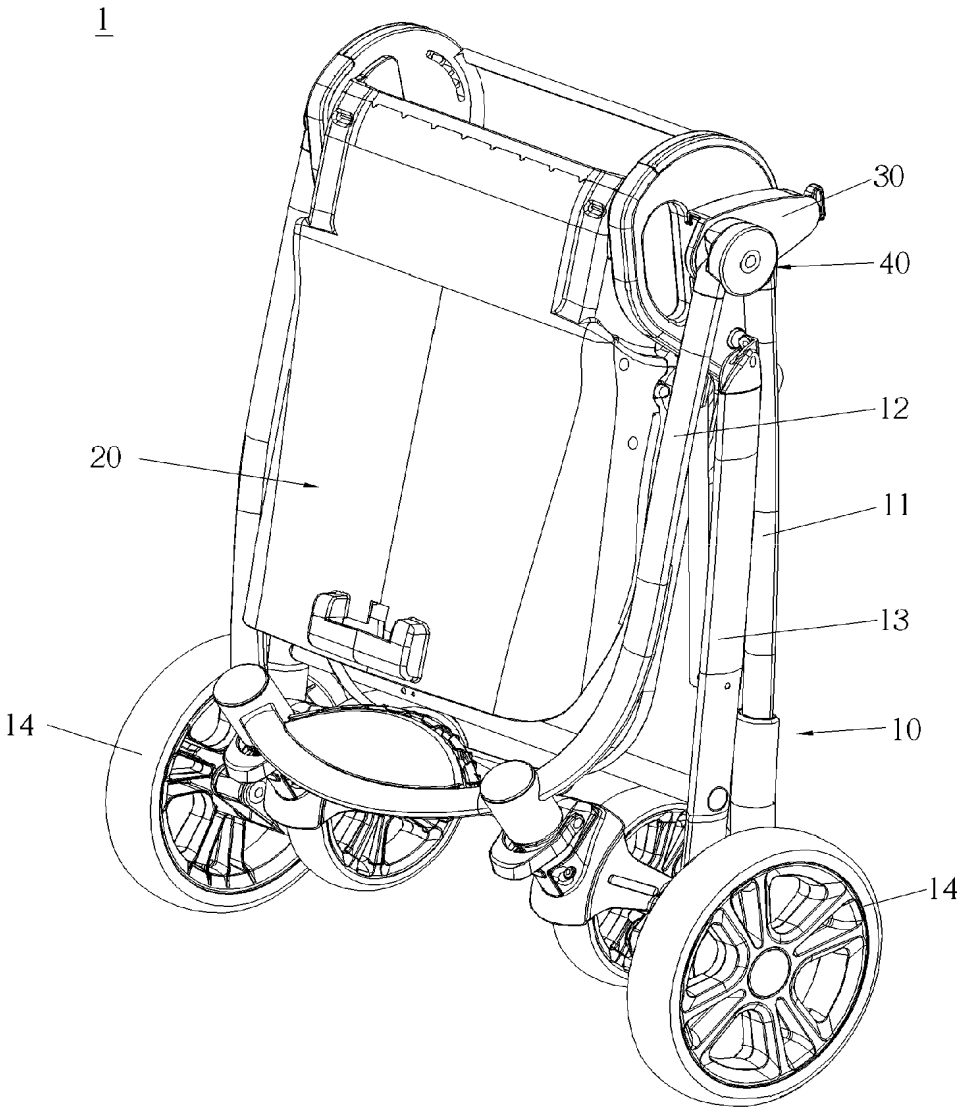
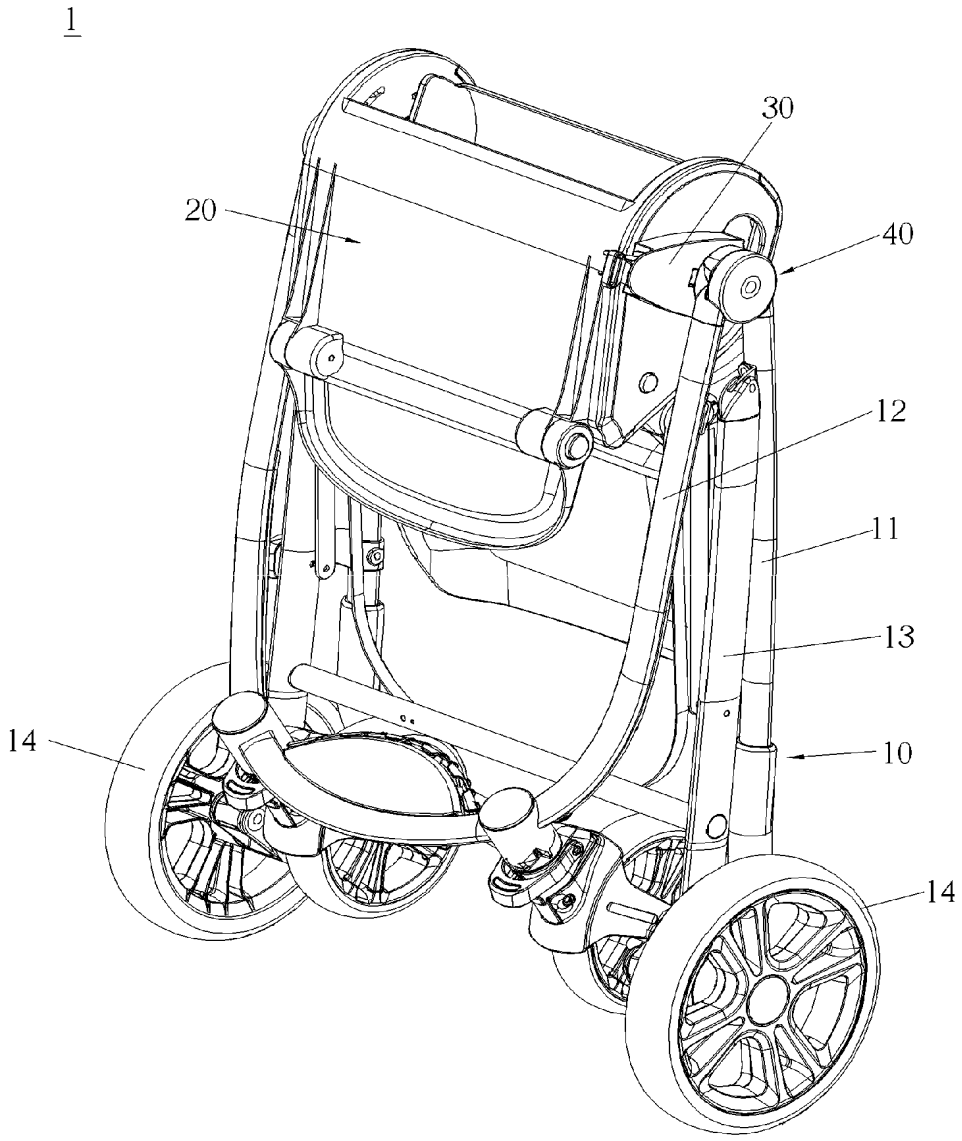


FIG. 10



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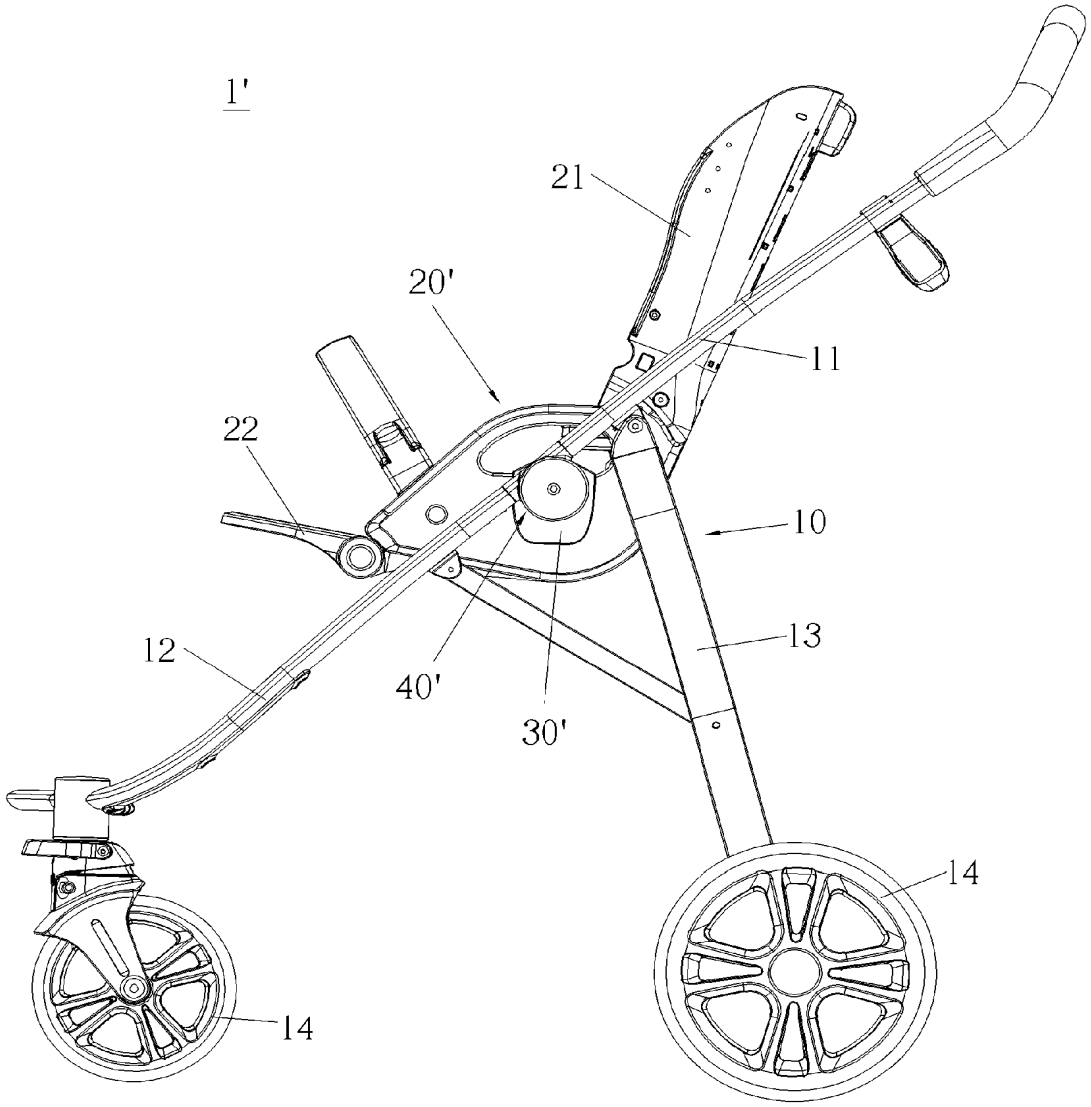

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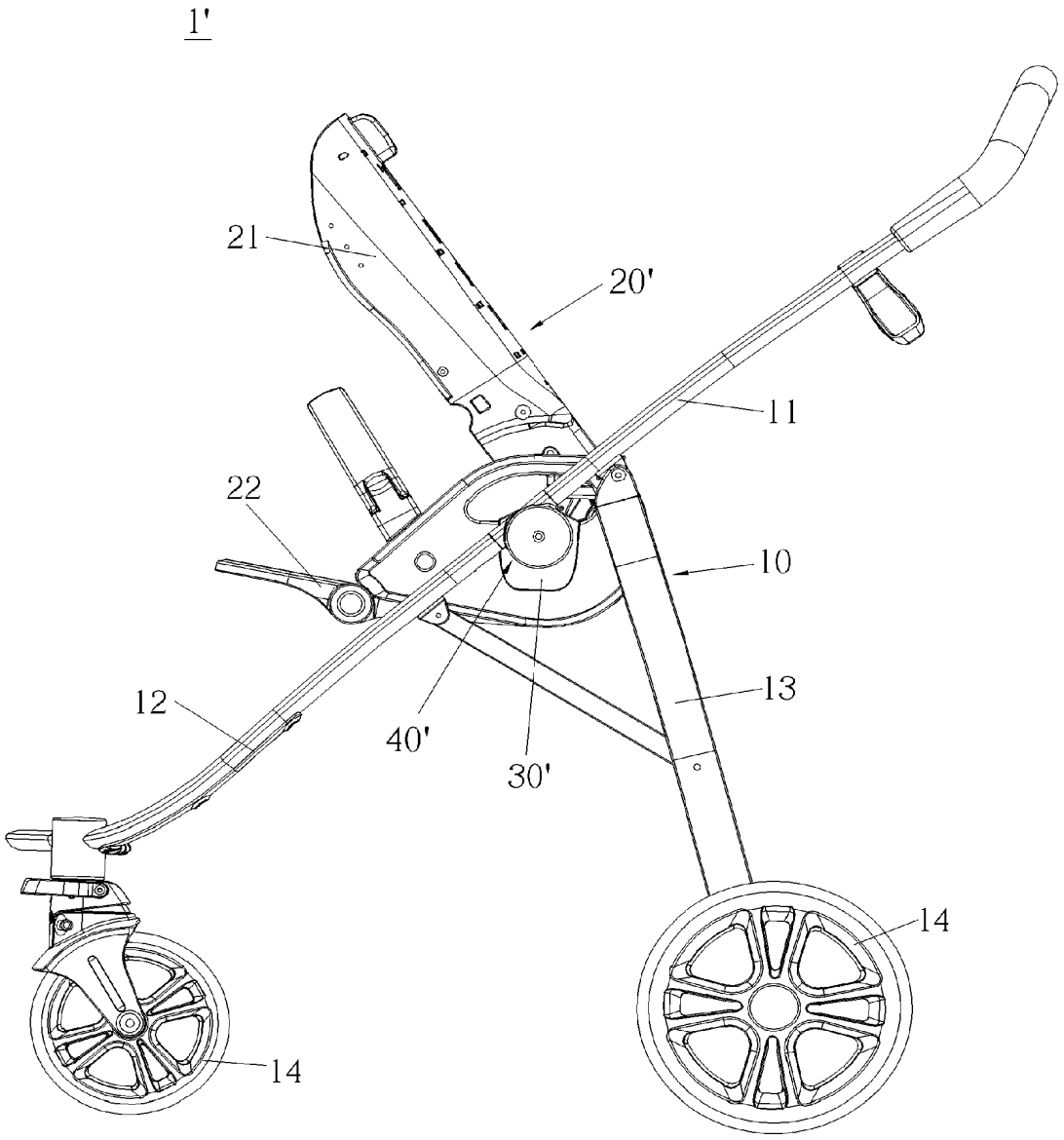

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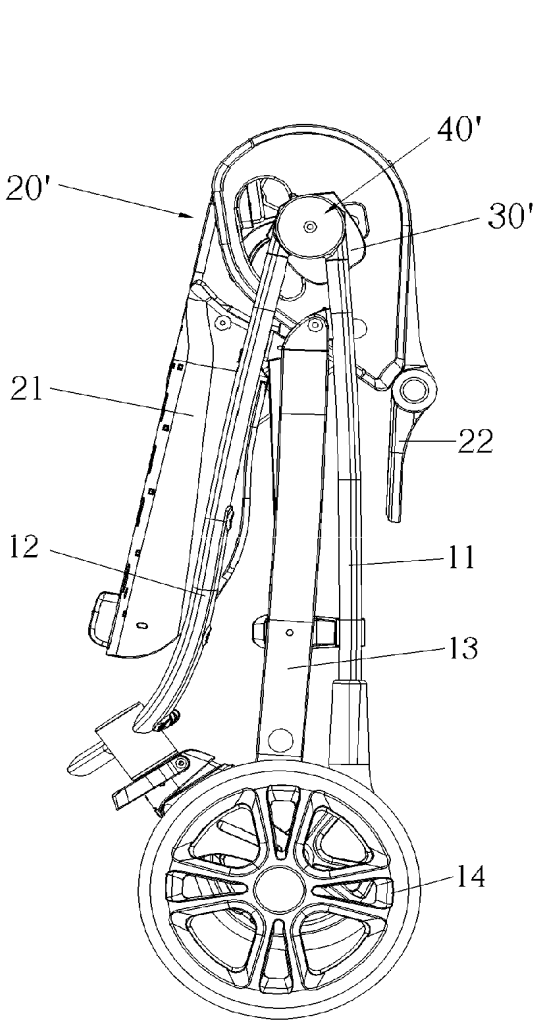

FIG. 14

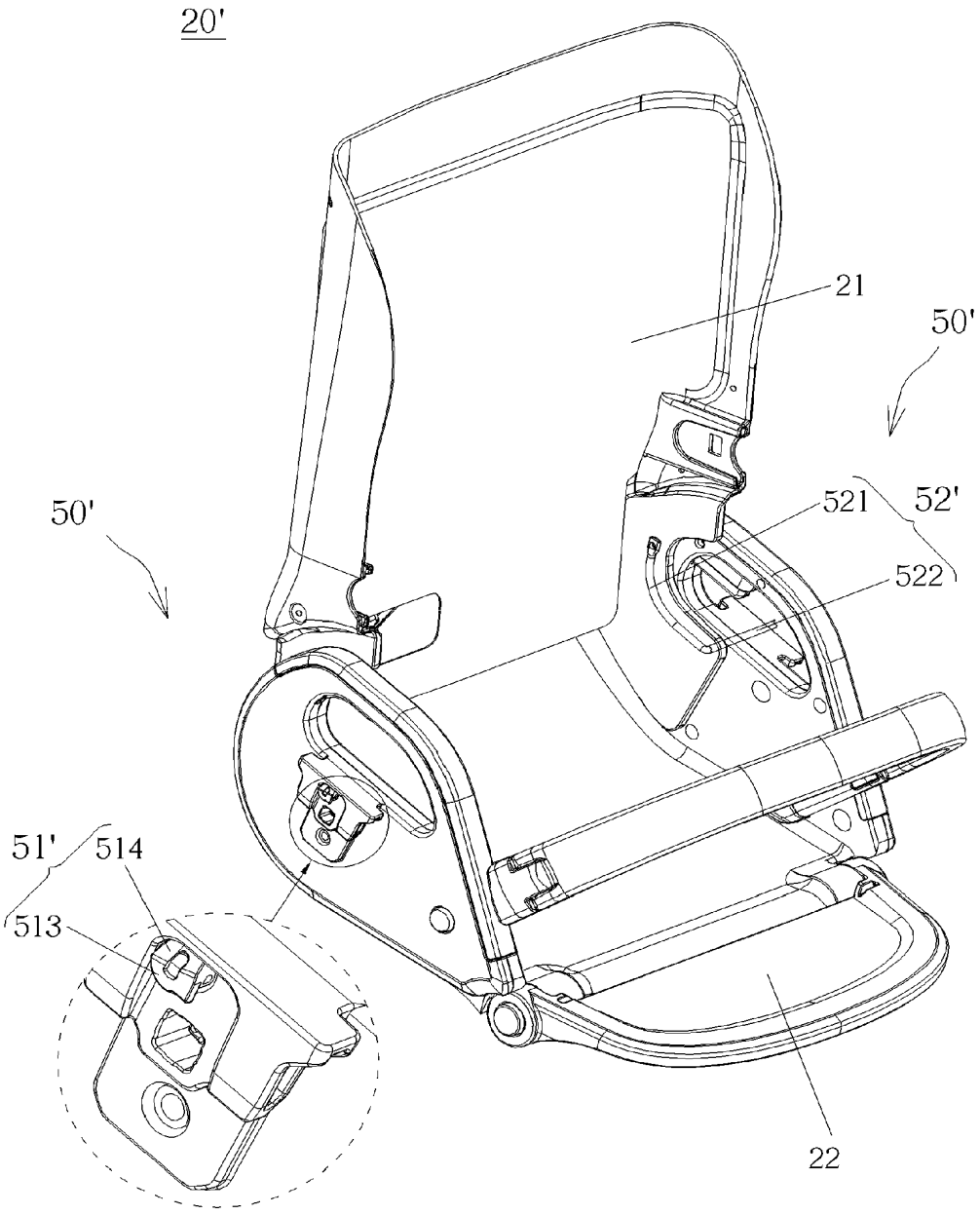

FIG. 15

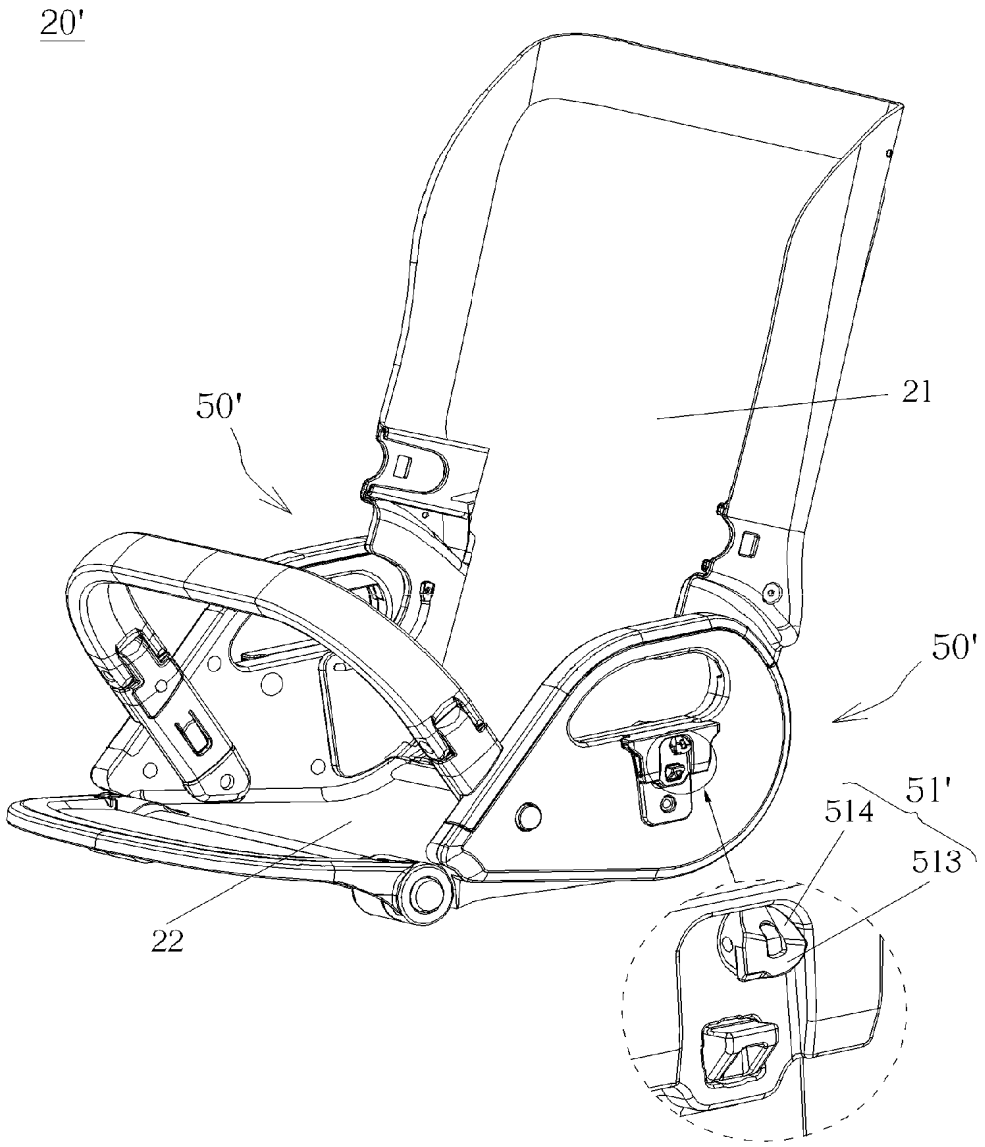

FIG. 16

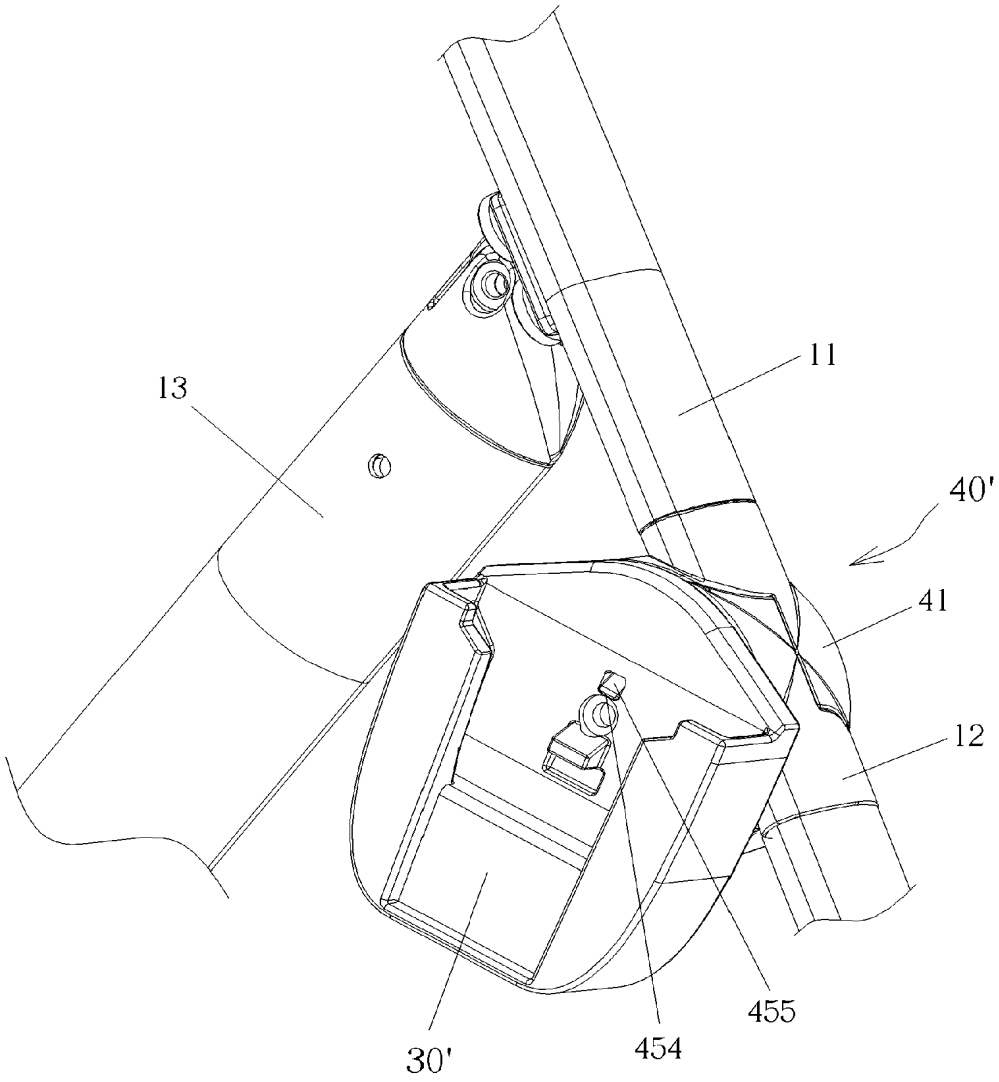

FIG. 17

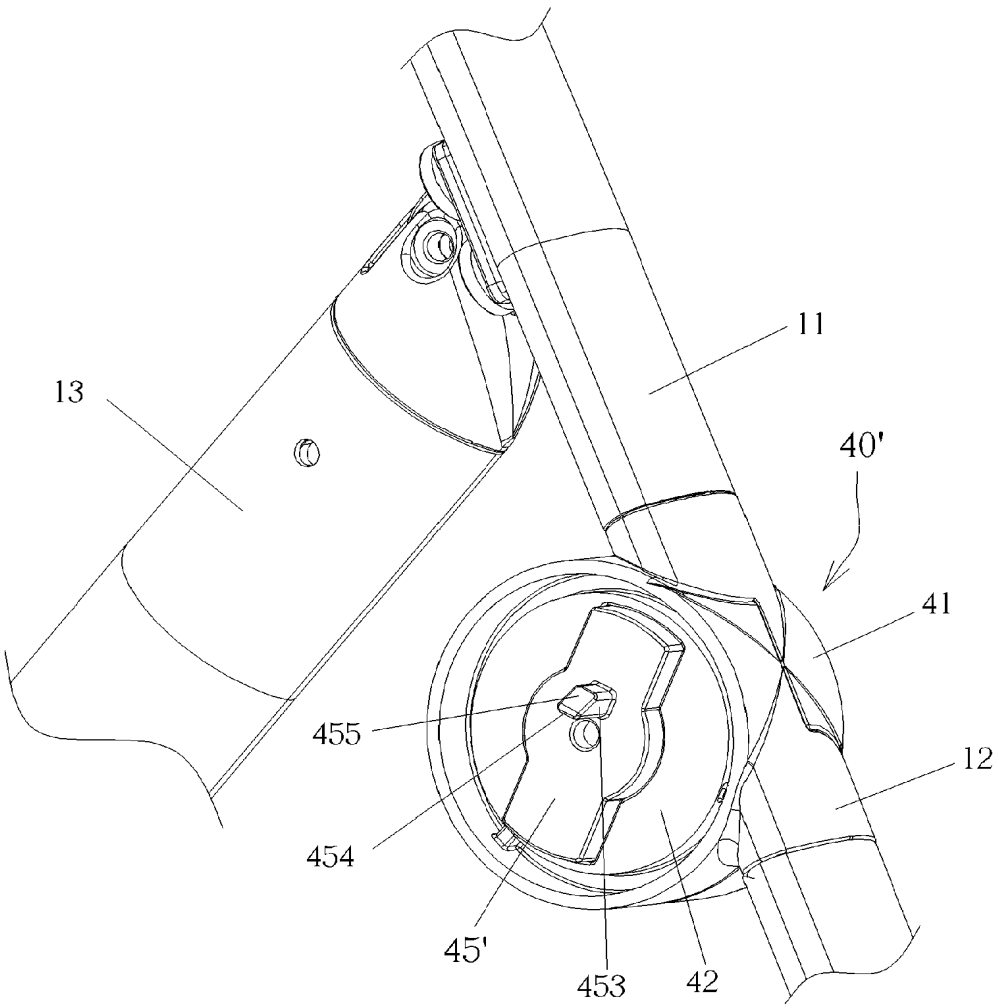

FIG. 18

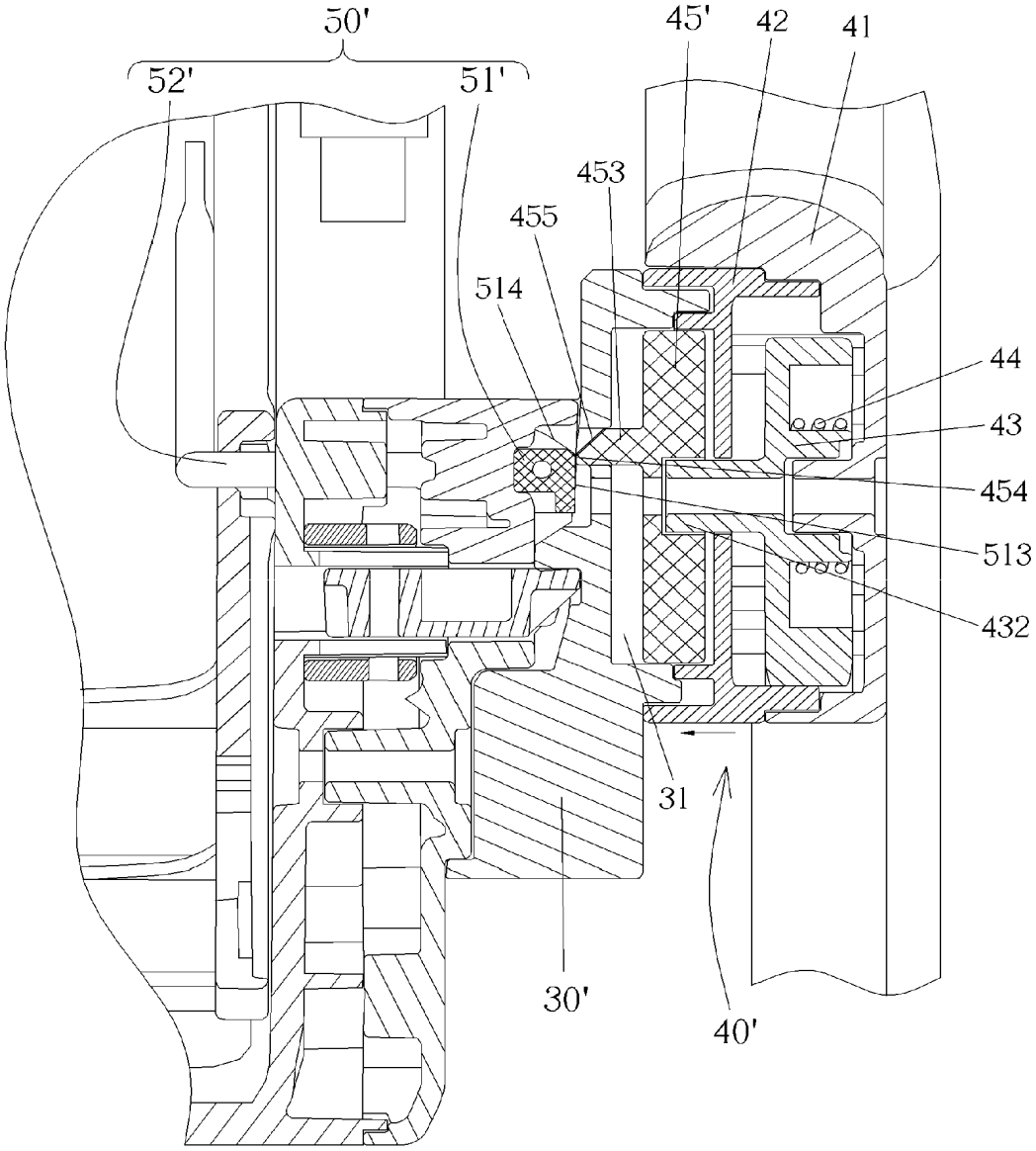

FIG. 19

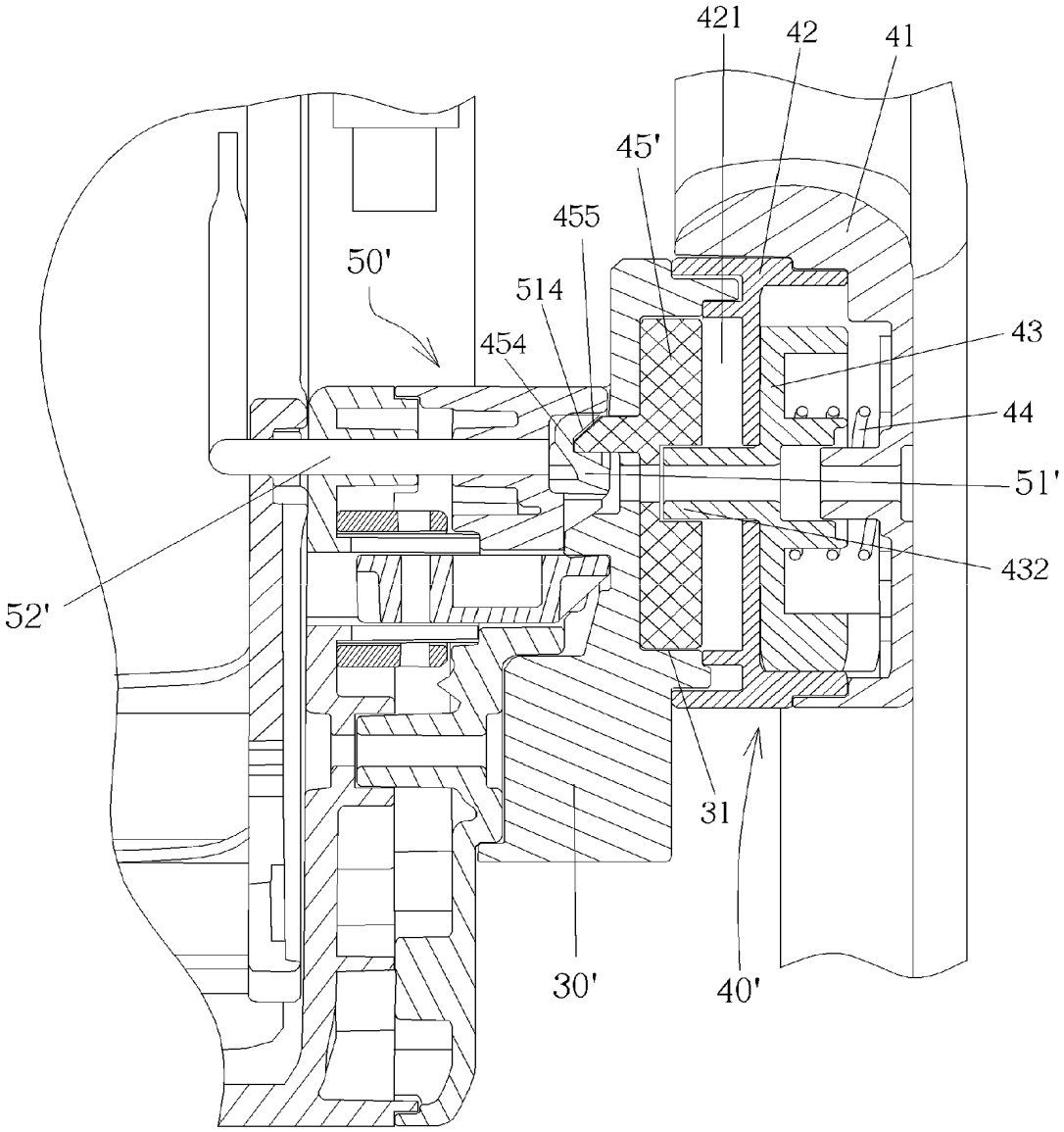

FIG. 20

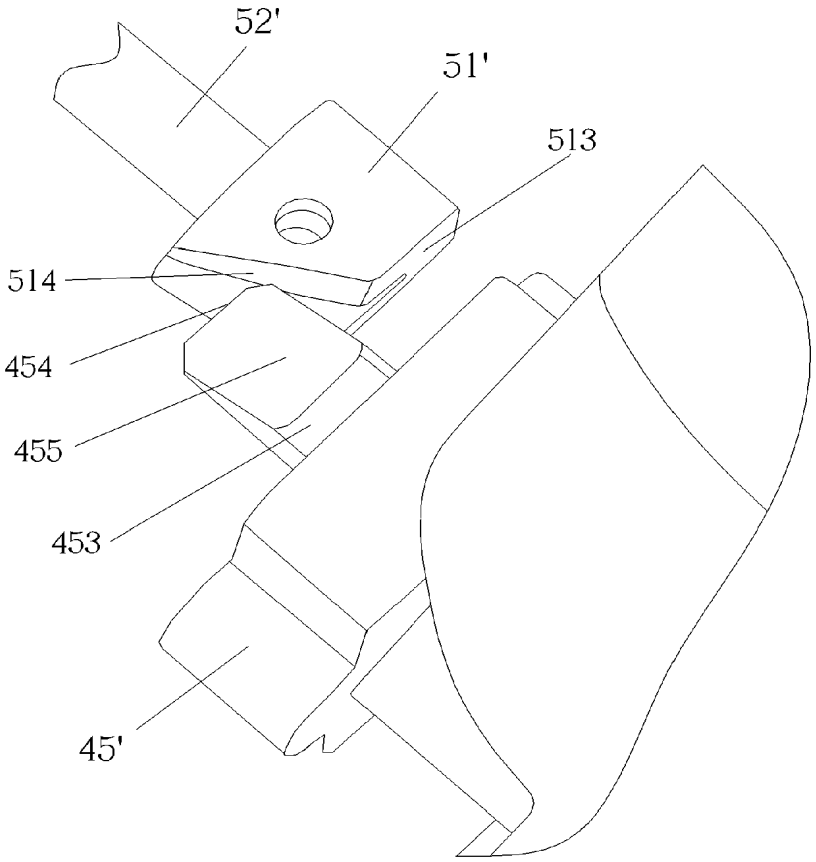

FIG. 21

Title

INFANT CARRIER

Background of the Invention

1. Field of the Invention

The present invention relates to an infant carrier, and more particularly, to an infant carrier capable of being folded easily and having a reduced folded volume.

2. Description of the Prior Art

Infant carriers are widely used in families with children. Taking strollers for example, frames of the strollers are usually designed to be foldable, and therefore, the strollers can be folded for easy storage and transportation when the strollers are not in use.

However, when it is desired to fold a conventional stroller, the seat has to be detached from the frame before folding the frame, which complicates a folding operation. Furthermore, it is required to find an additional space for storing the seat. Therefore, it brings difficulty in storage and transportation.

Besides, there is another conventional stroller, which can be folded without detaching the seat in advance. The frame can drive the seat to move along with the frame when the frame is folded. However, since the seat is not foldable, a folded volume of such stroller is not small enough, which also brings difficulty in storage and transportation.

Therefore, there is a need to provide an infant carrier capable of being folded easily and having a reduced folded volume for solving aforementioned problems.

Summary of the Invention

Therefore, an objective of the present invention is to provide an infant carrier capable of being folded easily and having a reduced folded volume for solving aforementioned problems.

In order to achieve the aforementioned problems, the present invention discloses an infant carrier including a frame and a seat. The frame includes a handle, a front leg, and a rear leg. The front leg is pivoted to the handle. The rear leg is pivoted to a lower end of the handle. The seat engages with the frame. The seat includes a seat portion, a back portion, and a releasing mechanism. The back portion is pivoted to the seat portion. The releasing mechanism includes a driving component. When the seat portion pivots relative to the back portion for folding the seat, the driving component is driven to release the frame, so that the frame is folded along with the seat.

Preferably, the releasing mechanism further includes a linking component connected between the driving component and the seat, and the seat drives the linking component to move the driving component when the seat is folded.

Preferably, the driving component is rotatably or slidably connected to the seat, and the seat drives the linking component to rotate or slide the driving component for releasing the frame when the seat is folded.

Preferably, the releasing mechanism further includes a rotating component connected between the linking component and the seat, and the seat drives the rotating component to rotate to pull the linking component when the seat is folded.

Preferably, the releasing mechanism further includes a resilient component for driving the driving component to recover.

Preferably, the driving component includes a driving inclined surface, and the driving component slides to drive the driving inclined surface to release the frame.

Preferably, the driving component includes a locking surface and a releasing inclined surface.

Preferably, the driving component rotates to drive the locking surface or the releasing inclined surface to interact with the frame for locking or releasing the frame, respectively.

Preferably, the infant carrier further includes a connecting mechanism, and the driving component is for releasing the connecting mechanism.

Preferably, the connecting mechanism includes a first pivoting joint, a second pivoting joint, and an engaging component. The first pivoting joint is fixed on the handle of the frame. A first accommodating chamber is formed in the first pivoting joint. The second pivoting joint is fixed on the front leg of the frame and pivoted to the first pivoting joint by a pivoting shaft. A second accommodating chamber is formed in the second pivoting joint. The engaging component is slidably disposed between the first accommodating chamber and the second accommodating chamber for locking the first pivoting joint and the second pivoting joint, and the driving component driving the engaging component to slide for releasing the first pivoting joint and the second pivoting joint.

Preferably, the engaging component is slidably disposed on the pivoting shaft. The frame is locked when the engaging component engages with both of the first pivoting joint and the second pivoting joint, and the frame is released when the engaging component slides along the pivoting shaft to disengage from the first pivoting joint or the second pivoting joint.

Preferably, the connecting mechanism further includes an engaging tooth protruding from the engaging component. An engaging slot is formed on an inner wall of each of the first accommodating chamber and the second accommodating chamber and corresponding to the engaging tooth.

Preferably, the engaging component slides to disengage the engaging tooth from the engaging slot on the first accommodating chamber or the engaging slot on the second accommodating chamber for releasing the frame.

Preferably, the infant carrier further includes a recovering component abutting between the engaging component and the first pivoting joint.

Preferably, the connecting mechanism further includes a positioning component disposed between the engaging component and the driving component, and the driving component drives the engaging component to move by the positioning component.

Preferably, the positioning component is disposed on the second pivoting joint. The connecting mechanism further includes a post protruding from the engaging component. The post passes through the second pivoting joint to abut against the positioning component.

Preferably, the positioning component moves to drive the driving component to disengage from the first pivoting joint or the second pivoting joint.

Preferably, the connecting mechanism further includes a protruding column protruding from the positioning component. The protruding column includes a locking end and an avoiding inclined surface. The driving component interacts with the locking end to lock the first pivoting joint and the second pivoting joint, and the driving component rotates to drive the positioning component to slide so as to drive the engaging component to slide for releasing the first pivoting joint and the second pivoting joint.

Preferably, the positioning component includes a driven inclined surface. The driving component includes a driving inclined surface. The driving component slides to drive the positioning component to slide by interaction of the driving inclined surface of the driving component and the driven inclined surface of the positioning component.

Preferably, the infant carrier further includes a connector disposed on the frame. The positioning component is disposed between the connector and the second pivoting joint for positioning the connector, and the seat detachably engaging with the connector.

In summary, the infant carrier of the present invention utilizes the foldable seat and the driving component to release the frame, so that the frame can be folded when the seat is folded. Therefore, it is very convenient for users to fold the infant carrier, and the infant carrier has a reduced folded volume for easy storage and transportation.

These and other objectives of the present invention will no doubt become obvious to those of ordinary skill in the art after reading the following detailed description of the preferred embodiment that is illustrated in the various figures and drawings.

Brief Description of the Drawings

FIG. 1 is a schematic diagram of an infant carrier according to a first embodiment of the present invention.

FIG. 2 is another schematic diagram of the infant carrier as a seat engages with a frame rearwardly according to the first embodiment of the present invention.

FIG. 3 is a partial exploded diagram of a connector, a connecting mechanism, and a releasing mechanism according to the first embodiment of the present invention.

FIG. 4 is a diagram of the connector according to the first embodiment of the present invention.

FIG. 5 is a diagram of the connecting mechanism and the releasing mechanism according to the first embodiment of the present invention.

FIG. 6 is a diagram of the connecting mechanism and the releasing mechanism without illustrating a second pivoting joint according to the first embodiment of the present invention.

FIG. 7 is a diagram of a positioning component and an engaging component according to the first embodiment of the present invention.

FIG. 8 is a sectional diagram of the connecting mechanism and the releasing mechanism at locking positions according to the first embodiment of the present invention.

FIG. 9 is a sectional diagram of the connecting mechanism and the releasing mechanism at releasing positions according to the first embodiment of the present invention.

FIG. 10 is a diagram of the infant carrier at a folding position as the seat engages with the frame forwardly according to the first embodiment of the present invention.

FIG. 11 is a diagram of the infant carrier at another folding position as the seat engages with the frame rearwardly according the first embodiment of the present invention.

FIG. 12 is a lateral view diagram of an infant carrier according to a second embodiment of the present invention.

FIG. 13 is a lateral view diagram of the infant carrier having not been folded completely according to the second embodiment of the present invention.

FIG. 14 is a lateral view diagram of the infant carrier at a folding position according to the second embodiment of the present invention.

FIG. 15 is a diagram of the seat according to the second embodiment of the present invention.

FIG. 16 is a diagram of the seat at another view according to the second embodiment of the present invention.

FIG. 17 is a diagram of a connecting mechanism and a connector according to the second embodiment of the present invention.

FIG. 18 is a diagram of the connecting mechanism according to the second embodiment of the present invention.

FIG. 19 is a sectional diagram of the connecting mechanism and the releasing mechanism at locking positions according to the second embodiment of the present invention.

FIG. 20 is a sectional diagram of the connecting mechanism and the releasing mechanism at releasing positions according to the second embodiment of the present invention.

FIG. 21 is a diagram of the driving component and the positioning component according to the second embodiment of the present invention.

Detailed Description

In order to illustrate technical specifications and structural features as well as achieved purposes and effects of the present invention, relevant embodiments and figures are described as follows.

Please refer to FIG. 1. FIG. 1 is a schematic diagram of an infant carrier 1 according to a first embodiment of the present invention. As shown in FIG. 1, the infant carrier 1 includes a frame 10, a seat 20, a pair of connectors 30, and a pair of connecting mechanisms 40. The frame 10 includes a handle 11, a front leg 12, a rear leg 13, and a plurality of wheels 14. The handle 11 is pivoted to the front leg 12 by the pair of the connecting mechanisms 40. The rear leg 13 is pivoted to a lower end of the handle 11. The plurality of wheels 14 is pivoted to lower ends of the front leg 12 and the rear leg 13. Each of the pair of connectors 30 is disposed on the corresponding connecting mechanism 40.

The seat 20 includes a back portion 21, a seat portion 22, and a pair of engaging mechanism, which is not shown in figures. The seat portion 22 is pivoted to the back portion 21. The pair of engaging mechanism is disposed on a side of the seat 20 for detachably engaging with the pair of connectors 30. The seat 20 further includes a pair of releasing mechanisms 50. The pair of releasing mechanisms 50 is located a position corresponding to the pair of connecting mechanisms 40. The seat 20 drives the pair of releasing mechanisms 50 to release the pair of connecting mechanisms 40 for folding the frame 10. However, the numbers and the configurations of the connector 30, the connecting mechanism 40, and the releasing mechanism 50 are not limited to this embodiment. In another embodiment, the infant carrier 1 can include one connector 30, one connecting mechanism 40, and the seat 20 can include one releasing mechanism 50.

Please refer to FIG. 1 and FIG. 2. FIG. 2 is another schematic diagram of the infant carrier 1 as the seat 20 engages with the frame 10 rearwardly according to the first embodiment of the present invention. In this embodiment, the seat 20 also can engage with the frame 10 forwardly, as shown in FIG. 1, or rearwardly, as shown in FIG. 2. It depends on practical demands.

Please refer to FIG. 3. FIG. 3 is a partial exploded diagram of the connector 30, the connecting mechanism 40, and the releasing mechanism 50 according to the first embodiment of the present invention. In this embodiment, the pair of connecting mechanisms 40 is symmetrically disposed at two sides of the frame 10. One of the pair of connecting mechanisms 40 at one side of the frame 10 has the same structure and configuration as the ones of the other one of the pair of connecting mechanisms 40 at the other side of the frame 10. For simplicity, the connecting mechanism 40 at one side of the frame 10 is introduced as follows. As shown in FIG. 3, the connecting mechanism 40 includes a first pivoting joint 41, a second pivoting joint 42, an engaging component 43, and a recovering component 44. The first pivoting joint 41 is fixed on the lower end of the handle 11, and a first accommodating chamber 411 is formed on the first pivoting joint 41. The second pivoting joint 42 is fixed on an upper end of the front leg 12, and a second accommodating chamber, which is not shown in figures, is formed on the second pivoting joint 42. The first pivoting joint 41 and the second pivoting joint 42 are pivoted to each other by a pivoting shaft. The engaging component 43 is slidably disposed on the pivoting shaft and between the first accommodating chamber 411 and the second accommodating chamber. The frame 10 is locked when the engaging component 43 is located between the first

accommodating chamber 411 and the second accommodating chamber to engage with both of the first pivoting joint 41 and the second pivoting joint 42. The frame 10 is released when the engaging component 43 is disengaged from one of first pivoting joint 41 and the second pivoting joint 42, and is received in the other one of the first pivoting joint 41 and the second pivoting joint 42.

In this embodiment, when the engaging component 43 slides along the pivoting shaft to disengage from the second pivoting joint 42, the first pivoting joint 41 and the second pivoting joint 42 are rotatable relative to each other, so that the frame 10 can be released for being folded. The recovering component 44 is disposed between the engaging component 43 and the first pivoting joint 41 for recovering the engaging component 43. Preferably, in this embodiment, the recovering component 44 can be a spring. However, it is not limited thereto.

The connecting mechanism 40 further includes a plurality of engaging teeth 431 and a post 432. The plurality of engaging teeth 431 protrudes from the engaging component 43 radially. The post 432 protrudes from a center of the engaging component 43 and passes through the second pivoting joint 42. A plurality of engaging slots 412 is formed on an inner wall of the first accommodating chamber 411 and corresponding to the plurality of engaging teeth 431. Similarly, a plurality of engaging slots, which is not shown in figures, is formed on an inner wall of the second accommodating chamber and corresponding to the plurality of engaging teeth 431. The frame 10 is locked when the plurality of engaging teeth 431 on the engaging component 43 engages with the plurality of engaging slots 412 on the first accommodating chamber 411 and the plurality of engaging slots on the second accommodating chamber. The frame

10 is released when the plurality of engaging teeth 431 disengages from the plurality of engaging slots on the second accommodating chamber. However, the numbers and the configurations of the engaging teeth 431 and the engaging slot are not limited to those illustrated in the figures in this embodiment. In another embodiment, the connecting mechanism 40 also can include only one engaging tooth 431. Furthermore, one engaging slot 412 is formed on the first accommodating chamber 411, and another engaging slot is formed on the second accommodating chamber.

The connector 30 is disposed on the second pivoting joint 42. The connecting mechanism 40 further includes a positioning component 45 slidably disposed between the connector 30 and the second pivoting joint 42. The positioning component 45 is used for positioning the connector 30. The positioning component 45 abuts against the post 432 on the engaging component 43. The releasing mechanism 50 drives the positioning component 45 to slidably move the engaging component 43 for releasing the frame 10.

Please refer to FIG. 4. FIG. 4 is a diagram of the connector 30 according to the first embodiment of the present invention. A first positioning slot 31 is formed on the connector 30. A second positioning slot 421 is formed on the second pivoting joint 42. The positioning component 45 is movably disposed between the first positioning slot 31 and the second positioning slot 421. The positioning component 45 engages with both of the first positioning slot 31 and the second positioning slot 421 for preventing the connector 30 from rotating relative to the connecting mechanism 40. The positioning component 45 slides to disengage from the first positioning slot 31 for releasing the connector 30 to allow rotation of the connector 30 relative to the connecting

mechanism 40.

In this embodiment, the positioning component 45 is substantially formed in a rod shape. Shapes of the first positioning slot 31 and the second positioning slot 421 are corresponding to a shape of the positioning component 45.

As shown in FIG. 3, in this embodiment, the pair of releasing mechanisms 50 is symmetrically disposed at two sides of the seat 20. One of the pair of releasing mechanisms 50 at one side of the seat 20 has the same structure and configuration as the ones of the other one of the pair of releasing mechanisms 50 at the other side of the seat 20. For simplicity, the releasing mechanism 50 at one side of the seat 20 is introduced as follows.

Specifically, the releasing mechanism 50 includes a driving component 51 and a linking component 52. The driving component 51 is slidably disposed in the connector 30 and abuts against the positioning component 45. The linking component 52 is connected to the driving component 51 and the seat 20. The seat 20 drives the linking component 52 to pull the driving component 51 to slide, so that the driving component 51 slides to drive the positioning component 45 to move the engaging component 43.

In this embodiment, the releasing mechanism 50 further includes a rotating component 53 and a resilient component 54. The rotating component 53 is pivoted to a lower end of the connector 30 and connected to the seat 20. For example, the rotating component 53 can be connected to the seat 20 by a wire or a strap component. However, it is not limited thereto. The linking component 52 is connected between the rotating component 53 and the driving component 51. The resilient

component 54 abuts between the driving component 51 and the connector 30. The seat 20 drives the rotating component 53 to rotate to pull the linking component 52 to slide the driving component 51. The resilient component 54 is for recovering the driving component 51.

Preferably, in this embodiment, the linking component 52 can be a steel wire, and the resilient component 54 can be a spring. However, it is not limited thereto.

As shown in FIG. 4, a third positioning slot 32 is formed on the connector 30 vertically for installing the driving component 51. The third positioning slot 32 intersects with the first positioning slot 31. In this embodiment, the third positioning slot 32 and the first positioning slot 31 are substantially formed in a cross shape, a pair of connecting lugs 33 is disposed on the lower end of the connector 30, and the rotating component 53 is pivoted to the pair of connecting lugs 33.

Please refer to FIG. 3 and FIG. 5 to FIG. 7. FIG. 5 is a diagram of the connecting mechanism 40 and the releasing mechanism 50 according to the first embodiment of the present invention. FIG. 6 is a diagram of the connecting mechanism 40 and the releasing mechanism 50 without illustrating the second pivoting joint 42 according to the first embodiment of the present invention. FIG. 7 is a diagram of the positioning component 45 and the engaging component 43 according to the first embodiment of the present invention. The driving component 51 includes a driving inclined surface 511. A long hole 512 is formed on an upper end of the driving component 51 and at a location corresponding to the driving inclined surface 511. The positioning component 45 includes a driven inclined surface 451. A long slot 452 is formed on a middle

portion of the positioning component 45 and penetrates an upper surface of the positioning component 45. In this embodiment, the driving inclined surface 511 and the driven inclined surface 451 can be flat surfaces.

The driving component 51 is slidably disposed in the connector 30. The upper end of the driving component 51 engages with the third positioning slot 32. The driving inclined surface 511 abuts against the driven inclined surface 451. The long hole 512 is corresponding to the long slot 452. The resilient component 54 is received in the long slot 452, and two ends of the resilient component 54 abut against the driving component 51 and the connector 30, respectively. When the driving component 51 slides downwardly, the driving inclined surface 511 pushes the driven inclined surface 451, so that the positioning component 45 slides horizontally to disengage from the connector 30. At this moment, the positioning component 45 pushes the post 432 on the engaging component 43, so that the plurality of engaging teeth 431 on the engaging component 43 disengages from the plurality of engaging slots on the second accommodating chamber. Therefore, the frame 10 can be released to be folded. During the aforementioned process, the resilient component 54 is compressed. The compressed resilient component 54 resiliently recovers the driving component 51 when the driving component 51 is released.

As shown in FIG. 3, FIG. 5, and FIG. 6, a middle portion of the rotating component 53 is pivoted to the pair of connecting lugs 33 on the connector 30. An upper end of the rotating component 53 is connected to a lower end of the driving component 51 by the linking component 52. A lower end of the rotating component 53 extends out of the connector 30 for connecting the seat 20. When the seat 20 is folded, the seat

20 drives the rotating component 53 to rotate, so that the rotating component 53 can pull the driving component 51 to slide downwardly by the linking component 52.

Please refer to FIG. 8 and FIG. 9. FIG. 8 is a sectional diagram of the connecting mechanism 40 and the releasing mechanism 50 at locking positions according to the first embodiment of the present invention. FIG. 9 is a sectional diagram of the connecting mechanism 40 and the releasing mechanism 50 at releasing positions according to the first embodiment of the present invention. When the frame 10 is locked, the engaging component 43 is located between the first pivoting joint 41 and the second pivoting joint 42 to engage with both of the first pivoting joint 41 and the second pivoting joint 42. Furthermore, the positioning component 45 is located between the second pivoting joint 42 and the connector 30 to engage with both of the second pivoting joint 42 and the connector 30. Therefore, the frame 10 cannot be folded rotatably, and the connector 30 cannot rotate relative to the frame 10 either.

When it is desired to fold the frame 10, the back portion 21 is operated to pivot relative to the seat portion 22 for folding the seat 20, so as to drive the rotating component 53 to rotate along an arrow direction shown in FIG. 9. The rotating component 53 pulls the driving component 51 to slide downwardly by the linking component 52. When the driving component 51 slides downwardly, the driving inclined surface 511 pushes the driven inclined surface 451, so that the positioning component 45 moves horizontally along the pivoting shaft. Therefore, the positioning component 45 disengages from the first positioning slot 31 on the connector 30, which releases the connector 30. At this moment, the positioning component 45 pushes the post 432 on the engaging

component 43, so that the engaging component 43 slides along the pivoting shaft to disengage from the second pivoting joint 42, which releases the frame 10. Therefore, the frame 10 can be rotatably folded. During the aforementioned process, the recovering component 44 and the resilient component 54 are compressed, as shown in FIG. 9.

When the seat 20 is unfolded, the rotating component 53 is released, so that the compressed resilient component 54 pushes the driving component 51 to recover upwardly. Furthermore, since the driving inclined surface 511 of the driving component 51 does not push the driven inclined surface 451 of the positioning component 45 during the unfolding process, the recovering component 44 pushes the engaging component 43 and the positioning component 45 to recover, as shown in FIG. 8.

Please refer to FIG. 1 to FIG. 2 and FIG. 10 to FIG. 11. FIG. 10 is a diagram of the infant carrier 1 at a folding position as the seat 20 engages with the frame 10 forwardly according to the first embodiment of the present invention. FIG. 11 is a diagram of the infant carrier 1 at another folding position as the seat 20 engages with the frame 10 rearwardly according the first embodiment of the present invention. When the frame 10 is released, the handle 11 can be operated to move downwardly. The handle 11 rotates relative to the front leg 12 and the rear leg 13, so that the front leg 12 and the rear leg 13 move toward each other. The handle 11 rotates downwardly until an upper end of the handle 11 is adjacent to the wheel 14. During the aforementioned process, since the connector 30 is released to rotate, the folded seat 20 can rotate along with the connector 30. As a result, the infant carrier 1 with the seat 20 engaging with the frame 10 forwardly can be folded to the folding position, as shown in FIG. 10,

and the infant carrier with the seat 20 engaging with the frame 10 rearwardly can be folded to the position, as shown in FIG. 11. Therefore, the infant carrier 1 of the present invention is folded easily and has a reduced folded volume.

Please refer to FIG. 12 to FIG. 15. FIG. 12 is a lateral view diagram of an infant carrier 1' according to a second embodiment of the present invention. FIG. 13 is a lateral view diagram of the infant carrier 1' having not been folded completely according to the second embodiment of the present invention. FIG. 14 is a lateral view diagram of the infant carrier 1' at a folding position according to the second embodiment of the present invention. FIG. 15 is a diagram of a seat 20' according to the second embodiment of the present invention. The infant carrier 1 includes the frame 10, the seat 20', a pair of connectors 30', and a pair of connecting mechanisms 40'. The seat 20' includes the back portion 21, the seat portion 22, and a pair of releasing mechanism 50', shown in FIG. 15. Structures and configurations of the frame 10 and the back portion 21 and the seat portion 22 of the seat 20' of the infant carrier 1' in the second embodiment are the same as the ones of the infant carrier 1 in the first embodiment, and further description is omitted herein for simplicity.

Please refer to FIG. 17 to FIG. 18. FIG. 17 is a diagram of the connecting mechanism 40' and the connector 30' according to the second embodiment of the present invention. FIG. 18 is a diagram of the connecting mechanism 40' according to the second embodiment of the present invention. As shown in FIG. 17 to FIG. 18, the connecting mechanism 40' includes the first pivoting joint 41, the second pivoting joint 42, the engaging component 43, the recovering component 44, shown in FIG. 19, and a positioning component 45'. Structures and configuration

of the first pivoting joint 41, the second pivoting joint 42, the engaging component 43, and the recovering component 44 of the connecting mechanism 40' in the second embodiment are the same as the ones of the connecting mechanism 40 in the first embodiment, and further description is omitted herein for simplicity. The positioning component 45' is slidably disposed between the connector 30' and the second pivoting joint 42. The connecting mechanism 40' further includes a protruding column 453 protruding from the positioning component 45'. The protruding column 453 includes a locking end 454 and an avoiding inclined surface 455. A through hole is formed on the connector 30' and at a position corresponding to the protruding column 453. After the connector 30' is installed, the positioning component 45' is located between the first positioning slot 31 of the connector 30' and the second positioning slot 421 of the second pivoting joint 42. The protruding column 453 passes through the through hole, so that the locking end 454 is exposed out of a side wall of the connector 30', as shown in FIG. 17.

Please refer to FIG. 15 and FIG. 16. FIG. 16 is a diagram of the seat 20' at another view according to the second embodiment of the present invention. Each of the pair of releasing mechanisms 50' includes a driving component 51' and a linking component 52'. The linking component 52' includes a first portion 521 and a second portion 522 substantially perpendicular to each other. The first portion 521 is formed in an arc shape and fixed on the back portion 21 of the seat 20'. The second portion 522 passes through a lateral wall of the seat 20'. The driving component 51' is fixed on an end of the second portion 522 and located at the lateral wall of the seat 20'. When the seat 20' engages with the frame 10, the

driving component 51’ abuts against the locking end 454. The engaging component 43 locks the first pivoting joint 41 and the second pivoting joint 42 when the frame 10 is locked, and the engaging component 43 slides to release the frame 10 when the driving component 51’ rotates to drive the positioning component 45’ to slide.

Preferably, in this embodiment, the linking component 52’ can be a steel wire. However, it is not limited thereto.

The driving component 51’ includes a locking surface 513 and a releasing inclined surface 514 disposed adjacent to each other. The locking surface 513 is parallel to the lateral wall of the seat 20’. When the locking surface 513 abuts against the locking end 454 of the positioning component 45, the frame 10 is locked. When the driving component 51’ rotates by a predetermined angle, the releasing inclined surface 514 abuts against the locking end 454, so that the frame 10 is released.

Please refer to FIG. 12 to FIG. 14 and FIG. 19 to FIG. 21. FIG. 19 is a sectional diagram of the connecting mechanism 40’ and the releasing mechanism 50’ at locking positions according to the second embodiment of the present invention. FIG. 20 is a sectional diagram of the connecting mechanism 40’ and the releasing mechanism 50’ at releasing positions according to the second embodiment of the present invention. FIG. 21 is a diagram of the driving component 51’ and the positioning component 45’ according to the second embodiment of the present invention. When the seat 20’ engages with the connector 30’ at a unfolded position, the locking surface 513 of the driving component 51’ abuts against the locking end 454 of the positioning component 45’, so that the positioning component 45’ is located between the first positioning slot

31 of the connector 30' and the second positioning slot 421 of the second pivoting joint 42. At this moment, the positioning component 45' pushes the post 432 of the engaging component 43, so the engaging component 43 engages with both of the first pivoting joint 41 and the second pivoting joint 42 for locking the frame 10, as shown in FIG. 19.

When the seat 20' is folded, the back portion 21 is operated to rotate toward the seat portion 22, as shown in FIG. 13. The back portion 21 rotates to drive the linking component 52' to rotate the driving component 51'. When the driving component 51' rotates by a predetermined angle, the releasing inclined surface 514 abuts against the locking end 454, as shown in FIG. 21. By cooperation of the locking end 454 and the releasing inclined surface 514, the positioning component 45' slides toward the seat 20' along an arrow direction shown in FIG. 19 until the positioning component 45' is received in the first positioning slot 31, and the protruding column 453 protrudes out of the through hole, as shown in FIG. 20. Furthermore, due to sliding of the positioning component 45', the engaging component 43 does not abut against the positioning component 45' accordingly, so that the engaging component 43 can slide along the pivoting shaft to disengage from the first pivoting joint 41 by a resilient force of the recovering component 44, as shown in FIG. 20. As a result, the frame 10 is released to fold. The infant carrier 1' in the second embodiment has the same folding operation as one of the infant carrier 1 in the first embodiment, and the folded infant carrier 1' is shown in FIG. 14.

When the seat 20' is unfolded, the back portion 21 rotates to drives the linking component 52' to rotate the driving component 51'. The releasing inclined surface 514 of the

driving component 51' pushes the locking end 454 of the protruding column 453, as shown in FIG. 21, so as to slide the positioning component 45'. During the aforementioned process, the positioning component 45' pushes the post 432 of the engaging component 43 to slide to engage with both of the first pivoting joint 41 and the second pivoting joint 42, and the recovering component 44 is compressed. When the back portion 21 is unfolded completely, the locking surface 513 abuts against the locking end 454 of the protruding column 453, so that the frame 10 is locked, as shown in FIG. 19.

In contrast to the prior art, the infant carrier of the present invention utilizes the foldable seat and the driving component to release the frame, so that the frame can be folded when the seat is folded. Therefore, it is very convenient for users to fold the infant carrier, and the infant carrier has a reduced folded volume for easy storage and transportation.

Those skilled in the art will readily observe that numerous modifications and alterations of the device and method may be made while retaining the teachings of the invention. Accordingly, the above disclosure should be construed as limited only by the metes and bounds of the appended claims.

Claims

What is claimed is:

1. An infant carrier comprising:

a frame comprising:

a handle;

a front leg pivoted to the handle; and

a rear leg pivoted to a lower end of the handle; and

a seat engaging with the frame, the seat comprising:

a seat portion;

a back portion pivoted to the seat portion; and

a releasing mechanism comprising a driving component;

wherein when the seat portion pivots relative to the back portion for folding the seat, the driving component is driven to release the frame, so that the frame is folded along with the seat.

2. The infant carrier of claim 1, wherein the releasing mechanism further comprises a linking component connected between the driving component and the seat, and the seat drives the linking component to move the driving component when the seat is folded.

3. The infant carrier of claim 2, wherein the driving component is rotatably or slidably connected to the seat, and the seat drives the linking component to rotate or slide the driving component for releasing the frame when the seat is folded.

4. The infant carrier of claim 2, wherein the releasing mechanism further comprises a rotating component connected between the linking component and the seat, and the seat drives the rotating component to rotate to pull the linking component when the seat is folded.

5. The infant carrier of claim 4, wherein the releasing mechanism further comprises a resilient component for driving the driving component to recover.

6. The infant carrier of claim 1, wherein the driving component comprises a driving inclined surface, and the driving component slides to drive the driving inclined surface to release the frame.

7. The infant carrier of claim 1, wherein the driving component comprises a locking surface and a releasing inclined surface.

8. The infant carrier of claim 7, wherein the driving component rotates to drive the locking surface or the releasing inclined surface to interact with the frame for locking or releasing the frame, respectively.

9. The infant carrier of claim 1, further comprising a connecting mechanism, and the driving component being for releasing the connecting mechanism.

10. The infant carrier of claim 9, wherein the connecting mechanism comprises:

a first pivoting joint fixed on the handle of the frame, a first accommodating chamber being formed in the first pivoting joint;

a second pivoting joint fixed on the front leg of the frame and pivoted to the first pivoting joint by a pivoting shaft, a second accommodating chamber being formed in the second pivoting joint; and

an engaging component slidably disposed between the first accommodating chamber and the second accommodating chamber for locking the first pivoting joint and the

second pivoting joint, and the driving component driving the engaging component to slide for releasing the first pivoting joint and the second pivoting joint.

11. The infant carrier of claim 10, wherein the engaging component is slidably disposed on the pivoting shaft, the frame is locked when the engaging component engages with both of the first pivoting joint and the second pivoting joint, and the frame is released when the engaging component slides along the pivoting shaft to disengage from the first pivoting joint or the second pivoting joint.

12. The infant carrier of claim 10, wherein the connecting mechanism further comprises an engaging tooth protruding from the engaging component, an engaging slot is formed on an inner wall of each of the first accommodating chamber and the second accommodating chamber and corresponding to the engaging tooth.

13. The infant carrier of claim 12, wherein the engaging component slides to disengage the engaging tooth from the engaging slot on the first accommodating chamber or the engaging slot on the second accommodating chamber for releasing the frame.

14. The infant carrier of claim 10, further comprising a recovering component abutting between the engaging component and the first pivoting joint.

15. The infant carrier of claim 10, wherein the connecting mechanism further comprises a positioning component disposed between the engaging component and the driving

component, and the driving component drives the engaging component to move by the positioning component.

16. The infant carrier of claim 15, wherein the positioning component is disposed on the second pivoting joint, the connecting mechanism further comprises a post protruding from the engaging component, the post passes through the second pivoting joint to abut against the positioning component.

17. The infant carrier of claim 16, wherein the positioning component moves to drive the driving component to disengage from the first pivoting joint or the second pivoting joint.

18. The infant carrier of claim 15, wherein the connecting mechanism further comprises a protruding column protruding from the positioning component, the protruding column comprises a locking end and an avoiding inclined surface, the driving component interacts with the locking end to lock the first pivoting joint and the second pivoting joint, and the driving component rotates to drive the positioning component to slide so as to drive the engaging component to slide for releasing the first pivoting joint and the second pivoting joint.

19. The infant carrier of claim 15, wherein the positioning component comprises a driven inclined surface, the driving component comprises a driving inclined surface, the driving component slides to drive the positioning component to slide by interaction of the driving inclined surface of the driving component and the driven inclined surface of the positioning component.

20. The infant carrier of claim 15, further comprising a connector disposed on the frame, the positioning component being disposed between the connector and the second pivoting joint for positioning the connector, and the seat detachably engaging with the connector.

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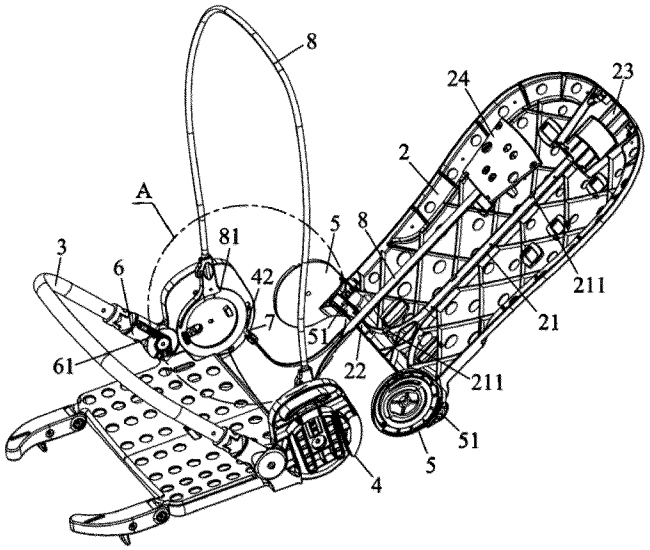

Abstract

(EN) The invention discloses a folding seat of a baby stroller, which comprises a seat plate, a backrest plate and a front armrest assembly, wherein bases are arranged at the rear part of both sides of the base plate; first joints are arranged at the front part of the bases; connecting seats are arranged at the lower part of both sides of the backrest plate and can be respectively and pivotally mounted at the inner side of the corresponding base; second joints are arranged at both ends of the front armrest assembly and can be pivotally mounted at the corresponding first joint; the connecting seats are provided with locking pins; first locking grooves matched with the locking pins are arranged at positions corresponding to the locking pins at the inner side of the bases; the locking pins can move along the connecting seats from the position where the locking pins are inserted into the first locking grooves to the position where the locking pins exit from the first locking grooves; when the locking pins are inserted into the first locking grooves, the bases and the connecting seats can be locked; the backrest plate is provided with a pull bar and a pull bar driving mechanism which is provided with a driving button; and the lower end of the pull bar is connected with the locking pins and the upper end of the pull bar is connected with the pull bar driving mechanism. The folding seat of the baby stroller realizes the folding and unfolding operation by one hand and has the advantages of convenient operation and high efficiency.

(ZH) 本发明公开一种折叠婴儿推车座椅，包括座板、背靠板以及前扶手组件，座板两侧的后部设有基座，基座的前部设有第一关节，背靠板两侧的下部设有连接座，连接座分别可枢转装于对应基座的内侧；前扶手组件的两端设有第二关节，第二关节可枢转装于对应的第一关节，连接座装有锁定销，基座的内侧与锁定销对应的位置开设有与锁定销相适配的第一锁定槽，锁定销可沿连接座在卡入第一锁定槽和退出第一锁定槽的位置之间移动，锁定销卡入第一锁定槽时，可将基座和连接座锁定，背靠板上设有拉条和具有驱动按钮的拉条驱动机构，拉条的下端

与锁定销相连，上端则与拉条驱动机构相连。本发明可单手实现折叠和展开操作，操作方便且效率高。

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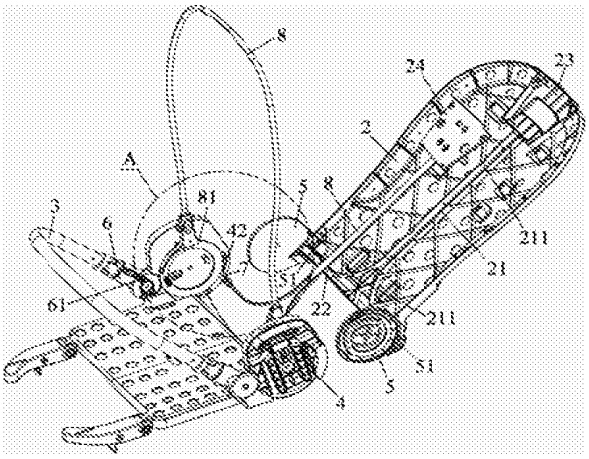
(54)发明名称

一种折叠婴儿推车座椅

(57)摘要

本发明公开一种折叠婴儿推车座椅，包括座板、背靠板以及前扶手组件，座板两侧的后部设有基座，基座的前部设有第一关节，背靠板两侧的下部设有连接座，连接座分别可枢转装于对应基座的内侧；前扶手组件的两端设有第二关节，第二关节可枢转装于对应的第一关节，连接座装有锁定销，基座的内侧与锁定销对应的位置开设有与锁定销相适配的第一锁定槽，锁定销可沿连接座在卡入第一锁定槽和退出第一锁定槽的位置之间移动，锁定销卡入第一锁定槽时，可将基座和连接座锁定，背靠板上设有拉条和具有驱动按钮的拉条驱动机构，拉条的下端与锁定销相连，上端则与拉条驱动机构相连。本发明可单手实现折叠和展开操作，操作方便且效率高。



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1.一种折叠婴儿推车座椅，包括座板、背靠板以及前扶手组件，座板两侧的后部设有基座，基座的前部设有第一关节，背靠板两侧的下部设有连接座，连接座分别可枢转装于对应基座的内侧；前扶手组件的两端设有第二关节，第二关节可枢转装于对应的第一关节，其特征在于：连接座装有锁定销，基座的内侧与锁定销对应的位置开设有与锁定销相适配的第一锁定槽，锁定销可沿连接座在卡入第一锁定槽和退出第一锁定槽的位置之间移动，锁定销卡入第一锁定槽时，可将基座和连接座锁定，背靠板上设有拉条和具有驱动按钮的拉条驱动机构，拉条的下端与锁定销相连，上端则与拉条驱动机构相连，按压拉条驱动机构的驱动按钮时，可驱使拉条将锁定销拉出第一锁定槽，以解除锁定销对基座和连接座的锁定，此时，可推动背靠板并带动前扶手组件往座板的承力面方向折叠；而当座椅处于完全展开状态并撤去按压驱动按钮的压力后，拉条驱动机构则驱使拉条复位，并驱使锁定销卡入第一锁定槽，将基座和连接座锁定。

2.如权利要求1所述的折叠婴儿推车座椅，其特征在于：背靠板的承力面上设有由上倾斜向下延伸的导向槽，拉条可滑动置于导向槽中，拉条包括基条以及从基条的下端向两侧的锁定销延伸的支条，支条包括上端与基条的下端相连的弯折段以及一端与弯折段的下端相连的直线段，所述直线段的另一端直接或者通过中间件与锁定销相连，通过拉条驱动机构驱使拉条沿导向槽运动时，可驱动锁定销在插入第一锁定槽和退出第一锁定槽的位置之间移动。

3.如权利要求2所述的折叠婴儿推车座椅，其特征在于：每个连接座开设有与第一锁定槽相对的导向通孔，背靠板对应导向通孔的位置开设有与导向通孔相连的导滑槽，直线段的所述另一端有连接块，连接块装于导滑槽中，所述锁定销位于导滑槽内的部分的侧壁开设环形卡槽，每个连接块设有两个向导向通孔的方向延伸至环形卡槽外侧的第一限位板，所述第一限位板设有延伸至卡入环形卡槽的卡部，拉条拉动连接块沿导滑槽移动时，连接块可通过卡部带动锁定销沿导向通孔在插入第一锁定槽和退出第一锁定槽的位置之间移动。

4.如权利要求1所述的折叠婴儿推车座椅，其特征在于：基座的内侧的边缘开设有开口滑槽，开口滑槽中装有锁定块，第二关节设有与锁定块相适配的第二锁定槽，锁定块卡入第二锁定槽时，可将第二关节和基座锁定，锁定块的后部设有向连接座方向延伸的第一导柱，连接座与第一导柱相对的区域开设有供第一导柱插入的第一驱动凹槽，第一驱动凹槽包括圆弧形的始段和非圆弧形的驱动段，始段和驱动段相连，且始段的始端壁与第一导柱相抵时，座椅处于完全展开的状态，在连接座相对基座转动过程中，第一驱动凹槽和第一导柱相对滑动，当第一导柱与第一驱动凹槽的始段相对滑动时，第一导柱在开口滑槽内保持静止，而当第一导柱与第一驱动凹槽的驱动段相对滑动时，第一导柱在非圆弧形的驱动段的槽壁的推动下，沿开口滑槽前后移动，并带动锁定块在插入第二锁定槽或者退出第二锁定槽的位置之间移动。

5.如权利要求4所述的折叠婴儿推车座椅，其特征在于：连接座通过枢轴可枢转安装于基座的内侧，并可绕枢轴的轴线转动，圆弧形始段的圆心与连接座的转动中心位于同一直线上，所述第一驱动凹槽还包括从驱动段的末端延伸而出的圆弧形缓冲段。

6.如权利要求2所述的折叠婴儿推车座椅，其特征在于：背靠板位于导向槽上方的位置设有安装槽，拉条驱动机构包括驱动按钮以及复位顶簧，所述驱动按钮包括安装在安装槽

内并可沿安装槽上下移动的主体以及从主体向后延伸出安装槽的驱动部，所述复位顶簧的上端与安装槽的顶壁相抵，下端与主体相抵，向上按压驱动部时，可驱使主体克服复位顶簧的顶力并沿安装槽向上移动，并驱使拉条将锁定销拉出第一锁定槽，而撤去按压驱动部的压力后，复位顶簧则可推动主体沿安装槽下行，并驱使拉条将锁定销推进第一锁定槽。

7.如权利要求1所述的折叠婴儿推车座椅，其特征在于：第二关节通过枢轴可枢转连接于第一关节上，并可绕枢轴的轴线转动，枢轴上套设有复位扭簧，复位扭簧的一端与第一关节弹性相抵，另一端与第二关节弹性相抵，当背靠板往远离座板的承力面的方向转动时，复位扭簧推动第二关节随连接座转动。

8.如权利要求1至7中任意一项所述的折叠婴儿推车座椅，其特征在于：还包括帆架杆，所述帆架杆的两端分别设有安装座，安装座可枢转安装于基座上。

9.如权利要求8所述的折叠婴儿推车座椅，其特征在于：安装座可枢转安装于基座和连接座之间，其与基座和连接座的接合区域呈环状，连接座朝向安装座的表面开设有第二驱动凹槽，所述安装座朝向连接座的表面设有伸入第二驱动凹槽的第二导柱，当第二导柱与第二驱动凹槽的始端壁相抵时，座椅处于完全展开的状态，当背靠板往座板的承力面方向折叠转动到一定位置后，第二驱动凹槽的末端与第二导柱相抵，当背靠板继续往座板的承力面方向折叠转动时，则可带动第二导柱转动，并使安装座以及帆架杆随背靠板往座板的承力面方向折叠转动。

10.如权利要求8所述的折叠婴儿推车座椅，其特征在于：基座朝向连接座的一侧在对应座椅完全折叠时锁定销所处的位置处开设有与锁定销适配的插槽，当座椅完全折叠后，插槽与锁定销相对，撤去按压驱动按钮的压力后，锁定销即可插入插槽，并将连接座和基座锁合。

一种折叠婴儿推车座椅

技术领域

[0001] 本发明涉及婴儿推车技术领域，特别一种折叠婴儿推车座椅。

背景技术

[0002] 婴儿推车是一种针对婴儿(或者幼童)所设计的承载移动工具，方便大人携带婴儿外出游玩或者购物等，同时还可适当盛放轻便的小物品，深受广大家长喜爱。

[0003] 传统的折叠婴儿推车座椅主要由柔性的纺织面料(必要时，纺织面料内可填充棉絮)制成。且其座垫和靠背垫分别通过位于车架两侧的座垫承载管和后支撑杆承力，使用时，柔性的座垫和靠背垫会因受力而中部严重凹陷变形，受力极不均匀，因此，婴儿坐、卧的舒适度较差，且不美观。

[0004] 为此，现有技术也出现了坐卧较为舒适的折叠婴儿推车座椅，其包括承力面垫设有柔性座垫的座板、承力面设有柔性靠垫的背靠板，其中，座板的两侧的后设有连接座，连接座通过关节组件连接有扶手管组件以及所述背靠板，所述座板和所述背靠板是采用塑料制成的板状结构，结构强度以及稳定性较好，使用时，不会因受力(即婴儿坐卧于其上)而发生严重的凹陷变形，因此，可提高婴儿坐卧的舒适度，且整体外形更为美观。但现有的这种折叠婴儿推车座椅仍有不足之处，原因在于，这种折叠婴儿推车座椅不具有单手连动收展的功能，收折及展开过程需两手操作，存在收展效率低且不方便的问题。

发明内容

[0005] 本发明的主要目的是提出一种折叠婴儿推车座椅，旨在实现折叠婴儿推车座椅的单手连动收展操作，以提高婴儿推车座椅收展操作的方便性。

[0006] 为实现上述目的，本发明提出一种折叠婴儿推车座椅，包括座板、背靠板以及前扶手组件，座板两侧的后部设有基座，基座的前部设有第一关节，背靠板两侧的下部设有连接座，连接座分别可枢转装于对应基座的内侧；前扶手组件的两端设有第二关节，第二关节可枢转装于对应的第一关节，连接座装有锁定销，基座的内侧与锁定销对应的位置开设有与锁定销相适配的第一锁定槽，锁定销可沿连接座在卡入第一锁定槽和退出第一锁定槽的位置之间移动，锁定销卡入第一锁定槽时，可将基座和连接座锁定，背靠板上设有拉条和具有驱动按钮的拉条驱动机构，拉条的下端与锁定销相连，上端则与拉条驱动机构相连，按压拉条驱动机构的驱动按钮时，可驱使拉条将锁定销拉出第一锁定槽，以解除锁定销对基座和连接座的锁定，此时，可推动背靠板并带动前扶手组件往座板的承力面方向折叠；而当座椅处于完全展开状态并撤去按压驱动按钮的压力后，拉条驱动机构则驱使拉条复位，并驱使锁定销卡入第一锁定槽，将基座和连接座锁定。

[0007] 本发明技术方案在连接座上安装有可沿安装座在卡入第一锁定槽和退出第一锁定槽的位置之间移动的锁定销，并在背靠板上设有下端与锁定销连接的拉条以及用于驱动拉条运动的拉条驱动机构。需要折叠本发明折叠婴儿推车座椅时，可单手按压拉条驱动机构的驱动按钮，以驱使拉条运动并将锁定销拉出第一锁定槽，并解除锁定销对基座和连接

座的锁定，此后，单手将背靠板往座板的承力面方向推动，即可带动前扶手组件向座板方向折叠翻转，直至折叠操作完成，整个折叠过程，单手即可连动实现，操作方便且效率高。而需要展开座椅时，则可单手反向拉动背靠板，使背靠板往远离座板承力面的方向摆动，直至座椅完全展开后，撤去按压驱动按钮的压力(即松开驱动按钮)，此时，拉条驱动机构则驱使拉条复位，并驱使锁定销移动至卡入第一锁定槽，以将基座和连接座重新锁定，防止在使用过程中，背靠板和座板相对转动。整过展开并锁定的过程，同样单手即可连动实现，操作方便且效率高。

附图说明

[0008] 图1为本发明折叠婴儿推车座椅展开状态的立体图；

图2为本发明折叠婴儿推车座椅展开状态并分离盖板后的示意图；

图3是本发明折叠婴儿推车座椅的部分分解示意图；

图4为图3的A部分的放大详图；

图5为本发明折叠婴儿推车座椅展开状态的右视图；

图6为本发明折叠婴儿推车座椅折叠至背靠板刚驱动前扶手组件转动时右视图；

图7为本发明折叠婴儿推车座椅完全折叠后的右视图；

图8为本发明折叠婴儿推车座椅的背靠板的左视图；

图9为本发明折叠婴儿推车座椅的安装座的立体示意图；

图10为本发明折叠婴儿推车座椅的拉条和锁定销的连接示意图。

具体实施方式

[0009] 下面将结合附图，对本发明实施例中的技术方案进行清楚、完整地描述，显然，所描述的实施例仅仅是本发明的一部分实施例，而不是全部的实施例。基于本发明中的实施例，本领域普通技术人员在没有作出创造性劳动前提下所获得的所有其他实施例，都属于本发明保护的范围。

[0010] 需要说明，若本发明实施例中有涉及方向性指示(诸如上、下、左、右、前、后、顶、底、内、外、垂向、横向、纵向，逆时针、顺时针、周向、径向、轴向……)，则该方向性指示仅用于解释在某一特定姿态(如附图所示)下各部件之间的相对位置关系、运动情况等，如果该特定姿态发生改变时，则该方向性指示也相应地随之改变。

[0011] 另外，若本发明实施例中有涉及“第一”或者“第二”等的描述，则该“第一”或者“第二”等的描述仅用于描述目的，而不能理解为指示或暗示其相对重要性或者隐含指明所指示的技术特征的数量。由此，限定有“第一”、“第二”的特征可以明示或者隐含地包括至少一个该特征。另外，各个实施例之间的技术方案可以相互结合，但是必须是以本领域普通技术人员能够实现为基础，当技术方案的结合出现相互矛盾或无法实现时应当认为这种技术方案的结合不存在，也不在本发明要求的保护范围之内。

[0012] 本发明提出一种折叠婴儿推车座椅。

[0013] 如图1至10所示，本发明实施例中，该折叠婴儿推车座椅，包括座板1、背靠板2以及前扶手组件3，座板1两侧的后部设有基座4，基座4的前部设有第一关节41，背靠板2两侧的下部设有连接座55，连接座55分别可枢转装于对应基座4的内侧(这里所指的内侧，指基座4

朝向座板1中部的侧壁)，基座4的外侧则与折叠婴儿推车的车架(未图示)连接；前扶手组件3呈U型管状结构，两端设有第二关节6，第二关节6可枢转安装(或称铰接)于对应的第一关节41，连接座5装有锁定销7，基座4的内侧与锁定销7对应的位置开设有与锁定销7相适配的第一锁定槽42，锁定销7可沿连接座5在卡入第一锁定槽42和退出第一锁定槽42的位置之间移动，锁定销7卡入第一锁定槽42时(此时，座椅处于展开状态)，可将基座4和连接座5锁定，使连接座5无法相对基座4转动，背靠板2上还设有拉条10和具有驱动按钮91的拉条驱动机构9，拉条10的下端与锁定销7相连，上端则与拉条驱动机构9相连，需要折叠本发明折叠婴儿推车座椅时，可按压拉条驱动机构9的驱动按钮91，并由拉条驱动机构9驱使拉条10将锁定销7拉出第一锁定槽42，以解除锁定销7对基座4和连接座5的锁定，此时，可推动背靠板2并带动前扶手组件3往座板1的承力面(或称座板的顶面)方向折叠翻转，直至折叠操作完成；而需要展开座椅时，则可单手反向拉动背靠板2，使背靠板2往远离座板1承力面的方向摆动，直至座椅处于完全展开状态后，撤去按压驱动按钮91的压力，以使拉条驱动机构9驱使拉条10复位，并驱使锁定销7卡入第一锁定槽42，将基座4和连接座5锁定。防止在使用过程中，背靠板2和座板1相对转动。整个折叠和展开的过程，单手即可连动实现，操作方便且效率高。

[0014] 应当说明的是，座板1和背靠板2可优先采用塑料制成，采用塑料制成，具有成型方便，成本低的优点。同时，为使婴儿坐卧舒适，最好在座板1的承力面和背靠板2的承力面分别垫设由柔性的座垫和靠垫，以供婴儿坐卧。

[0015] 在本发明实施例中，如图2、图3和图10所示，所述背靠板2的承力面上设有由上倾斜向下延伸的导向槽21，所述拉条10可滑动置于导向槽21中，拉条10包括基条101以及从基条101的下端向两侧的锁定销7延伸的支条，所述支条包括上端与基条101的下端相连的弯折段102以及一端与弯折段102的下端相连的直线段103，所述直线段103的另一端直接或者通过中间件与锁定销7相连，通过拉条驱动机构9驱使拉条10沿导向槽21运动时，可驱动锁定销7在插入第一锁定槽42和退出第一锁定槽42的位置之间移动，以将基座4和连接座5锁定，或者解除对基座4和连接座5的锁定。具体地，每个连接座5开设有与第一锁定槽42相对的导向通孔51，背靠板2对应导向通孔51的位置开设有与导向通孔51相连的导滑槽22(见图3、图4)，直线段103的所述另一端有连接块104，连接块104装于导滑槽22中，所述锁定销7位于导滑槽22内的部分的侧壁开设环形卡槽71，每个连接块104设有两个向导向通孔51的方向延伸至环形卡槽外侧的第一限位板，所述第一限位板设有延伸至卡入环形卡槽71的卡部105，拉条10拉动连接块104沿导滑槽22移动时，连接块104可通过卡部105带动锁定销7沿导向通孔51在插入第一锁定槽42和退出第一锁定槽42的位置之间移动。此连接方式，便于拆装锁定销7。应当说明的是，在不影响使用的情况下，锁定销7也可直接与连接块固连。

[0016] 进一步地，如图2、图3所示，导向槽21的侧壁设有第二限位板211，该第二限位板211延伸至部分与拉条10的前表面接触，以对拉条10进行限位，防止拉条10在使用过程中，脱出导向槽21。

[0017] 具体地，如图1至3所示，连接座5通过枢轴(或称铰轴，如铆钉或者螺杆，未图示)可枢转安装(或称铰接)于基座4的内侧，并可绕枢轴的轴线转动。

[0018] 在本发明实施例中，如图3、图4以及图8所示，所述基座4的内侧(即朝向座板1中部的一侧的侧壁)的边缘开设有开口滑槽43，开口滑槽43中装有锁定块11，第二关节6设有与

锁定块11相适配的第二锁定槽(未图示),锁定块11卡入第二锁定槽时,可将第二关节6和基座4锁定,锁定块11的后部设有向连接座5方向延伸的第一导柱111,连接座5与第一导柱111相对的区域开设有供第一导柱111插入的第一驱动凹槽52,所述第一驱动凹槽52包括圆弧形的始段521和非圆弧形的驱动段522,始段521和驱动段522相连,且始段521的始端壁与第一导柱111相抵时,座椅处于完全展开的状态,在连接座5相对基座4转动过程中,第一驱动凹槽52和第一导柱111相对滑动。当第一导柱111与第一驱动凹槽52的始段521相对滑动时,第一导柱111在开口滑槽43内保持静止,而当第一导柱111与第一驱动凹槽52的驱动段522相对滑动时,第一导柱111在非圆弧形的驱动段522的槽壁的推动下,沿开口滑槽43前后移动,并带动锁定块11在插入第二锁定槽(未图示)或者退出第二锁定槽的位置之间移动。从而自动将第二关节6和基座4锁定或者解除第二关节6和基座4的锁定,从而实现背靠板2和前扶手组件3的连动折叠和展开操作,并提高折叠和展开操作的效率。

[0019] 具体地,如图3、图4以及图8所示,圆弧形始段521的圆心与连接座5的转动中心位于同一直线(即均位于枢轴的轴线)上,以保证第一导柱111与第一驱动凹槽52的始段521相对滑动时,第一导柱111在开口滑槽43内保持静止。进一步地,所述第一驱动凹槽52还包括从驱动段522的末端延伸而出的圆弧形缓冲段523,该缓冲段523最好也与连接座5的转动中心位于同一直线上,以对第一导柱111沿开口滑槽43的滑动进行缓冲,当第一导柱111与第一驱动凹槽52的缓冲段523相对滑动时,第一导柱111在开口滑槽43内保持静止,防止第一导柱111移动过急而出现卡死现象。

[0020] 进一步地,如图1至4以及图9所示,本发明折叠婴儿推车座椅还包括帆架杆8,所述帆架杆8的两端分别设有安装座81,安装座81可枢转安装于基座4上,背靠板2往座板1的承力面方向折叠转动到一定位置后(见图6),可驱使安装座81带动帆架杆8往座板1的承力面方向折叠,直至座椅折叠完成(见图7)。具体地,所述安装座81可枢转安装于基座4和连接座5之间,其与基座4和连接座5的接合区域呈环状,设置成环状主要是为了不阻碍安装座81的转动。同时,也应当注意不阻碍锁定销7的移动。所述连接座5朝向安装座81的表面开设有第二驱动凹槽53,所述安装座81朝向连接座5的表面设有伸入第二驱动凹槽53的第二导柱811,当第二导柱811与第二驱动凹槽53的始端壁相抵时,座椅处于完全展开的状态(见图5),当背靠板2往座板1的承力面方向折叠转动到一定位置后,第二驱动凹槽53的末端与第二导柱811相抵,当背靠板2继续往座板1的承力面方向折叠转动时,则可带动第二导柱811转动,并使安装座81以及帆架杆8随背靠板2往座板1的承力面方向折叠转动,直至折叠操作完成(见图7)。

[0021] 进一步地,如图1、图4以及图9所示,安装座81朝向连接座5的一侧设有连接座5的方向延伸的圆弧形限位围板812或者圆弧形限位凹槽(未图示),所述连接座5置于圆弧形限位围板812或者圆弧形限位凹槽,并可相对圆弧形限位围板812或者圆弧形限位凹槽转动。

[0022] 进一步地,如图2至图4所示,基座4朝向连接座5的一侧在对应座椅完全折叠时锁定销7所处的位置处开设有与锁定销7适配的插槽44,当座椅完全折叠后,插槽44与锁定销7相对,撤去按压驱动按钮91的压力后,锁定销7即可插入插槽44,并将连接座5和基座4锁合,以防止在不使用的情况下,座椅自行展开。而需要展开座椅时,则可先按压驱动按钮91,以通过拉条10将锁定销7拉出插槽44后,即可往远离座板1承力面的方向转动背靠板2,直到座椅完全展开,此后,撤去按压驱动按钮91的压力,使拉条10驱动锁定销7卡入第一锁定槽42

后，即可将展开状态的座椅锁定。

[0023] 本发明实施例中，如图1至5所示，背靠板2位于导向槽21上方的位置设有安装槽23，拉条驱动机构9包括驱动按钮91以及复位顶簧92，所述驱动按钮91包括安装在安装槽23内并可沿安装槽23上下移动的主体以及从主体向后延伸出安装槽23的驱动部911，所述复位顶簧92的上端与安装槽23的顶壁相抵，下端与主体相抵，向上按压驱动部911时，可驱使主体克服复位顶簧92的顶力并沿安装槽23向上移动，并驱使拉条10将锁定销7拉出第一锁定槽42，以解对除基座4和连接座5的锁定，而撤去按压驱动部911的压力后，复位顶簧92则可推动主体沿安装槽23下行，并驱使拉条10将锁定销7推进第一锁定槽42，以将基座4和连接座5锁定。具体地，所述安装槽23的前侧可拆卸固设有可将安装槽23的前侧覆盖的盖板24，以对所述主体进行限位，防止主体脱出安装槽23。

[0024] 在本发明实施例中，如图1、图2所示，拉条10的顶端伸入安装槽23，并与主体固连或者卡接。卡接的方式，便于拆装。而固连的方式，则结构稳定性较高，可根据需要而选择。

[0025] 在本发明实施例中，如图1、图3以及图4所示，第二关节6同样可通过枢轴(或称铰轴，如铆钉，螺杆等)可枢转连接(或称铰接)于第一关节41上，并可绕枢轴的轴线转动。进一步地，所述枢轴上套设有复位扭簧61，复位扭簧61的一端与第一关节41弹性相抵，另一端与第二关节6弹性相抵，当背靠板2往远离座板1的承力面的方向转动时，复位扭簧61推动第二关节6随连接座5转动，直到转动到预定的位置为止，此后，锁定块11在连接座5的第一驱动凹槽52驱动段521的驱动下，逐渐卡入第二关节6的锁定槽(未图示)，以将第二关节6锁定在基座4上。

[0026] 以上所述仅为本发明的优选实施例，并非因此限制本发明的专利范围，凡是在本发明的发明构思下，利用本发明说明书及附图内容所作的等效结构变换，或直接/间接运用在其他相关的技术领域均包括在本发明的专利保护范围内。

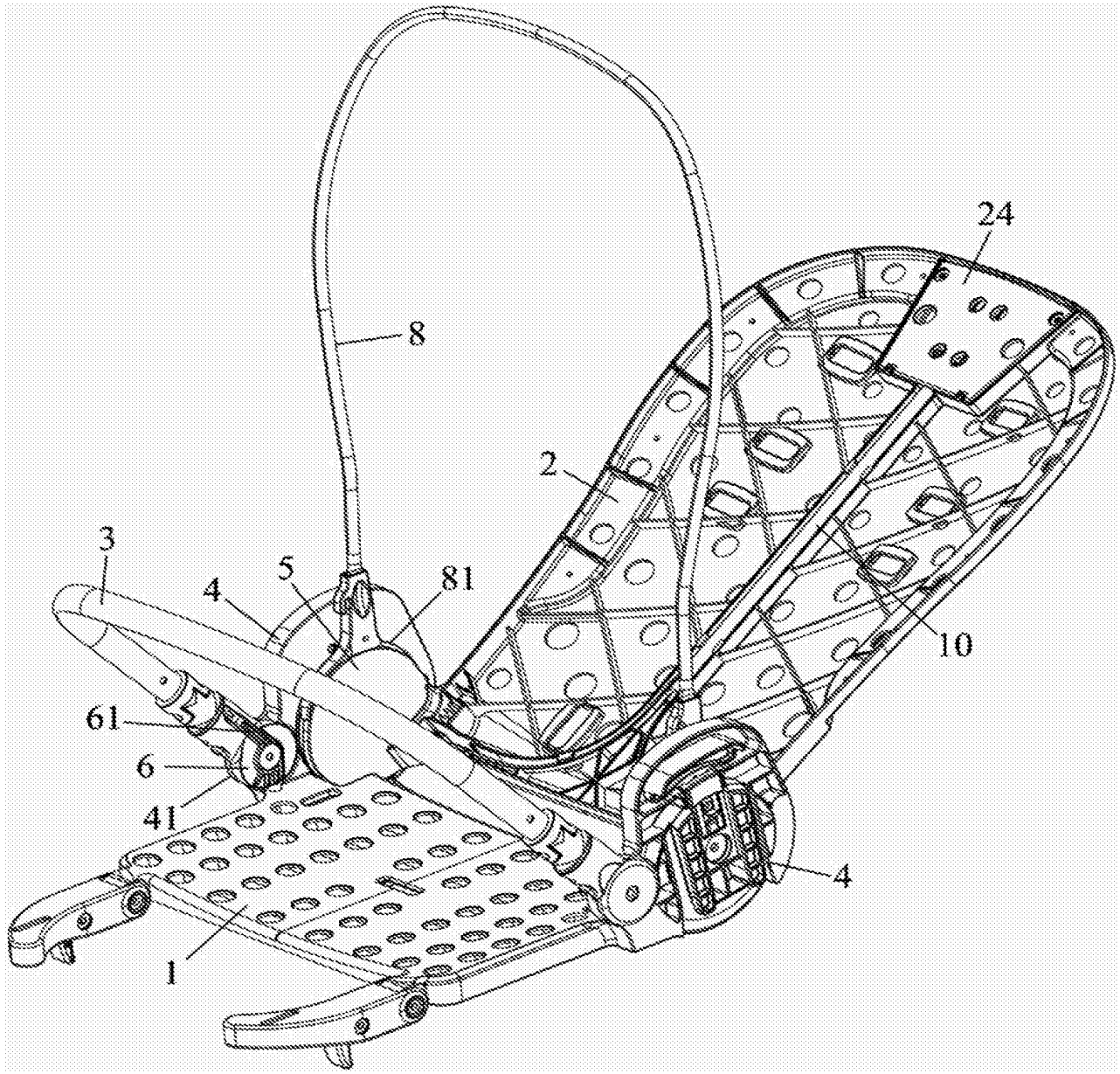


图1

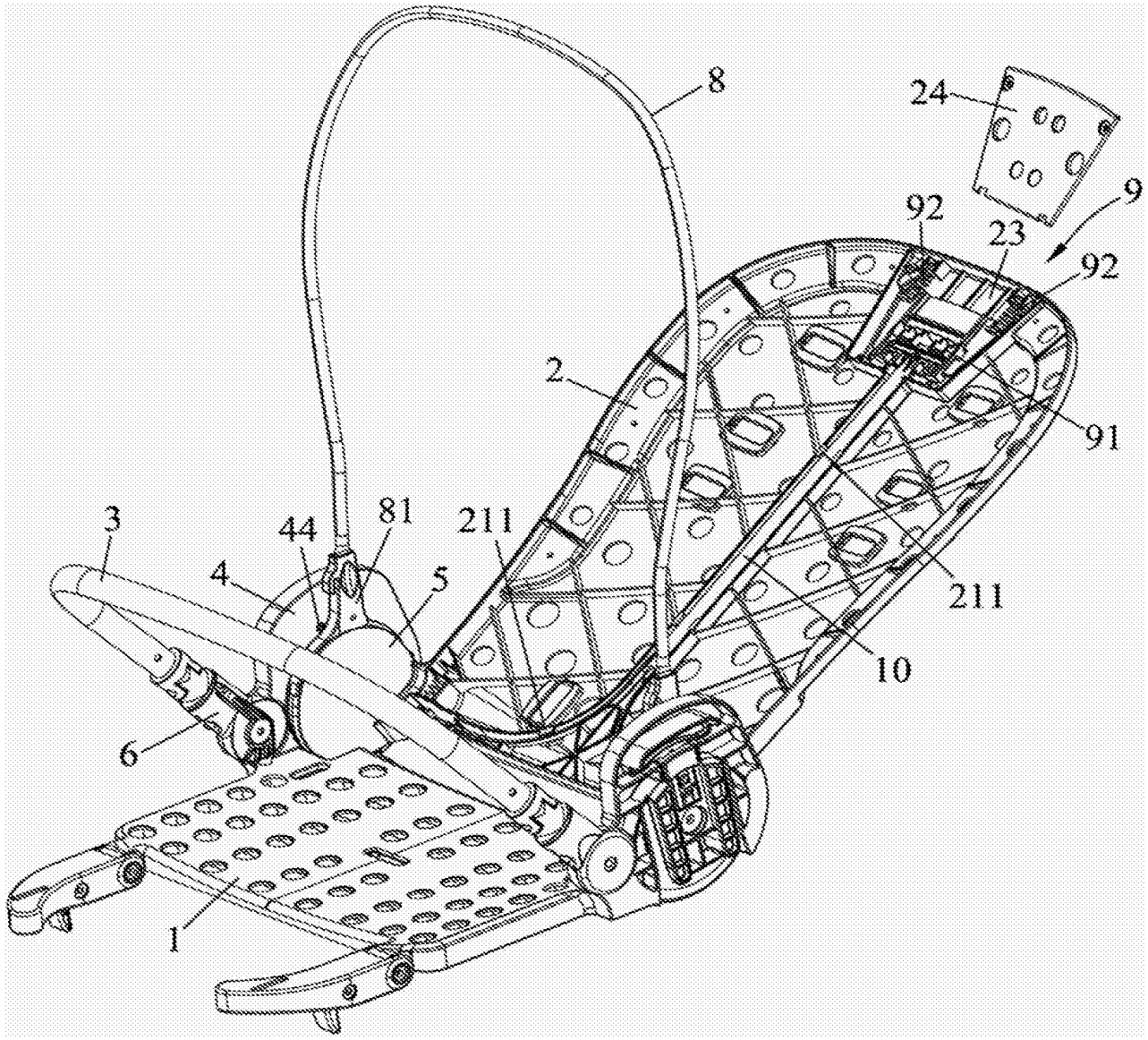
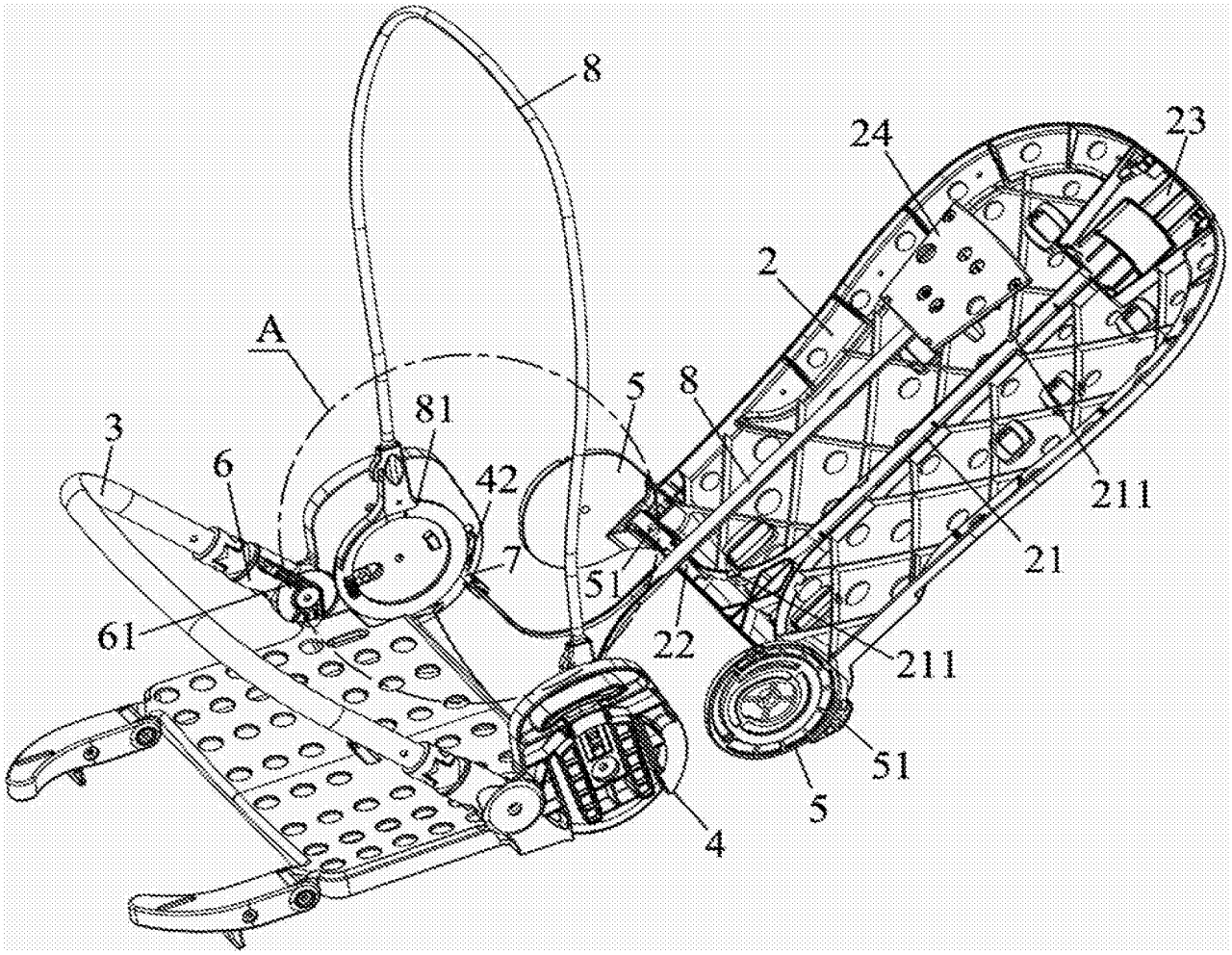


图2



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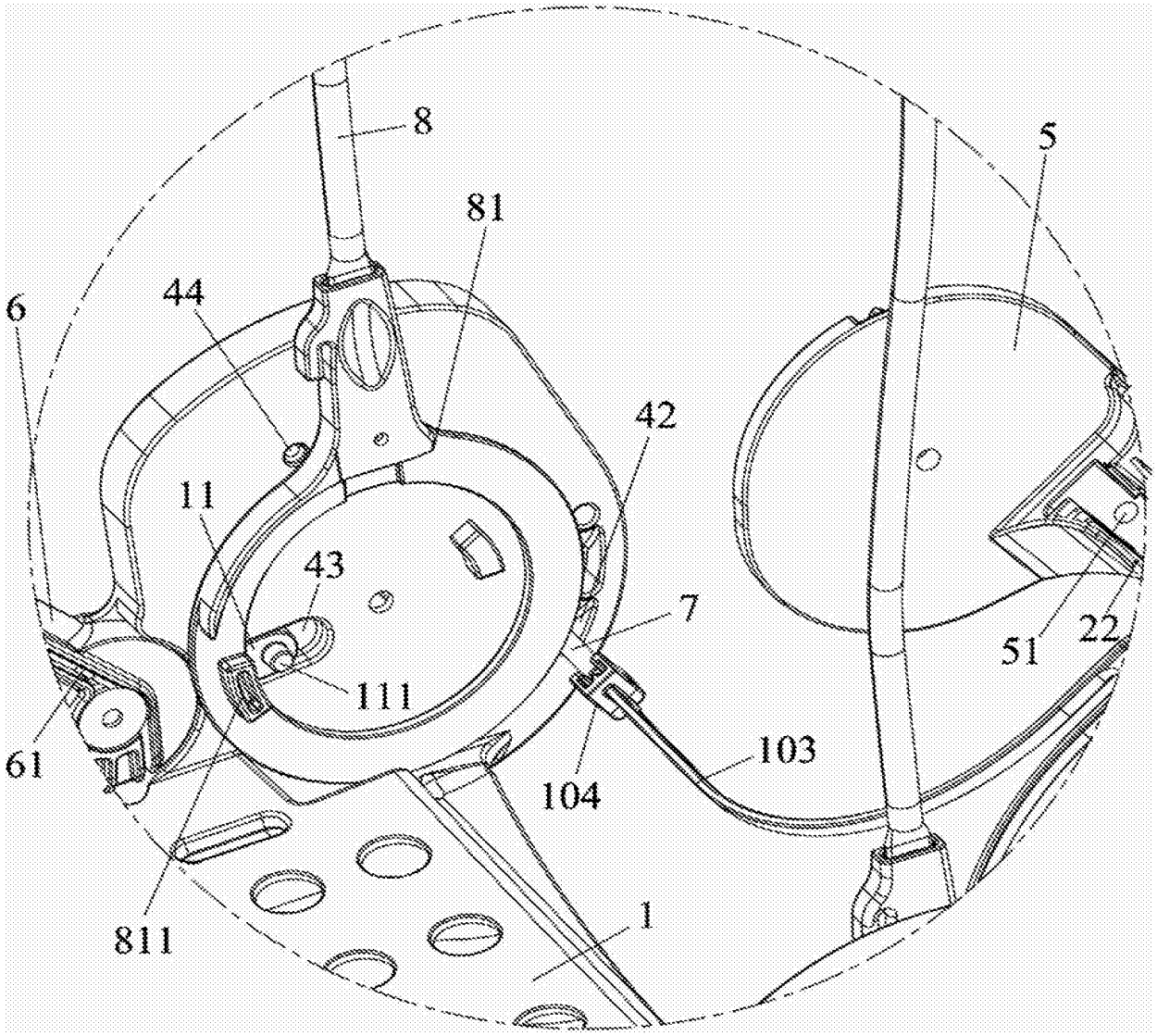

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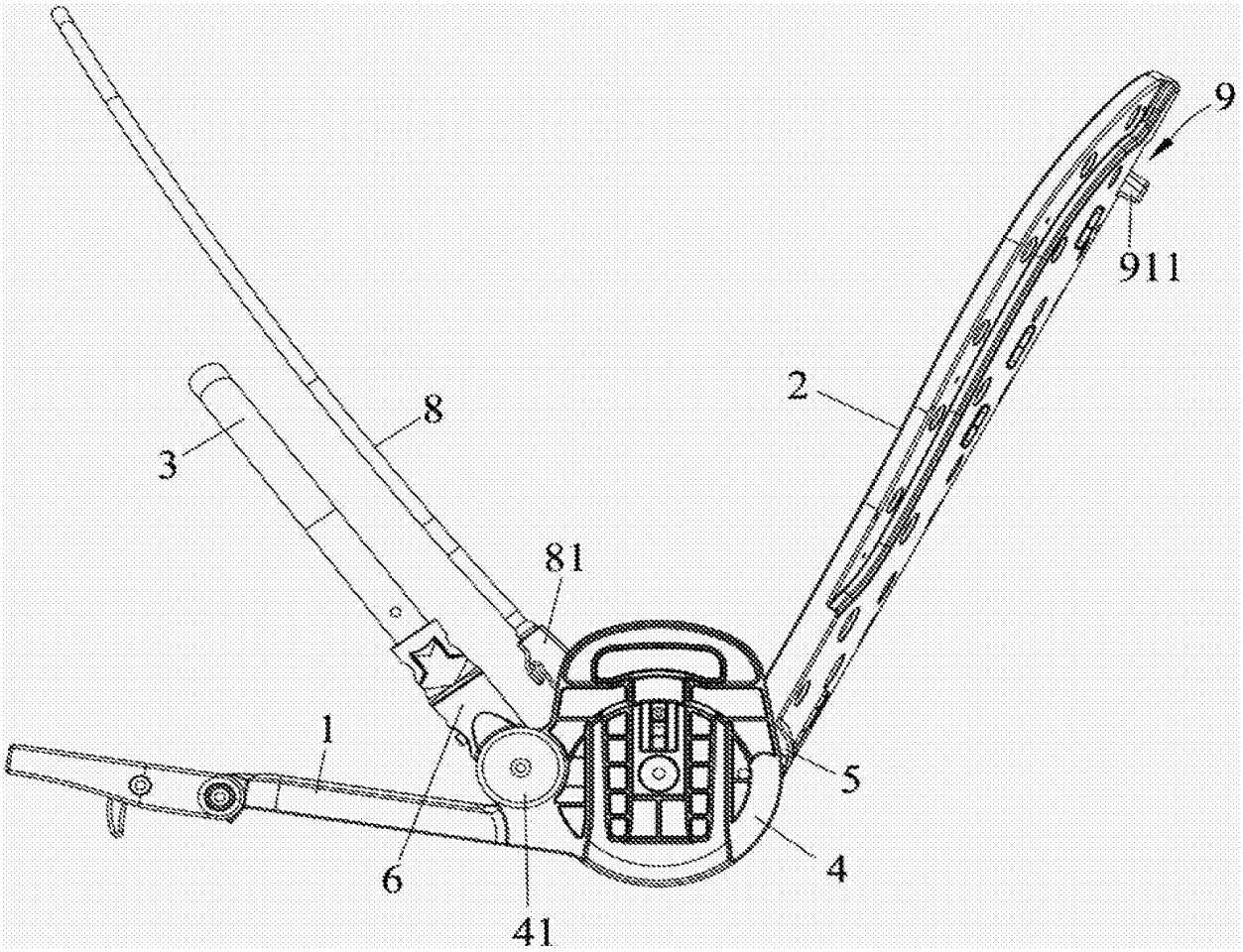

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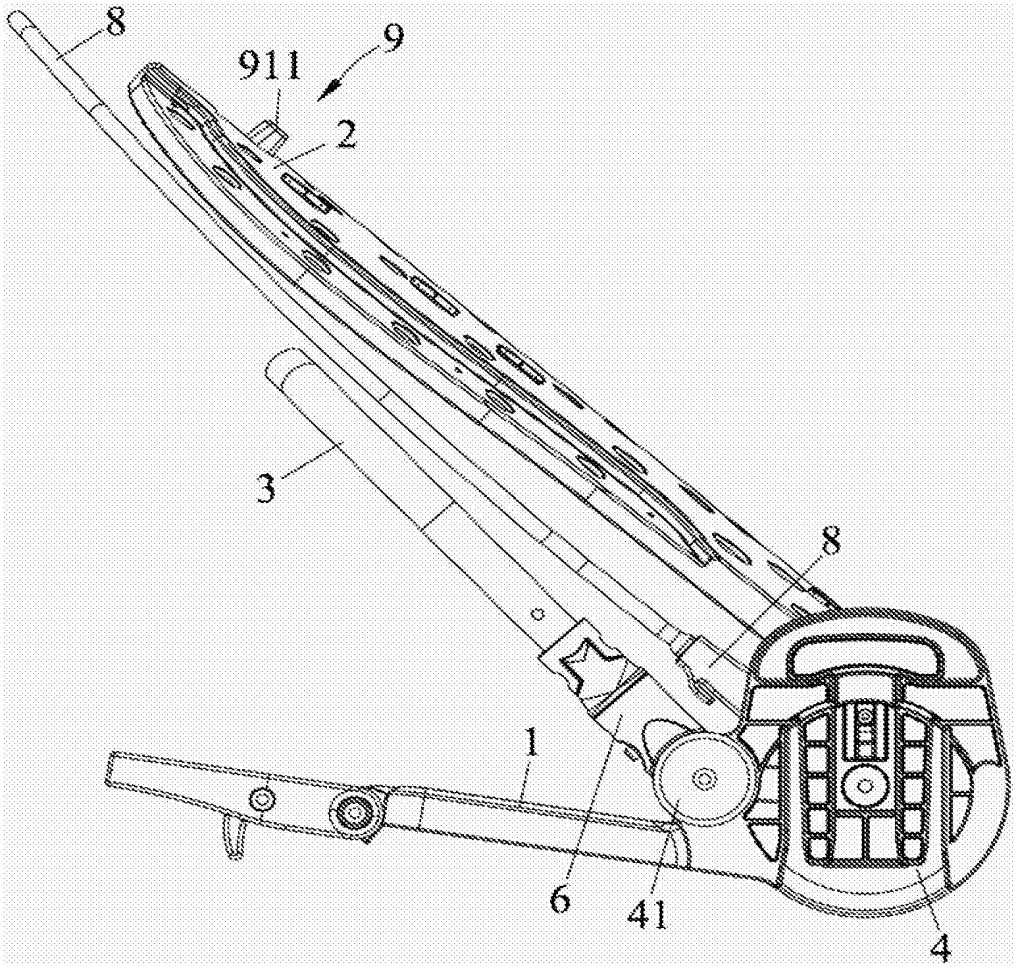

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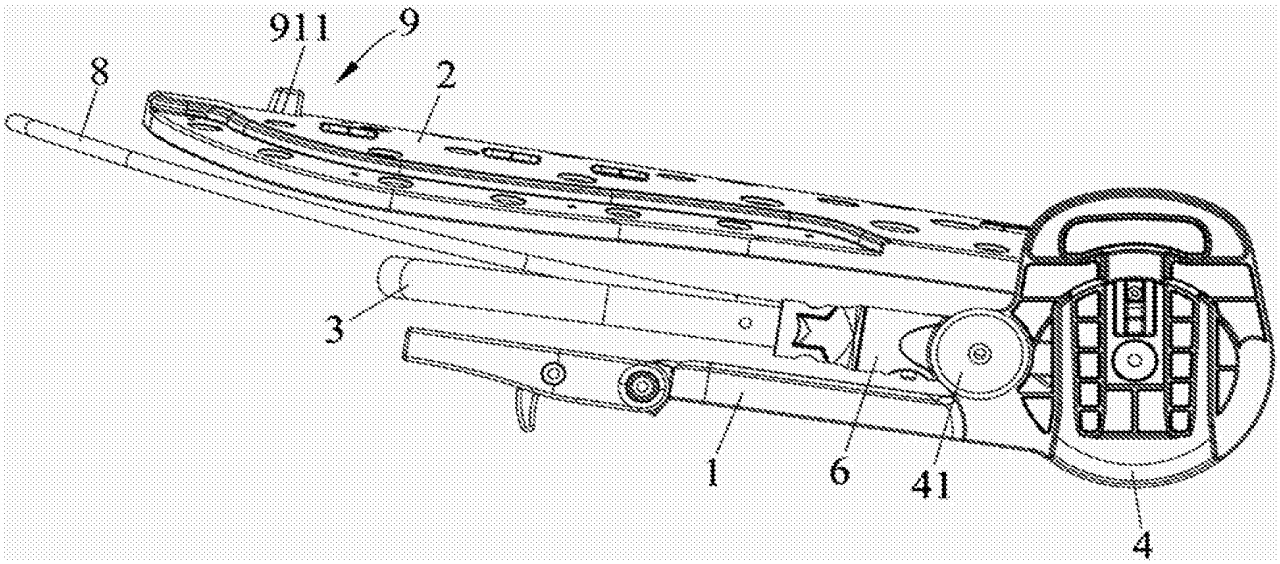
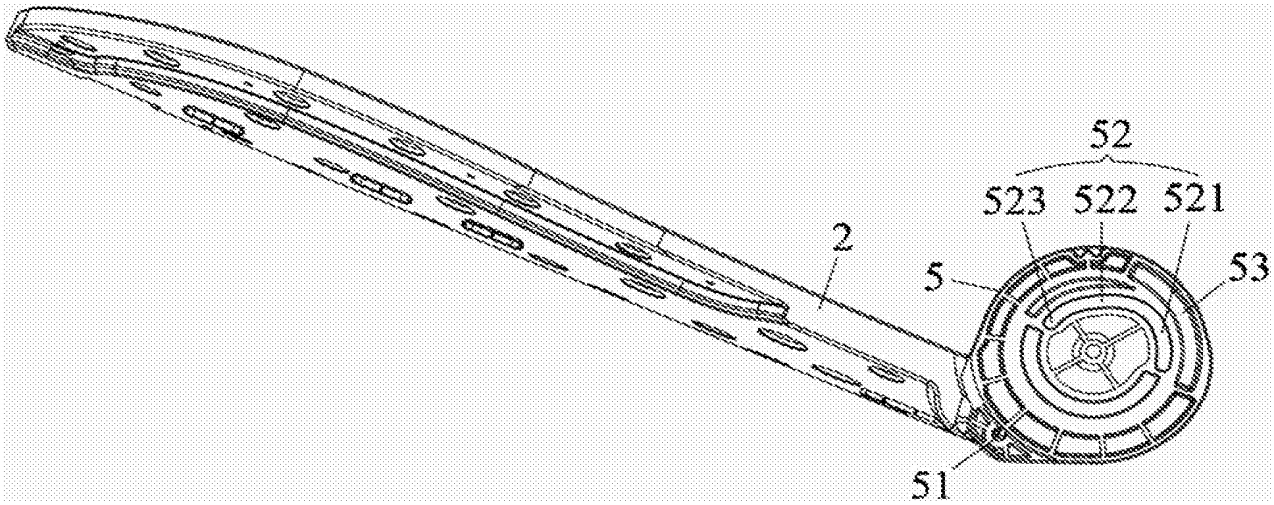


图7



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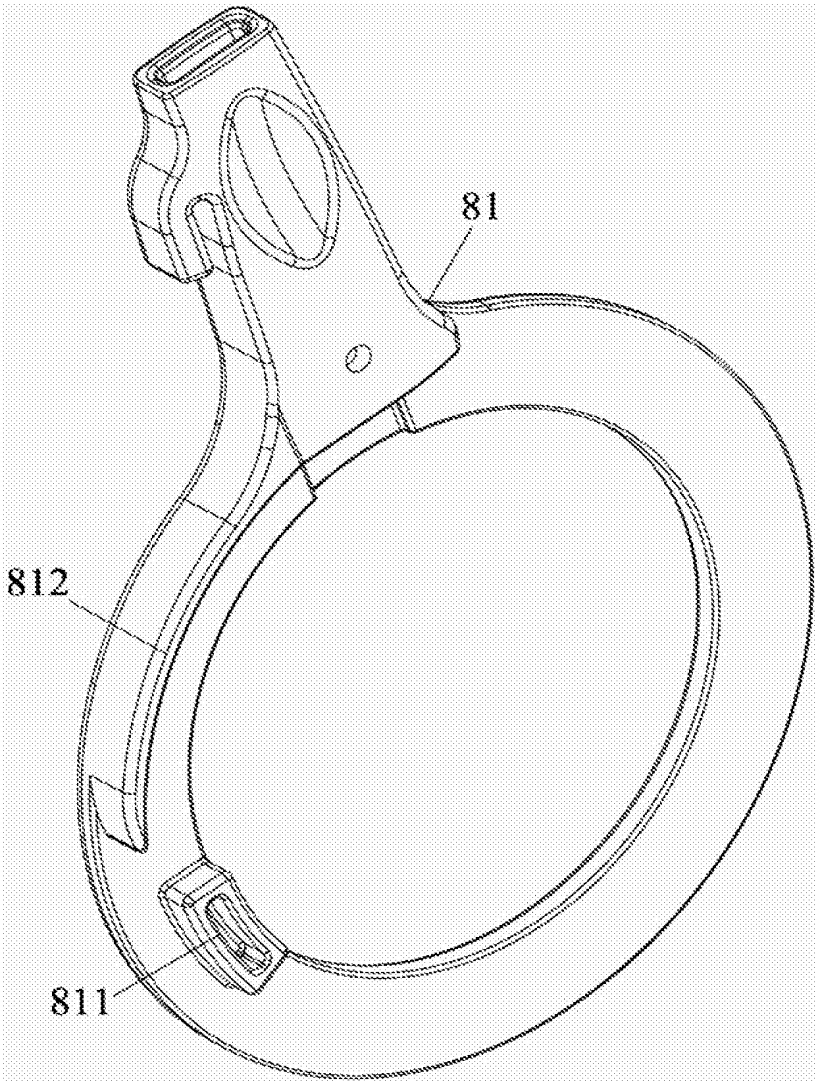

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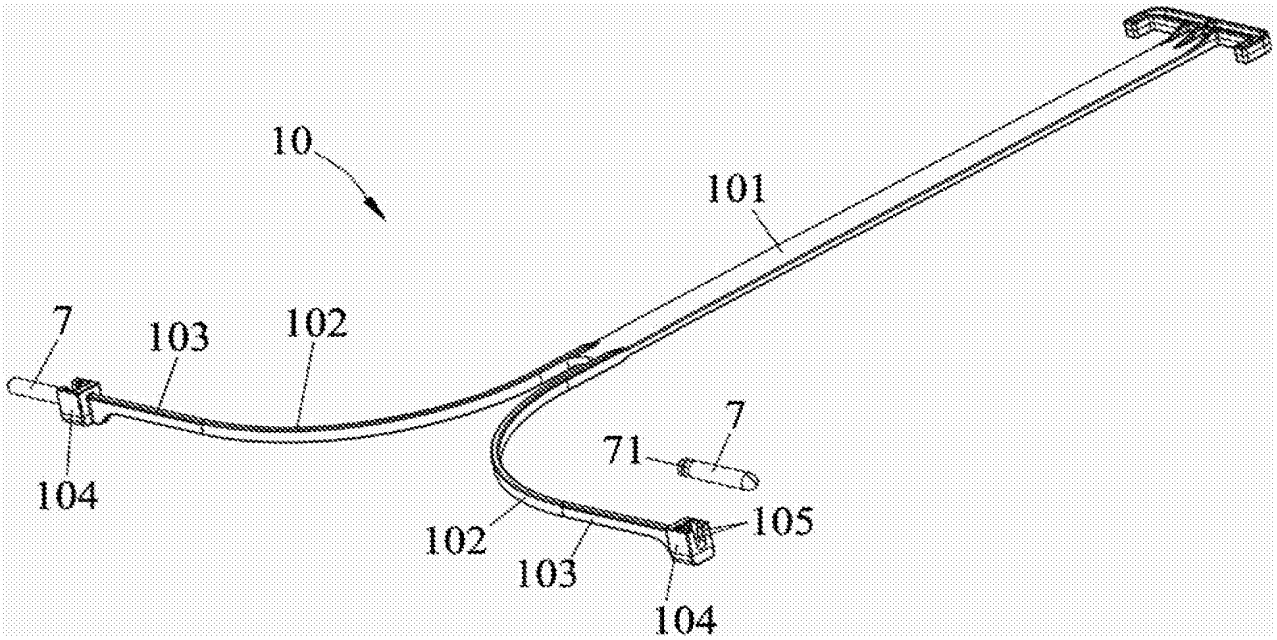

图10

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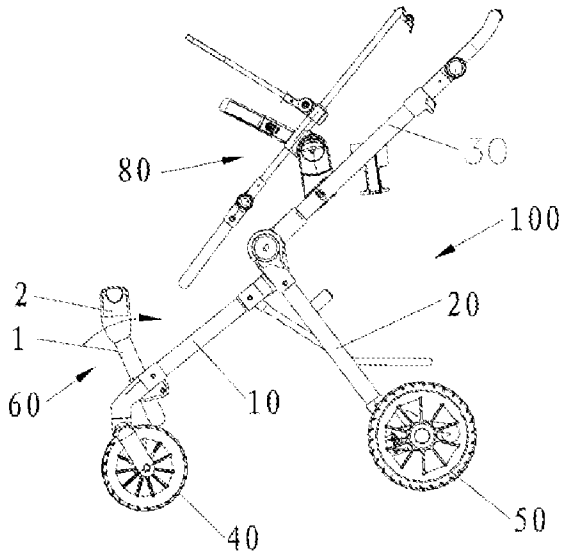
Title
[EN] Baby carriage
[ZH] 儿童推车



Abstract

[EN] The invention discloses a baby carriage. A frame of the baby carriage includes two side supports arranged on the left and right respectively and also includes a seat carrier for holding a baby seat; the seat carrier includes a carrier base that at least has two carrier rods arranged on the left and right respectively; each carrier rod has a mounting end that is provided with a carrier connector which can be fitly connected with the baby seat; the side support on each side has a support rod extended in vertical direction; the carrier base is pivotally connected to the frame in front-rear direction; the seat carrier is positioned between the support rods on the two sides in the left-right direction. The seat carrier on the baby carriage allows the baby carriage to be quickly switched betweena single carriage and a double carriage, and even between a single carriage and a multiple carriage, so that the overall bearing capacity of the baby carriage is greatly improved.
[ZH] 本发明公开了一种儿童推车，其推车车架包括分设于左右两侧的两个侧支架，还包括用于嫁接儿童座兜的座兜托架，所述座兜托架包括托架座，所述托架座至少具有分设于左右两侧的两根托架杆，每根所述托架杆均具有安装端，所述安装端上设有能够与所述儿童座兜相配接的托架连接件，每侧的所述侧支架均具有沿上下方向延伸的支架杆，所述托架座能够沿前后方向翻转地连接在所述推车车架上，且所述座兜托架沿左右方向上位于两侧的所述支架杆之间。通过在儿童推车上设置该座兜托架，还能够有效地实现儿童推车在单、双人车之间进行快速转换，甚至单人与多人车之间的快速转换，大幅地提升儿童推车的整体承载能力。

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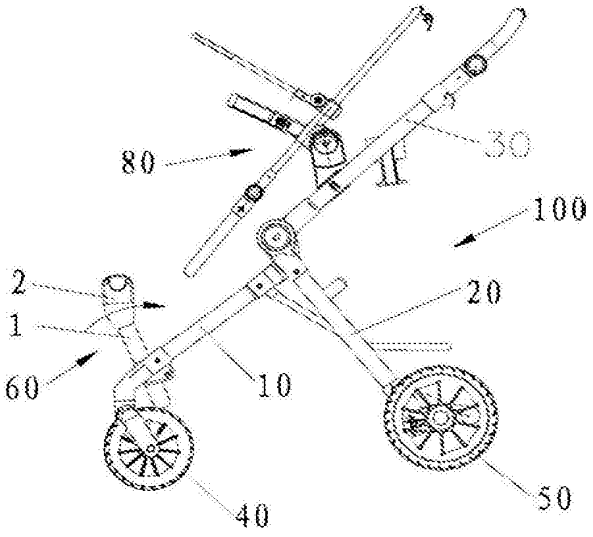
(54)发明名称

儿童推车

(57)摘要

本发明公开了一种儿童推车，其推车车架包括分设于左右两侧的两个侧支架，还包括用于嫁接儿童座兜的座兜托架，所述座兜托架包括托架座，所述托架座至少具有分设于左右两侧的两根托架杆，每根所述托架杆均具有安装端，所述安装端上设有能够与所述儿童座兜相配接的托架连接件，每侧的所述侧支架均具有沿上下方向延伸的支架杆，所述托架座能够沿前后方向翻转地连接在所述推车车架上，且所述座兜托架沿左右方向上位于两侧的所述支架杆之间。通过在儿童推车上设置该座兜托架，还能够有效地实现儿童推车在单、双人车之间进行快速转换，甚至单人与多人车之间的快速转换，大幅地提升儿童推车的整体承载能力。



CN 108327769 A

1.一种儿童推车，包括具有展开状态与折叠状态的推车车架、设于所述推车车架底部的轮组件，以及用于将所述推车车架锁定在展开状态下的锁定机构，所述推车车架包括分设于左右两侧的两个侧支架，其特征在于：所述推车车架还包括用于嫁接儿童座兜的座兜托架，所述座兜托架包括托架座，所述托架座至少具有分设于左右两侧的两根托架杆，每根所述托架杆均具有安装端，所述安装端上设有能够与所述儿童座兜相配接的托架连接件，每侧的所述侧支架均具有沿上下方向延伸的支架杆，所述托架座能够沿前后方向翻转地连接在所述推车车架上，且所述座兜托架沿左右方向上位于两侧的所述支架杆之间。

2.根据权利要求1所述的儿童推车，其特征在于：所述座兜托架具有打开状态与收折状态，当所述座兜托架由打开状态向收折状态转换时，所述托架连接件沿前后方向靠近所述支架杆；当所述座兜托架由收折状态向打开状态转换时，所述托架连接件沿前后方向远离所述支架杆。

3.根据权利要求1所述的儿童推车，其特征在于：所述推车车架的左右各侧上，所述托架杆转动地连接在同侧的所述支架杆上，同一侧的所述托架杆与所述支架杆之间还设有用于将两者锁定的托架锁定件。

4.根据权利要求3所述的儿童推车，其特征在于：所述托架座还包括连接在两侧所述托架杆之间的托架横杆，所述托架横杆与两侧的所述托架杆之间构成U字型，所述托架横杆上还设有用于将两侧的所述托架锁定件解锁的托架解锁件。

5.根据权利要求1所述的儿童推车，其特征在于：所述座兜托架的左右各侧上，所述托架连接件能够相对所述托架杆翻转地安装在所述托架杆的所述安装端上，且两侧的所述托架连接件相对同侧所述托架杆翻转的方向相向设置。

6.根据权利要求1至5任一项所述的儿童推车，其特征在于：每侧的所述侧支架均包括相对转动连接的前支架、后支架及推杆，所述座兜托架有一组或多组，所述的前支架、和/或所述后支架、和/或所述推杆构成所述的支架杆。

7.根据权利要求6所述的儿童推车，其特征在于：所述推车车架还包括设于两侧所述侧支架之间的人体承载装置，当所述推车车架处于展开状态时，所述人体承载装置与所述座兜托架一上一下地设置在所述推车车架上。

8.根据权利要求7所述的儿童推车，其特征在于：所述人体承载装置与所述座兜托架这两者中，其中至少有一者沿上下方向位置可调地设置在所述推车车架上。

9.根据权利要求7所述的儿童推车，其特征在于：所述人体承载装置设于两侧的所述推杆之间，所述座兜托架设于两侧的所述前支架之间，和/或，所述座兜托架设于两侧的所述后支架之间。

10.根据权利要求9所述的儿童推车，其特征在于：所述人体承载装置包括座兜架，所述座兜架的左右两侧各设有一组座兜连接组件，所述座兜连接组件沿所述推杆的长度延伸方向上下滑动地设于所述推杆上。

儿童推车

技术领域

[0001] 本发明涉及一种儿童推车。

背景技术

[0002] 随着越来越多的家庭有两个孩子，既能作为单人使用又可作双人使用的儿童推车越来越受欢迎。现有技术中，大多是提供单个儿童乘坐的单人推车，也有一些可同时供两个儿童同时乘坐的双人推车，而能够在双人推车与单人推车之间转换的儿童推车比较少。

[0003] 虽然目前市场上也出现了能够在双人推车与单人推车之间转换的儿童推车，但是由于转换需要用到的连接杆件以及需要连接的部位较多，结构比较繁琐，操作也十分的不便，同时还影响整个推车在折叠后各杆件的收拢程度，造成折叠后的推车整体体积偏大而不易携带与存放等问题。

发明内容

[0004] 本发明的目的是克服现有技术的缺点，提供一种能够实现单、双人转换的儿童推车。

[0005] 为达到上述目的，本发明采用的技术方案是：一种儿童推车，包括具有展开状态与折叠状态的推车车架、设于所述推车车架底部的轮组件，以及用于将所述推车车架锁定在展开状态下的锁定机构，所述推车车架包括分设于左右两侧的两个侧支架，所述推车车架还包括用于嫁接儿童座兜的座兜托架，所述座兜托架包括托架座，所述托架座至少具有分设于左右两侧的两根托架杆，每根所述托架杆均具有安装端，所述安装端上设有能够与所述儿童座兜相配接的托架连接件，每侧的所述侧支架均具有沿上下方向延伸的支架杆，所述托架座能够沿前后方向翻转地连接在所述推车车架上，且所述座兜托架沿左右方向上位于两侧的所述支架杆之间。

[0006] 优选地，所述座兜托架具有打开状态与收折状态，当所述座兜托架由打开状态向收折状态转换时，所述托架连接件沿前后方向靠近所述支架杆；当所述座兜托架由收折状态向打开状态转换时，所述托架连接件沿前后方向远离所述支架杆。

[0007] 优选地，所述推车车架的左右各侧上，所述托架杆转动地连接在同侧的所述支架杆上，同一侧的所述托架杆与所述支架杆之间还设有用于将两者锁定的托架锁定件。

[0008] 进一步地，所述托架座还包括连接在两侧所述托架杆之间的托架横杆，所述托架横杆与两侧的所述托架杆之间构成U字型，所述托架横杆上还设有用于将两侧的所述托架锁定件解锁的托架解锁件。

[0009] 优选地，所述座兜托架的左右各侧上，所述托架连接件能够相对所述托架杆翻转地安装在所述托架杆的所述安装端上，且两侧的所述托架连接件相对同侧所述托架杆翻转的方向相向设置。

[0010] 优选地，每侧的所述侧支架均包括相对转动连接的前支架、后支架及推杆，所述座兜托架有一组或多组，所述的前支架、和/或所述后支架、和/或所述推杆构成所述的支架

杆。

[0011] 进一步地，所述推车车架还包括设于两侧所述侧支架之间的人体承载装置，当所述推车车架处于展开状态时，所述人体承载装置与所述座兜托架一上一下地设置在所述推车车架上。

[0012] 更进一步地，所述人体承载装置与所述座兜托架这两者中，其中至少有一者沿上下方向位置可调地设置在所述推车车架上。

[0013] 更进一步地，所述人体承载装置设于两侧的所述推杆之间，所述座兜托架设于两侧的所述前支架之间，和/或，所述座兜托架设于两侧的所述后支架之间。

[0014] 作为一种具体的实施方式，所述人体承载装置包括座兜架，所述座兜架的左右两侧各设有一组座兜连接组件，所述座兜连接组件沿所述推杆的长度延伸方向上下滑动地设于所述推杆上。

[0015] 由于上述技术方案的运用，本发明与现有技术相比具有下列优点：本发明的儿童推车上，座兜托架能够前后翻转地设置在推车车架上而具有打开状态和收折状态，这使其能够在打开状态时通过嫁接儿童座兜而在儿童推车上增设一个座位装置，以及在不需要嫁接儿童座兜时收拢于推车车架两侧的支架杆之间而不影响儿童推车的整体尺寸、外观，以及推车车架的收折。通过在儿童推车上设置该座兜托架，还能够有效地实现儿童推车在单、双人车之间进行快速转换，甚至单人与多人车之间的快速转换，大幅地提升儿童推车的整体承载能力。

附图说明

[0016] 附图1为本发明的儿童推车展开状态下的侧视图(双人车状态)；

附图2为附图1的立体图；

附图3为本发明的儿童推车展开状态下的侧视图(单人车状态且座兜托架处于打开状态)；

附图4为附图3的立体图；

附图5为本发明的儿童推车展开状态下的侧视图(单人车状态且座兜托架处于半收折状态)；

附图6为附图5的立体图；

附图7为本发明的儿童推车展开状态下的侧视图(单人车状态且座兜托架处于收折状态)；

附图8为附图7的立体图；

附图9为本发明的儿童推车上座兜托架打开且与篮筐的配合示意图；

附图10为附图9中座兜托架收折时的示意图；

附图11为本发明中座兜托架展开状态下的主视图；

附图12为本发明中座兜托架半折叠状态下的主视图；

附图13为本发明中座兜托架折叠状态下的主视图；

附图14为本发明的儿童推车另一实施例的主视示意图；

附图15为本发明的儿童推车又一实施例的主视示意图；

其中：100、侧支架；10、前支架；20、后支架；30、推杆；40、前轮组件；50、后轮组件；60、座

兜托架；70、儿童座兜；80、座兜架；801、座兜接口件；802、座兜嫁接件；90、90’、连杆；901、滑动件；101、滑套；

1、托架座；11、托架杆；11a、安装端；12、托架横杆；13、连接套管；2、托架连接件；2a、嫁接端；2b、连接端；3、转接件；4、第一轴；5、第二轴；6、解锁操作件。

具体实施方式

[0017] 下面结合附图和具体实施例来对本发明的技术方案作进一步的阐述。

[0018] 参见图1至图8所示的儿童推车，其包括具有展开状态与折叠状态的推车车架、设于推车车架底部的轮组件，以及用于将该推车车架锁定在展开状态下的锁定机构。推车车架包括分设于左右两侧的两个侧支架100，每侧的侧支架100均具有沿上下方向延伸的支架杆。

[0019] 该推车车架还包括座兜托架60，以用于嫁接安装儿童座兜70，使得儿童推车上具有座位或者再增设一个座位。参见图11至图13所示，该座兜托架60包括托架座1，托架座1至少具有分设于左右两侧的两根托架杆11，每根托架杆11均具有安装端11a，安装端11a上设有能够与儿童座兜70相配接的托架连接件2，托架座1能够沿前后方向翻转地连接在推车车架上，且座兜托架60沿左右方向上位于两侧的所述支架杆之间。

[0020] 这样，座兜托架60具有打开状态与收折状态，当座兜托架60由打开状态向收折状态转换时，托架连接件沿前后方向靠近支架杆，以用于与儿童座兜70进行连接而实现儿童座兜70的嫁接安装，如图1、图2所示；当座兜托架60由收折状态向打开状态转换时，托架连接件沿前后方向远离支架杆，座兜托架60不嫁接儿童座兜70，托架座1相对推车车架翻转而使得托架杆11与侧支架100上的支架杆相收拢，以减小座兜托架60占用的空间，且有利于推车车架折叠时各杆件的相对收拢，参见图7至图8所示。

[0021] 本实施例中，推车车架的左右各侧上，托架杆11转动地连接在同侧的支架杆上，同一侧的托架杆11与支架杆之间还设有用于将两者锁定的托架锁定件。具体地，参见图11至图13所示，两侧的托架杆11上均设置有连接套管13，通过连接套管13与对应侧支架杆之间的连接与锁定，从而实现托架座1在推车车架上的锁定安装，托架锁定件即设置在连接套管13与支架杆之间。

[0022] 托架座1还包括连接在两侧托架杆11之间的托架横杆12，该托架横杆12与两侧的托架杆11之间构成U字型结构，具体设置时，托架横杆12与两侧的托架杆11可一体成形设置，托架横杆12上还设有用于将两侧的托架锁定件解锁的托架解锁件6。

[0023] 参见图11至图13所示，该座兜托架60的左右各侧上，托架连接件2能够相对托架杆11翻转地安装在托架杆11的安装端11a上，且两侧的托架连接件2相对同侧托架杆11翻转的方向相向设置。这使得座兜托架60具有展开状态与折叠状态，当座兜托架60处于展开状态时，两侧的托架连接件2分别自两侧的托架杆11的安装端11a伸出，以用于与儿童座兜70相配合进行嫁接安装，如图11所示；当座兜托架60处于折叠状态时，两侧的托架连接件2相向翻转而与对应侧的托架杆11相收拢，且两个托架连接件2沿左右方向收拢在两侧的托架杆11之间。

[0024] 本实施例中，座兜托架60的左右各侧上，托架连接件2通过转接件3连接在托架杆11的安装端11a上。具体地，每个托架连接件2均具有用于与儿童座兜70相连接的嫁接端2a，

以及用于与托架杆11相连接的连接端2b，其中，嫁接端2a与待嫁接的儿童座兜70之间具有相配合的可拆卸连接结构。转接件3则设于连接端2b与托架杆11的安装端11a之间，此处具体采用如下设置：转接件3的一端部通过第一轴4与安装端11a相枢轴连接，转接件3的另一端部通过第二轴5与托架连接件2的连接端2b相枢轴连接，其中第一轴4与第二轴5的轴心线相互平行地设置，这样，能够使得托架连接件2相对托架杆11翻转时实现紧密地贴合收拢。

[0025] 本实施例采用的座兜托架60上，安装端11a上设有第一收容槽(图中未示出)，托架连接件2上设有第二收容槽(图中未示出)，当座兜托架60处于展开状态时，连接件3的一端部收容在第一收容槽中且其另一端部收容于第二收容槽中，托架连接件2上连接端2b的端部直接抵触在安装端11a上，亦即，该座兜托架60展开状态下从外部并不能看到转接件3，这使其在展开使用时外观较为美观简洁。具体设置时，第一收容槽与第二收容槽可设置为开口朝向托架座1内侧的U型开口槽，两侧的第一收容槽/第二收容槽的口部相对设置。

[0026] 参见图1至图10所示，本实施例的推车车架上，每侧的侧支架100均包括相对转动连接的前支架10、后支架20及推杆30，轮组件包括前轮组件40和后轮组件50，前轮组件40设于前支架10的下部，后轮组件50设于后支架20的下部。上述的前支架10、和/或后支架20、和/或推杆30构成上述的支架杆。推车车架上，座兜托架60可以设置为一组或多组，该一组或多组的座兜托架60可以设置在两侧的前支架10之间，和/或设置在两侧的后支架20之间，和/或设置在两侧的推杆30之间，从而嫁接一个或多个儿童座兜，以在儿童推车上形成一个或多个座位。

[0027] 在儿童推车上设置上述的座兜托架60还能够实现儿童推车在单人车与双人车之间进行快速转换。参见图1至图10所示，推车车架还包括设于两侧侧支架100之间的人体承载装置，当推车车架处于展开状态时，上述的人体承载装置与座兜托架60一上一下地设置在推车车架上。这样，当儿童推车仅需要承载一个儿童时，直接由人体承载装置承载，而将座兜托架60相对推车车架收折而不嫁接儿童座兜；当儿童推车需要同时承载两个儿童时，则由人体承载装置承载一个儿童，同时将座兜托架60打开并嫁接儿童座兜70，以承载另一名儿童。优选地，上述人体承载装置与座兜托架60这两者中，其中至少一者沿上下方向位置可调地设置在推车车架上，以在座兜托架60打开或收折时调整座兜托架60与人体承载装置之间的相对位置，以防止各杆、部件干涉以及利于儿童推车整体重心的调整。

[0028] 在本实施例中，如图1至图8所示，人体承载装置包括设置在两侧推杆30之间的座兜架80，座兜架80的左右两侧各设有一组座兜连接组件，此处，该座兜连接组件包括设于座兜架80上的座兜接口件801，以及能够与座兜接口件801可拆卸配合连接的座兜嫁接件802，其中，座兜嫁接件802沿推杆30的长度延伸方向上下滑动地设置在推杆30上，使得座兜架80在推杆30上的上下位置可调。座兜托架60则设置在两侧的前支架10之间，该座兜托架60相对前支架10翻转而使得托架连接件2向前上方伸出而处于打开状态时，如图1、图2所示，可以通过嫁接儿童座兜70而在推车车架上形成下座位；当不需要嫁接儿童座兜70时，座兜托架60则沿图3中的箭头顺时针旋转而收拢在两侧的前支架10之间，如图7、图8所示。

[0029] 参见图9、图10所示，本实施例的儿童推车上，各侧侧支架100上，前支架10的上部、后支架20的上部及推杆30的下部通过转动关节相互转动地连接在一起，各侧的侧支架100还包括连杆90，该连杆90的后部枢轴连接在后支架20上，其前部枢轴连接有滑动件901，且该滑动件901沿前支架10的长度延伸方向滑动地设置于前支架10上。该推车车架展开状态

下，连杆90可作为篮筐杆，通过设置篮筐布套而形成储物篮筐。设置时还可以将座兜托架60与篮筐布套的前部相连接，这样当座兜托架60打开时，还能够进一步地对储物篮筐的储物空间向前进行扩展。

[0030] 当然，在其他的某些实施例中，还可以在两侧推杆30之间设置人体承载装置的同时，再在两侧的后支架20之间设置一组座兜托架60，从而在儿童推车上能够形成一上一下两个座位装置，如图14所示。在图14示出的实施例中，推杆30的下部与后支架20的上部相枢轴连接，前支架10的上部枢轴连接有滑套101，该滑套101滑动地套设在后支架20上，连杆90'的前部枢轴连接在前支架10上且其后部枢轴连接在后支架20上。通过在前支架10与后支架20之间设置篮筐布套，并将座兜托架60与篮筐布套的后部相连接，这样当座兜托架60向后打开时，也能够进一步地对储物篮筐的储物空间向后进行扩展。

[0031] 在其他的某些实施例中，还可以在两侧推杆30之间设置人体承载装置的同时，在两侧的前支架10之间、在两侧的后支架20之间各设置一组座兜托架60，从而使得儿童推车能够形成一上两下三个座位装置，如图15所示，用户可以根据需要旋转使用其中的一个或多个座位装置。该实施例下，前后两个座兜托架60分别打开时，能够分别地对储物篮筐的储物空间向前与向后进行扩展。

[0032] 综上，本发明的儿童推车，其中通过在推车车架两侧侧支架100之间设置座兜托架60，且通过将其托架座1上的托架杆11前后翻转地连接在侧支架100上的支架杆上，使得座兜托架60具有相对支架杆倾斜的打开状态和相对支架杆收拢的收折状态，从而能够嫁接儿童座兜70以在儿童推车上增设一个座位装置，且能够在不需要嫁接儿童座兜70时收拢于支架杆之间而不影响儿童推车的整体尺寸、外观，以及影响推车车架的收折。通过采用该座兜托架60，还能够有效地实现儿童推车在单、双人车之间进行快速转换，甚至单人与多人车之间的快速转换，大幅地提升儿童推车的整体承载能力。

[0033] 上述实施例只为说明本发明的技术构思及特点，其目的在于让熟悉此项技术的人士能够了解本发明的内容并据以实施，并不能以此限制本发明的保护范围。凡根据本发明精神实质所作的等效变化或修饰，都应涵盖在本发明的保护范围之内。

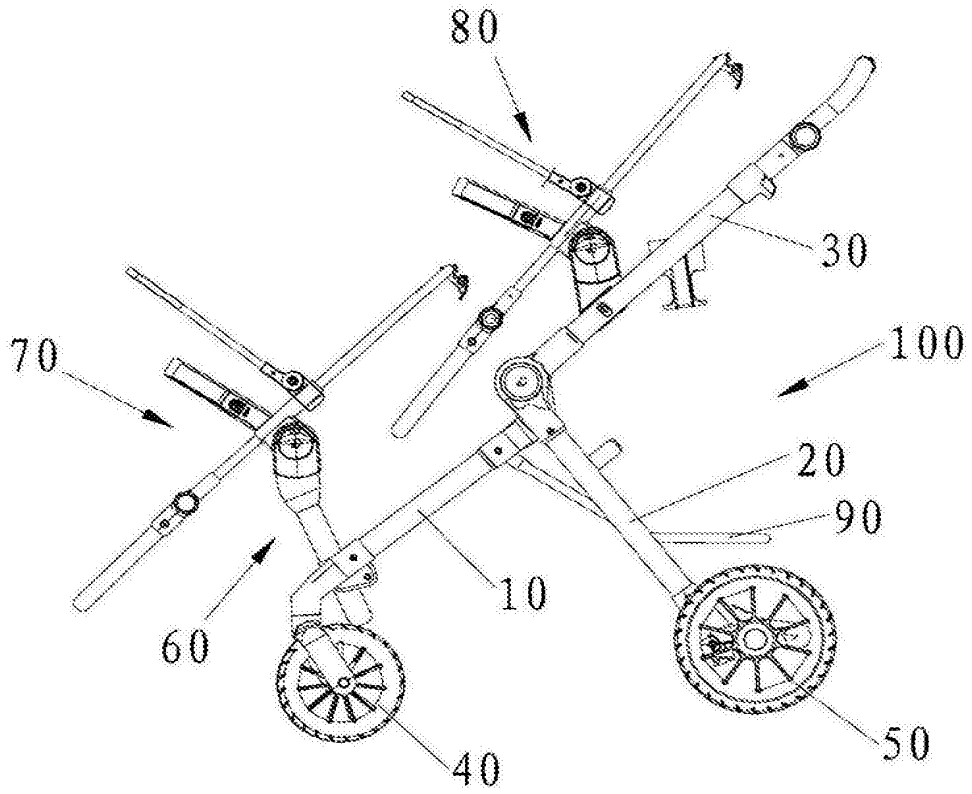


图1

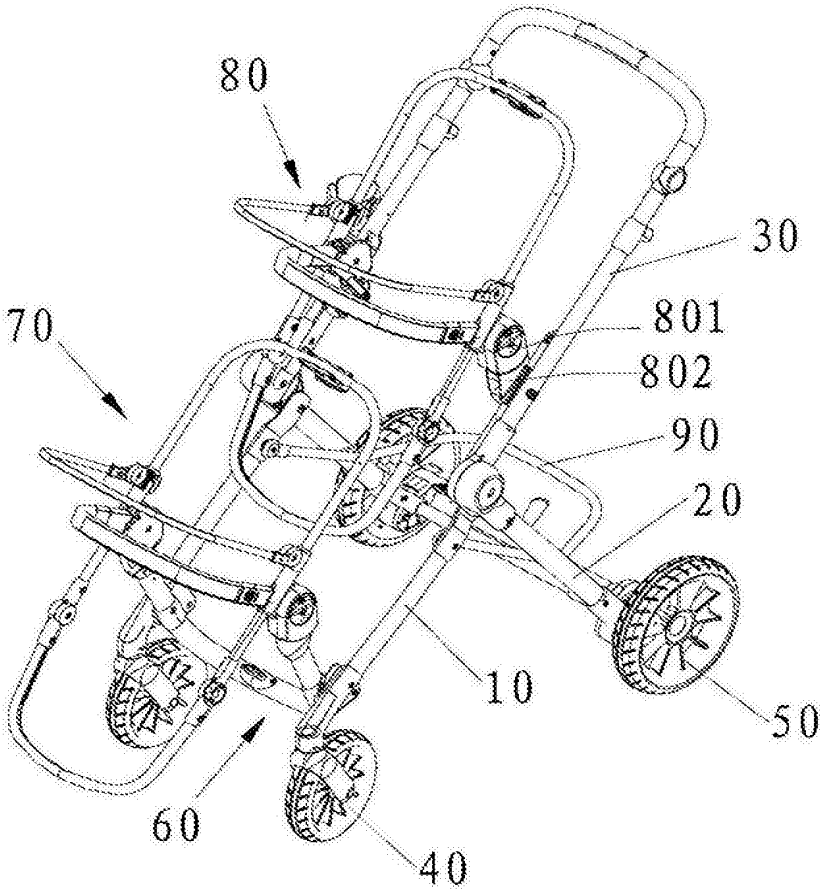


图2

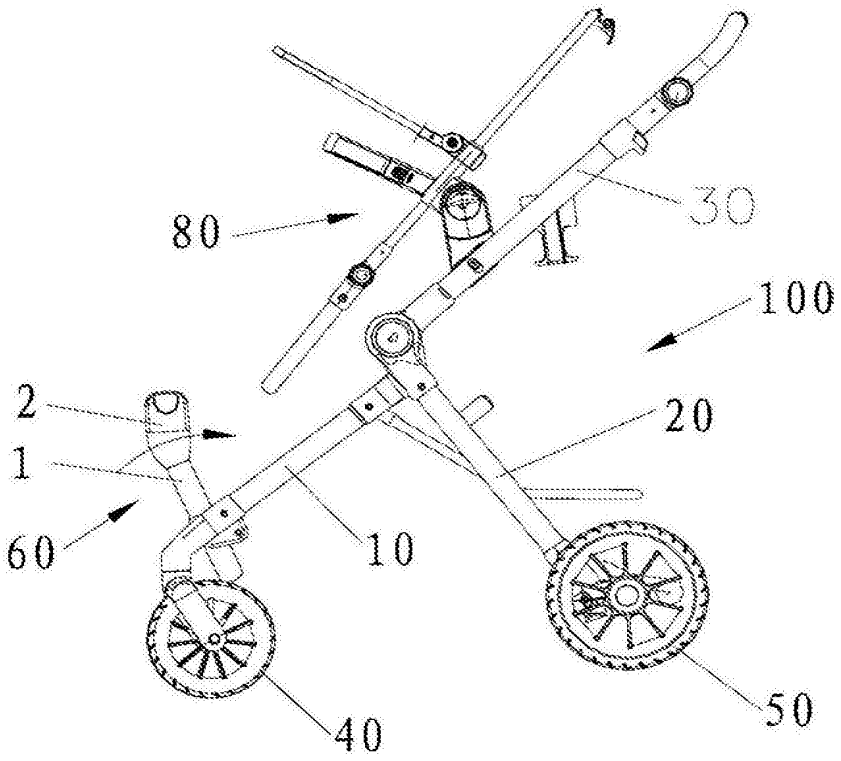


图3

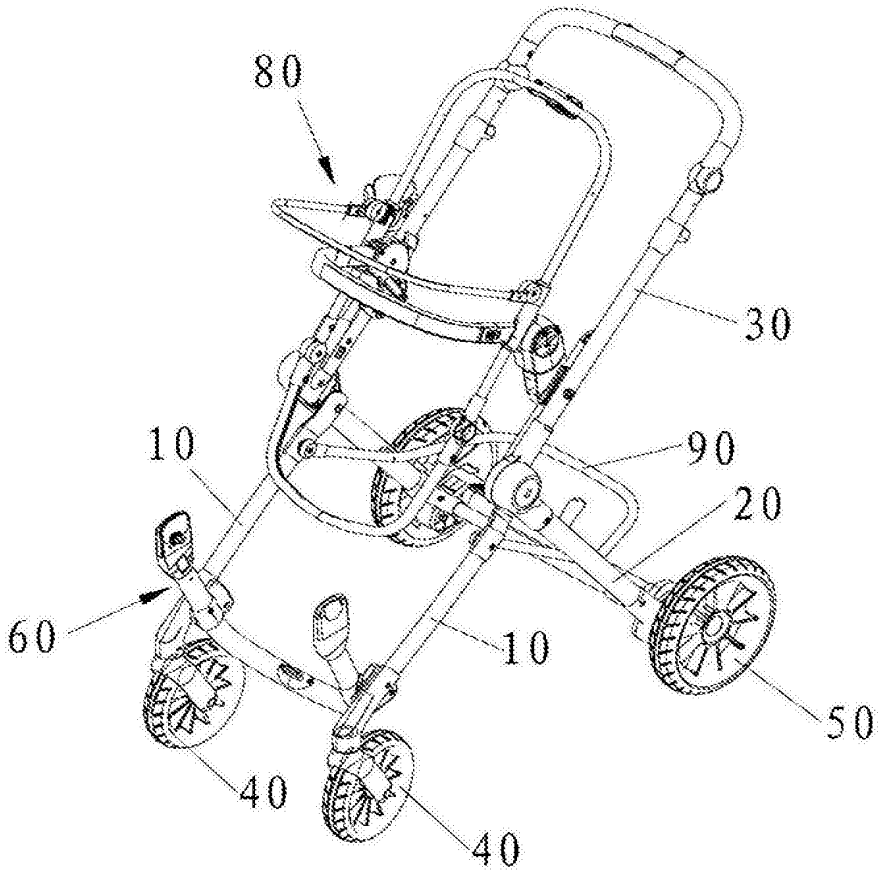


图4

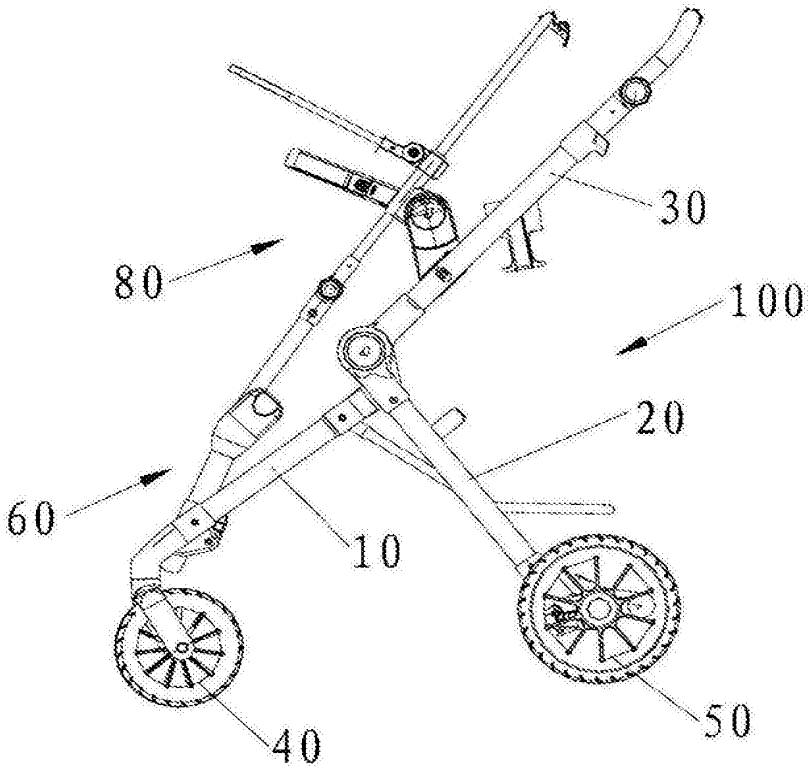


图5

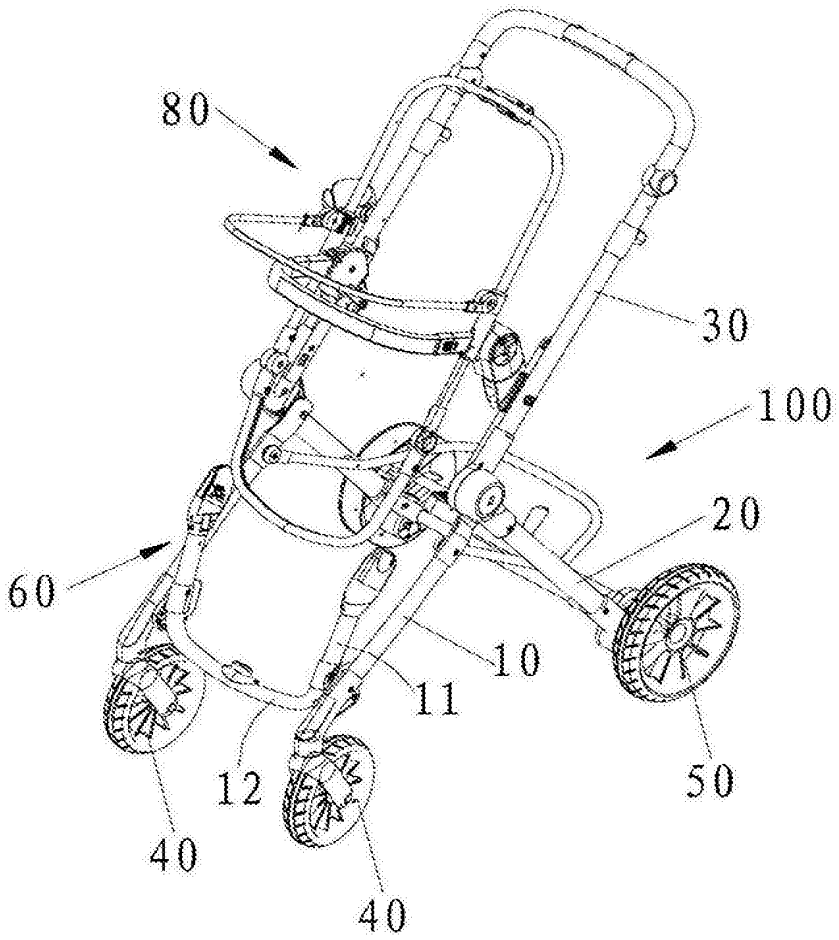


图6

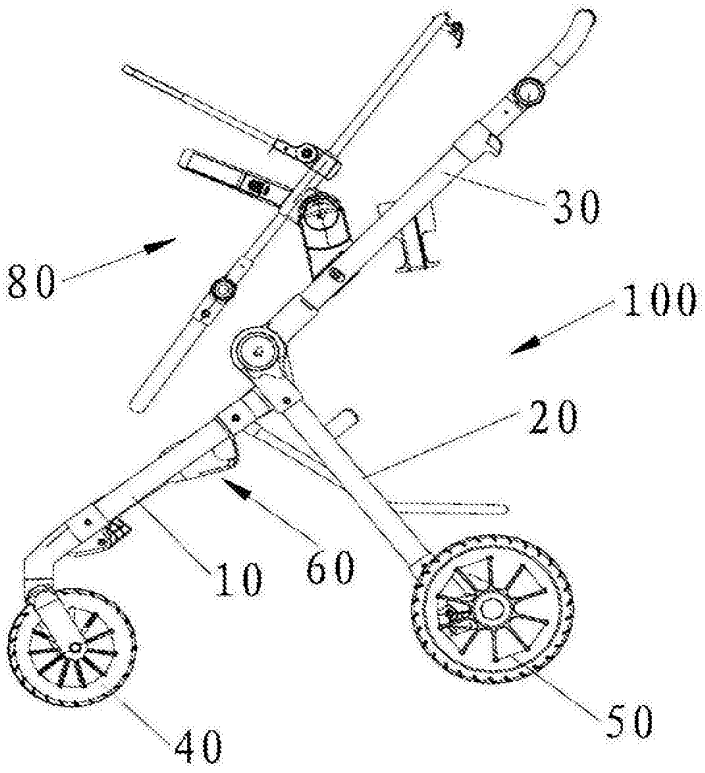


图7

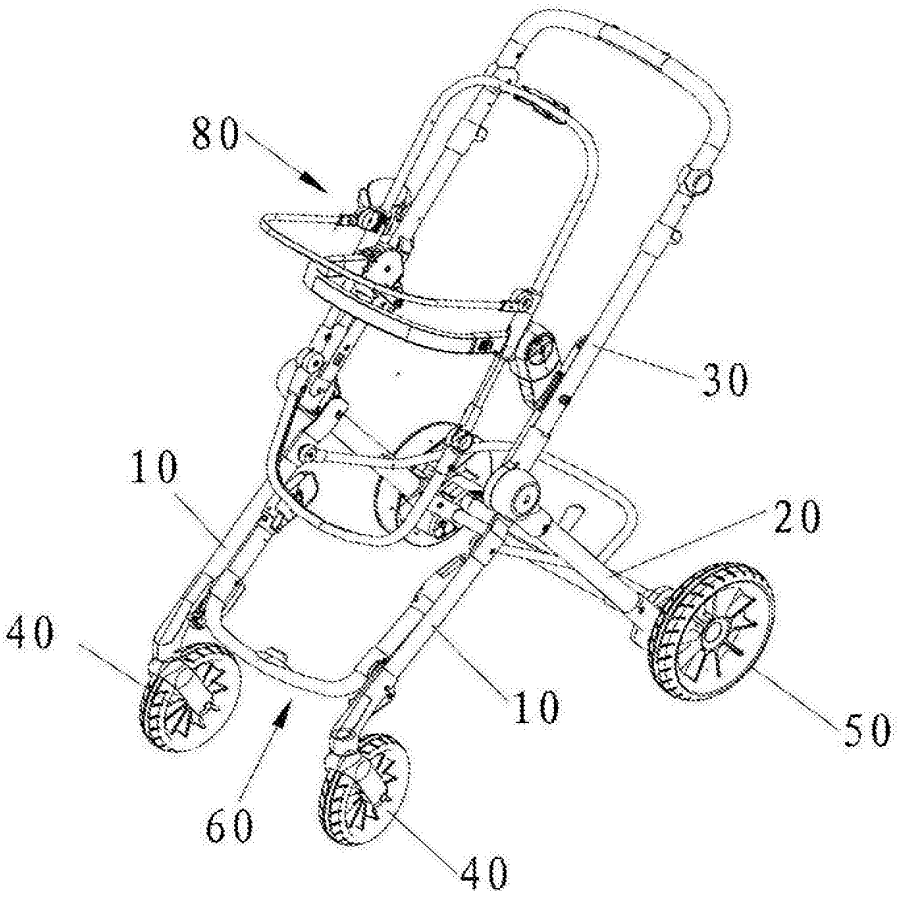


图8

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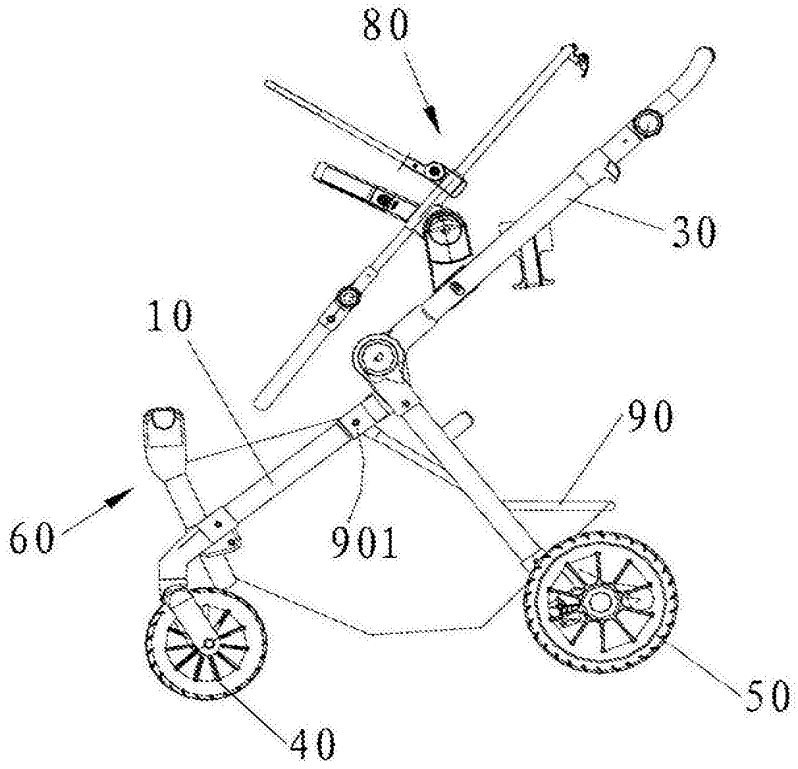

图9

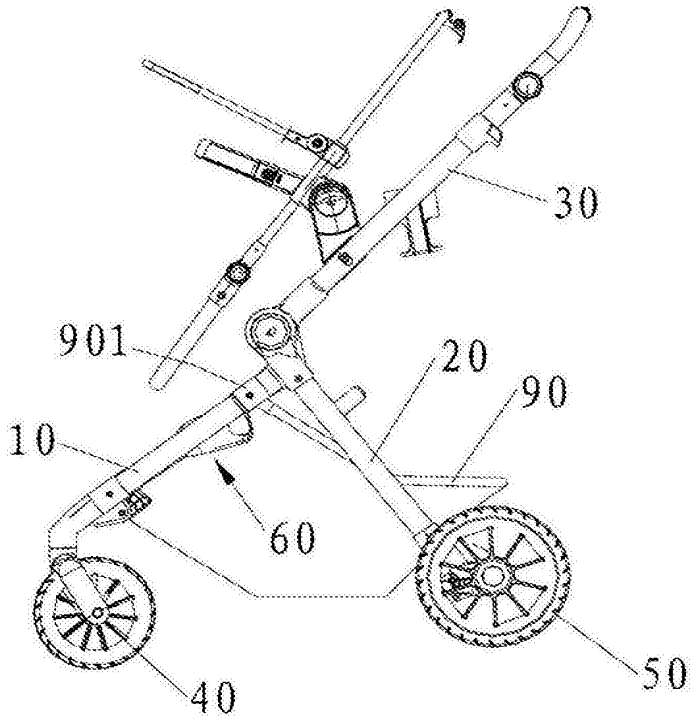

图10

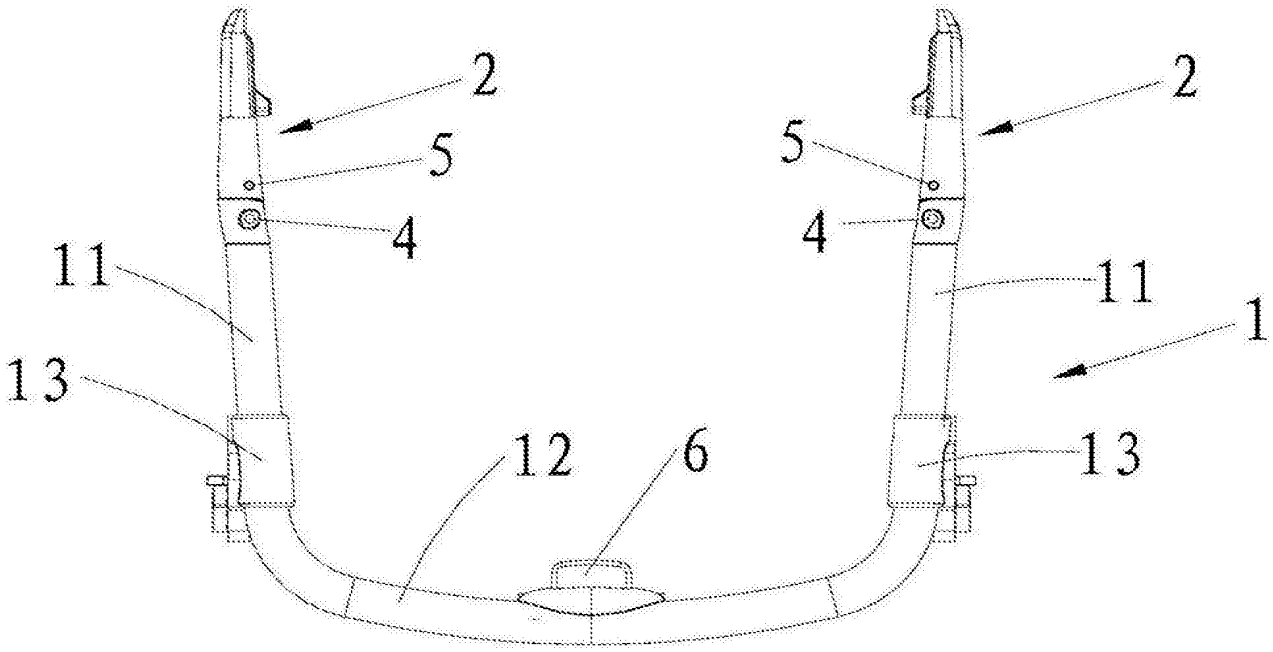

图11

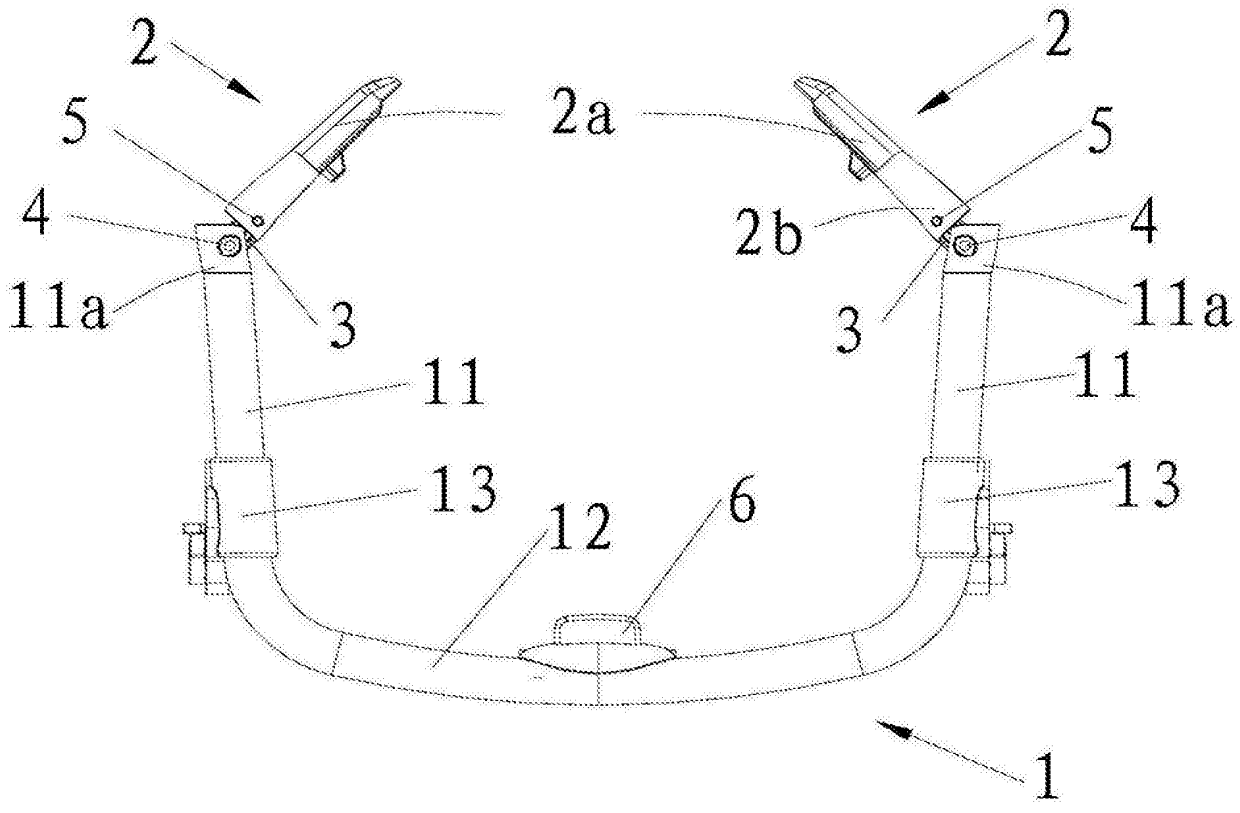

图12

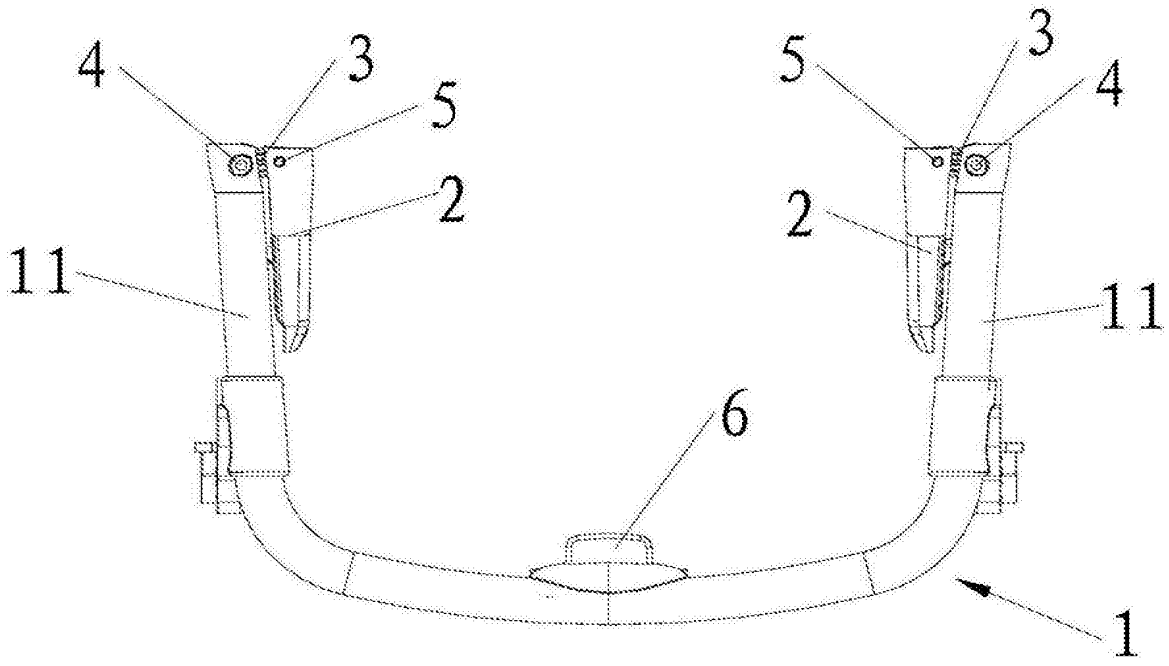

图13

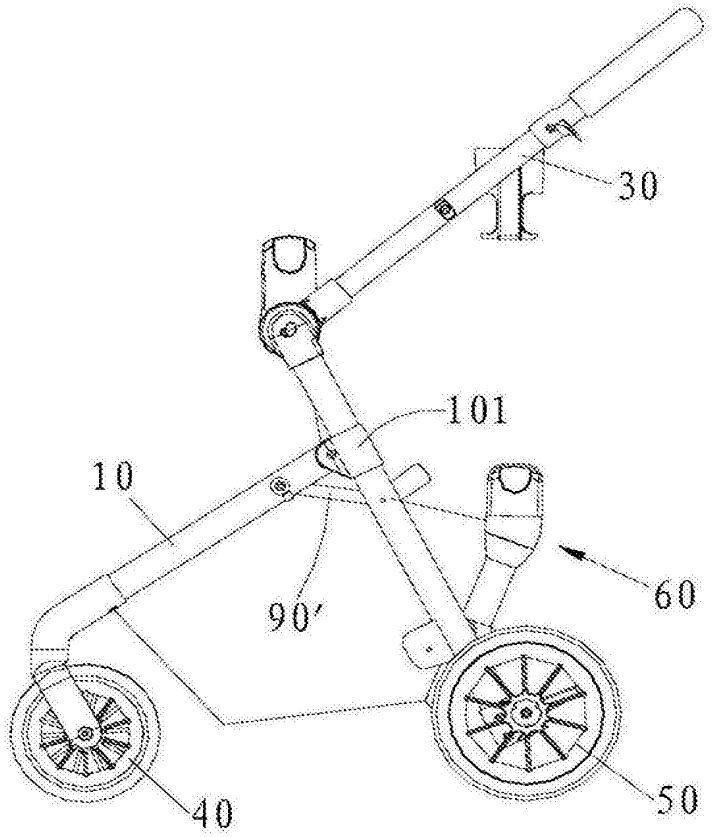

图14

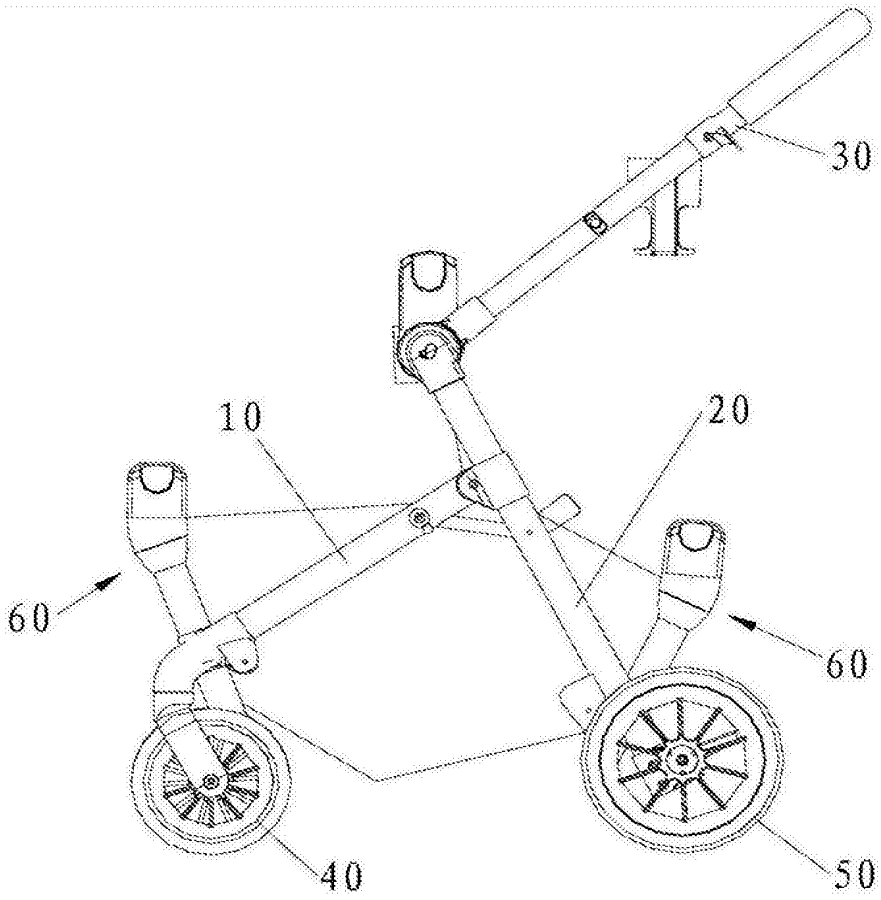

图15

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(54) BABY CARRIAGE CHASSIS

(57) A baby carriage chassis characterized in that it has a frame (10) with a seat (22) connected by means of a connecting slot (21), and the seat (22) may rotate toward a tappet assembly (13) or a front footrest beam (11) of the frame (10) relative to the connecting slot (21), and a first blocking device (23) unlocks a backrest frame (222) relative to a seating part (221), and the motion of the backrest frame (222) toward the seating part (221) may unlock a first unlocking element (224) between the seating part (221) and the connecting slot (21), and this makes it possible to rotate the seat (22) toward the tappet assembly (13) or the front footrest beam (11) of the frame (10), and a third blocking device (223) releases an armrest seat (2261) by means of a fourth blocking device (227) only after unlocking the first blocking device (23) and after unlocking the first unlocking element (224), and then rotation of a rotary plate (2254) is possible by means of an operating part (22541).

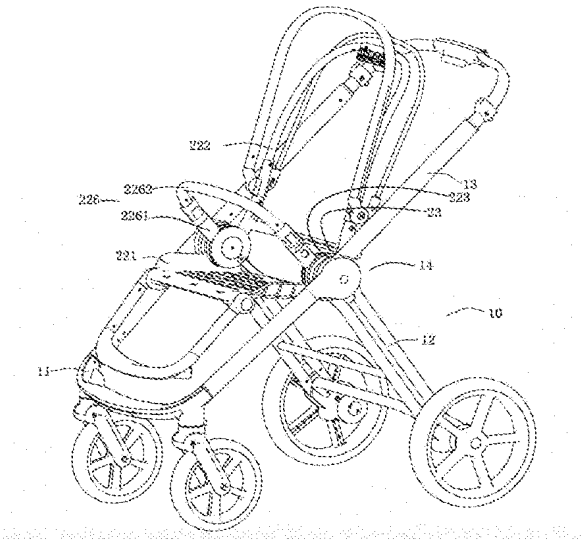

Fig. 1

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Description

Field

[0001] This invention relates to a baby carriage chassis comprising a frame connected to a seat via connecting slots. The carriage chassis may be freely folded and unfolded. Additionally, the chassis makes it possible to mount the seat in two directions of riding the baby carriage.

State of the Art

[0002] Baby carriages are known in which a seat may be mounted only in one direction of riding the baby carriage. Additionally, these carriages are difficult to fold for a single user using one hand.

[0003] Therefore, the aim of the present invention is to propose a baby carriage chassis that makes it possible to mount a seat in two different directions of riding (facing a user and with the back onto a user). Moreover, the invention aims to make it possible for a user, when holding a child with one hand, to operate the mechanism of folding the chassis with the second hand so that the backrest frame, together with a seating part, approaches the front footrest beam, and then could continue the operation of folding the chassis with the same hand in a simple manner until the complete folding.

Summary

[0004] This aim has been reached by a baby carriage chassis of the invention.

[0005] The subject matter of the invention is a baby carriage chassis characterized in that it has a frame with a seat connected by means of a connecting slot, wherein the seat may rotate toward a tappet assembly or a front footrest beam of the frame relative to the connecting slot, and a first blocking device unlocks a backrest frame relative to a seating part, and the motion of the backrest frame toward the seating part may unlock a first unlocking element between the seating part and the connecting slot, and this makes it possible to rotate the seat toward the tappet assembly or the front footrest beam of the frame, and a third blocking device releases an armrest seat by means of a fourth blocking device only after unlocking the first blocking device and after unlocking a first unlocking element, and then rotation of a rotary plate is possible by means of an operating part.

[0006] The baby carriage chassis has an armrest assembly that may rotate between the seating part and the backrest frame, and all these elements may be mutually interlocked by the backrest frame, and the fourth blocking device is actuated when folding the backrest frame toward the seating part.

[0007] Also, the chassis has a second unblocking assembly that is located between the armrest assembly and the connecting slot.

[0008] The connecting slot is separably connected to the frame, and the connecting slot has a fifth blocking device that may interlock these two elements with each other.

[0009] The frame is additionally equipped with a second blocking device that may be unlocked after demounting the seat and the connecting slot by means of a second unlocking structure.

[0010] According to the invention, the third blocking device is connected to the seating part and makes it possible to regulate the backrest frame relative to the seating part by several regulating slots, and the backrest frame is connected by means of a mandrel that may be connected to or disconnected from the regulating slots, wherein the backrest frame is equipped with an operating member, and a mechanism for shifting the mandrel is placed between the operating member and the mandrel, and after pulling the operating member, a cable moves the mandrel between the regulating slots, and between the backrest frame a spring is located that allows the mandrel to return to the regulating slots and thus to the locked state.

[0011] The first blocking device consists of a left hinge cover of the seating part, a right hinge cover, wherein a recess is formed between the left hinge cover and the right hinge cover, and a first spline is located between the left and right hinge covers, which may move relative to the left and the right hinge covers, and the return of the first spline is assured by a spring, and the backrest frame actuates a pin of a ring to move it laterally when the backrest frame is rotated and folded toward the seating part by a cam surface.

[0012] The armrest assembly comprises an armrest seat pivotally connected between the seating part and the backrest frame, and the armrest seat is connected to the armrest rod, and the fourth blocking device is arranged between the armrest seat and the seating part and the backrest frame, and the fourth blocking device comprises several blocking notches arranged on the armrest seat, and these elements contact the first spline, and a first locking member may be locked in a blocking notch or disconnected from it when moving, and the pins contact the cam surfaces, and when changing the position of the backrest frame relative to the seating part, a cam surface pressures onto the pins and moves the ring, and this shift unlocks the spline of a blocking element of the armrest seat by overcoming the springs that press the first locking member, and after pushing out the first locking member, the armrest seat is unlocked, and, at this time, the armrest seat and the rod may rotate and approach the seating part in order to fold.

[0013] The second unblocking assembly comprises a first pressing element slidably connected to the seating part and the connecting slot, and after pressing, a first pressing mandrel may slide out of the connecting slot and unlock the main second blocking device of the carriage. Then, the spring restores the original position of the first pressing element, and a sliding member-slider

is located in the backrest frame and the seating part, which may slide relative to the seating part, and the sliding member-slider adheres to the rotary plate.

[0014] The rotary plate is equipped with a protrusion that is located in the backrest frame, and the sliding member-slider is equipped with a groove capable of receiving the protrusion in it, and also the sliding member-slider is equipped with a sloped surface that may brush against the protrusion, and the seating part is equipped with a projecting guiding portion that guides a guiding groove that moves laterally, and the backrest frame is also equipped with a pressure portion capable of pressing one side of the first pressing element.

[0015] Preferably, the operating part is a handle or a belt.

[0016] The second blocking device comprises a first protrusion placed on the rotary plate, and the armrest seat is equipped with a second protrusion that may adhere to the first protrusion to prevent rotation of the rotary plate when the seat and the body of the frame are unfolded, and the backrest frame is also equipped with a niche so as the first protrusion and the second protrusion slide thereinto when the backrest frame is rotated and folded.

[0017] Preferably, the second blocking device comprises a left connecting shell connected to the rear footrest beam and a right connecting shell connected to the front footrest beam, and there is a space located between the right connecting shell and the tappet assembly, which is equipped with a second spline that may move relative to the space, and the left connecting shell comprises a spline groove, the tappet assembly comprises a spline groove, and a second spline is located between the left connecting shell and the right connecting shell, and the spline has resilient members that may move, where a pressure member has mandrels that may move the second spline, and a return spring is located between the pressure member and the spline groove of the rear footrest beam.

[0018] The solution of the invention has the following advantages:

1. When the carriage frame is to be folded, one should first unlock the third blocking device; at this time, the backrest frame may be folded toward the seating part. During the operation of folding the backrest frame toward the seating part, the backrest frame actuates the first unblocking assembly. When the first unblocking assembly is unlocked, the whole seat may be folded and moved closer to the front connector of the carriage structure. When the seat assembly and the front footrest beam of the carriage are folded and moved closer, the second unblocking assembly is operated, and the second unblocking assembly may unlock the second blocking device, where one may unlock the rear footrest beam and the tappet assembly of the carriage. Then, the tappet assembly gradually moves from the inclined position to the vertical position. At this time, the front footrest beam of the carriage and the seat rotate and approach the rear footrest beam of the carriage structure under their own weight, and the tappet assembly rotates and approaches the rear footrest beam under its weight. The second unblocking assembly may not unlock the second blocking device only then when the backrest frame is folded toward the seating part, and the second unblocking assembly may be operated to unlock after folding the backrest frame toward the seating part and folding the whole seat toward the front connector of the carriage structure.

2. When a user holds a child in one hand, he/she may operate, with the other hand, the blockage of the seat in order to fold it and rotate it on the carriage frame. After folding the seat, the user may operate the second blockage of the carriage to complete the folding process. During the folding process, an adult person may execute both operations using one hand.

3. During the operation of folding the backrest toward the seating part, the fourth blockage is unlocked, and, at this time, the rod may rotate toward the seating part. A user only must fold the backrest toward the seat.

4. The main blocking device may prevent adults from inappropriately operating the second unlocking element to unlock the body of the frame, whereby children may ride more safely.

[0019] The invention is explained in embodiments illustrated in the drawing, in which:

Fig. 1 shows a perspective view of a baby carriage frame;

Fig. 2 shows a side view of a baby carriage frame according to the present invention;

Fig. 3 shows a state in which the seat of the baby carriage according to the present invention is folded;

Fig. 4 shows a perspective view of the baby carriage frame according to the present invention when the seat is folded;

Fig. 5 shows a state in which the baby carriage frame according to the present invention is folded;

Fig. 6 shows a perspective view of the baby carriage frame according to the present invention when it is folded;

Fig. 7 shows a perspective view of the body of the frame and the seat assembly in the frame of the baby

carriage according to the present invention;

Fig. 8 shows a view of the unfolded body of the frame and the seat assembly in the frame of the baby carriage according to the present invention;

Fig. 9 shows one expanded view of the seat assembly, a railing assembly, a connecting seat, and any corresponding blocking device in the carriage frame according to the present invention;

Fig. 10 is an enlarged view of Fig. 9;

Fig. 11 is a second view, in the unfolded state, of the seat assembly, the railing assembly, the connecting seat, and any corresponding blocking device in the carriage frame according to the present invention;

Fig. 12 is an enlarged view of Fig. 11;

Fig. 13 shows a perspective view of the seating part in the carriage frame according to the present invention;

Fig. 14 shows a perspective view of a backrest frame in the carriage frame according to the present invention;

Fig. 15 shows a perspective view of a slider in the carriage frame according to the present invention;

Fig. 16 shows a perspective view of a rotary plate in the carriage frame according to the present invention;

Fig. 17 shows a perspective view of a seat with a railing in the carriage frame according to the present invention;

Fig. 18 shows a perspective view of the seat assembly in a folded state of the carriage frame according to the present invention;

Fig. 19 shows a view of the seat assembly, a connecting and main body of the frame in the carriage structure according to the present invention;

Fig. 20 shows a view of the main structure of the baby carriage frame according to the present invention;

Fig. 21 shows a perspective view of a second unlocking structure in the frame of the baby carriage according to the present invention.

[0020] The present specification presents embodiments of a baby carriage chassis.

[0021] However, it should be stressed that the examples described below are not intended to limit the scope of protection. On the contrary, they only illustrate one of many possible applications of the present invention. The present invention may be employed everywhere where one recognizes a need for easy unlocking and folding of a baby carriage chassis.

Detailed description of the invention

[0022] According to the invention, a baby carriage chassis comprises a frame 10 that may be folded or unfolded. The frame 10 is connected to a seat 22 by means of a connecting slot 21. The connecting slot 21 is connected to the frame that may rotate relative to it. The seat 22 may be folded toward the frame 10. The seat 22 is equipped with a first blocking device 23, located between the seat 22 and the connecting slot 21, that may block these two elements relative to each other. The body of the frame 10 comprises a rotary connection between a front footrest beam 11, a tappet assembly 13, and a rear footrest beam 12. The front footrest beam 11, the tappet assembly 13, and the rear footrest beam 12 are equipped with a main second blocking device 14 that may block the structure of the frame 10 in the unfolded state. The seat 22 comprises a seating part 221 that is rotatably connected to the connecting slot 21. The seating part 221 is connected to a backrest frame 222 that may be rotated and unfolded or folded close to it. The backrest frame 222 is connected to the seating part 221. A third blocking device 223 is arranged between the seating part 221 and may block the backrest frame 222 in an unfolded position. Also, the seat 22 is equipped with a third blocking device 223, and the backrest frame 222 is close to the seating part 221 when the third blocking device 223 is unlocked. A first unlocking element 224 may unlock the first blocking device 23 from the seat 22. The main second blocking device 14 may not be unlocked until the seat 22 will not be folded to the front footrest beam 11, whereby one may fold the frame 10.

[0023] Also, an armrest assembly 226 is pivotally connected between the seating part 221 and the backrest frame 222. Also, the armrest assembly 226, the seating part 221, and the backrest frame 222 are equipped with a device that may interlock these three elements relative to each other and may be connected to the backrest frame 222. Moreover, there is a fourth blocking device 227 that may be locked and unlocked by the backrest frame 222 during the operation of folding the backrest frame 222 toward the seating part 221.

[0024] A second blocking device 228 is located between the armrest assembly 226 and a second unblocking assembly 225, which may prevent unlocking the main second blocking device 14 by the second unblocking assembly 225 when the seat 22 and the body of the frame 10 are unfolded.

[0025] The connecting slot 21 is separably connected to the carriage frame 10, and a fifth blocking device 3 is located between the connecting slot 21 and the carriage

frame 10, which is capable of interlocking the connecting slot 21 and the carriage frame 10.

[0026] Moreover, the carriage frame 10 is equipped with a second unlocking structure 15 capable of unlocking the main second blocking device 14 after demounting the seat 22 and the connecting slot 21.

[0027] The third blocking device 223 comprises several regulating slots 2231 that are arranged peripherally on the seating part 221 and may regulate the inclination of the backrest frame 222 relative to the seating part 221. A mandrel 2232 may be connected to or disconnected from the regulating slots 2231 when the backrest frame 222 is equipped with an operating member 2233. After pulling the operating member 2233, a cable 2234 is actuated between the operating member 2233 and the mandrel 2232. Moreover, the cable 2234 for moving the mandrel 2232 is equipped with a spring 2235 between the mandrel 2232 and the backrest frame 222, which may keep the mandrel 2232 in the locked state.

[0028] The first blocking device 23 comprises a left hinge cover 231 for the seating part 221 and a right hinge cover 232 for the seating part 221 located on the seat 22. A recess 233 is located between the left hinge cover 231 and the right hinge cover, and both the left hinge cover 231as well as the right hinge cover 232 are equipped with a first spline groove 234, and the recess 233 is equipped with a first spline 235 that may move relative to the left hinge cover 231 and split away from the left hinge cover 231, and a first spring 236 is placed between the first spline 235 and the right hinge cover 232, which makes it possible to lock the first spline 235 against the first spline groove 234 on the left hinge cover 231 and the right hinge cover 232. A first ring 237 is located between the first spline 235 and the left hinge cover 231, which may push the first spline 235 so as it moves during the folding process, and the first ring 237 is located on a first pin 2371 projecting outwardly from the ring 237. The first unlocking element 224 is placed on the backrest frame 222 and may push a first cam when the backrest frame 222 is rotated and folded toward the seating part 221. Then, the pin 2371 of the cam ring actuates, in turn, the ring 237 for lateral movement.

[0029] The armrest assembly 226 comprises an armrest seat 2261 pivotally connected between the seating part 221 and the backrest frame 222, and the armrest assembly 2261 is connected to an armrest rod 2262. A fourth blocking device 227 is placed on the armrest seat 2261 between the seating part 221 and the backrest frame 222. The fourth blocking device 227 comprises several blocking notches 2271 located on the armrest seat 2261. The first spline 235 and the right hinge cover 232 are connected to a first locking member 2272 that may be locked or separated from the blocking notch 2271 by means of two skids. The blocking notches 2271 are appropriately arranged by means of a catch portion 22721. Moreover, the backrest frame 222 is equipped with a projecting catch portion 2221 that may reach a ring of the armrest seat 2261. Also, there is a cam 2222 that is located in the backrest frame 222 and may press onto a skid of the ring of the catch portion 22721 so as to actuate the ring of the first locking member 2272 to move it when the backrest frame 222 is rotating. The first locking member 2272 , in which a second spring 2273 is located, is connected to the right hinge cover 232 and keeps the ring of the first locking member 2272 and the armrest seat 2261 in the locked state.

[0030] The second unblocking assembly 225 comprises a first pressing element 2251. A first pressing mandrel 22511 is located outside the connecting slot 21 and unlocks the structure of the carriage frame. Also, a third spring 2252 is located between the first pressing element 2251 and the connecting slot 21, which is a releasing element in the first pressing element 2251. The backrest frame 222 and the seating part 221 are also connected to a sliding member-slider 2253 that may move relative to them, and the backrest frame 222 is also rotatably connected to a rotary plate 2254 that may actuate the sliding member-slider 2253 for moving. An operating part 22541 is connected to the rotary plate 2254, which actuates the folding system.

[0031] The rotary plate 2254 is equipped with a protrusion 22542 that may project in the backrest frame 222. The sliding member-slider 2253 is equipped with a groove 22531 that has protrusions 22542. The sliding member-slider 2253 has a sloped surface 22532 that may receive and cooperate with a guiding portion 2211. A guiding groove 22533 makes it possible to move the sliding member-slider 2253 laterally. Moreover, the backrest frame 222 is equipped with a pressure portion 2212 capable of pressing a side of the first pressing element 2251.

[0032] The operating part 22541 is a handle or a belt.

[0033] The second blocking device 228 comprises a first protrusion 2281 intended for the rotary plate 2254. The armrest seat 2261 is equipped with a first protrusion 2281 that is connected when the seat 22 and the body of the frame 10 are unfolded. A second protrusion 2282 is pressed to the rotary plate 2254 to prevent any rotation. Moreover, the backrest frame 222 is equipped with a niche 2283, so the first protrusion 2281 and the second protrusion 2282 move inside it when the backrest frame 222 is rotated and folded.

[0034] The main second blocking device 14 comprises a left connecting shell 141 on a rear footrest beam and a right connecting shell 142 on the front footrest beam 11. The left connecting shell 141, the right connecting shell 142 and the tappet assembly 13 have an active space 143 with a spline between them, and a second spline 144, which may move relative to this spline, is arranged in the active space 143. The left connecting shell 141 is equipped with a second spline groove 145. A third spline groove 140 is located on the tappet assembly 13. The right connecting shell 142 is equipped with a protrusion 146. In the middle between the second spline 144 and the right connecting shell 142 there is a resilient member 147 that is connected to the second spline

groove 145, the third spline groove 140 and the protrusion 146. The left connecting shell 141 is connected to a pressure member 148 that may move relative to the space. The pressure member 148 is equipped with a mandrel 1481 that may push the second spline 144 for moving so as the second spline 144 is separated from the second spline 145 and the third spline groove 140. The pressure member 148 is connected to the right connecting shell 142. Between the right connecting shell 142 a return spring 149 is located that may push the pressure member 148 for return.

[0035] The second unlocking structure 15 is a tilting block that is pivotally connected to the left connecting shell 141 and may press onto the pressure member 148 to unlock the second blocking device 14 during a rotation relative to the left connecting shell 141. An operating portion 151 is envisaged.

[0036] As shown in Figs. 1 to 21, the present invention relates to a baby carriage chassis that comprises a frame 10 that may be folded or unfolded, and a connecting slot 21 is connected to the frame 10 and also it is connected to a seat 22 that may be rotated relative to the connecting slot 21 and folded toward the frame 10. A first blocking device 23 is located between the seat 22 and the connecting slot 21, which may interlock both these elements relative to each other. The frame 10 comprises a front footrest beam 11, a tappet assembly 13, and a rear footrest beam 12, which are rotatably connected to each other. The main second blocking device 14 in the unfolded state is the seat 22 comprising a seating part 221 connected rotatably with the connecting slot 21, and the seating part 221 is connected to a backrest frame 222 that may be rotated relative to it for unfolding or folding. A third blocking device 223 is located between the backrest frame 222 and the seating part 221. After unlocking the third blocking device 223, the backrest 222 will be moved closer to the seating part 221. During changing the angle between the first unlocking element 224, the first blocking device 23 becomes unlocked. Moreover, the seat 22 is equipped with a second unblocking assembly 225 of the main second blocking device 14, which may only act after folding the seat 22 toward the front footrest beam 11.

[0037] Then, after unlocking, the rear footrest beam 12 is lifted and gradually moves from the inclined position to the vertical position. At this time, the front footrest beam 11 and the seat 22 are located close to the rear beam 12. During the folding process, the tappet assembly 13 rotates on a connector of the frame and approaches the rear beam 12 under its own weight.

[0038] When an adult person holds a child in one hand, he/she may operate the mechanism of folding the backrest with the other hand so as it approaches the front footrest beam 11, and then he/she may operate the second unblocking assembly 225 with one hand to complete the folding the whole chassis whereby the operation is simple. The second unblocking assembly 225 may not unlock the main second blocking device 14 that locks the frame of the carriage if the backrest frame 222 of the seat is not folded toward the seating part 221 and the whole seat 22 is not folded toward the front footrest beam 11. The second unblocking assembly 225 may only act when the backrest frame 222 is folded and is located close to the seating part 221. Only then, one may operate the second unblocking assembly 225 to unlock the main second blocking device 14 and unlock the frame 10. Such an arrangement guarantees the safety of a child when exploiting the carriage and prevents folding the carriage when using it inappropriately.

[0039] As shown in Figs. 9 to 10, an armrest assembly 226 is also rotatably connected between the seat 221 and the backrest frame 222. A fourth blocking device 227 is located between the armrest assembly 226, the seating part 221, and the backrest frame 222, which may be locked and unlocked by the backrest frame 222 during the operation of folding the backrest frame 222 toward the seating part 221. When the backrest frame 222 is folded toward the seating part 221, the fourth blocking device 227 is unlocked, and the armrest assembly 226 may be, at this time, rotated toward the seating part 221. To unlock the fourth blocking device 227, an adult person only must operate the backrest frame 222 to rotate it toward the seating part 221 after unlocking the third blocking device 223.

[0040] Fig. 10 shows a fifth blocking device 3 that blocks the connecting slot 21 with the frame 10. When the fifth blocking device 3 is unlocked, one may disconnect the connecting slot 21 and the seat 22 from the body of the frame 10.

[0041] As shown in Fig. 21, the carriage frame 10 is also equipped with a second unlocking structure 15 that makes it possible to unlock the second blocking device 14 after demounting the seat 22 with the connecting slot 21. After disconnecting the seat 22 from the body of the frame 10, the second blocking device 14 may be unlocked by operating the second unlocking structure 15, and also, the carriage frame 10 may be folded. The second unlocking structure 15 may only act after disconnecting the seat 22 with the connecting slot 21, and this may prevent malfunctioning of the second unlocking structure 15 in order to unlock the carriage frame 10.

[0042] As shown in Fig. 11, the third blocking device 223 comprises several regulating slots 2231 that are arranged on the circumference of the seating part 221 and may regulate the inclination of the backrest frame 222 relative to the seating part 221. The backrest frame 222 is equipped with an operating member 2233, and a cable 2234 is located between the operating member 2233 and a mandrel 2232, which may move the mandrel 2232. A spring 2235 is located between the mandrel 2232 and backrest frame 222, which keeps the mandrel 2232 in the locked state. When the position of the backrest frame 222 is changed relative to the seating part 221, the operating member 2233 is actuated. After actuating the operating member 2233, the cable 2234 moves the mandrel 2232 to a selected position of the backrest frame 222 relative to the seating part 221.

[0043] When the backrest frame 222 is in a regulating slot 2231, the operating member 2233 is released, and the spring 2235 presses the mandrel 2232 to an appropriate regulating slot 2231. The backrest frame 222 together with the seating part 221 are locked. When one needs to fold the backrest frame 222 relative to the seating part 221, the operating member 2233 releases the mandrel 2232, and the backrest frame 222 may be rotated back.

[0044] As shown in Figs. 9 to 12, the first blocking device 23 is located between the left hinge cover 231 of the seating part 221 and the right hinge cover 232 of the connecting slot 21. Both the left hinge cover 231 as well as the right hinge cover 232 possess spline grooves 234. A recess 233 in the seating part allows for moving a first spline 235 in order to disconnect the seating part 221 from the connecting slot 21.

[0045] The splines 235 (toothed wheels) are arranged so that one may connect or disconnect the seating part 221 and connecting slot(s) 21 in only one position.

[0046] A ring 237, pushing a spring 236, is responsible for coupling and decoupling the spline 235.

[0047] The ring 237 is equipped with projecting pins 2371 that point at the seating part 221 and touch the cams of the first unlocking element 224 located on the backrest frame 222 that rotates toward the seating part 221 on the backrest frame 222. In order to unlock the first blocking device 23, firstly, one must unlock the third blocking device 223. Then, the backrest frame 222 may be folded toward the seating part 221. During this movement, a first driving surface (the cam) on the backrest frame 222 presses onto a projecting pin 2371. The ring 237 moves the spline 235 relative to the left hinge cover 231 and the right hinge cover 232. During this process, the seating part 221 becomes decoupled from the right hinge cover 232 since the spline 235 wholly enters the spline of the right hinge cover 232 and presses the spring 236.

[0048] The first blocking device 23 becomes unlocked, and the seating part 221 may be rotated relative to the first blocking device 23.

[0049] During the process of getting the backrest frame 222 close to the seating part 221, the whole seat 22 is also rotated relative to the connecting slot 21 and approaches the front footrest beam 11.

[0050] As shown in Figs. 9 to 12, the armrest assembly 226 comprises an armrest seat 2261 pivotally connected between the seating part 221 and the backrest frame 222. The armrest seat 2261 is connected to the armrest rod 2262. The fourth blocking device 227 is arranged between the armrest seat 2261 and the seating part 221, and the backrest frame 222. The fourth blocking device 227 comprises several blocking notches 2271 arranged on the armrest seat 2261. This element contacts the first spline 235. A first locking member 2272 may be locked by the blocking notch 2271 or decoupled from it when moving. The blocking notches 2271 touch the cam 2222. When changing the position of the backrest frame 222 relative to the seating part 221, the cam 2222 pressures onto the pins 2371 and moves the ring 237. This shift unlocks the spline of the armrest seat 2261 by overcoming the springs 2273 that press the first locking member 2272. After pushing the first locking member 2272 out, the armrest seat is unlocked. At this time, the armrest seat 2261 and the rod may rotate and approach the seating part 221 in order to fold.

[0051] As shown in Figs. 9 to 12, the second unblocking assembly 225 comprises a first pressing element 2251 slidably connected to the seating part 221 and the connecting slot 21. After pressing, a first pressing mandrel 22511 may slide out of the connecting slot 21 and unlock the second blocking device 14 - the lock of the carriage. A spring 2252 restores the original position of the first unlocking element 2251.

[0052] A sliding member-slider 2253 is located in the backrest frame 222 and the seating part 221, which may slide relative to the seating part 221. The sliding member-slider 2253 adheres to a rotary plate 2254. After folding the seat 22, also the second blocking device 228 unlocks. The rotary plate 2254 may rotate relative to the seating part 221 and the backrest frame 222. During the rotation of the rotary plate 2254, the sliding member-slider 2253 is pressed to the first pressing element 2251, and also, the spring 2252 is compressed. When the first pressing element 2251 moves, the first pressing mandrel 22511, which is located thereon, exserts outside the connecting slot 21 to unlock the main second blocking device 14, and at this moment, the whole carriage frame 10 may be folded.

[0053] As shown in Figs. 9-13, the rotary plate 2254 is equipped with a protrusion 22542 that may project in the backrest frame 222, and the sliding member-slider 2253 is equipped with a groove 22531 that may receive the protrusion 22542. Moreover, the sliding member-slider 2253 is equipped with a sloped surface 22532 that may abut against the protrusion 22542.

[0054] The seating part 221 is equipped with a projecting guiding portion 2211. The sliding member-slider 2253 is also equipped with the guiding portion 2211. When the rotary plate 2254 rotates, the outer sidewall of the protrusion 22542 on the rotary plate 2254 presses onto the sloped surface 22532 of the sliding member-slider 2253 so as the sliding member-slider 2253 moves relative to the backrest frame 222 and the seating part 221. During this process, the sliding member-slider 2253 is blocked by the guiding grooves 22533 on the seating part 221 and only may move laterally relative to the backrest frame 222 and the seating part 221.

[0055] As shown in Fig. 6, the operating part 22541 is a belt or a cable. It is convenient to operate for adults and pulling with one hand. To release the blockage by means of the belt, it is necessary to fold the seat 22. Then, a link of the operating part 22541 is visible and appropriately directed for more convenient operation by adults with only one hand.

[0056] As shown in Figs. 9 to 12, the second blocking

device 228 comprises a first protrusion 2281 intended for the rotary plate 2254. The protrusion does not allow for releasing the rotation of the plate to actuate the moving assembly when the seat 221 and backrest 222 are in the unfolded position. After folding the backrest frame 222 to the seating part 221, the second blocking device 228 is also released. The first protrusion 2281 and the second protrusion 2282 split apart, and this makes it possible to rotate the rotary plate 2254 and start the folding system.

[0057] As shown in Figs. 19 do 20, the main second blocking device 14 comprises a left connecting shell 141 that connects the rear footrest beam and a right connecting shell 142 that connects the front footrest beam 11. There is a space located between the right connecting shell 142 and the tappet assembly 13, which is equipped with a second spline 144 that may move relative to the space. The left connecting shell 141 comprises another spline groove 145, and the tappet assembly 13 comprises a third spline groove 140. The second spline 144 is located between the first and the second connecting shells, and the spline has resilient members 147 that may move. The pressure member 148 has mandrels 1481 that may move the second spline 144. A return spring 149 is located between the pressure member 148 and the spline groove 145.

[0058] According to the invention, the main second blocking device 14 has at least three ways of unlocking.

[0059] A first way. When the seat 22 assembly is installed on the carriage structure. To unlock the frame 10, one should unlock the third blocking device 223. After unlocking the third blocking device 223, the backrest frame 222 may be folded toward the seating part 221. Then, one may operate an operating part in the form of a belt 22541, which actuates the rotary plate 2254, and the rotary plate 2254 actuates the first pressing mandrel 22511 in the connecting slot 21. After sliding out the first pressing mandrel 22511, the second pressure member is released 148, and the second spline 144 is moved relative to the left connecting shell 141 of the rear footrest beam, the spline groove 140, and the right connecting shell 142 of the front footrest beam. After moving the second spline 144, released are the spline groove 145 of the left connecting shell 141 of the rear footrest beam and the spline groove 140 relative to the right connecting shell 142 of the front footrest beam.

[0060] When an adult person lifts the operating member 22541, the rear footrest beam 12 of the carriage changes its position gradually from the inclined state to the vertical state, and the front footrest beam 11 of the carriage and the seat 22 approach the rear footrest beam 12 under own weight.

[0061] Therefore, when an adult person holds a child in one hand, she/he may operate the seat 22 with the other hand to rotate it toward the front footrest beam 11 and then pull the operating member 22541 with one hand to complete the process of folding the whole frame 10, and this makes the folding operation more convenient and safe.

[0062] A second way. After pulling the seat 22 from the frame 10, a user has an access to the second blocking device 14 by pressing the pressure member 148 directly.

[0063] A third way. When the seat 22 is disconnected from the frame 10, the second unlocking structure 15 appears. After tilting the second unlocking structure 15, the pressure member 148 is moved to unlock the second blocking device 14.

[0064] As shown in Fig. 21, the second unlocking structure 15 is a tiltable member that is rotatably connected to the left connecting shell 141 and may press onto the pressure member 148 to unlock the main second blocking device 14 when rotating relative to the left connecting shell 141 of the rear footrest beam. The rotary block is equipped with the operating portion 151. When the operating portion 151 is actuated, the rotary block rotates relative to the left connecting shell 141 of the rear footrest beam, and the rotary block presses onto the pressure member 148 for unlocking.

List of references

[0065]

3	fifth blocking device [9, 10, 11, 12, 19]
10	frame [1, 4]
11	front footrest beam [1, 2, 3, 4, 5, 6, 7, 8, 19, 20, 21]
12	rear footrest beam [1, 2, 3, 4, 5, 6, 7, 8, 19, 20, 21]
13	tappet assembly [1, 2, 3, 4, 5, 6, 7, 8, 19, 20, 21]
14	second blocking device [1, 20]
15	second unlocking structure [19, 20, 21]
21	connecting slot [8, 9, 10, 11, 12, 18, 19]
22	seat [3, 5, 18, 19]
23	first blocking device [1, 9, 10]
140	spline groove [19, 20]
141	left connecting shell [19, 20]
142	right connecting shell [19, 20]
143	active space [19, 20]
144	second spline [19, 20]
145	spline groove [19]
146	protrusion [20]
147	resilient member [19, 20]
148	pressure member [19, 20, 21]
149	return spring [19, 20]
151	operating portion [19, 20, 21]
221	seating part [1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 12, 13, 18]
222	backrest frame [1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 12, 14, 18]
223	third blocking device [1, 11]
224	first unlocking element [14]
225	second unblocking assembly [11, 12]
226	armrest assembly [1, 2, 3, 4, 6]
227	fourth blocking device [9, 10]
228	second blocking device [11, 12]
231	left hinge cover [9, 10, 11, 12, 13]
232	right hinge cover [9, 10, 11, 12]

233 recess [9, 10, 11, 12, 13]
234 first spline groove [9, 10, 11, 12, 13]
235 first spline [9, 10, 11, 12]
236 spring [9, 10, 11, 12]
237 ring [9, 10, 11, 12]
283 arched slot [14]

1481 mandrel [19]
2211 guiding portion [13]
2212 pressure portion [13]
2221 catch portion [9, 10, 14]
2222 cam [10, 14]
2231 regulating slot [11, 12]
2232 mandrel [9, 11, 12]
2233 operating member [9, 11]
2234 cable [9, 11]
2235 spring [9, 11]
2251 first pressing element [9, 10, 11, 12]
2252 spring [9, 10, 11, 12]
2253 sliding member-slider [9, 10, 11, 12, 15]
2254 rotary plate [6, 7, 8, 9, 10, 11, 12, 16]
2261 armrest seat [1, 7, 8, 9, 10, 11, 12, 17, 18]
2262 armrest rod [1]
2271 blocking notch [9, 10, 11, 12, 17]
2272 first locking member [9, 11, 12]
2273 spring [9, 10, 11, 12]
2281 first protrusion [9, 10, 11, 12, 16]
2282 second protrusion [11, 12, 17]
2283 niche [10, 11, 12]
2371 pin [9, 10, 11, 12]

22511 first pressing mandrel [9, 10, 11, 12, 19]
22531 groove [11, 12, 15]
22532 sloped surface [11, 12, 15]
22533 guiding groove [11, 12, 15]
22541 operating part [6, 7, 8, 9, 10, 11, 12]
22542 protrusion [9, 10, 16]
22721 catch portion [9, 10, 11, 12]

Claims

1. A baby carriage chassis **characterized in that** it has a frame (10) with a seat (22) connected by means of a connecting slot (21), and the seat (22) may rotate toward a tappet assembly (13) or a front footrest beam (11) of the frame (10) relative to the connecting slot (21), and a first blocking device (23) unlocks a backrest frame (222) relative to a seating part (221), and the motion of the backrest frame (222) toward the seating part (221) may unlock a first unlocking element (224) between the seating part (221) and the connecting slot (21), and this makes it possible to rotate the seat 22 toward the tappet assembly (13) or the front footrest beam (11) of the frame (10), and a third blocking device (223) releases an armrest seat (2261) by means of a fourth blocking device (227) only after unlocking the first blocking device (23) and after unlocking the first unlocking element (224), and then rotation of a rotary plate (2254) is possible by means of an operating part (22541).

2. The baby carriage chassis according to claim 1, **characterized in that** it has an armrest assembly (226) rotatable between the seating part (221) and the backrest frame (222), and all these elements may be mutually interlocked by the backrest frame (222), and the fourth blocking device (227) is actuated when folding the backrest frame (222) toward the seating part (221).

3. The baby carriage chassis according to claim 2, **characterized in that** it has a second unblocking assembly (225) that is located between the armrest assembly (226) and the connecting slot (21).

4. The baby carriage chassis according to claim 2, **characterized in that** the connecting slot (21) is separably connected to the frame (10), and the connecting slot (21) has a fifth blocking device (3) that may block these two elements with each other.

5. The baby carriage chassis according to claim 1, **characterized in that** the frame (10) is additionally equipped with a second blocking device that may be unlocked after demounting the seat (22) and the connecting slot (21) by means of a second unlocking structure (15).

6. The baby carriage chassis according to claim 1, **characterized in that** the third blocking device (223) is connected to the seating part (221) and makes it possible to regulate the backrest frame (222) relative to the seating part (221) by several regulating slots (2231), and the backrest frame (222) is connected by means of a mandrel (2232) that may be connected to or disconnected from the regulating slots (2231), wherein the backrest frame (222) is equipped with an operating member (2233), and a mechanism for shifting the mandrel (2232) is placed between the operating member (2233) and the mandrel (2232), and after pulling the operating member (2233), a cable (2234) moves the mandrel (2232) between the regulating slots (2231), and a spring (2235) is located between the backrest frame (222), which allows the mandrel to return (2232) to the regulating slots (2231) and thus to the locked state.

7. The baby carriage chassis according to claim 3, **characterized in that** the first blocking device (23) consists of a left hinge cover (231) of the seating part (221), a right hinge cover (232), and a recess (233) is formed between the left hinge cover (231) and the right hinge cover (232), and a first spline (235) is located between the left (231) and the right (232) hinge covers, which may move relative to the left

(231) and the right (232) hinge covers, and the return of the first spline (235) is assured by a spring (236), and the backrest frame (222) actuates a pin (2371) of a ring (237) to move it laterally when the backrest frame (222) is rotated and folded toward the seating part (221) by a cam surface (2222).

8. The baby carriage chassis according to claims 1-7, **characterized in that** the armrest assembly (226) comprises an armrest seat (2261) pivotally connected between the seating part (221) and the backrest frame (222), and the armrest seat (2261) is connected to the armrest rod (2262), and the fourth blocking device (227) is arranged between the armrest seat (2261) and the seating part (221) and the backrest frame (222), and the fourth blocking device (227) comprises several blocking notches (2271) arranged on the armrest seat (2261), and these elements contact the first spline (235), and the first locking member (2272) may be locked in a blocking notch (2271) or disconnected from it when moving, and the pins (2371) contact the cam surfaces (2222), and when changing the position of the backrest frame (222) relative to the seating part (221), the cam surface (2222) pressures onto the pins (2371) and moves the ring (237), and this shift unlocks the spline of a blocking element of the armrest seat (2261) by overcoming the springs (2273) that press the first locking member (2272), and after pushing out the first locking member (2272), the armrest seat (2261) is unlocked, and, at this time, the armrest seat (2261) and a railing may rotate and approach the seating part (221) in order to fold.

9. The baby carriage chassis according to claims 1-8, **characterized in that** the second unblocking assembly (225) comprises a first pressing element (2251) slidably connected to the seating part (221) and the connecting slot (21), and after pressing, a first pressing mandrel (22511) may slide out of the connecting slot (21) and unlock the main second blocking device (14) of the carriage, then a spring (2252) restores the original position of the first pressing element (2251), and a sliding member-slider (2253) is located in the backrest frame (222) and the seating part (221), which may slide relative to the seating part (221), and the sliding member-slider (2253) adheres to the rotary plate (2254).

10. The baby carriage chassis according to claims 1-9, **characterized in that** the rotary plate (2254) is equipped with a protrusion (22542) that is located in the backrest frame (222), and the sliding member-slider (2253) is equipped with a groove (22531) capable of receiving the protrusion (22542) in it, and the sliding member-slider (2253) is equipped with a sloped surface (22532) that may brush against the protrusion (22542), and the seating part (221) is equipped with a projecting guiding portion (2211) that guides a guiding groove (22533) that moves laterally, and the backrest frame (222) is also equipped with a pressure portion (2212) capable of pressing one side of the first pressing element (2251).

11. The baby carriage chassis according to claim 9, **characterized in that** the operating part (22541) is a handle or a belt.

12. The baby carriage chassis according to claims 1-11, **characterized in that** the second blocking device (228) comprises a first protrusion (2281) placed on the rotary plate (2254), and the armrest seat (2261) is equipped with a second protrusion (2282) that may adhere to the first protrusion (2281) to prevent rotation of the rotary plate (2254) when the seat (22) and the body of the frame (10) are unfolded, and the backrest frame (222) is also equipped with a niche (2283) so as the first protrusion (2281) and the second protrusion (2282) slide thereinto when the backrest frame (222) is rotated and folded.

13. The baby carriage chassis according to claim 5, **characterized in that** the second blocking device (14) comprises a left connecting shell (141) connected to the rear footrest beam (12) and a right connecting shell (142) connected to the front footrest beam (11), and there is a space located between the right connecting shell (142) and the tappet assembly (13), which is equipped with a second spline (144) that may move relative to the space, and the left connecting shell (141) comprises a spline groove (145), the tappet assembly (13) comprises a spline groove (140), and the second spline (144) is located between the left connecting shell (141) and the right connecting shell (142), and the spline has resilient members (147) that may move, and the pressure member (148) has mandrels (1481) that may move the second spline (144), and a return spring (149) is located between the pressure member (148) and the spline groove (145) of the rear footrest beam (12).

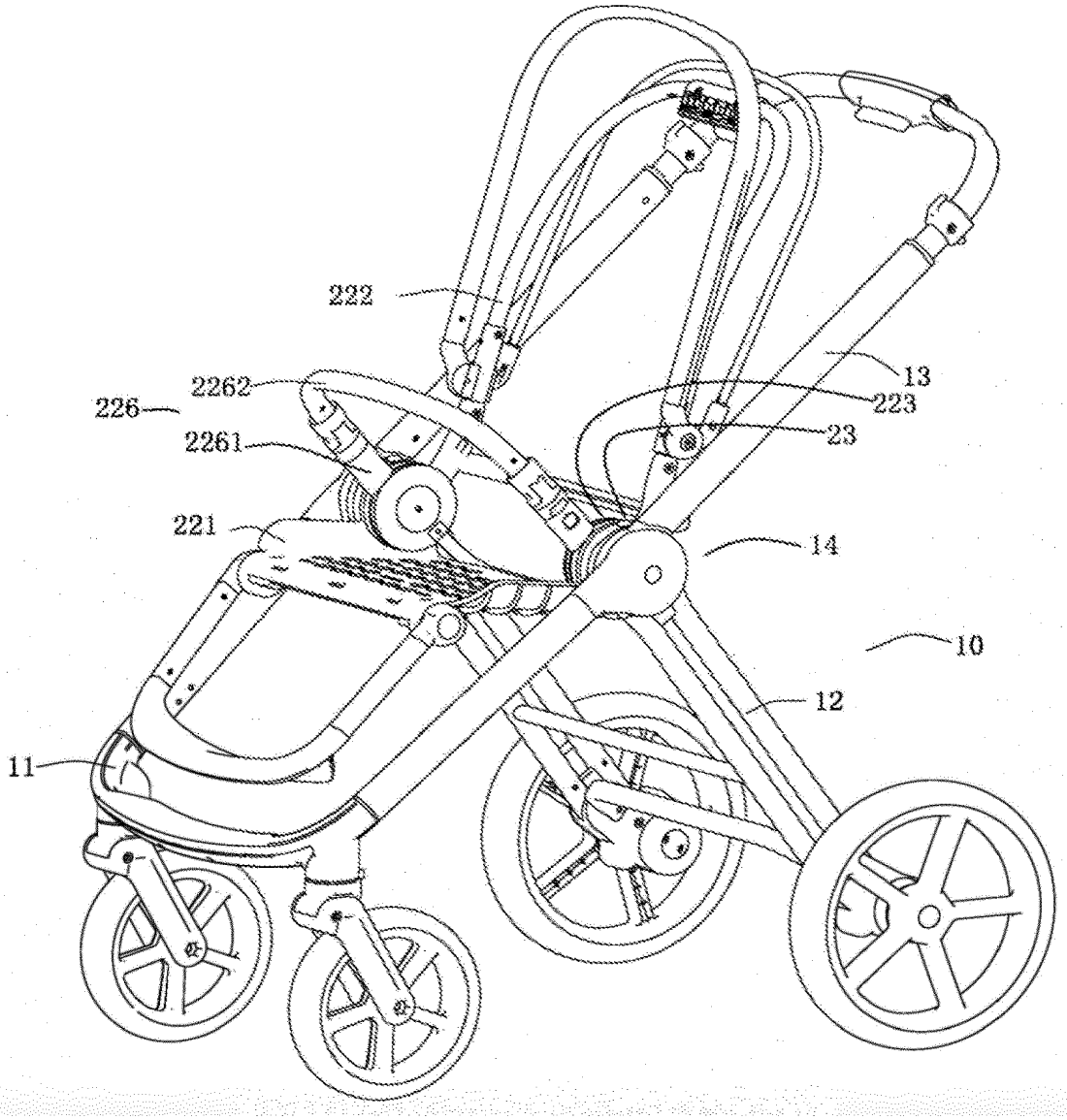


Fig. 1

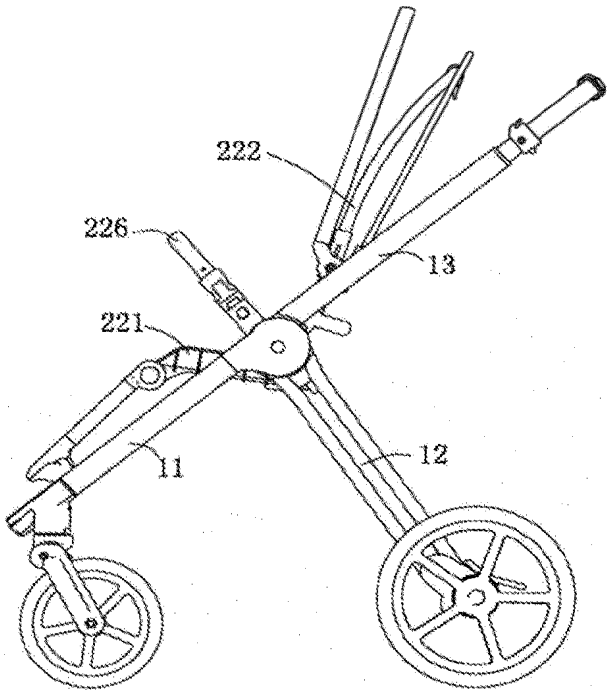
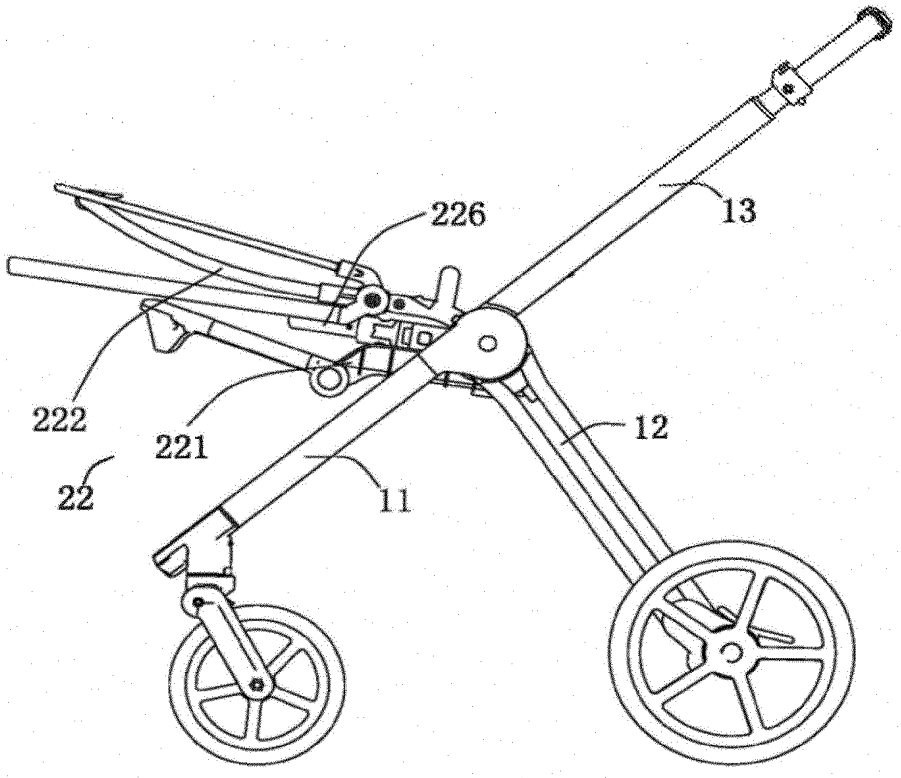


Fig. 2



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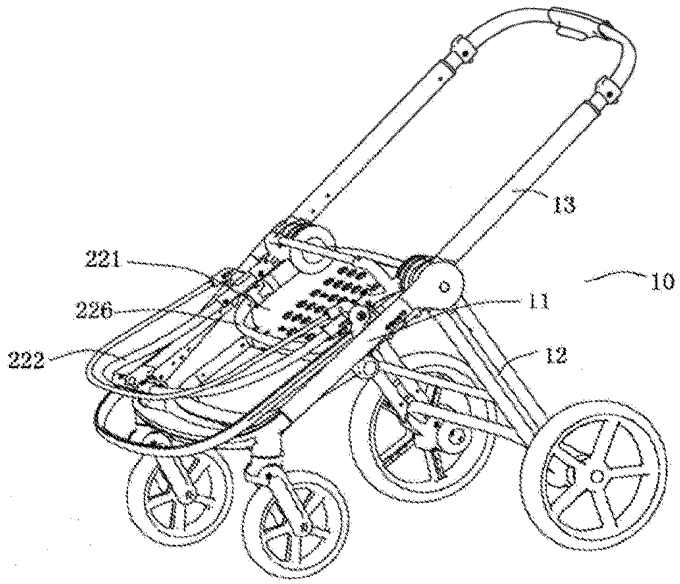

Fig. 4

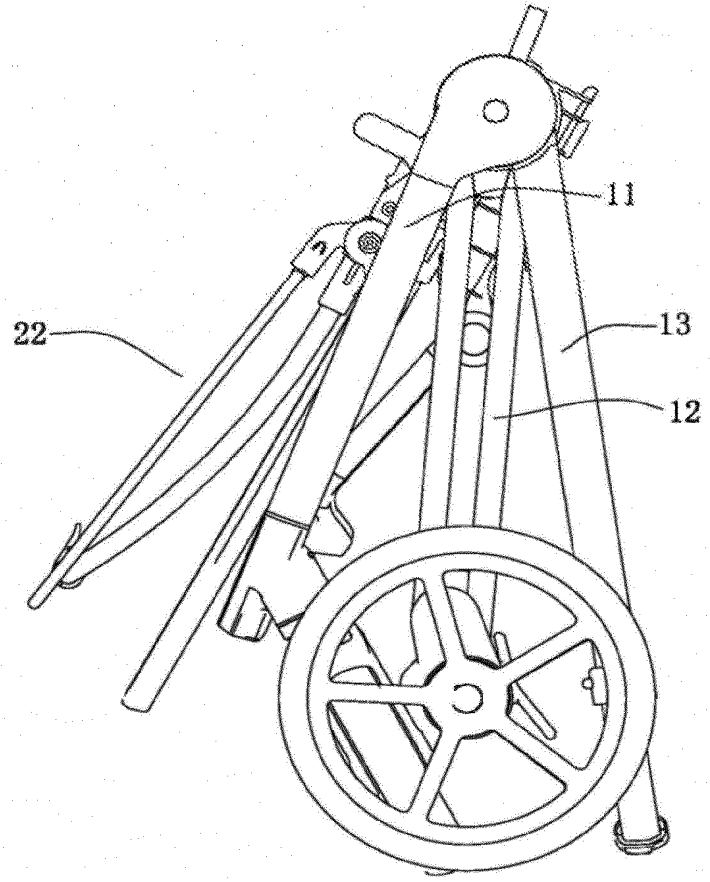

Fig. 5

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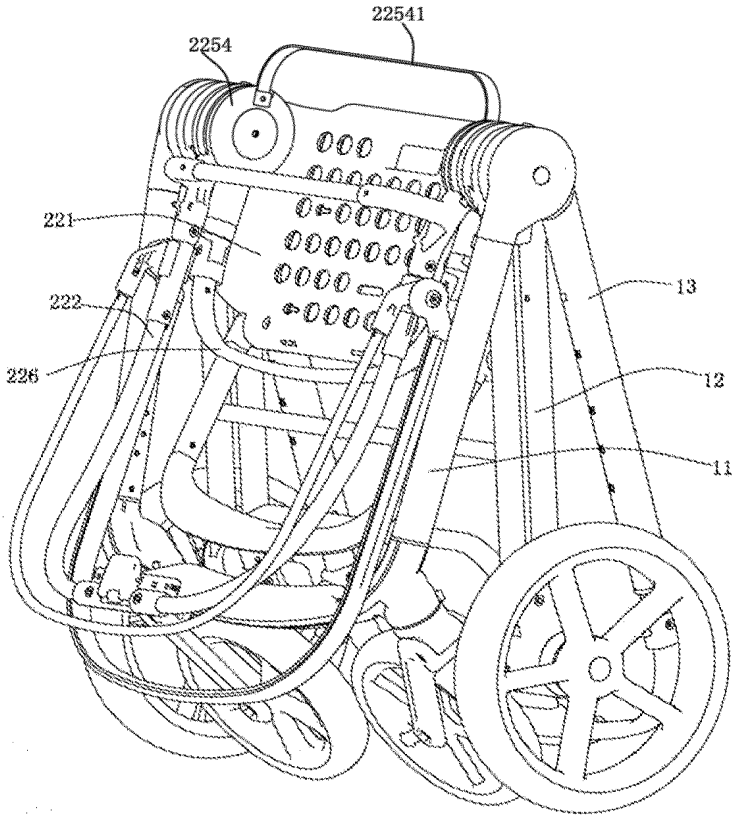


Fig. 6

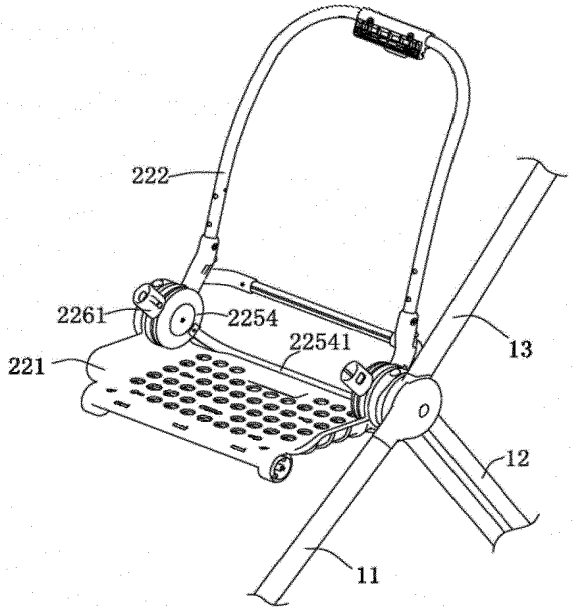
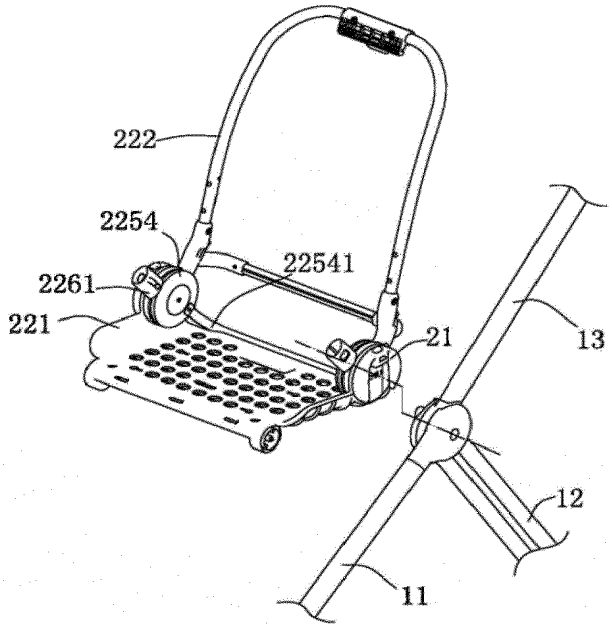


Fig. 7



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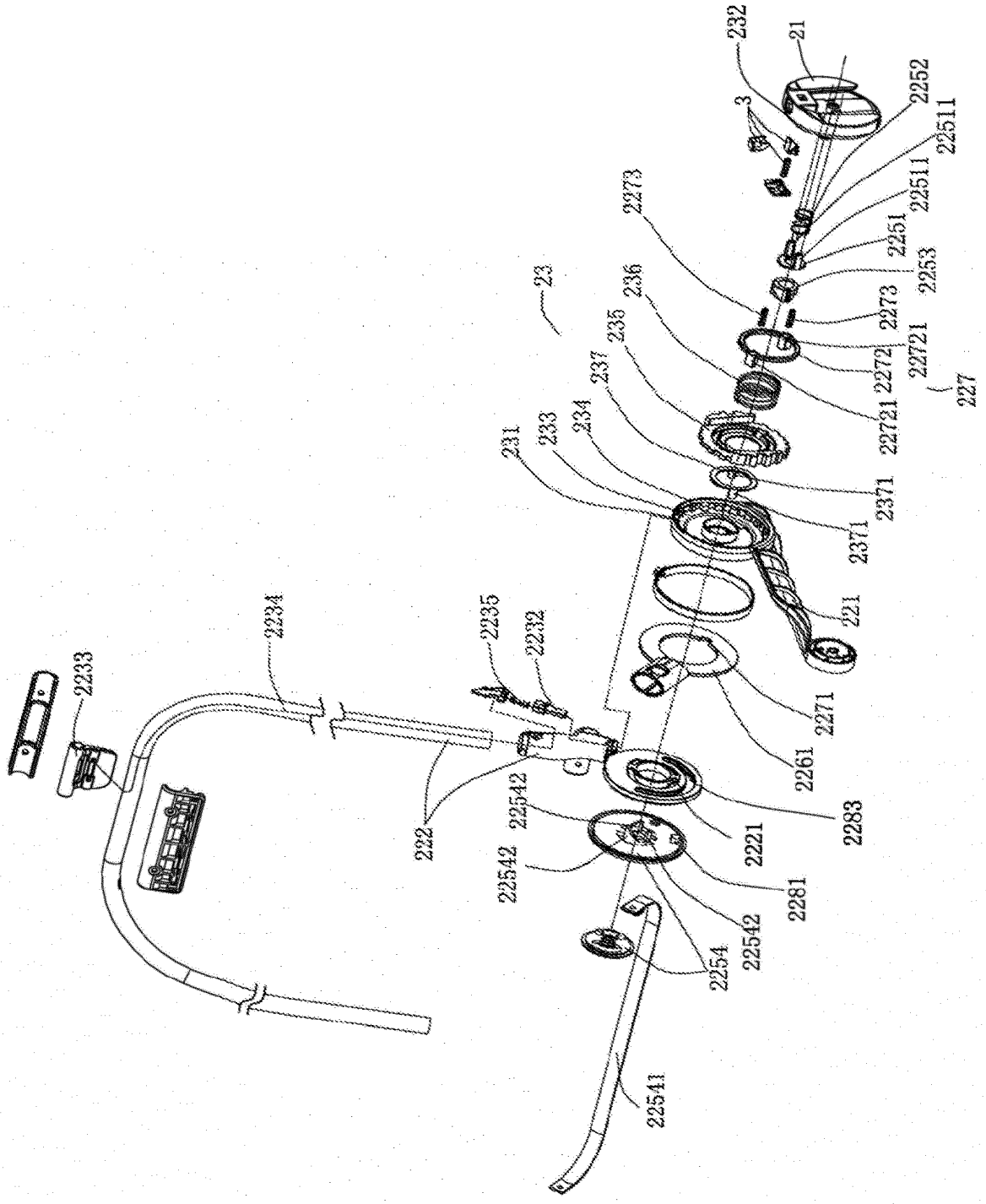
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Fig. 9

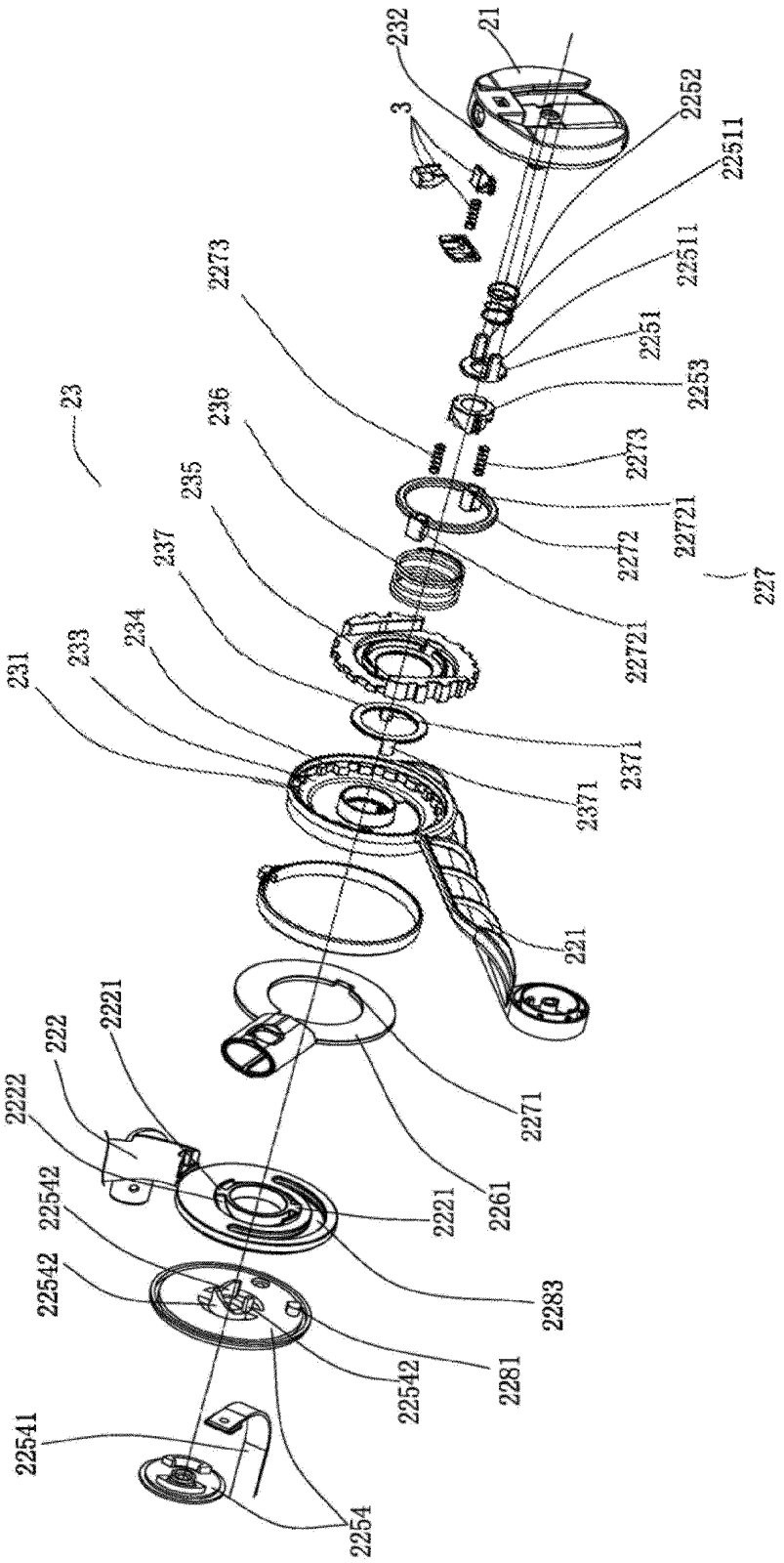
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Fig. 10

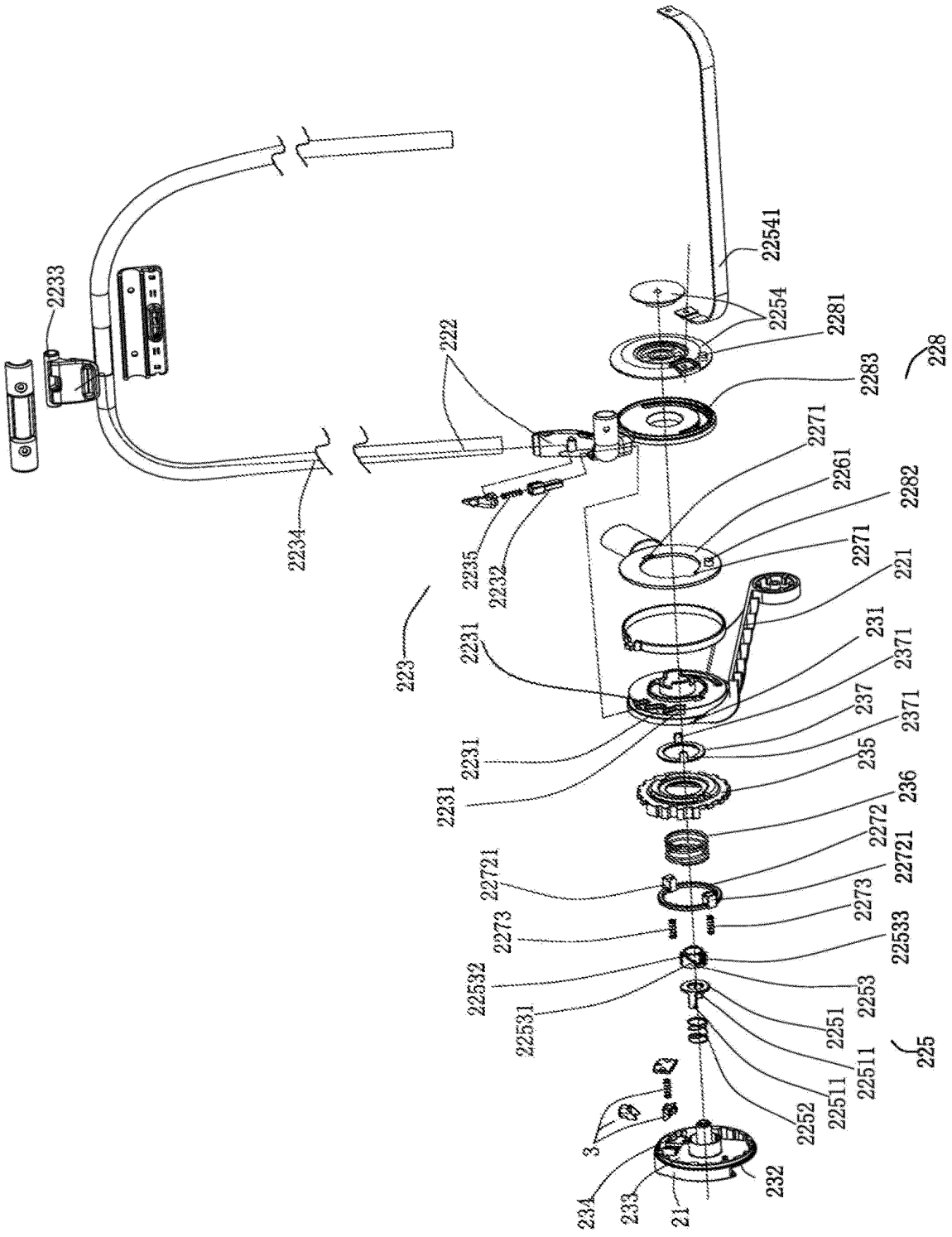
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Fig. 11

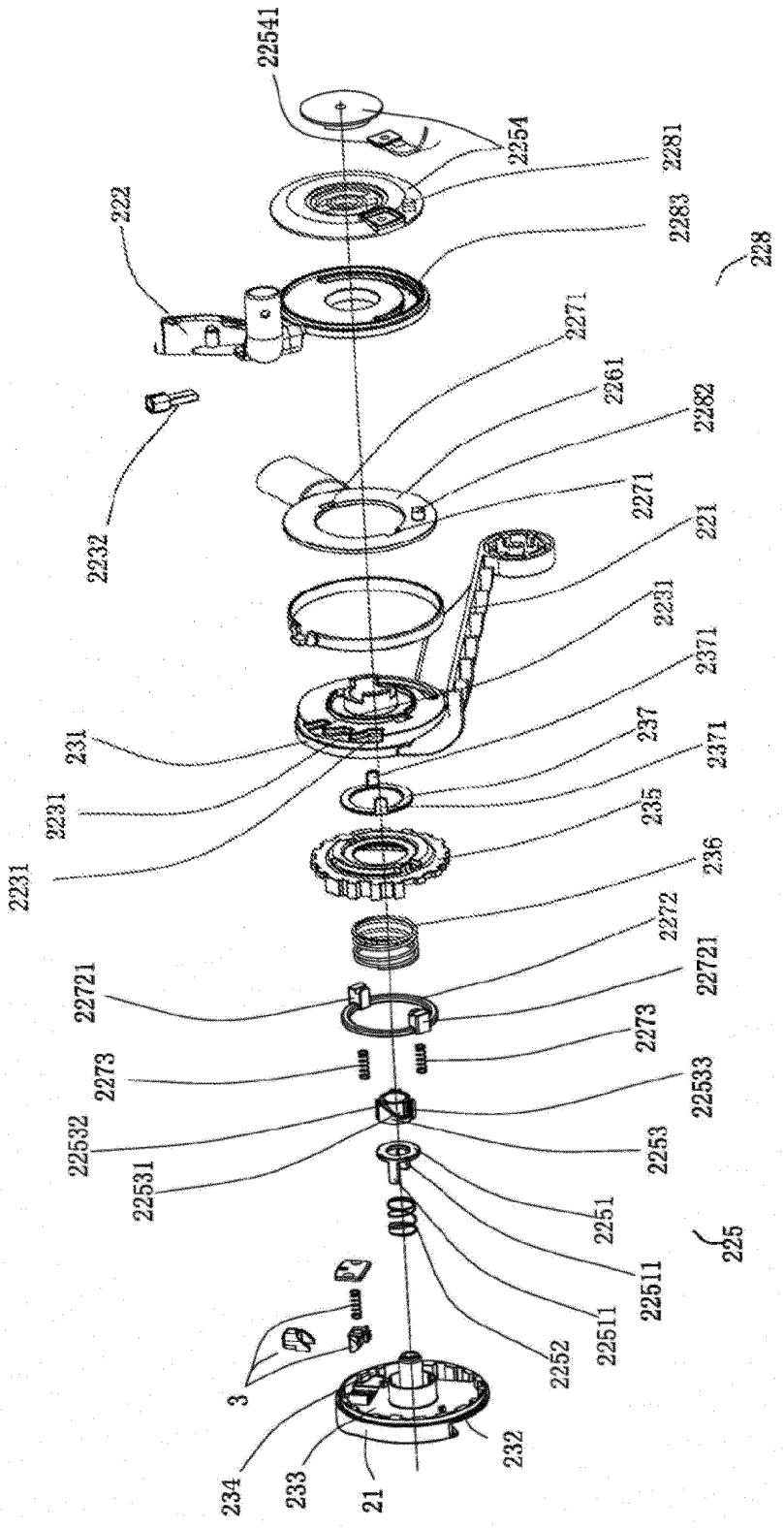

Fig. 12

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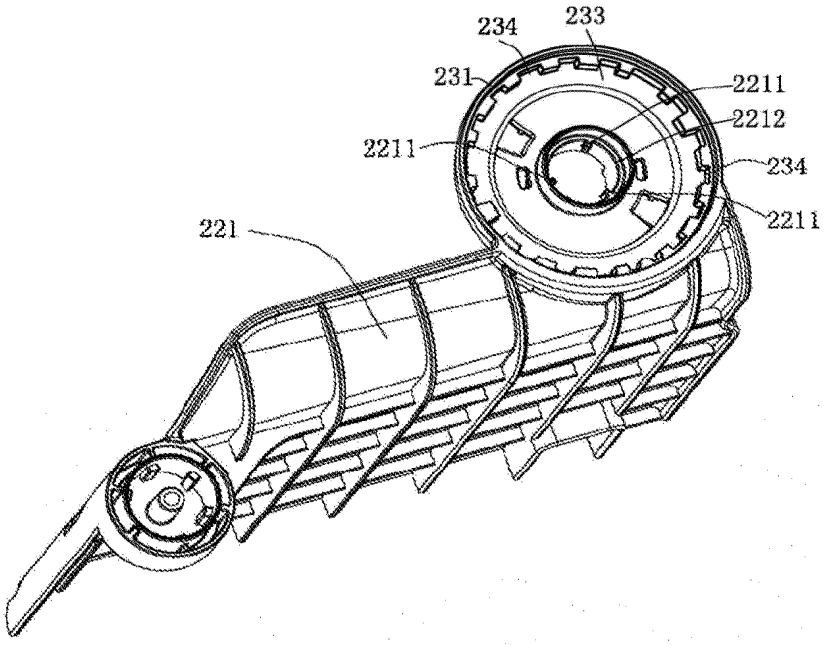
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Fig. 13

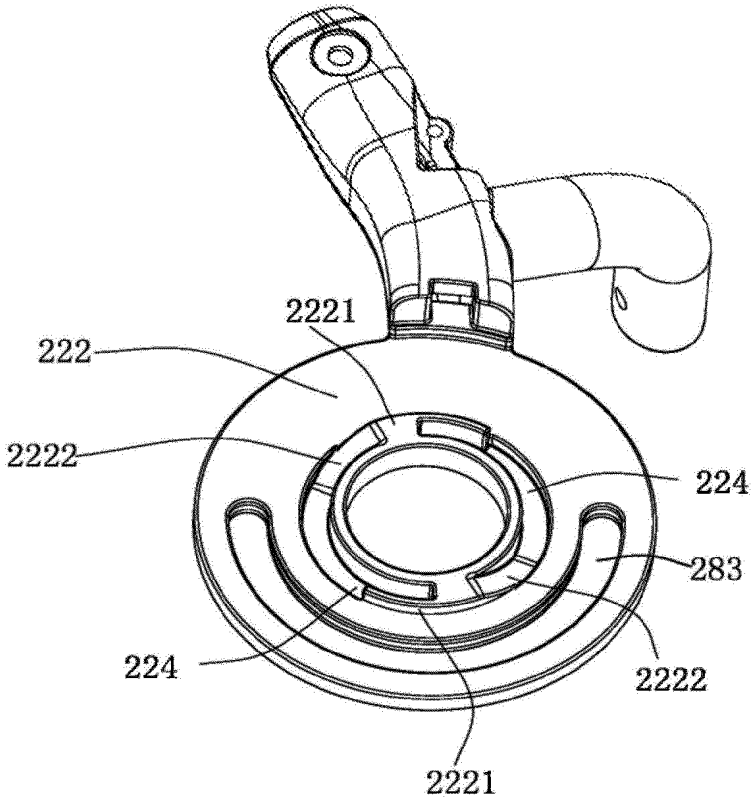
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Fig. 14

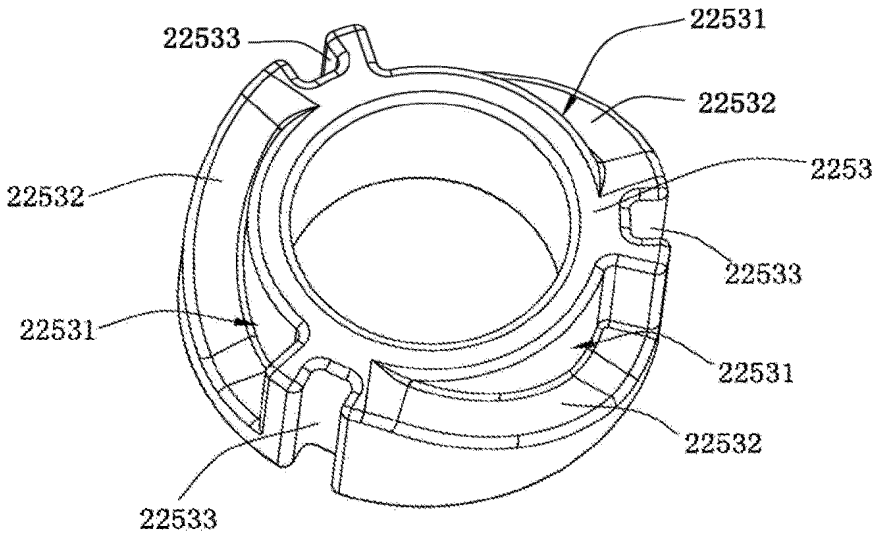


Fig. 15

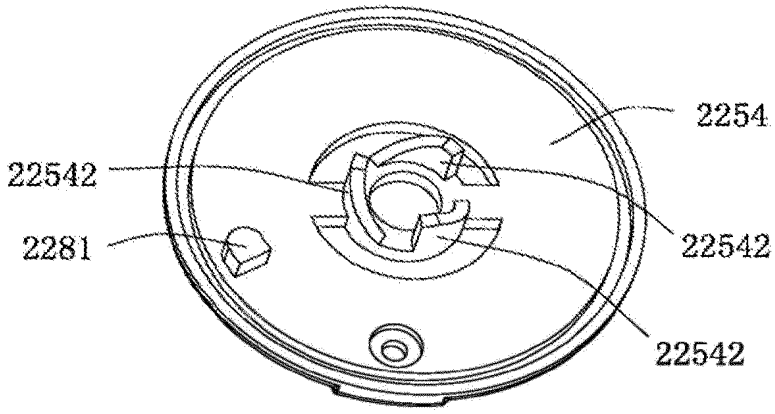
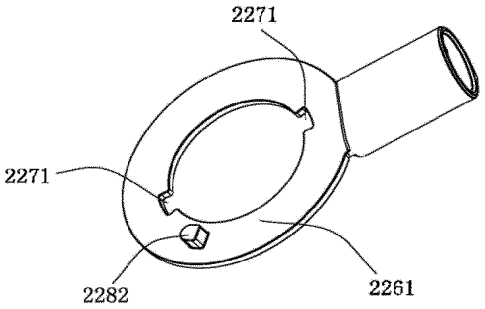


Fig. 16



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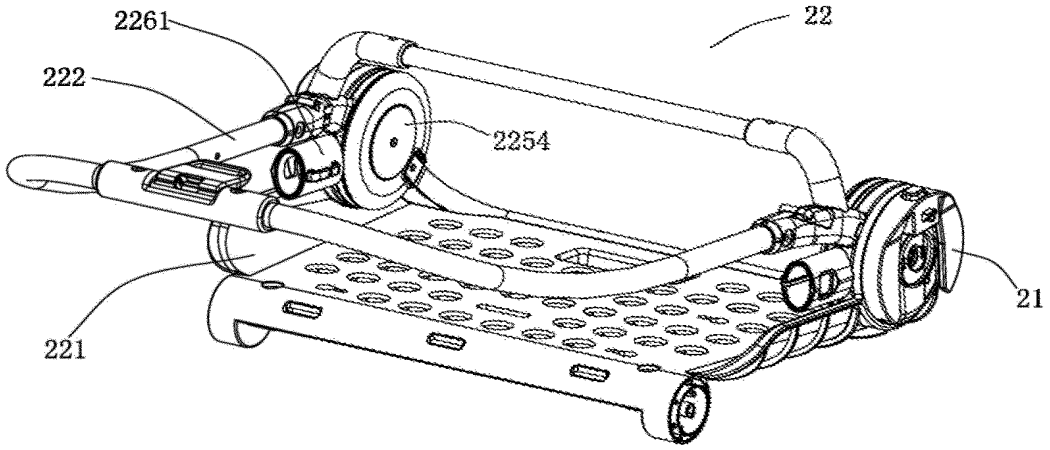
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Fig. 18

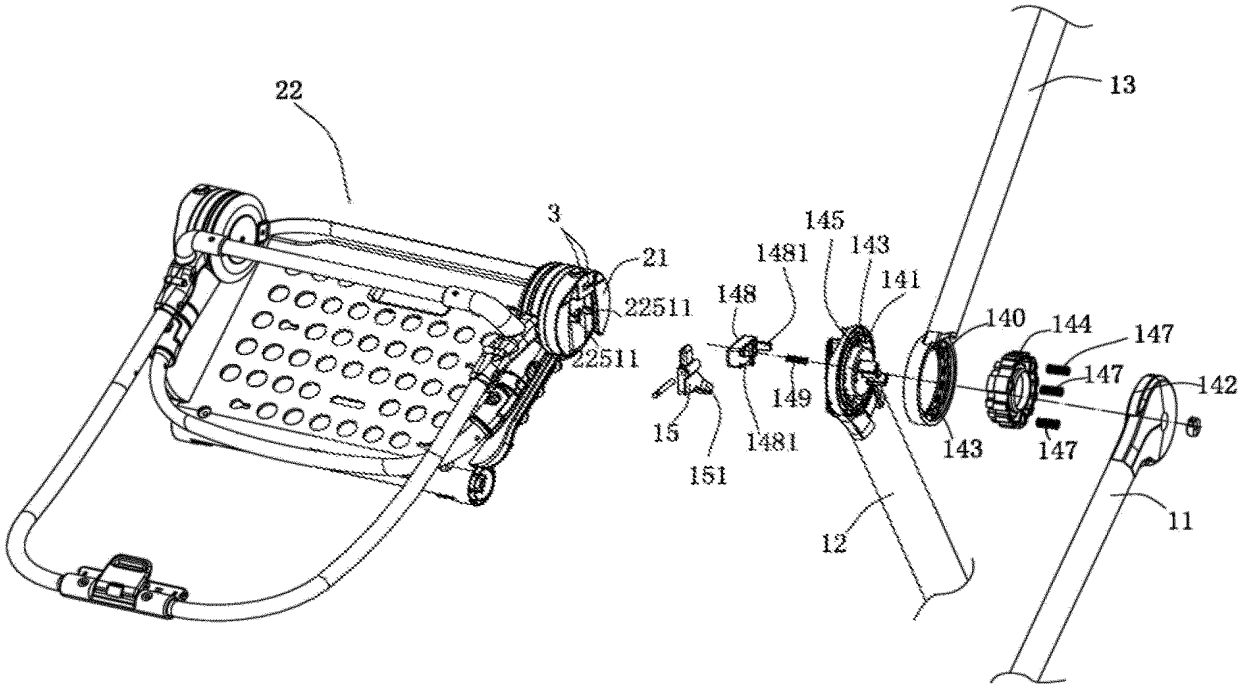
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Fig. 19

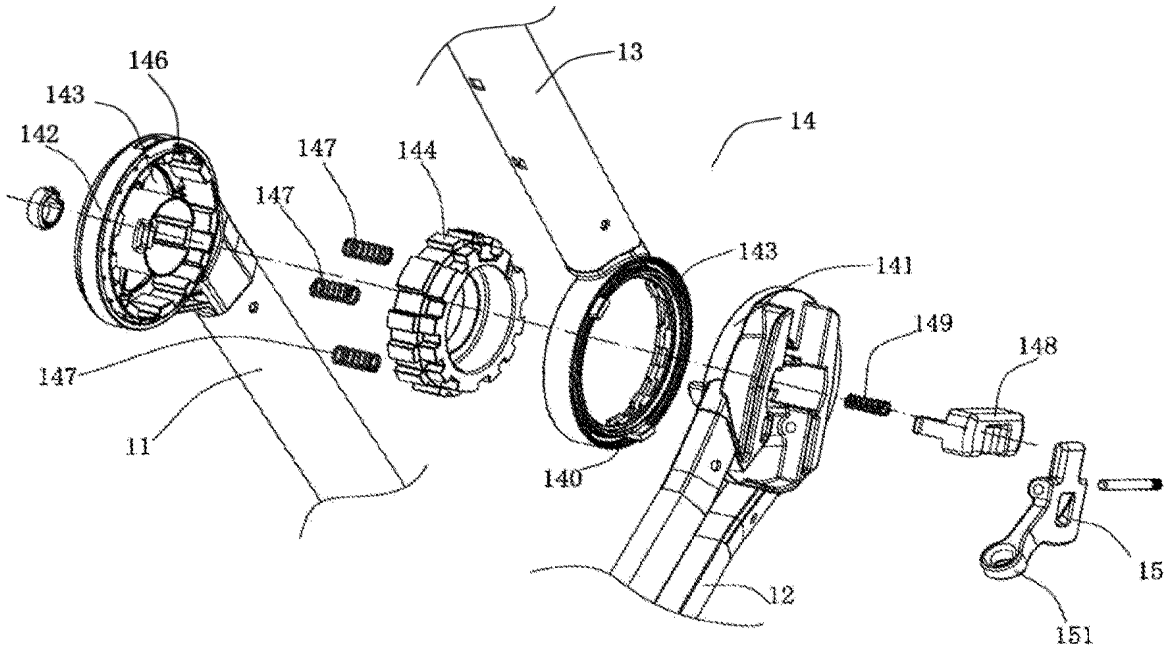
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Fig. 20

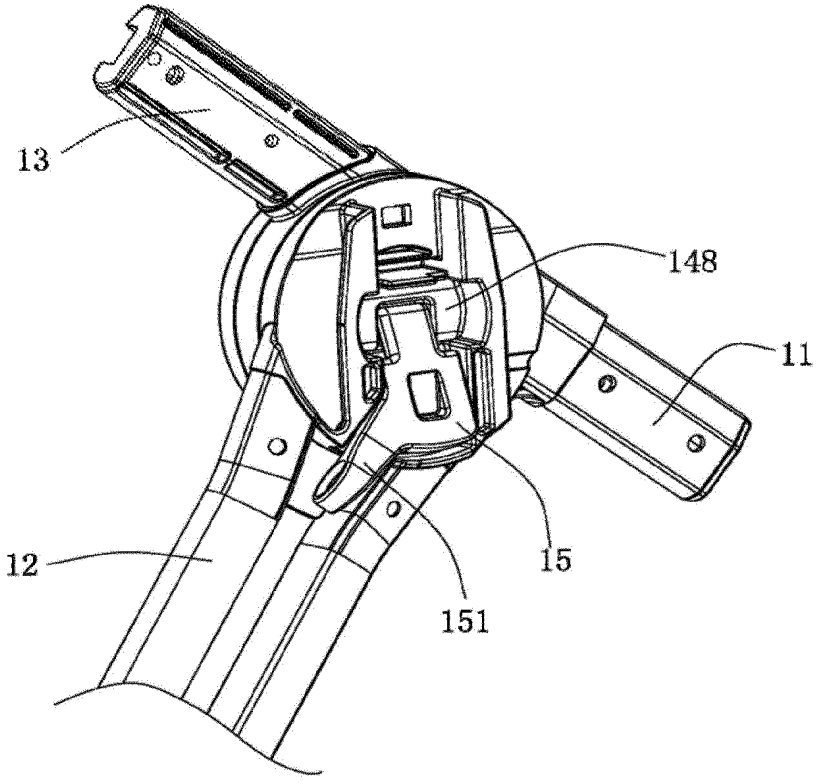
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Fig. 21

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EUROPEAN SEARCH REPORT

Application Number
EP 23 15 1638

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X	US 2020/239058 A1 (ZHANG XIAOJIAN [CN]) 30 July 2020 (2020-07-30) * paragraphs [0006], [0030] - [0039], [0050]; figures *	1-13	TECHNICAL FIELDS SEARCHED (IPC) B62B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	31 May 2023	Chaloupy, Marc

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31-05-2023

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134811 7590 05/21/2024

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NewellPatents@eversheds-sutherland.us
patentdocket@eversheds-sutherland.com
umarbakhsh@eversheds-sutherland.us

Applicant-Initiated Interview Summary	**Application No.** 18/448,417	**Applicant(s)** ZEHFUSS, Mark		
	Examiner JAMES M DOLAK	**Art Unit** 3618	**AIA (First Inventor to File) Status** No	**Page** 1 of 1

All Participants (applicant, applicants representative, PTO personnel)	**Title**	**Type**
JAMES M DOLAK	Primary Examiner	Telephonic
Umar Bakhsh	Attorney of Record	

Date of Interview: 15 May 2024

Issues Discussed:

Proposed Amendment(s)

Discussed amendments to the claims to be filed in response to Non-Final mailed 2/29/2024.

/JAMES M DOLAK/ Primary Examiner, Art Unit 3618	

Applicant is reminded that a complete written statement as to the substance of the interview must be made of record in the application file. It is the applicants responsibility to provide the written statement, unless the interview was initiated by the Examiner and the Examiner has indicated that a written summary will be provided. See MPEP 713.04
Please further see:
MPEP 713.04
Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews, paragraph (b)
37 CFR § 1.2 Business to be transacted in writing

Applicant recordation instructions: The formal written reply to the last Office action must include the substance of the interview. (See MPEP section 713.04). If a reply to the last Office action has already been filed, applicant is given a non-extendable period of the longer of one month or thirty days from this interview date, or the mailing date of this interview summary form, whichever is later, to file a statement of the substance of the interview.

Examiner recordation instructions: Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 18/448,417	Filing Date 08/11/2023	☐ To be Mailed

ENTITY: ☑ LARGE ☐ SMALL ☐ MICRO

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A		N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A		N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*		x $100 =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*		x $480 =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).				
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))					
* If the difference in column 1 is less than zero, enter "0" in column 2.				TOTAL	

APPLICATION AS AMENDED - PART II

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT	05/21/2024	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 15	Minus	** 20	= 0		x $100 =	0
	Independent (37 CFR 1.16(h))	* 1	Minus	*** 3	= 0		x $480 =	0
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	0

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=		x $0 =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=		x $0 =	
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.	Administrative Support Assista
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".	/DANTE SMITH/
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".	
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.	

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.	:	18/448,417
Filed	:	August 11, 2023
First Named Inventor	:	Mark Zehfuss
Applicant	:	Baby Jogger, LLC
Title	:	Removable Seat Attachment for a Stroller
Confirmation No.	:	3414
Art Unit	:	3618
Examiner	:	James M. Dolak
Attorney Docket No.	:	34757-2775
Customer No.	:	134811

AMENDMENT AND RESPONSE TO NON-FINAL OFFICE ACTION

Via EFS-Web
Commissioner for Patents
Alexandria, VA 22313-1450

Dear Commissioner:

Responsive to the Non-Final Office Action dated February 29, 2024 (the "Office Action"), Applicant submits the following amendments and remarks.

Amendments to the Claims begin on page 2.

Remarks begin on page 5.

Amendments to the Claims

1. (Canceled)

2. (New) A convertible stroller configured for being converted from a single stroller to a double stroller, the stroller comprising:

a stroller frame configured for being adjusted between a folded configuration and an unfolded configuration, the stroller frame comprising:

a handle portion;

a front wheel support portion; and

a back wheel support portion; and

at least one front wheel secured to the stroller frame's front wheel support portion;

two rear wheels secured to the stroller frame's back wheel support portion;

a first seat removably attached to the stroller frame;

one or more seat attachment portions removably attached to the stroller frame; and

a second seat removably attached to the one or more seat attachment portions and positioned in front of the first seat;

wherein at least one of the first seat and the second seat is configured for being removably attached to the stroller frame in a forward-facing configuration and a backward-facing configuration; and

wherein the first seat and the second seat are positioned such that a center of gravity of the stroller is between the at least one front wheel and the plurality of back wheels.

3. (New) The stroller of Claim 2, wherein the second seat is positioned substantially over the at least one front wheel.

4. (New) The stroller of Claim 2, wherein the first seat is positioned substantially over the two rear wheels.

5. (New) The stroller of Claim 2, wherein the first seat is positioned adjacent to the stroller frame's handle portion.

6. (New) The stroller of Claim 2, wherein the first seat is positioned nearer to the stroller frame's handle portion than the second seat.

7. (New) The stroller of Claim 2, wherein the one or more seat attachment portions are removably attached to the stroller frame's front wheel support portion.

8. (New) The stroller of Claim 2, wherein the one or more seat attachment portions are positioned to support the second seat above the at least one front wheel.

9. (New) The stroller of Claim 2, wherein the one or more seat attachment portions each comprise a seat connector configured for connecting to the second seat.

10. (New) The stroller of Claim 2, wherein the one or more seat attachment portions comprise one or more first seat attachment portions and the stroller further comprises one or more second seat attachment portions connected to the stroller frame; and

wherein the first seat is removably attached to the one or more second seat attachment portions.

11. (New) The stroller of Claim 10, wherein the one or more first seat attachment portions are removably attached to the stroller frame's front wheel support portion, and

wherein the one or more second seat attachment portions are connected to the stroller frame adjacent to the frame's handle portion.

12. (New) The stroller of Claim 2, wherein the first seat is configured for being attached to the stroller frame in a forward-facing configuration and a backward-facing configuration.

13. (New) The stroller of Claim 2, wherein the at least one front wheel comprises two front wheels secured to the stroller frame's front wheel support portion.

14. (New) The stroller of Claim 2, wherein the second seat is configured for being attached to the one or more seat attachment portions in a forward-facing configuration and a backward-facing configuration.

15. (New) The stroller of Claim 2, wherein the first seat is configured for being removably attached to the stroller frame at a first vertical position, and the second seat is configured for being removably attached to the one or more seat attachment portions at a second vertical position that is below the first vertical position.

16. (New) The stroller of Claim 2, wherein the handle portion and the front wheel support portion are substantially parallel when the stroller frame is in the unfolded configuration.

Remarks

This Response is believed to be fully responsive to the Non-Final Office Action dated February 29, 2024. Claim 1 was pending and stands rejected. Claim 1 is canceled without prejudice. Claims 2-16 are new. After entry of the present claim amendments, claims 2-16 will be pending. The amendments to the claims are fully supported by the specification and drawings as originally filed. It is respectfully submitted that no new matter has been added.

Drawing Objection

The drawings are objected to under 37 C.F.R. 1.83(a) for allegedly failing to show an element of claim 1. This rejection is moot in view of the present claim amendments. Reconsideration is respectfully requested.

Rejection under 35 U.S.C. § 102

Claims 1 stands rejected under 35 U.S.C. § 102 as allegedly being anticipated by U.S. Patent No. 7,475,900 to Cheng (Cheng). This rejection is moot as claim 1 is canceled.

Reconsideration and allowance of claims 2-16 is respectfully requested as Cheng does not teach or suggest at least the claimed elements of new independent claim 2.

Conclusion

It is believed that each matter raised by the Office Action has been addressed by this Response. Accordingly, allowance of the claims is respectfully solicited. It is not believed that extensions of time or additional fees are required beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned for under 37 C.F.R. § 1.136(a), and any fee required therefore (including any fee associated with net addition of claims) is hereby authorized to be charged to Deposit Account No. 19-5029. If there

are any issues that can be resolved by teleconference or an Examiner's Amendment, the Examiner is invited to telephone the undersigned.

Respectfully submitted,

/Umar R. Bakhsh/
Umar R. Bakhsh
Reg. No. 67,307

Date: May 21, 2024

EVERSHEDS SUTHERLAND (US) LLP
999 Peachtree Street NE, Suite 2300
Atlanta, GA 30309-3996
(ph) 404.853.8084

UNITED STATES
PATENT AND TRADEMARK OFFICE

P.O. Box 1450
Alexandria, VA 22313 - 1450
www.uspto.gov

ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/448,417	**05/21/2024 02:28:43 PM Z ET**	**34757-2775**

Title of Invention

REMOVABLE SEAT ATTACHMENT FOR A STROLLER

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	3414	FILED BY	Loretta Garcia
PATENT CENTER #	65612769	FILING DATE	08/11/2023
CUSTOMER #	134811	FIRST NAMED INVENTOR	Mark ZEHFUSS
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	Umar Bakhsh

Documents

TOTAL DOCUMENTS: 2

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
34757-2775 - Response to Non-Final Office Action-APP.TEXT.docx	6	Application body structured text document	34 KB
Warning: Dynamic dates have been converted to static dates. Bookmarks were found and have been removed. The automatic document description has been replaced. Dynamic dates have been converted to static dates. Bookmarks were found and have been removed.			
34757-2775 - Response to Non-Final Office Action.pdf	6	Auxiliary PDF of Application	38 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
34757-2775 - Response to Non-Final Office Action-APP.TEXT.docx	6FA22C4C9FD7C590841BA69643188761411B38DE906E07F6BEB87A1FD27DA3D9AFA95D46B0708C67271C2E6DA642D1101C8C0297BDEDEA11C05FC194CD082CE6
34757-2775 - Response to Non-Final Office Action.pdf	D50936A33D653CDF3FCBCDC0F2AADDA9F70E4C6843E24564ECC4AE1FBA5FC18F8A7330BC34ADEDDEF01D307A3E7A2AA0E488E138BD6F6124BCDF8655BE7DFE4C

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 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.

Notice of References Cited	Application/Control No. 18/448,417	Applicant(s)/Patent Under Reexamination ZEHFUSS, Mark	
	Examiner JAMES M DOLAK	Art Unit 3618	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date YYYY-MM-DD	Name	CPC Classification	US Classification
*	A	US-12005950-B2	2024-06-11	Zhong; Zhiren	B62B9/102	1/1
*	B	US-D593459-S	2009-06-02	Liao; Gordon		D12/129
	C					
	D					
	E					
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	G					
	H					
	I					
	J					
	K					
	L					
	M					

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date YYYY-MM-DD	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 YYYY-MM-DD format are publication dates. Classifications may be US or foreign.

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	18/448,417	ZEHFUSS, Mark
	Examiner	Art Unit
	JAMES M DOLAK	3618

✓	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	02/24/2024	07/15/2024							
	1	✓	-							
	2		✓							
	3		✓							
	4		✓							
	5		✓							
	6		✓							
	7		✓							
	8		✓							
	9		✓							
	10		✓							
	11		✓							
	12		✓							
	13		✓							
	14		✓							
	15		✓							
	16		✓							

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	18/448,417	ZEHFUSS, Mark
	Examiner	Art Unit
	JAMES M DOLAK	3618

CPC - Searched*		
Symbol	Date	Examiner
B62B7/008,00,006,14,142,145	02/24/2024	JMD
B62B9/12,28,102	02/24/2024	JMD

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
Inventor & Assignee Search	02/24/2024	JMD
Text search	02/24/2024	JMD
Updated Search	07/03/2024	jmd

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner

/JAMES M DOLAK/ Primary Examiner.Art Unit 3618	/JAMES M DOLAK/ Primary Examiner, Art Unit 3618

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-22)
Approved for use through 05/31/2024. OMB 0651-0031
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Filing Date	2023-08-11
First Named Inventor	Mark ZEHFUSS
Art Unit	3618
Examiner Name	James M. DOLAK
Attorney Docket Number	34757-2775

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	7717457	B2	2010-05-18	Bearup et al.	
	2	8651502	B2	2014-02-18	Winterhalter et al.	
	3	8696055	B2	2014-04-15	Stolarz et al.	
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	7	9511789	B2	2016-12-06	Cheng et al.	
	8	9545940	B2	2017-01-17	Taylor et al.	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /J.M.D/

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	10	10023218	B2	2018-07-17	Paxton et al.	
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	30	11208136	B2	2021-12-28	Taylor et al.	

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	54	7677585	B2	2010-03-16	Rohl	
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	70	8458880	B2	2013-06-11	Fiore, Jr.	
	71	8585075	B2	2013-11-19	Zhong	
	72	8596670	B2	2013-12-03	di Carimate et al.	
	73	8696016	B2	2014-04-15	Homan et al.	
	74	8733784	B2	2014-05-27	Kobayashi	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /J.M.D/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT
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First Named Inventor	Mark ZEHFUSS
Art Unit	3618
Examiner Name	James M. DOLAK
Attorney Docket Number	34757-2775

	75	8764048	B1	2014-07-01	Ahnert et al.	
	76	8882134	B2	2014-11-11	Rolicki et al.	
	77	8905427	B2	2014-12-09	Katz et al.	
	78	8936261	B2	2015-01-20	Yuan	
	79	9010773	B2	2015-04-21	Horst et al.	
	80	9108654	B2	2015-08-18	Kozinski	
	81	9108659	B2	2015-08-18	Sparling	
	82	9119483	B1	2015-09-01	Heisey	
	83	9199659	B2	2015-12-01	Chen et al.	
	84	9200746	B2	2015-12-01	Xiao	
	85	9242665	B2	2016-01-26	Offord	

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	86	9260127	B2	2016-02-16	Rolicki et al.	
	87	9517787	B2	2016-12-13	Zehfuss et al.	
	88	9561817	B2	2017-02-07	Laffan et al.	
	89	9701333	B2	2017-07-11	Liu	
	90	9725106	B2	2017-08-08	Pos	
	91	9771095	B2	2017-09-26	Laffan et al.	
	92	9776652	B2	2017-10-03	Zhong	
	93	9840168	B2	2017-12-12	Yi et al.	
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	95	9924806	B2	2018-03-27	Panello et al.	
	96	9944305	B2	2018-04-17	Lee et al.	

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	97	9956979	B1	2018-05-01	Fernsten	
	98	10207731	B2	2019-02-19	Taylor et al.	
	99	10293843	B2	2019-05-21	Naslain	

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Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20220371643	A1	2022-11-24	Hu	
	2	20220410959	A1	2022-12-29	FLESSA et al.	
	3	20230125708	A1	2023-04-27	HU	
	4	20230219611	A1	2023-07-13	Taylor et al.	
	5	20010033069	A1	2001-10-25	Ivers	
	6	20020109321	A1	2002-08-15	Turner et al.	

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	Attorney Docket Number	34757-2775

	7	20030025304	A1	2003-02-06	Haeggberg	
	8	20060001226	A1	2006-01-05	Refsum	
	9	20060131841	A1	2006-06-22	Huang	
	10	20060290107	A1	2006-12-28	Powers	
	11	20070001429	A1	2007-01-04	Maciejczyk	
	12	20070085303	A1	2007-04-19	Cheng	
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	14	20070114738	A1	2007-05-24	Jones et al.	
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	16	20080231022	A1	2008-09-25	Hu et al.	
	17	20090302578	A1	2009-12-10	White et al.	

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	18	20100140902	A1	2010-06-10	Zehfuss	
	19	20140191483	A1	2014-07-10	Rolicki et al.	
	20	20140333039	A1	2014-11-13	Zehfuss	
	21	20160046315	A1	2016-02-18	Zehfuss et al.	

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FOREIGN PATENT DOCUMENTS Remove

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1	106184331	CN	B	2018-07-06	SUNNYLOVE BABY PRODUCTS ZHUHAI CO LTD	w/English abstract	☐
	2	107082083	CN	A	2017-08-22	MASTER KIDS TOY CO. LTD.	w/English abstract	☐
	3	108327769	CN	A	2018-07-27	GOODBABY CHILD PRODUCTS CO., LTD.	w/English abstract	☐
	4	108674478	CN	A	2018-10-19	GOODBABY CHILD PRODUCTS CO., LTD.	w/English abstract	☐
	5	108909813	CN	B	2023-07-11	GUANGDONG ROADMATE GROUP CO., LTD.	w/English abstract	☐

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Attorney Docket Number	34757-2775

	6	113135216	CN	A	2021-07-20	WONDERLAND SWITZERLAND AG	w/English abstract	☐
	7	113511252	CN	B	2022-10-28	GOODBABY CHILD PRODUCTS CO., LTD.	w/English abstract	☐
	8	113715891	CN	B	2023-01-31	GOODBABY CHILD PRODUCTS CO., LTD.	w/English abstract	☐
	9	114475760	CN	A	2022-05-13	ZHONGSHAN TAIKAS BABY PRODUCT LIMITED COMPANY	w/English abstract	☐
	10	102020132658	DE	A1	2021-06-17	WONDERLAND SWITZERLAND AG	w/English abstract	☐
	11	1992543	EP	B1	2010-08-18	HAUCK GMBH & CO KG	w/English abstract	☐
	12	3708461	EP	B1	2023-06-21	YOJIN INDUSTRY CORP.		☐
	13	4212408	EP	A1	2023-07-19	SUNNYLOVE BABY PRODUCTS ZHUHAI		☐
	14	2544377	GB	B	2021-03-03	WONDERLAND SWITZERLAND AG		☐
	15	2023105066	WO	A1	2023-06-15	WONDERLAND SWITZERLAND AG		☐
	16	2784272	CN	Y	2006-05-31	GOODBABY CHILD PRODUCTS CO LTD	w/English abstract	☐

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Attorney Docket Number	34757-2775

	17	1978264	CN	A	2007-06-13	HAOHAIZI CHILDREN S ARTICLES C	w/English abstract	☐
	18	2918181	CN	Y	2007-07-04	DONGGUAN LIAOBUQI DAILY PRODUC	w/English abstract	☐
	19	201626448	CN	U	2010-11-10	GE LUO	w/English abstract	☐
	20	201646823	CN	U	2010-11-24	GOODBABY CHILD PRODUCTS CO LTD	w/English abstract	☐
	21	102256856	CN	A	2011-11-23	DYNAMIC BRANDS LLC	w/English abstract	☐
	22	103909960	CN	A	2014-07-09	KOLCRAFT ENTPR INC	w/English abstract	☐
	23	103921830	CN	A	2014-07-16	DYNAMIC BRANDS LLC	w/English abstract	☐
	24	2253093	ES	A1	2006-05-16	PLAY SA	w/English abstract	☐
	25	2309203	GB	A	1997-07-23	JANE SA		☐
	26	2005105545	WO	A1	2005-11-10	STEPHANIE ROHL		☐
	27	2005105546	WO	A1	2005-11-10	STEPHANIE ROHL		☐

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	Attorney Docket Number	34757-2775

	28	2010065884	WO	A1	2010-06-10	DYNAMIC BRANDS LLC		☐
	29	2014042524	WO	A1	2014-03-20	WF INTERNATIONAL HOLDING BV		☐

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NON-PATENT LITERATURE DOCUMENTS Remove

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1	Extended European Search report issued in EP Application No. 17161947.1, dated Aug. 29, 2017 (9 pages).	☐
	2	International Search Report and Written Opinion for International Application No. PCT/US2009/066817, dated Jan. 29, 2010 (6 pages).	☐
	3	International Preliminary Report on Patentability for International Application No. PCT/US2009/066817, dated Jun. 7, 2011 (5 pages).	☐
	4	Office Action from Australian Patent Application 2009322149, dated Apr. 1, 2014 (5 pages).	☐
	5	Office Action from Australian Patent Application No. 2009322149, dated Dec. 2, 2014 (4 pages).	☐
	6	Office Action from Canadian Patent Application No. 2,745,914, dated Dec. 17, 2015 (3 pages).	☐
	7	Office Action from Chinese Patent Application No. 200980148829.3 dated Oct. 31, 2012 (17 pages, including 8 pages English translation).	☐

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	8	Office Action from Chinese Patent Application No. 200980148829. 3, dated Jun. 8, 2013 (11 pages, including, 5 pages English translation).	☐
	9	Office Action from Chinese Patent Application No. 200980148829. 3, dated Nov. 18, 2013 (5 pages, including 2 pages English translation).	☐
	10	Office Action from Chinese Patent Application No. 201410187239. 4, dated Sep. 6, 2015 (9 pages, including 4 pages English translation).	☐
	11	Office Action from European Patent Application No. 09831215, dated Jan. 13, 2016 (5 pages).	☐
	12	Office Action issued in Chinese Application No. 201710169826.4, dated Oct. 31, 2018, (11 pages).	☐

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

EXAMINER SIGNATURE

Examiner Signature	/JAMES M DOLAK/	Date Considered	07/16/2024

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

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

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Examiner Name	James M. DOLAK
Attorney Docket Number	34757-2775

CERTIFICATION STATEMENT

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

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

OR

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

☐ See attached certification statement.

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

☒ A certification statement is not submitted herewith.

SIGNATURE

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

Signature	/Umar Bakhsh/	Date (YYYY-MM-DD)	2024-05-15
Name/Print	Umar Bakhsh	Registration Number	67307

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

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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 record s.

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.

EFS Web 2.1.18

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
18/448,417	08/11/2023	Mark ZEHFUSS	34757-2775	3414

134811 7590 07/25/2024

Eversheds Sutherland (US) LLP/NWL
999 Peachtree Street
Suite 2300
Atlanta, GA 30309

EXAMINER	
DOLAK, JAMES M	

ART UNIT	PAPER NUMBER
3618	

NOTIFICATION DATE	DELIVERY MODE
07/25/2024	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):

patentdocket@eversheds-sutherland.com

Office Action Summary	Application No. 18/448,417	Applicant(s) ZEHFUSS, Mark	
	Examiner JAMES M DOLAK	Art Unit 3618	AIA (FITF) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☑ Responsive to communication(s) filed on 5/21/2024.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☑ This action is **FINAL.** 2b) ☐ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5) ☑ Claim(s) 2-16 is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6) ☐ Claim(s) _____ is/are allowed.

7) ☑ Claim(s) 2-16 is/are rejected.

8) ☐ Claim(s) _____ is/are objected to.

9) ☐ Claim(s) _____ are subject to restriction and/or election requirement

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to **PPHfeedback@uspto.gov.**

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☑ The drawing(s) filed on 8/11/2023 is/are: a)☐ accepted or b)☑ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a)☐ All b)☐ Some** c)☐ None of the:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☑ Notice of References Cited (PTO-892)

2) ☑ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.

4) ☐ Other: _____.

DETAILED ACTION

Notice of Pre-AIA or AIA Status

1. The present application is being examined under the pre-AIA first to invent provisions.

Response to Amendment

2. The reply filed on 5/21/2024 cancelled claim 1, and added new claims 2-16. Claims 2-16 are currently pending herein.

Response to Arguments

3. Applicant's arguments with respect to claim(s) 2-16 have been considered but are moot because the new ground of rejection does not rely on any reference applied in the prior rejection of record for any teaching or matter specifically challenged in the argument.

Information Disclosure Statement

4. The information disclosure statement (IDS) submitted on 5/15/2024 was filed in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Drawings

5. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "one or more seat attachment portions", and "one or more first seat attachment portions and the stroller further comprises one or more second seat attachment portions" (Claim 2/10/11 – only one attachment portion 17 is portrayed in the Figures 1-3, see below 35 USC 112

rejections) and similarly all of the elements listed below must be shown and labeled or the feature(s) canceled from the claim(s) (No new matter should be entered).

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

6. Claims 2, 5, 6, 7, are objected to because of the following informalities: "the stroller frame's" (Claim 2, line 8 & 10, etc.) is not necessary and should be removed. Appropriate correction is required.

7. Claim 11 is objected to because of the following informalities: "the frame's" is not necessary and should be removed. Appropriate correction is required.

Claim Rejections - 35 USC § 112

8. The following is a quotation of 35 U.S.C. 112(b):
(b) CONCLUSION.—The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor regards as the invention.

The following is a quotation of 35 U.S.C. 112 (pre-AIA), second paragraph:
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 2-16 are rejected under 35 U.S.C. 112(b) or 35 U.S.C. 112 (pre-AIA), second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the inventor or a joint inventor (or for applications subject to pre-AIA 35 U.S.C. 112, the applicant), regards as the invention. Specifically, the limitations: “one or more seat attachment portions” (Claim 2, line 12 — the embodiment of Figure 1-3 as the claims appear to be directed to only provides one seat attachment portion 17 and it is unclear how more than one would properly function), are currently unclear and the disclosure does not provide support for the limitations. Appropriate correction is required.

10. Claims 3, 4, and 16, are rejected under 35 U.S.C. 112(b) or 35 U.S.C. 112 (pre-AIA), second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the inventor or a joint inventor (or for applications subject to pre-AIA 35 U.S.C. 112, the applicant), regards as the invention. The term “substantially” in claim 3, 4, and 16 is a relative term which renders the claim indefinite. The term "substantially" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Since no tolerances have been defined by the specification or claims, it's impossible to determine what

range has been actually claimed, thus rendering the scope of the claim(s) not clearly defined. Appropriate correction is required.

11. Claim 8 is rejected under 35 U.S.C. 112(b) or 35 U.S.C. 112 (pre-AIA), second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the inventor or a joint inventor (or for applications subject to pre-AIA 35 U.S.C. 112, the applicant), regards as the invention. Specifically, the limitations: "positioned to support" are unclear and therefore render the claim indefinite. Appropriate correction is required.

12. Claims 10 and 11 are rejected under 35 U.S.C. 112(b) or 35 U.S.C. 112 (pre-AIA), second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the inventor or a joint inventor (or for applications subject to pre-AIA 35 U.S.C. 112, the applicant), regards as the invention. Specifically, the limitations: "one or more seat attachment portions comprise ***one or more first seat attachment portions*** and the stroller further comprises ***one or more second seat attachment portions*** connected to the stroller frame and wherein the first seat is removably attached to the one or more second seat attachment portions" (Claim 10 — the embodiment of Figure 1-3 as the claims appear to be directed to only provides one seat attachment portion 17 and it is unclear how more than one would properly function), are currently unclear and the disclosure does not provide support for the limitations. Therefore, the claims are currently indefinite. Appropriate correction is required.

Claim Rejections - 35 USC § 102

13. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

14. **Claims 2-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Liao (US D593,459)**.

[Claim 2] Regarding Claim 2, Liao discloses: A convertible stroller (See, e.g., Fig. 1-13) configured for being converted from a single stroller to a double stroller (See, e.g., Fig. 1-13), the stroller comprising: a stroller frame (See, e.g., Fig. 1-13) configured for being adjusted between a folded configuration and an unfolded configuration (See, e.g., Fig. 1-13), the stroller frame comprising: a handle portion (See, e.g., Fig. 1-13); a front wheel support portion (See, e.g., Fig. 1-13); and a back wheel support portion (See, e.g., Fig. 1-13); and at least one front wheel secured to the stroller frame's front wheel support portion (See, e.g., Fig. 1-13); two rear wheels secured to the stroller frame's back wheel support portion (See, e.g., Fig. 1-13); a first seat (See, e.g., Fig. 1-13) removably attached to the stroller frame (See, e.g., Fig. 1-13); one or more seat attachment portions removably attached to the stroller frame (See, e.g., Fig. 1-13); and a second seat (See, e.g., Fig. 1-13) removably attached to the one or more seat attachment portions (See, e.g., Fig. 1-13) and positioned in front of the first seat (See, e.g., Fig. 1-13); wherein at least one of the first seat and the second seat is configured for being removably attached to the stroller frame in a forward-facing configuration and a backward-facing configuration (See, e.g., Fig. 11-12); and wherein the first seat and

the second seat are positioned such that a center of gravity of the stroller is between the at least one front wheel and the plurality of back wheels (See, e.g., Fig. 1-13).

[Claim 3] Regarding Claim 3, Liao discloses: wherein the second seat is positioned substantially over the at least one front wheel (See, e.g., Fig. 11-12).

[Claim 4] Regarding Claim 4, Liao discloses: wherein the first seat is positioned substantially over the two rear wheels (See, e.g., Fig. 11-12).

[Claim 5] Regarding Claim 5, Liao discloses: wherein the first seat is positioned adjacent to the stroller frame's handle portion (See, e.g., Fig. 11-12).

[Claim 6] Regarding Claim 6, Liao discloses: wherein the first seat is positioned nearer to the stroller frame's handle portion than the second seat (See, e.g., Fig. 11-12).

[Claim 7] Regarding Claim 7, Liao discloses: wherein the one or more seat attachment portions are removably attached to the stroller frame's front wheel support portion (See, e.g., Fig. 1-13).

[Claim 8] Regarding Claim 8, Liao discloses: wherein the one or more seat attachment portions are positioned to support the second seat above the at least one front wheel (See, e.g., Fig. 11-12).

[Claim 9] Regarding Claim 9, Liao discloses: wherein the one or more seat attachment portions each comprise a seat connector configured for connecting to the second seat (See, e.g., Fig. 1-13).

[Claim 10] Regarding Claim 10, Liao discloses: wherein the one or more seat attachment portions comprise one or more first seat attachment portions and the stroller further comprises one or more second seat attachment portions connected to the

stroller frame (See, e.g., Fig. 1-13); and wherein the first seat is removably attached to the one or more second seat attachment portions (See, e.g., Fig. 1-13).

[Claim 11] Regarding Claim 11, Liao discloses: wherein the one or more first seat attachment portions are removably attached to the stroller frame's front wheel support portion (See, e.g., Fig. 1-13), and wherein the one or more second seat attachment portions are connected to the stroller frame adjacent to the frame's handle portion (See, e.g., Fig. 1-13).

[Claim 12] Regarding Claim 12, Liao discloses: wherein the first seat is configured for being attached to the stroller frame in a forward-facing configuration and a backward-facing configuration (See, e.g., Fig. 11-12).

[Claim 13] Regarding Claim 13, Liao discloses: wherein the at least one front wheel comprises two front wheels secured to the stroller frame's front wheel support portion (See, e.g., Fig. 1-13).

[Claim 14] Regarding Claim 14, Liao discloses: wherein the second seat is configured for being attached to the one or more seat attachment portions in a forward-facing configuration and a backward- facing configuration (See, e.g., Fig. 11-12).

[Claim 15] Regarding Claim 15, Liao discloses: wherein the first seat is configured for being removably attached to the stroller frame at a first vertical position (See, e.g., Fig. 1-13), and the second seat is configured for being removably attached to the one or more seat attachment portions at a second vertical position that is below the first vertical position (See, e.g., Fig. 1-13).

[Claim 16] Regarding Claim 16, Liao discloses: wherein the handle portion and the front wheel support portion are substantially parallel when the stroller frame is in the unfolded configuration (See, e.g., Fig. 1-13).

Conclusion

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure, and can be found on the attached Notice of References Cited.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAMES M DOLAK whose telephone number is (571)270-7757. The examiner can normally be reached on 9-530 EST Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, J ALLEN SHRIVER can be reached on 303-297-4337. 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 http://pair-direct.uspto.gov. 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.

/JAMES M DOLAK/
Primary Examiner, Art Unit 3618.

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 18/448,417	Filing Date 08/11/2023	☐ To be Mailed

ENTITY: ☑ LARGE ☐ SMALL ☐ MICRO

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A		N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A		N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*		x $100 =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*		x $480 =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).				
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))					
* If the difference in column 1 is less than zero, enter "0" in column 2.				TOTAL	

APPLICATION AS AMENDED - PART II

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT	09/19/2024	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 16	Minus	** 20	= 0		x $100 =	0
	Independent (37 CFR 1.16(h))	* 2	Minus	*** 3	= 0		x $480 =	0
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	0

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=		x $0 =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=		x $0 =	
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.	SLIE
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".	/LISA R EPPS/
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".	
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.	

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.	:	18/448,417
Filed	:	August 11, 2023
First Named Inventor	:	Mark Zehfuss
Applicant	:	Baby Jogger, LLC
Title	:	Removable Seat Attachment for a Stroller
Confirmation No.	:	3414
Art Unit	:	3618
Examiner	:	James M. Dolak
Attorney Docket No.	:	34757-2775
Customer No.	:	134811

AMENDMENT AND RESPONSE TO FINAL OFFICE ACTION

Via EFS-Web
Commissioner for Patents
Alexandria, VA 22313-1450

Dear Commissioner:

Responsive to the Final Office Action dated July 25, 2024 (the "Office Action"), Applicant submits the following amendments and remarks, along with a request for reconsideration under the After Final Consideration Pilot 2.0 program.

Amendments to the Claims begin on page 2.

Remarks begin on page 6.

Amendments to the Claims

1. (Canceled)

2. (Currently Amended) A convertible stroller configured for being converted from a single stroller to a double stroller, the stroller comprising:

a stroller frame configured for being adjusted between a folded configuration and an unfolded configuration, the stroller frame comprising:

a handle portion;

a front wheel support portion; and

a back wheel support portion; [[and]]

at least one front wheel secured directly to the ~~stroller frame's~~ front wheel support portion;

two rear wheels secured to the ~~stroller frame's~~ back wheel support portion;

a first seat removably attached to the stroller frame;

~~one or more~~ a first seat attachment portion ~~portions~~ removably attached directly to the stroller frame; and

a second seat removably attached to the ~~one or more~~ first seat attachment portion ~~portions~~ and positioned in front of the first seat;

wherein at least one of the first seat and the second seat is configured for being removably attached to the stroller frame in a forward-facing configuration and a backward-facing configuration; and

wherein the first seat and the second seat are positioned such that a center of gravity of the stroller is between the at least one front wheel and the ~~plurality of back~~ two rear wheels.

3. (Currently Amended) The stroller of Claim 2, wherein the second seat is positioned ~~substantially~~ over the at least one front wheel.

4. (Currently Amended) The stroller of Claim 2, wherein the first seat is positioned ~~substantially~~ over the two rear wheels.

5. (Currently Amended) The stroller of Claim 2, wherein the first seat is positioned adjacent to the ~~stroller frame's~~ handle portion.

6. (Currently Amended) The stroller of Claim 2, wherein the first seat is positioned nearer to the ~~stroller frame's~~ handle portion than the second seat.

7. (Currently Amended) The stroller of Claim 2, wherein the ~~one or more~~ first seat attachment portion is ~~portions are~~ removably attached to the ~~stroller frame's~~ front wheel support portion.

8. (Currently Amended) The stroller of Claim 2, wherein the ~~one or more~~ first seat attachment portion supports ~~portions are positioned to support~~ the second seat above the at least one front wheel.

9. (Currently Amended) The stroller of Claim 2, wherein the ~~one or more~~ first seat attachment portion comprises ~~portions each comprise~~ a seat connector configured for connecting to the second seat.

10. (Currently Amended) The stroller of Claim 2, wherein ~~the one or more seat attachment portions comprise one or more first seat attachment portions and~~ the stroller further comprises ~~one or more second seat attachment portions~~ a second seat attachment portion connected to the stroller frame; and

wherein the first seat is removably attached to the ~~one or more~~ second seat attachment portion ~~portions~~.

11. (Currently Amended) The stroller of Claim 10, wherein the ~~one or more~~ first seat attachment portion is ~~portions are~~ removably attached to the ~~stroller frame's~~ front wheel support portion, and

wherein the ~~one or more~~ second seat attachment portion is ~~portions are~~ connected to the stroller frame adjacent to the ~~frame's~~ handle portion.

12. (Previously Presented) The stroller of Claim 2, wherein the first seat is configured for being attached to the stroller frame in a forward-facing configuration and a backward-facing configuration.

13. (Currently Amended) The stroller of Claim 2, wherein the at least one front wheel comprises two front wheels secured to the ~~stroller frame's~~ front wheel support portion.

14. (Previously Presented) The stroller of Claim 2, wherein the second seat is configured for being attached to the one or more seat attachment portions in a forward-facing configuration and a backward-facing configuration.

15. (Previously Presented) The stroller of Claim 2, wherein the first seat is configured for being removably attached to the stroller frame at a first vertical position, and the second seat is configured for being removably attached to the one or more seat attachment portions at a second vertical position that is below the first vertical position.

16. (Currently Amended) The stroller of Claim 2, wherein the handle portion and the front wheel support portion are ~~substantially~~ parallel when the stroller frame is in the unfolded configuration.

17. (New) A convertible stroller configured for being converted from a single stroller to a double stroller, the stroller comprising:

a stroller frame configured for being adjusted between a folded configuration and an unfolded configuration, the stroller frame comprising:

a handle portion;

a front wheel support portion; and

a back wheel support portion;

only two front wheels secured to the front wheel support portion, wherein the only two front wheels are aligned on opposite sides of the stroller frame;

only two rear wheels secured to the back wheel support portion;

a first seat removably attached to the stroller frame;

a first seat attachment portion removably attached to the stroller frame; and

a second seat removably attached to the first seat attachment portion and positioned in front of the first seat;

wherein at least one of the first seat and the second seat is configured for being removably attached to the stroller frame in a forward-facing configuration and a backward-facing configuration; and

wherein the first seat and the second seat are positioned such that a center of gravity of the stroller is between the at least one front wheel and the two rear wheels.

Remarks

This Response is believed to be fully responsive to the Final Office Action dated July 25, 2024. Claims 2-16 are pending and stand rejected. Claims 2-11, 13, and 16 are presently amended. Claim 17 is new. After entry of the present claim amendments, claims 2-17 will remain pending. The amendments to the claims are fully supported by the specification and drawings as originally filed. It is respectfully submitted that no new matter has been added.

Examiner-Initiated Interview Request

If needed, Applicant requests that the Examiner contact the undersigned to schedule an Examiner-initiated interview to discuss the present amendments and remarks, in accordance with the guidelines set forth under the After Final Consideration Pilot 2.0 program.

Drawing Objection

The drawings are objected to under 37 C.F.R. 1.83(a) for allegedly failing to show an element of claim 2. This rejection is moot in view of the present claim amendments. Reconsideration is respectfully requested.

Claim Objections

Claims 2, 5-7, and 11 are objected to for minor informalities that are addressed by the present amendment to the claims. Reconsideration is respectfully requested.

Rejection under 35 U.S.C. § 112

Claims 2-16 stand rejected under 35 U.S.C. § 112 as allegedly being indefinite with respect to the claimed "one or more seat attachment portions." Applicant submits this rejection is moot in view of the present claim amendments. Reconsideration is respectfully requested.

Rejection under 35 U.S.C. § 102

Claims 2-16 stand rejected under 35 U.S.C. § 102 as allegedly being anticipated by U.S. Patent No. D593,459 to Liao (Liao). This rejection is traversed for at least the following reasons.

Claim 2 is amended to clarify that "at least one front wheel [is] secured directly to the front wheel support portion," and "a first seat attachment portion [is] removably attached directly to the stroller frame." Liao does not teach or suggest at least these elements of claim 2.

In particular, with reference to representative FIG. 5 of Liao (reproduced below), the alleged seat attachment portion of Liao is not attached directly to the stroller frame. If the handle portion of Liao is considered the stroller frame, to which the rearmost of the front wheels is coupled, the alleged seat attachment portion is not directly attached to the stroller frame. Instead, the alleged seat attachment portion appears to be coupled to a separate discrete component that is coupled to the frontmost front wheels.

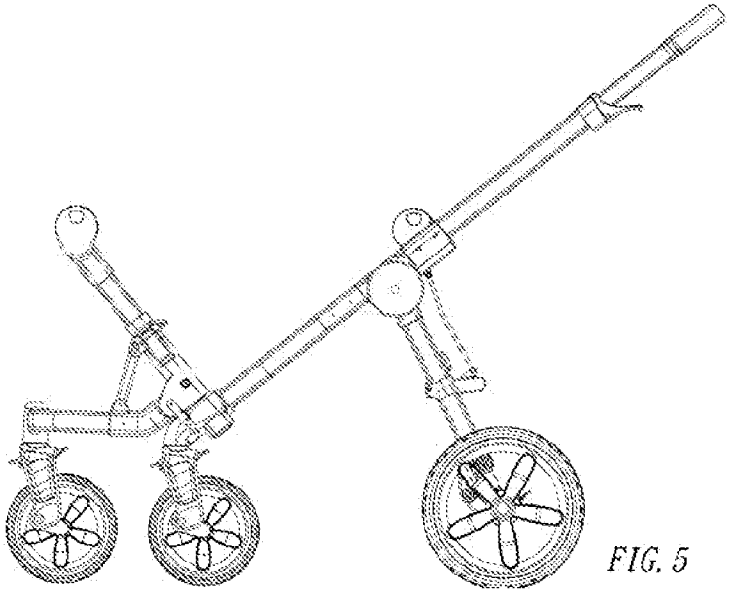

FIG. 5

As a result, Liao does not teach or fairly suggest each and every element of claim 2. Reconsideration and allowance of claims 2-16 is therefore respectfully requested.

Conclusion

It is believed that each matter raised by the Office Action has been addressed by this Response. Accordingly, allowance of the claims is respectfully solicited. It is not believed that extensions of time or additional fees are required beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned for under 37 C.F.R. § 1.136(a), and any fee required therefore (including any fee associated with net addition of claims) is hereby authorized to be charged to Deposit Account No. 19-5029. If there are any issues that can be resolved by teleconference or an Examiner's Amendment, the Examiner is invited to telephone the undersigned.

Respectfully submitted,

/Umar R. Bakhsh/
Umar R. Bakhsh
Reg. No. 67,307

Date: September 19, 2024

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UNITED STATES
PATENT AND TRADEMARK OFFICE

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Alexandria, VA 22313 - 1450
www.uspto.gov

ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/448,417	**09/19/2024 05:21:43 PM Z ET**	**34757-2775**

Title of Invention

REMOVABLE SEAT ATTACHMENT FOR A STROLLER

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	3414	FILED BY	Loretta Garcia
PATENT CENTER #	67240665	FILING DATE	08/11/2023
CUSTOMER #	134811	FIRST NAMED INVENTOR	Mark ZEHFUSS
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	Umar Bakhsh

Documents

TOTAL DOCUMENTS: 3

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
34757-2775 After Final Consideration Pilot Program.pdf	2	After Final Consideration Program Request	253 KB
34757-2775 Response to Final Office Action-APP.TEXT.docx	8	Application body structured text document	123 KB

Warning: The automatic document description has been replaced. Dynamic dates have been converted to static dates. Bookmarks were found and have been removed. Dynamic dates have been converted to static dates. Bookmarks were found and have been removed.

34757-2775 Response to Final Office Action.pdf	8	Auxiliary PDF of Application	264 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
34757-2775 After Final Consideration Pilot Program.pdf	DC3724A16CFB596FF90661DECB8474EFA429F68DEC6E3FA4 3DF04F36A4F1AFB48DECBB5326E6AB9F1B9CDEA7BEB349B 7453ADE006E7A95ABCADAD3C5F9286B54
34757-2775 Response to Final Office Action-APP.TEXT.docx	7D212667EFE504D6787E5503A41DC6B465A8C037A642267B0 EF7A0545F8A0FCB85BB39412C0175017F5F0843A9A23CB14F 913054BE8F2778FFBB0CB76845058B
34757-2775 Response to Final Office Action.pdf	C381AA01F36809DEDF9705480BEC44AFF2FCB5F440260276F 9468DE638010CFEEE685B17EA957F7C512377041CC2CA1BE7 4B9772ADF77782B0C59D9D21C8E0DA

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 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: A.NE.AFCP
Document Description: After Final Consideration Program Request

PTO/SB/434 (3-22)

CERTIFICATION AND REQUEST FOR CONSIDERATION UNDER THE AFTER FINAL CONSIDERATION PILOT PROGRAM 2.0

Practitioner Docket No.:	Application No.:	Filing Date:
34757-2775	18/448,417	August 11, 2023
First Named Inventor:	**Title:**	
Mark Zehfuss	REMOVABLE SEAT ATTACHMENT FOR A STROLLER	

APPLICANT HEREBY CERTIFIES THE FOLLOWING AND REQUESTS CONSIDERATION UNDER THE AFTER FINAL CONSIDERATION PILOT PROGRAM 2.0 (AFCP 2.0) OF THE ACCOMPANYING RESPONSE UNDER 37 CFR 1.116.

1. The above-identified application is (i) an original utility, plant, or design nonprovisional application filed under 35 U.S.C. 111(a) [a continuing application (*e.g.*, a continuation or divisional application) is filed under 35 U.S.C. 111(a) and is eligible under (i)], or (ii) an international application that has entered the national stage in compliance with 35 U.S.C. 371(c).
2. The above-identified application contains an outstanding final rejection.
3. Submitted herewith is a response under 37 CFR 1.116 to the outstanding final rejection. The response includes an amendment to at least one independent claim, and the amendment does not broaden the scope of the independent claim in any aspect.
4. This certification and request for consideration under AFCP 2.0 is the only AFCP 2.0 certification and request filed in response to the outstanding final rejection.
5. Applicant is willing and available to participate in any interview requested by the examiner concerning the present response.
6. This certification and request is being filed electronically using the USPTO's patent electronic filing system.
7. Any fees that would be necessary consistent with current practice concerning responses after final rejection under 37 CFR 1.116, *e.g.*, extension of time fees, are being concurrently filed herewith. [There is no additional fee required to request consideration under AFCP 2.0.]
8. By filing this certification and request, applicant acknowledges the following:
    - Reissue applications and reexamination proceedings are not eligible to participate in AFCP 2.0.
    - The examiner will verify that the AFCP 2.0 submission is compliant, *i.e.*, that the requirements of the program have been met (see items 1 to 7 above). For compliant submissions:
        - The examiner will review the response under 37 CFR 1.116 to determine if additional search and/or consideration (i) is necessitated by the amendment and (ii) could be completed within the time allotted under AFCP 2.0. If additional search and/or consideration is required but cannot be completed within the allotted time, the examiner will process the submission consistent with current practice concerning responses after final rejection under 37 CFR 1.116, *e.g.*, by mailing an advisory action.
        - If the examiner determines that the amendment does not necessitate additional search and/or consideration, or if the examiner determines that additional search and/or consideration is required and could be completed within the allotted time, then the examiner will consider whether the amendment places the application in condition for allowance (after completing the additional search and/or consideration, if required). If the examiner determines that the amendment does not place the application in condition for allowance, then the examiner will contact the applicant and request an interview.
            - The interview will be conducted by the examiner, and if the examiner does not have negotiation authority, a primary examiner and/or supervisory patent examiner will also participate.
            - If the applicant declines the interview, or if the interview cannot be scheduled within ten (10) calendar days from the date that the examiner first contacts the applicant, then the examiner will proceed consistent with current practice concerning responses after final rejection under 37 CFR 1.116.

Signature	Date	Practitioner Registration No.
/Umar R. Bakhsh/	09/19/24	67,307
Name (Print/Typed)	**Telephone Number**	
Umar R. Bakhsh	404-853-8084	

Note: *This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. Submit multiple forms if more than one signature is required, see below*.*

☑ * Total of one forms are submitted.

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.

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.
18/448,417	08/11/2023	Mark ZEHFUSS	34757-2775	3414

134811 7590 10/10/2024

Eversheds Sutherland (US) LLP/NWL
999 Peachtree Street
Suite 2300
Atlanta, GA 30309

EXAMINER	
DOLAK, JAMES M	

ART UNIT	PAPER NUMBER
3613	

NOTIFICATION DATE	DELIVERY MODE
10/10/2024	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):

patentdocket@eversheds-sutherland.com

Advisory Action Before the Filing of an Appeal Brief	**Application No.** 18/448,417	**Applicant(s)** ZEHFUSS, Mark	
	Examiner JAMES M DOLAK	**Art Unit** 3618	**AIA (FITF) Status** No

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 19 September 2024 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

NO NOTICE OF APPEAL FILED

1. ☑ The reply was filed after a final rejection. No Notice of Appeal has been filed. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114 if this is a utility or plant application. Note that RCEs are not permitted in design applications. The reply must be filed within one of the following time periods:
   a) ☐ The period for reply expires ____ months from the mailing date of the final rejection.
   b) ☑ The period for reply expires on: (1) the mailing date of this Advisory Action; or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.
   c) ☐ A prior Advisory Action was mailed more than 3 months after the mailing date of the final rejection in response to a first after-final reply filed within 2 months of the mailing date of the final rejection.The current period for reply expires ____ months from the mailing date of *the prior Advisory Action* or SIX MONTHS from the mailing date of the final rejection, whichever is earlier.
   Examiner Note: If box 1 is checked, check either box (a), (b) or (c). ONLY CHECK BOX (b) WHEN THIS ADVISORY ACTION IS THE FIRST RESPONSE TO APPLICANTS FIRST AFTER-FINAL REPLY WHICH WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. ONLY CHECK BOX (c) IN THE LIMITED SITUATION SET FORTH UNDER BOX (c). See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) or (c) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37CFR 41.37(a).

AMENDMENTS

3. ☑ The proposed amendments filed after a final rejection, but prior to the date of filing a brief, will not be entered because
   a) ☑ They raise new issues that would require further consideration and/or search (see NOTE below);
   b) ☐ They raise the issue of new matter (see NOTE below);
   c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
   d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.
   NOTE: See Continuation Sheet (See 37 CFR 1.116 and 41.33(a)).
4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).
5. ☐ Applicant's reply has overcome the following rejection(s): _____
6. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
7. ☑ For purposes of appeal, the proposed amendment(s):(a) ☑ will not be entered, or (b) ☐ will be entered, and an explanation of how the new or amended claims would be rejected is provided below or appended.

AFFIDAVIT OR OTHER EVIDENCE

8. ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____
9. ☐ The affidavit or other evidence filed after final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).
10. ☐ The affidavit or other evidence filed after the date of filing the Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing of good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).
11. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

12. ☑ The request for reconsideration has been considered but does NOT place the application in condition for allowance because: See Continuation Sheet.
13. ☐ Note the attached Information *Disclosure Statement*(s). (PTO/SB/08) Paper No(s). _____
14. ☑ Other: PTO-2323, PTO-892, PTO-413.

STATUS OF CLAIMS

15. The status of the claim(s) is (or will be) as follows:
    Claim(s) allowed:_____.
    Claim(s) objected to:_____.
    Claim(s) rejected:2-16.
    Claim(s) withdrawn from consideration:_____.

/JAMES M DOLAK/ Primary Examiner, Art Unit 3618	

Continuation of 3. NOTE: The new amendments require further search and consideration but as best understood would overcome the current art rejections. (See attached PTO-2323, PTO-892 and PTOL-413).

Continuation of REQUEST FOR RECONSIDERATION/OTHER 12. The request for reconsideration has been considered but does NOT place the application in condition for allowance because: The new amendments require further search and consideration but as best understood would overcome the current art rejections, however a determination of allowability could not be made in the time allotted under the AFCP pilot. New independent claim 17 also appears to present possible issues regarding election by original presentation, and 35 USC 112 issues at least in line 19: "at least one front wheel."

Applicant-Initiated Interview Summary	**Application No.** 18/448,417	**Applicant(s)** ZEHFUSS, Mark	
	Examiner JAMES M DOLAK	**Art Unit** 3618	**AIA (FITF) Status** No

All participants (applicant, applicants representative, PTO personnel):

(1) JAMES M. DOLAK (Examiner). (3) _____.

(2) Umar Bakhsh (Applicant's representative). (4) _____.

Date of Interview: 07 October 2024.

Type: ☑ Telephonic ☐ Video Conference
☐ Personal [copy given to: ☐ applicant ☐ applicant's representative]

Exhibit shown or demonstration conducted: ☐ Yes ☑ No.
If Yes, brief description: _____.

Issues Discussed ☐101 ☐112 ☑102 ☑103 ☐Others
(For each of the checked box(es) above, please describe below the issue and detailed description of the discussion)

Claim(s) discussed: 2-17.

Identification of prior art discussed: Cheng (US 7,475,900 B2), Cone (US 6,286,844 B1) and Cheng (D593,459S).

Substance of Interview
(For each issue discussed, provide a detailed description and indicate if agreement was reached. Some topics may include: identification or clarification of a reference or a portion thereof, claim interpretation, proposed amendments, arguments of any applied references etc...)

Discussed the AFCP pilot claim amendments filed 9/19/2024 in relation to the outstanding rejections presented in the Final office action mailed 7/25/2024 (See attached PTO-2323).

Applicant recordation instructions: The formal written reply to the last Office action must include the substance of the interview. (See MPEP section 713.04). If a reply to the last Office action has already been filed, applicant is given a non-extendable period of the longer of one month or thirty days from this interview date, or the mailing date of this interview summary form, whichever is later, to file a statement of the substance of the interview.

Examiner recordation instructions: Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

☐ Attachment

/JAMES M DOLAK/ Primary Examiner, Art Unit 3618	

Summary of Record of Interview Requirements

Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record
A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

Title 37 Code of Federal Regulations (CFR) 1.133 Interviews
Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

37 CFR §1.2 Business to be transacted in writing.
All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiners responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicants correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:
- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:
1) A brief description of the nature of any exhibit shown or any demonstration conducted,-
2) an identification of the claims discussed,
3) an identification of the specific prior art discussed,
4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
5) a brief identification of the general thrust of the principal arguments presented to the examiner,
(The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
6) a general indication of any other pertinent matters discussed, and
7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicants record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiners version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, Interview Record OK on the paper recording the substance of the interview along with the date and the examiners initials.

Notice of References Cited	Application/Control No. 18/448,417	Applicant(s)/Patent Under Reexamination ZEHFUSS, Mark	
	Examiner JAMES M DOLAK	Art Unit 3618	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date YYYY-MM-DD	Name	CPC Classification	US Classification
*	A	US-7210699-B2	2007-05-01	Lan; Red	B62B7/10	280/47.38
*	B	US-12037039-B2	2024-07-16	Yi; Xiaolong	B62B7/04	1/1
	C					
	D					
	E					
	F					
	G					
	H					
	I					
	J					
	K					
	L					
	M					

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date YYYY-MM-DD	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 YYYY-MM-DD format are publication dates. Classifications may be US or foreign.

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	18/448,417	ZEHFUSS, Mark
	Examiner	Art Unit
	JAMES M DOLAK	3618

CPC - Searched*		
Symbol	Date	Examiner
B62B7/008,00,006,14,142,145	02/24/2024	JMD
B62B9/12,28,102	02/24/2024	JMD

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
Inventor & Assignee Search	02/24/2024	JMD
Text search	02/24/2024	JMD
Updated Search	07/03/2024	jmd
AFCP Updated Search	09/24/2024	jmd

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner
ALL	See attached Search History	10/03/2024	jmd

/JAMES M DOLAK/ Primary Examiner.Art Unit 3618	/JAMES M DOLAK/ Primary Examiner, Art Unit 3618

AFCP 2.0 Decision

Application No.	Applicant(s)	
18/448,417	ZEHFUSS, Mark	
Examiner	**Art Unit**	**AIA (FITF) Status**
JAMES M DOLAK	3618	No

This is in response to the After Final Consideration Pilot request filed 19 September 2024.

1. **Improper Request** – The AFCP 2.0 request is improper for the following reason(s) and the after final amendment submitted with the request will be treated under pre-pilot procedure.

   ☐ An AFCP 2.0 request form PTO/SB/434 (or equivalent document) was not submitted.

   ☐ A non-broadening amendment to at least one independent claim was not submitted.

   ☐ The request is not the first proper AFCP 2.0 request submitted in response to the most recent final rejection.

   ☐ Other: _____

2. **Proper Request**

   A. After final amendment submitted with the request will not be treated under AFCP 2.0.
   The after final amendment cannot be reviewed and a search conducted within the guidelines of the pilot program.

   ☐ The after final amendment will be treated under pre-pilot procedure.

   B. Updated search and/or completed additional consideration.
   The examiner performed an updated search and/or completed additional consideration of the after final amendment within the time authorized for the pilot program. The result(s) of the updated search and/or completed additional consideration are:

   ☐ 1. All of the rejections in the most recent final Office action are overcome and a Notice of Allowance is issued herewith.

   ☐ 2. The after final amendment would not overcome all of the rejections in the most recent final Office action . See attached interview summary for further details.

   ☑ 3. The after final amendment was reviewed, and it raises a new issue(s). See attached interview summary for further details.

   ☑ 4. The after final amendment raises new issues, but would overcome all of the rejections in the most recent final Office action. A decision on determining allowability could not be made within the guidelines of the pilot. See attached interview summary for further details, including any newly discovered prior art.

   ☐ 5. Other: _____

   Examiner Note: Please attach an interview summary when necessary as described above.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.	:	18/448,417
Filed	:	August 11, 2023
First Named Inventor	:	Mark Zehfuss
Applicant	:	Baby Jogger, LLC
Title	:	Removable Seat Attachment for a Stroller
Confirmation No.	:	3414
Art Unit	:	3618
Examiner	:	James M. Dolak
Attorney Docket No.	:	34757-2775
Customer No.	:	134811

AMENDMENT AND RESPONSE TO FINAL OFFICE ACTION

Via EFS-Web
Commissioner for Patents
Alexandria, VA 22313-1450

Dear Commissioner:

Responsive to the Final Office Action dated July 25, 2024 (the "Office Action"), Applicant submits the following amendments and remarks, along with a request for reconsideration under the After Final Consideration Pilot 2.0 program.

Amendments to the Claims begin on page 2.

Remarks begin on page 6.

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 18/448,417	Filing Date 08/11/2023	☐ To be Mailed

ENTITY: ☑ LARGE ☐ SMALL ☐ MICRO

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A		N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A		N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*		x $100 =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*		x $480 =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).				
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))					
* If the difference in column 1 is less than zero, enter "0" in column 2.				TOTAL	

APPLICATION AS AMENDED - PART II

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT	10/25/2024	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 16	Minus	** 20	= 0		x $100 =	0
	Independent (37 CFR 1.16(h))	* 2	Minus	*** 3	= 0		x $480 =	0
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	0

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=		x $0 =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=		x $0 =	
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.	SLIE
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".	/SHARON M WEST/
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".	
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.	

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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

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

PTO/SB/30EFS (01-22)
Approved for use through 05/31/2024. OMB 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	18/448,417	Filing Date	2023-08-11	Docket Number (if applicable)	34757-2775	Art Unit	3613
First Named Inventor	Mark Zehfuss			Examiner Name	James M. Dolak		

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 195029

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

☒ Patent Practitioner Signature

☐ Applicant Signature

UPPABABY ET AL. EX. 1068

PTO/SB/30EFS (01-22)
Approved for use through 05/31/2024. OMB 0651-0031
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Signature of Registered U.S. Patent Practitioner			
Signature	/Umar R. Bakhsh/	Date (YYYY-MM-DD)	2024-10-25
Name	Umar R. Bakhsh	Registration Number	67,307

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

P.O. Box 1450
Alexandria, VA 22313 - 1450
www.uspto.gov

ELECTRONIC PAYMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/448,417	**10/25/2024 03:23:53 PM Z ET**	**34757-2775**

Title of Invention

REMOVABLE SEAT ATTACHMENT FOR A STROLLER

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	3414	FILED BY	Loretta Garcia
PATENT CENTER #	67721222	AUTHORIZED BY	Umar Bakhsh
CUSTOMER #	134811	FILING DATE	08/11/2023
CORRESPONDENCE ADDRESS	-	FIRST NAMED INVENTOR	Mark ZEHFUSS

Payment Information

PAYMENT METHOD	PAYMENT TRANSACTION ID	PAYMENT AUTHORIZED BY
DA / 195029	**E20240OF24367626**	**Loretta Garcia**

PRE-AUTHORIZED ACCOUNT	PRE-AUTHORIZED CATEGORY
195029	**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)**

FEE CODE	DESCRIPTION	ITEM PRICE($)	QUANTITY	ITEM TOTAL($)
1801	REQUEST FOR CONTINUED EXAMINATION (RCE) - 1ST REQUEST (SEE 37 CFR 1.114)	1360.00	1	1360.00
			TOTAL AMOUNT:	**$1,360.00**

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 filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application

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

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

New International Application Filed with the USPTO as a Receiving Office

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

UNITED STATES
PATENT AND TRADEMARK OFFICE

P.O. Box 1450
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ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/448,417	**10/25/2024 03:23:53 PM Z ET**	**34757-2775**

Title of Invention

REMOVABLE SEAT ATTACHMENT FOR A STROLLER

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	3414	FILED BY	Loretta Garcia
PATENT CENTER #	67721222	FILING DATE	08/11/2023
CUSTOMER #	134811	FIRST NAMED INVENTOR	Mark ZEHFUSS
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	Umar Bakhsh

Documents

TOTAL DOCUMENTS: 3

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
34757-2775 RCE.pdf	3	Request for Continued Examination (RCE)	1628 KB
34757-2775 Supplemental Response to Final Office Action-APP.TEXT.docx	8	Application body structured text document	123 KB
Warning: Bookmarks were found and have been removed. Dynamic dates have been converted to static dates.			
34757-2775 Supplemental Response to Final Office Action.pdf	8	Auxiliary PDF of Application	264 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
34757-2775 RCE.pdf	72C7E89B300D9C249CFAA1869EA02EDF2AAA69F577E60E2027BE3D38C794B0680980897C6FE14D81246FA0A9711649027BF879CC7EAB876D605D5ADE79B19E30
34757-2775 Supplemental Response to Final Office Action-APP.TEXT.docx	689AA224B097501B3333C74DE7EDD06E7F123EA573F3BE30DDE592EC70D18E4738D6B5893D8B4CBEBFFB9043A00FC01BD9A234B6C62B9530DBC80D6479F099AC
34757-2775 Supplemental Response to Final Office Action.pdf	25F7DCE8719C9D9FF84EFE13D21EF4CC07EB09F3F9CBA4A024C9354EDD9552CCE71072BE6BB8D45440A187072F268E3403025DA995244F3CDA48EFA09EB6942D

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.

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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

Application No.	:	18/448,417
Filed	:	August 11, 2023
First Named Inventor	:	Mark Zehfuss
Applicant	:	Baby Jogger, LLC
Title	:	Removable Seat Attachment for a Stroller
Confirmation No.	:	3414
Art Unit	:	3613
Examiner	:	James M. Dolak
Attorney Docket No.	:	34757-2775
Customer No.	:	134811

SUPPLEMENTAL RESPONSE

Via EFS-Web
Commissioner for Patents
Alexandria, VA 22313-1450

Dear Commissioner:

Responsive to the Advisory Action dated October 10, 2024 and the Final Office Action dated July 25, 2024 (the "Office Action"), Applicant submits the following amendments and remarks, along with a Request for Continued Examination and related fee.

Amendments to the Claims begin on page 2.

Remarks begin on page 6.

Amendments to the Claims

1. (Canceled)

2. (Currently Amended) A convertible stroller configured for being converted from a single stroller to a double stroller, the stroller comprising:

a stroller frame configured for being adjusted between a folded configuration and an unfolded configuration, the stroller frame comprising:

a handle portion;

a front wheel support portion; and

a back wheel support portion; [[and]]

at least one front wheel secured directly to the ~~stroller frame's~~ front wheel support portion;

two rear wheels secured to the ~~stroller frame's~~ back wheel support portion;

a first seat removably attached to the stroller frame;

~~one or more~~ a first seat attachment portion ~~portions~~ removably attached directly to the stroller frame, wherein the first seat attachment portion does not extend in front of the at least one front wheel; and

a second seat removably attached to the ~~one or more~~ first seat attachment portion ~~portions~~ and positioned in front of the first seat;

wherein at least one of the first seat and the second seat is configured for being removably attached to the stroller frame in a forward-facing configuration and a backward-facing configuration; and

wherein the first seat and the second seat are positioned such that a center of gravity of the stroller is between the at least one front wheel and the ~~plurality of back~~ two rear wheels.

3. (Currently Amended) The stroller of Claim 2, wherein the second seat is positioned ~~substantially~~ over the at least one front wheel.

4. (Currently Amended) The stroller of Claim 2, wherein the first seat is positioned ~~substantially~~ over the two rear wheels.

5. (Currently Amended) The stroller of Claim 2, wherein the first seat is positioned adjacent to the ~~stroller frame's~~ handle portion.

6. (Currently Amended) The stroller of Claim 2, wherein the first seat is positioned nearer to the ~~stroller frame's~~ handle portion than the second seat.

7. (Currently Amended) The stroller of Claim 2, wherein the ~~one or more~~ first seat attachment portion is ~~portions are~~ removably attached to the ~~stroller frame's~~ front wheel support portion.

8. (Currently Amended) The stroller of Claim 2, wherein the ~~one or more~~ first seat attachment portion supports ~~portions are positioned to support~~ the second seat above the at least one front wheel.

9. (Currently Amended) The stroller of Claim 2, wherein the ~~one or more~~ first seat attachment portion comprises ~~portions each comprise~~ a seat connector configured for connecting to the second seat.

10. (Currently Amended) The stroller of Claim 2, wherein ~~the one or more seat attachment portions comprise one or more first seat attachment portions and~~ the stroller further comprises ~~one or more second seat attachment portions~~ a second seat attachment portion connected to the stroller frame; and

wherein the first seat is removably attached to the ~~one or more~~ second seat attachment portion ~~portions~~.

11. (Currently Amended) The stroller of Claim 10, wherein the ~~one or more~~ first seat attachment portion is ~~portions are~~ removably attached to the ~~stroller frame's~~ front wheel support portion, and

wherein the ~~one or more~~ second seat attachment portion is ~~portions are~~ connected to the stroller frame adjacent to the ~~frame's~~ handle portion.

12. (Previously Presented) The stroller of Claim 2, wherein the first seat is configured for being attached to the stroller frame in a forward-facing configuration and a backward-facing configuration.

13. (Currently Amended) The stroller of Claim 2, wherein the at least one front wheel comprises two front wheels secured to the ~~stroller frame's~~ front wheel support portion.

14. (Previously Presented) The stroller of Claim 2, wherein the second seat is configured for being attached to the one or more seat attachment portions in a forward-facing configuration and a backward-facing configuration.

15. (Previously Presented) The stroller of Claim 2, wherein the first seat is configured for being removably attached to the stroller frame at a first vertical position, and the second seat is configured for being removably attached to the one or more seat attachment portions at a second vertical position that is below the first vertical position.

16. (Currently Amended) The stroller of Claim 2, wherein the handle portion and the front wheel support portion are ~~substantially~~ parallel when the stroller frame is in the unfolded configuration.

17. (New) A convertible stroller configured for being converted from a single stroller to a double stroller, the stroller comprising:

a stroller frame configured for being adjusted between a folded configuration and an unfolded configuration, the stroller frame comprising:

a handle portion;

a front wheel support portion; and

a back wheel support portion;

only two front wheels secured to the front wheel support portion, wherein the only two front wheels are aligned on opposite sides of the stroller frame;

only two rear wheels secured to the back wheel support portion;

a first seat removably attached to the stroller frame;

a first seat attachment portion removably attached to the stroller frame, wherein the first seat attachment portion does not extend in front of the at least one front wheel; and

a second seat removably attached to the first seat attachment portion and positioned in front of the first seat;

wherein at least one of the first seat and the second seat is configured for being removably attached to the stroller frame in a forward-facing configuration and a backward-facing configuration; and

wherein the first seat and the second seat are positioned such that a center of gravity of the stroller is between the at least one front wheel and the two rear wheels.

Remarks

This Response is believed to be fully responsive to the Advisory Action dated October 10, 2024 and the Final Office Action dated July 25, 2024. Claims 2-16 are pending and stand rejected. Claims 2-11, 13, and 16 are presently amended. Claim 17 is new. After entry of the present claim amendments, claims 2-17 will remain pending. The amendments to the claims are fully supported by the specification and drawings as originally filed. It is respectfully submitted that no new matter has been added.

Drawing Objection

The drawings are objected to under 37 C.F.R. 1.83(a) for allegedly failing to show an element of claim 2. This rejection is moot in view of the present claim amendments. Reconsideration is respectfully requested.

Claim Objections

Claims 2, 5-7, and 11 are objected to for minor informalities that are addressed by the present amendment to the claims. Reconsideration is respectfully requested.

Rejection under 35 U.S.C. § 112

Claims 2-16 stand rejected under 35 U.S.C. § 112 as allegedly being indefinite with respect to the claimed "one or more seat attachment portions." Applicant submits this rejection is moot in view of the present claim amendments. Reconsideration is respectfully requested.

Rejection under 35 U.S.C. § 102

Claims 2-16 stand rejected under 35 U.S.C. § 102 as allegedly being anticipated by U.S. Patent No. D593,459 to Liao (Liao). This rejection is traversed for at least the following reasons.

Claim 2 is amended to clarify that "at least one front wheel [is] secured directly to the front wheel support portion," and "a first seat attachment portion [is] removably attached directly to the stroller frame, wherein the first seat attachment portion does not extend in front of the at least one front wheel." Liao does not teach or suggest at least these elements of claim 2.

In particular, with reference to representative FIG. 5 of Liao (reproduced below), the alleged seat attachment portion of Liao is not attached directly to the stroller frame. If the handle portion of Liao is considered the stroller frame, to which the rearmost of the front wheels is coupled, the alleged seat attachment portion is not directly attached to the stroller frame. Instead, the alleged seat attachment portion appears to be coupled to a separate discrete component that is coupled to the frontmost front wheels. The alleged seat attachment portion also extends beyond the alleged at least one front wheel of Liao.

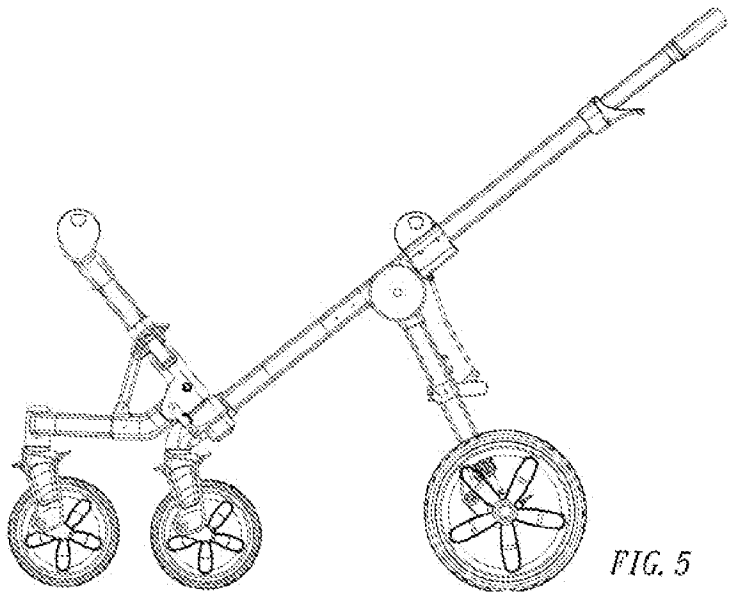

FIG. 5

As a result, Liao does not teach or fairly suggest each and every element of claim 2. Reconsideration and allowance of claims 2-16 is therefore respectfully requested.

Conclusion

It is believed that each matter raised by the Office Action has been addressed by this Response. Accordingly, allowance of the claims is respectfully solicited. It is not believed that extensions of time or additional fees are required beyond those that may otherwise be provided

for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned for under 37 C.F.R. § 1.136(a), and any fee required therefore (including any fee associated with net addition of claims) is hereby authorized to be charged to Deposit Account No. 19-5029. If there are any issues that can be resolved by teleconference or an Examiner's Amendment, the Examiner is invited to telephone the undersigned.

Respectfully submitted,

/Umar R. Bakhsh/
Umar R. Bakhsh
Reg. No. 67,307

Date: October 25, 2024

EVERSHEDS SUTHERLAND (US) LLP
999 Peachtree Street NE, Suite 2300
Atlanta, GA 30309-3996
(ph) 404.853.8084

Applicant-Initiated Interview Summary	**Application No.** 18/448,417	**Applicant(s)** ZEHFUSS, Mark		
	Examiner JAMES M DOLAK	**Art Unit** 3613	**AIA (First Inventor to File) Status** No	**Page** 1 of 1

All Participants (applicant, applicants representative, PTO personnel)	**Title**	**Type**
JAMES M DOLAK	Primary Examiner	Telephonic
Umar Bakhsh	Attorney of Record	

Date of Interview: 25 November 2024

Issues Discussed:

Proposed Amendment(s)

Discussed amendments to the claims to be made via Examiner's Amendment in order to overcome the art of record and proceed to Allowance.

/JAMES M DOLAK/ Primary Examiner, Art Unit 3618	

Applicant is reminded that a complete written statement as to the substance of the interview must be made of record in the application file. It is the applicants responsibility to provide the written statement, unless the interview was initiated by the Examiner and the Examiner has indicated that a written summary will be provided. See MPEP 713.04
Please further see:
MPEP 713.04
Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews, paragraph (b)
37 CFR § 1.2 Business to be transacted in writing

Applicant recordation instructions: The formal written reply to the last Office action must include the substance of the interview. (See MPEP section 713.04). If a reply to the last Office action has already been filed, applicant is given a non-extendable period of the longer of one month or thirty days from this interview date, or the mailing date of this interview summary form, whichever is later, to file a statement of the substance of the interview.

Examiner recordation instructions: Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

Notice of References Cited	Application/Control No. 18/448,417	Applicant(s)/Patent Under Reexamination ZEHFUSS, Mark	
	Examiner JAMES M DOLAK	Art Unit 3613	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date YYYY-MM-DD	Name	CPC Classification	US Classification
*	A	US-8844964-B2	2014-09-30	Chiang; Sen-Yung	B62B7/14	280/658
*	B	US-RE19139-E	1934-04-17	Gill	A47D1/06	280/7.1
	C					
	D					
	E					
	F					
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	I					
	J					
	K					
	L					
	M					

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date YYYY-MM-DD	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 YYYY-MM-DD format are publication dates. Classifications may be US or foreign.

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	18/448,417	ZEHFUSS, Mark
	Examiner	**Art Unit**
	JAMES M DOLAK	3613

CPC						
Symbol					**Type**	**Version**
B62B	/	9	/	102	F	2013-01-01
B62B	/	7	/	006	I	2013-01-01
B62B	/	7	/	008	I	2013-01-01
B62B	/	7	/	14	I	2013-01-01
B62B	/	9	/	28	I	2013-01-01
B62K	/	27	/	003	I	2013-01-01
B62K	/	5	/	02	I	2013-01-01
B62M	/	1	/	38	I	2013-01-01
B62B	/	9	/	12	I	2013-01-01
B62B	/	7	/	145	A	2013-01-01
B62B	/	3	/	008	A	2013-01-01
B62K	/	13	/	00	A	2013-01-01

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

NONE		**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	16	
/JAMES M DOLAK/ Primary Examiner, Art Unit 3613	27 November 2024	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	2	2 & 3

U.S. Patent and Trademark Office — Part of Paper No.: 20241115

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	18/448,417	ZEHFUSS, Mark
	Examiner	**Art Unit**
	JAMES M DOLAK	3613

INTERNATIONAL CLASSIFICATION					
CLAIMED					
B62B	/	3	/	00	

NON-CLAIMED				
	/		/	

US ORIGINAL CLASSIFICATION	
CLASS	**SUBCLASS**

CROSS REFERENCES(S)						
CLASS	**SUBCLASS (ONE SUBCLASS PER BLOCK)**					

NONE		**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	16	
/JAMES M DOLAK/ Primary Examiner, Art Unit 3613	27 November 2024	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	2	2 & 3

U.S. Patent and Trademark Office — Part of Paper No.: 20241115

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	18/448,417	ZEHFUSS, Mark
	Examiner	**Art Unit**
	JAMES M DOLAK	3613

☑ 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	9	10												
1	2	10	11												
2	3	11	12												
3	4	12	13												
4	5	13	14												
5	6	14	15												
6	7	15	16												
7	8	16	17												
8	9														

NONE		**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	16	
/JAMES M DOLAK/ Primary Examiner, Art Unit 3613	27 November 2024	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	2	2 & 3

U.S. Patent and Trademark Office Part of Paper No.: 20241115

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	18/448,417	ZEHFUSS, Mark
	Examiner	Art Unit
	JAMES M DOLAK	3613

CPC - Searched*		
Symbol	Date	Examiner
B62B7/008,00,006,14,142,145	02/24/2024	JMD
B62B9/12,28,102	02/24/2024	JMD

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
Inventor & Assignee Search	02/24/2024	JMD
Text search	02/24/2024	JMD
Updated Search	07/03/2024	jmd
AFCP Updated Search	09/24/2024	jmd
Updated Search	11/15/2024	jmd

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner
ALL	See attached Search History	11/27/2024	jmd

/JAMES M DOLAK/ Primary Examiner.Art Unit 3618	/JAMES M DOLAK/ Primary Examiner, Art Unit 3618

UNITED STATES PATENT AND TRADEMARK OFFICE

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

NOTICE OF ALLOWANCE AND FEE(S) DUE

134811 7590 12/11/2024

Eversheds Sutherland (US) LLP/NWL
999 Peachtree Street
Suite 2300
Atlanta, GA 30309

EXAMINER	
DOLAK, JAMES M	
ART UNIT	PAPER NUMBER
3613	

DATE MAILED: 12/11/2024

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
18/448,417	08/11/2023	Mark ZEHFUSS	34757-2775	3414

TITLE OF INVENTION: REMOVABLE SEAT ATTACHMENT FOR A STROLLER

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	03/11/2025

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 40% the amount of undiscounted fees, and micro entity fees are 20% the amount of undiscounted fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Maintenance fees are due in utility patents issuing on applications filed on or after Dec. 12, 1980. It is patentee's responsibility to ensure timely payment of maintenance fees when due. More information is available at www.uspto.gov/PatentMaintenanceFees.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via the USPTO patent electronic filing system.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications. **Because electronic patent issuance may occur shortly after issue fee payment, any desired continuing application should preferably be filed prior to payment of this issue fee in order not to jeopardize copendency.**

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

134811 7590 12/11/2024
Eversheds Sutherland (US) LLP/NWL
999 Peachtree Street
Suite 2300
Atlanta, GA 30309

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 the USPTO patent electronic filing system 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.
18/448,417	08/11/2023	Mark ZEHFUSS	34757-2775	3414

TITLE OF INVENTION: REMOVABLE SEAT ATTACHMENT FOR A STROLLER

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	03/11/2025

EXAMINER	ART UNIT	CLASS-SUBCLASS
DOLAK, JAMES M	3613	280-047350

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

❑ Change of correspondence address (or Change of Correspondence Address form PTO/AIA/122 or PTO/SB/122) attached.

❑ "Fee Address" indication (or "Fee Address" Indication form PTO/AIA/47 or PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 _____
2 _____
3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ❑ Individual ❑ Corporation or other private group entity ❑ Government

4a. Fees submitted: ❑ Issue Fee ❑ Publication Fee (if required)

4b. Method of Payment: *(Please first reapply any previously paid fee shown above)*

❑ Electronic Payment via the USPTO patent electronic filing system ❑ 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

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.

❑ Applicant asserting small entity status. See 37 CFR 1.27

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.

❑ Applicant changing to regular undiscounted fee status.

NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
18/448,417	08/11/2023	Mark ZEHFUSS	34757-2775	3414

134811 7590 12/11/2024

Eversheds Sutherland (US) LLP/NWL
999 Peachtree Street
Suite 2300
Atlanta, GA 30309

EXAMINER	
DOLAK, JAMES M	

ART UNIT	PAPER NUMBER
3613	

DATE MAILED: 12/11/2024

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. The United States Patent and Trademark Office (USPTO) collects the information in this record under authority of 35 U.S.C. 2. The USPTO's system of records is used to manage all applicant and owner information including name, citizenship, residence, post office address, and other information with respect to inventors and their legal representatives pertaining to the applicant's/ owner's activities in connection with the invention for which a patent is sought or has been granted. The applicable Privacy Act System of Records Notice for the information collected in this form is COMMERCE/PAT-TM-7 Patent Application Files, available in the Federal Register at 78 FR 19243 (March 29, 2013).
https://www.govinfo.gov/content/pkg/FR-2013-03-29/pdf/2013-07341.pdf

Routine uses of the information in this record may include disclosure to:

1) law enforcement, in the event that the system of records indicates a violation or potential violation of law;
2) a federal, state, local, or international agency, in response to its request;
3) a contractor of the USPTO having need for the information in order to perform a contract;
4) the Department of Justice for determination of whether the Freedom of Information Act (FOIA) requires disclosure of the record;
5) a Member of Congress submitting a request involving an individual to whom the record pertains, when the individual has requested the Member's assistance with respect to the subject matter of the record;
6) a court, magistrate, or administrative tribunal, in the course of presenting evidence, including disclosures to opposing counsel in the course of settlement negotiations;
7) the Administrator, General Services Administration (GSA), or their designee, during an inspection of records conducted by GSA under authority of 44 U.S.C. 2904 and 2906, in accordance with the GSA regulations and any other relevant (i.e., GSA or Commerce) directive, where such disclosure shall not be used to make determinations about individuals;
8) 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));
9) the Office of Personnel Management (OPM) for personnel research purposes; and
10) the Office of Management and Budget (OMB) for legislative coordination and clearance.

If you do not furnish the information requested on this form, the USPTO may not be able to process and/or examine your submission, which may result in termination of proceedings, abandonment of the application, and/or expiration of the patent.

Notice of Allowability	Application No. 18/448,417	Applicant(s) ZEHFUSS, Mark	
	Examiner JAMES M DOLAK	Art Unit 3613	AIA (FITF) Status No

-- 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 10/25/2024.
   ☐ 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 2-17 . As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see **http://www.uspto.gov/patents/init_events/pph/index.jsp** or send an inquiry to **PPHfeedback@uspto.gov.**

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   Certified copies:

   a) ☐ All b) ☐ Some* c) ☐ None of the:

   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☑ Notice of References Cited (PTO-892)
2. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____.
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material _____.
4. ☑ Interview Summary (PTO-413), Paper No./Mail Date. _____.
5. ☑ Examiner's Amendment/Comment
6. ☑ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

/JAMES M DOLAK/
Primary Examiner, Art Unit 3613

DETAILED ACTION

Notice of Pre-AIA or AIA Status

1. The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/25/2024 has been entered.

Response to Amendment

3. The reply filed on 10/25/2024 amended claims 2-11, 13, and 16, and added Claim 17. Claims 2-17 are currently pending herein.

EXAMINER'S AMENDMENT

6. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in an interview with Umar Bakhsh (Applicant's representative) on 11/25/2024.

7. The application has been amended as follows:

In the Claims:

Replace Claim 1, with the following:

A convertible stroller configured for being converted from a single stroller to a double stroller, the stroller comprising:

a stroller frame configured for being adjusted between a folded configuration and an unfolded configuration, the stroller frame comprising: a handle portion; a front wheel support portion; and a back wheel support portion;

at least one front wheel secured directly to the front wheel support portion;

two rear wheels secured to the back wheel support portion;

a first seat removably attached to the stroller frame;

a first seat attachment portion removably attached directly to the stroller frame, wherein a connector portion of the first seat attachment portion does not extend in front of the at least one front wheel, the first seat attachment portion comprising a locking mechanism that is configured to secure the first seat attachment portion to the stroller frame when the stroller frame is in the folded configuration; and

a second seat removably attached to the first seat attachment portion and positioned in front of the first seat;

wherein at least one of the first seat and the second seat is configured for being removably attached to the stroller frame in a forward-facing configuration and a backward-facing configuration; and wherein the first seat and the second seat are positioned such that a center of gravity of the stroller is between the at least one front wheel and the two rear wheels.

Replace Claim 17, with the following:

A convertible stroller configured for being converted from a single stroller to a double stroller, the stroller comprising:

a stroller frame configured for being adjusted between a folded configuration and an unfolded configuration, the stroller frame comprising: a handle portion; a front wheel support portion; and a back wheel support portion;

only two front wheels secured to the front wheel support portion, wherein the only two front wheels are aligned on opposite sides of the stroller frame;

only two rear wheels secured to the back wheel support portion;

a first seat removably attached to the stroller frame;

a first seat attachment portion removably attached directly to the stroller frame, wherein a connector portion of the first seat attachment portion does not extend in front of the at least one front wheel, the first seat attachment portion comprising a locking mechanism that is configured to secure the first seat attachment portion to the stroller frame when the stroller frame is in the folded configuration; and

the first seat attachment portion does not extend in front of the two front wheels; and

a second seat removably attached to the first seat attachment portion and positioned in front of the first seat;

wherein at least one of the first seat and the second seat is configured for being removably attached to the stroller frame in a forward-facing configuration and a backward-facing configuration; and wherein the first seat and the second

seat are positioned such that a center of gravity of the stroller is between the two front wheels and the two rear wheels.

Replace Claim 14, with the following:

The stroller of Claim 2, wherein the second seat is configured for being attached to the first seat attachment portion in a forward-facing configuration and a backward-facing configuration.

Allowable Subject Matter

8. Claims 2-17 are allowed.

9. The following is an examiner's statement of reasons for allowance: The prior art of record when taken alone or in combination with another does not teach or fairly suggest at this time at least, among other limitations: A convertible stroller configured for being converted from a single stroller to a double stroller, the stroller comprising: a stroller frame configured for being adjusted between a folded configuration and an unfolded configuration, the stroller frame comprising: a handle portion; a front wheel support portion; and a back wheel support portion; at least one front wheel secured directly to the front wheel support portion; two rear wheels secured to the back wheel support portion; a first seat removably attached to the stroller frame; ***a first seat attachment portion removably attached directly to the stroller frame, wherein a connector portion of the first seat attachment portion does not extend in front of the at least one front wheel, the first seat attachment portion comprising a locking mechanism that is configured to secure the first seat attachment portion to the stroller frame when the stroller frame is in the folded configuration; and a second seat removably attached to the first seat attachment portion and***

positioned in front of the first seat; wherein at least one of the first seat and the second seat is configured for being removably attached to the stroller frame in a forward-facing configuration and a backward-facing configuration; and wherein the first seat and the second seat are positioned such that a center of gravity of the stroller is between the at least one front wheel and the two rear wheels, as claimed in Claim 2 and similarly claimed in Claim 17 (emphasis added to allowable limitations not suggested or taught by the prior art).

10. The prior art discloses similar examples of convertible strollers (see attached Notice of References cited). However, the prior art does not appear to teach or fairly suggest the combination of limitations of amended independent claim 1 as noted above.

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

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure, and can be found on the attached Notice of References Cited.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAMES M DOLAK whose telephone number is (571)270-7757. The examiner can normally be reached on 9-530 EST Monday-Friday.

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, J ALLEN SHRIVER can be reached on 303-297-4337. 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 http://pair-direct.uspto.gov. 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.

/JAMES M DOLAK/
Primary Examiner, Art Unit 3618

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.
18/448,417	08/11/2023	Mark ZEHFUSS	34757-2775	3414

134811 7590 12/26/2024

Eversheds Sutherland (US) LLP/NWL
999 Peachtree Street
Suite 2300
Atlanta, GA 30309

EXAMINER	
DOLAK, JAMES M	

ART UNIT	PAPER NUMBER
3613	

NOTIFICATION DATE	DELIVERY MODE
12/26/2024	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):

patentdocket@eversheds-sutherland.com

Corrected ***Notice of Allowability***	**Application No.** 18/448,417	**Applicant(s)** ZEHFUSS, Mark	
	Examiner JAMES M DOLAK	**Art Unit** 3613	**AIA (FITF) Status** No

-- 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 10/25/2024.
   ☐ 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 2-17 . As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see **http://www.uspto.gov/patents/init_events/pph/index.jsp** or send an inquiry to **PPHfeedback@uspto.gov.**

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   Certified copies:

   a) ☐ All b) ☐ Some* c) ☐ None of the:

   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____.
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material _____.
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date. _____.
5. ☑ Examiner's Amendment/Comment
6. ☑ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

/JAMES M DOLAK/
Primary Examiner, Art Unit 3613

DETAILED ACTION

Notice of Pre-AIA or AIA Status

1. The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/25/2024 has been entered.

Response to Amendment

3. The reply filed on 10/25/2024 amended claims 2-11, 13, and 16, and added Claim 17. Claims 2-17 are currently pending herein.

EXAMINER'S AMENDMENT

4. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in an interview with Umar Bakhsh (Applicant's representative) on 11/25/2024.

5. The application has been amended as follows:

In the Claims:

Replace Claim 2, with the following:

A convertible stroller configured for being converted from a single stroller to a double stroller, the stroller comprising:

a stroller frame configured for being adjusted between a folded configuration and an unfolded configuration, the stroller frame comprising: a handle portion; a front wheel support portion; and a back wheel support portion;

at least one front wheel secured directly to the front wheel support portion;

two rear wheels secured to the back wheel support portion;

a first seat removably attached to the stroller frame;

a first seat attachment portion removably attached directly to the stroller frame, wherein a connector portion of the first seat attachment portion does not extend in front of the at least one front wheel, the first seat attachment portion comprising a locking mechanism that is configured to secure the first seat attachment portion to the stroller frame when the stroller frame is in the folded configuration; and

a second seat removably attached to the first seat attachment portion and positioned in front of the first seat;

wherein at least one of the first seat and the second seat is configured for being removably attached to the stroller frame in a forward-facing configuration and a backward-facing configuration; and wherein the first seat and the second seat are positioned such that a center of gravity of the stroller is between the at least one front wheel and the two rear wheels.

Replace Claim 17, with the following:

A convertible stroller configured for being converted from a single stroller to a double stroller, the stroller comprising:

a stroller frame configured for being adjusted between a folded configuration and an unfolded configuration, the stroller frame comprising: a handle portion; a front wheel support portion; and a back wheel support portion;

only two front wheels secured to the front wheel support portion, wherein the only two front wheels are aligned on opposite sides of the stroller frame;

only two rear wheels secured to the back wheel support portion;

a first seat removably attached to the stroller frame;

a first seat attachment portion removably attached directly to the stroller frame, wherein a connector portion of the first seat attachment portion does not extend in front of the at least one front wheel, the first seat attachment portion comprising a locking mechanism that is configured to secure the first seat attachment portion to the stroller frame when the stroller frame is in the folded configuration; and

the first seat attachment portion does not extend in front of the two front wheels; and

a second seat removably attached to the first seat attachment portion and positioned in front of the first seat;

wherein at least one of the first seat and the second seat is configured for being removably attached to the stroller frame in a forward-facing configuration and a backward-facing configuration; and wherein the first seat and the second

seat are positioned such that a center of gravity of the stroller is between the two front wheels and the two rear wheels.

Replace Claim 14, with the following:

The stroller of Claim 2, wherein the second seat is configured for being attached to the first seat attachment portion in a forward-facing configuration and a backward-facing configuration.

Allowable Subject Matter

6. Claims 2-17 are allowed.

7. The following is an examiner's statement of reasons for allowance: The prior art of record when taken alone or in combination with another does not teach or fairly suggest at this time at least, among other limitations: A convertible stroller configured for being converted from a single stroller to a double stroller, the stroller comprising: a stroller frame configured for being adjusted between a folded configuration and an unfolded configuration, the stroller frame comprising: a handle portion; a front wheel support portion; and a back wheel support portion; at least one front wheel secured directly to the front wheel support portion; two rear wheels secured to the back wheel support portion; a first seat removably attached to the stroller frame; ***a first seat attachment portion removably attached directly to the stroller frame, wherein a connector portion of the first seat attachment portion does not extend in front of the at least one front wheel, the first seat attachment portion comprising a locking mechanism that is configured to secure the first seat attachment portion to the stroller frame when the stroller frame is in the folded configuration; and a second seat removably attached to the first seat attachment portion and***

positioned in front of the first seat; wherein at least one of the first seat and the second seat is configured for being removably attached to the stroller frame in a forward-facing configuration and a backward-facing configuration; and wherein the first seat and the second seat are positioned such that a center of gravity of the stroller is between the at least one front wheel and the two rear wheels, as claimed in Claim 2 and similarly claimed in Claim 17 (emphasis added to allowable limitations not suggested or taught by the prior art).

8. The prior art discloses similar examples of convertible strollers (see attached Notice of References cited). However, the prior art does not appear to teach or fairly suggest the combination of limitations of amended independent claim 1 as noted above.

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

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure, and can be found on the attached Notice of References Cited.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAMES M DOLAK whose telephone number is (571)270-7757. The examiner can normally be reached on 9-530 EST Monday-Friday.

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, J ALLEN SHRIVER can be reached on 303-297-4337. 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 http://pair-direct.uspto.gov. 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.

/JAMES M DOLAK/
Primary Examiner, Art Unit 3618

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
18/448,417	08/11/2023	Mark ZEHFUSS	34757-2775	3414

134811 7590 01/23/2025

Eversheds Sutherland (US) LLP/NWL
999 Peachtree Street
Suite 2300
Atlanta, GA 30309

EXAMINER	
DOLAK, JAMES M	

ART UNIT	PAPER NUMBER
3613	

NOTIFICATION DATE	DELIVERY MODE
01/23/2025	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):

patentdocket@eversheds-sutherland.com

UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
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Application No. : 18448417
Applicant : Zehfuss
Filing Date : 08/11/2023
Date Mailed : 01/23/2025

NOTICE TO FILE CORRECTED APPLICATION PAPERS

Notice of Allowance Mailed

This application has been accorded an Allowance Date and is being prepared for issuance. The application, however, is incomplete for the reasons below.

Applicant is given two (2) months from the mail date of this Notice within which to respond. This time period for reply is extendable under 37 CFR 1.136(a) for only TWO additional MONTHS.

The informalities requiring correction are indicated in the attachment(s). If the informality pertains to the abstract, specification (including claims) or drawings, the informality must be corrected with an amendment in compliance with 37 CFR 1.121 (or, if the application is a reissue application, 37 CFR 1.173). Such an amendment may be filed after payment of the issue fee if limited to correction of informalities noted herein. See Waiver of 37 CFR 1.312 for Documents Required by the Office of Patent Publication, 1280 Off. Gaz. Patent Office 918 (March 23, 2004). In addition, if the informality is not corrected until after payment of the issue fee, for purposes of 35 U.S.C. 154(b)(1)(iv), "all outstanding requirements" will be considered to have been satisfied when the informality has been corrected. A failure to respond within the above-identified time period will result in the application being ABANDONED.

See attachment(s).

A copy of this notice MUST be returned with the reply. Please address response to "Mail Stop Issue Fee, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450".

/Naran Hem/
Publication Branch
Office of Data Management
(571) 272-4200

IDENTIFICATION OF DRAWING DEFICIENCIES

- [ ] There is a hole or the image thereof within the illustration. FIG(s)
- [ ] The illustration is penetrated or traversed by a solid or broken line that is not intended to be part of the drawing, such as a dark line caused by a flaw in the copying process. FIG(s)
- [ ] An ink stamp or the image thereof obscures part of the illustration. FIG(s)
- [X] The drawing is marred by black smudges, obliterations, or fax/copier marks (for example, speckles or dots in a substantial portion of the drawing). FIG(s) 14A-14C
- [ ] Figure numbers are duplicated or missing. FIG(s)
- [ ] Drawing sheet or figure is missing. FIG(s)
- [ ] Numbers, letters, or reference characters in the drawing have been crossed out or are illegibly handwritten. FIG(s)
- [ ] The character of the lines, numbers, and letters is poor. FIG(s)
- [X] The drawing's background shows that the original drawing was made on graph paper or other paper with a pattern or decoration. FIG(s) 12-13C
- [ ] The FIG. number label is placed in a location that causes the drawing to be read upside down. FIG(s)
- [ ] Data, a reference number, or part of the drawing is truncated or missing, or a lead line has no reference number. FIG(s)
- [ ] The drawing and/or the FIG. label contain(s) foreign language. FIG(s)
- [ ] This utility application contains a photograph of a view that is capable of being illustrated as a line drawing. FIG(s)
- [ ] A petition under 37 CFR 1.84(a)(2) to accept color drawings has been granted, but the brief description of the drawings in the specification does not contain (or has not been amended to contain) the paragraph required by 37 CFR 1.84(a)(2)(iii).
- [ ] This reissue application contains added and/or amended drawings that are not labeled as “New” or “Amended” or “Canceled” as required by 37 CFR 1.173(b)(3). FIG(s)
- [ ] This Design reissue application contains a drawing that is labeled as “Canceled” but is not surrounded by brackets, or a drawing that is surrounded by brackets but is not labeled as “Canceled.” See 37 CFR 1.173(b)(3). FIG(s)
- [ ] OTHER:
- [ ] COMMENTS:

Placeholder Sheet for Supplemental Content

Application Number: 18448417 Document Date: 01/28/2025

The presence of this form indicates that the following document type was received in electronic format on the date identified above. This document is stored separately from the typical case contents which are stored in image format.

Since this was an electronic submission, there is no physical artifact folder, no artifact folder is recorded and no paper documents or physical media exist.

- Drawing

At the time of document entry (noted above):

- USPTO employees may access this supplemental content via Docket Application Viewer (DAV) or Supplemental Content Viewer (SCV).
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DOLAK, JAMES M	

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/Naran Hem/
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- [ ] OTHER:
- [ ] COMMENTS:

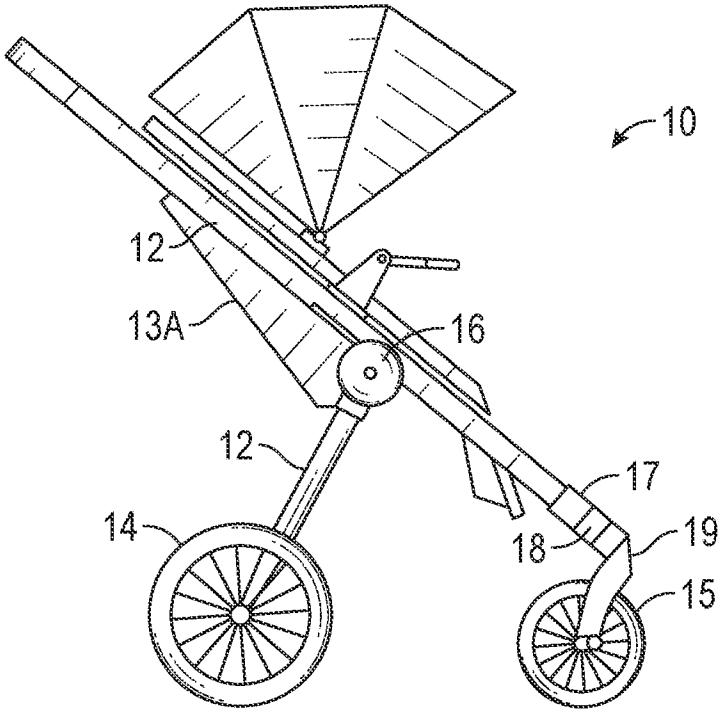


FIG. 1

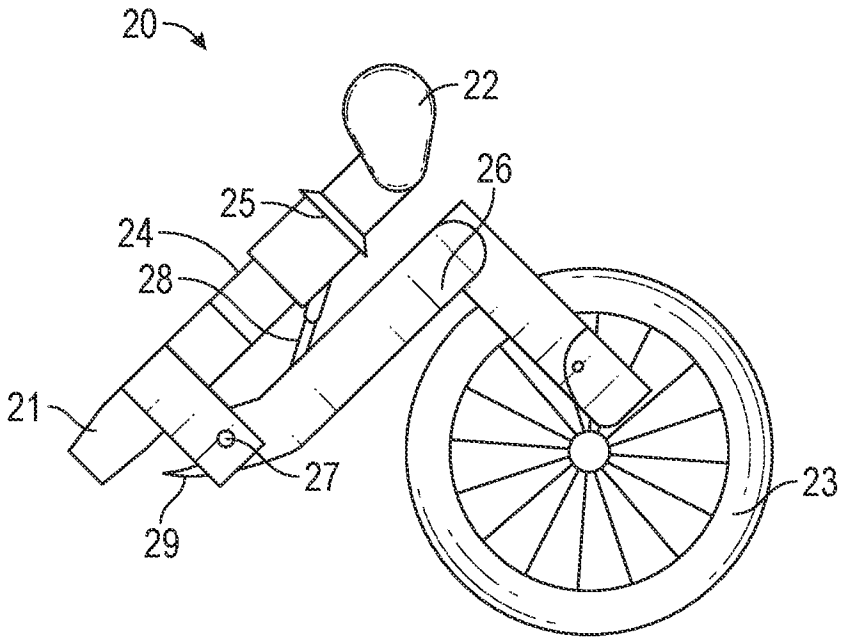


FIG. 2

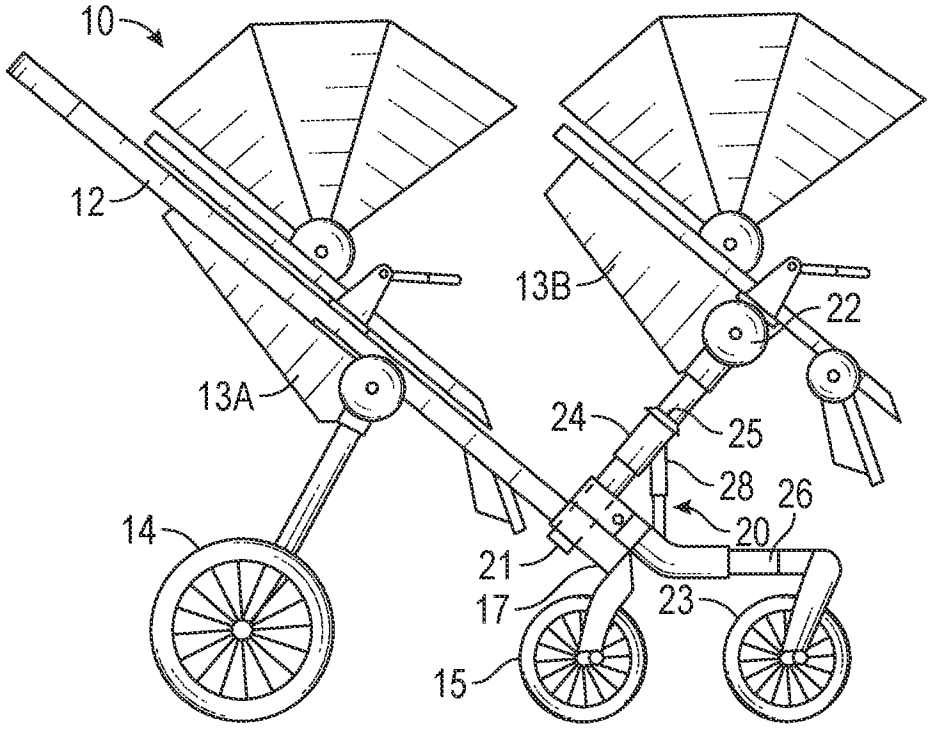


FIG. 3

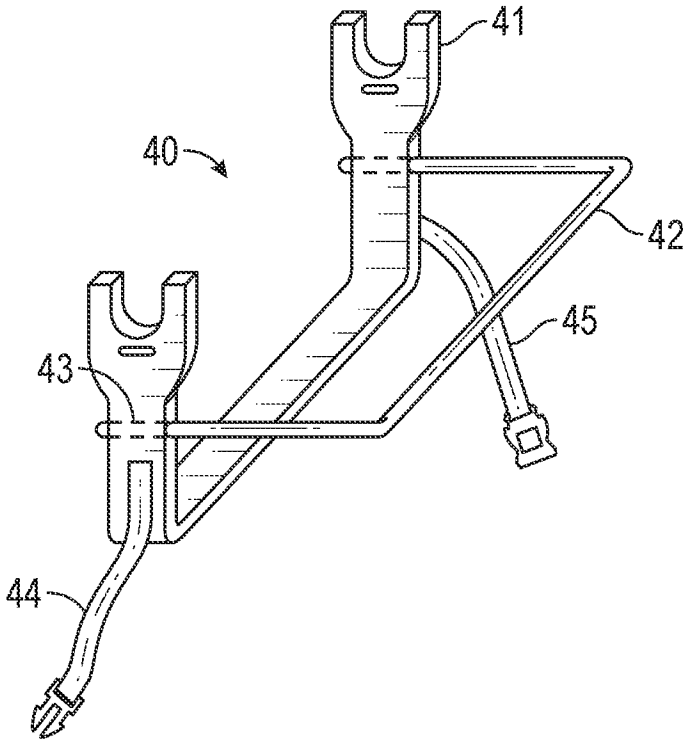


FIG. 4

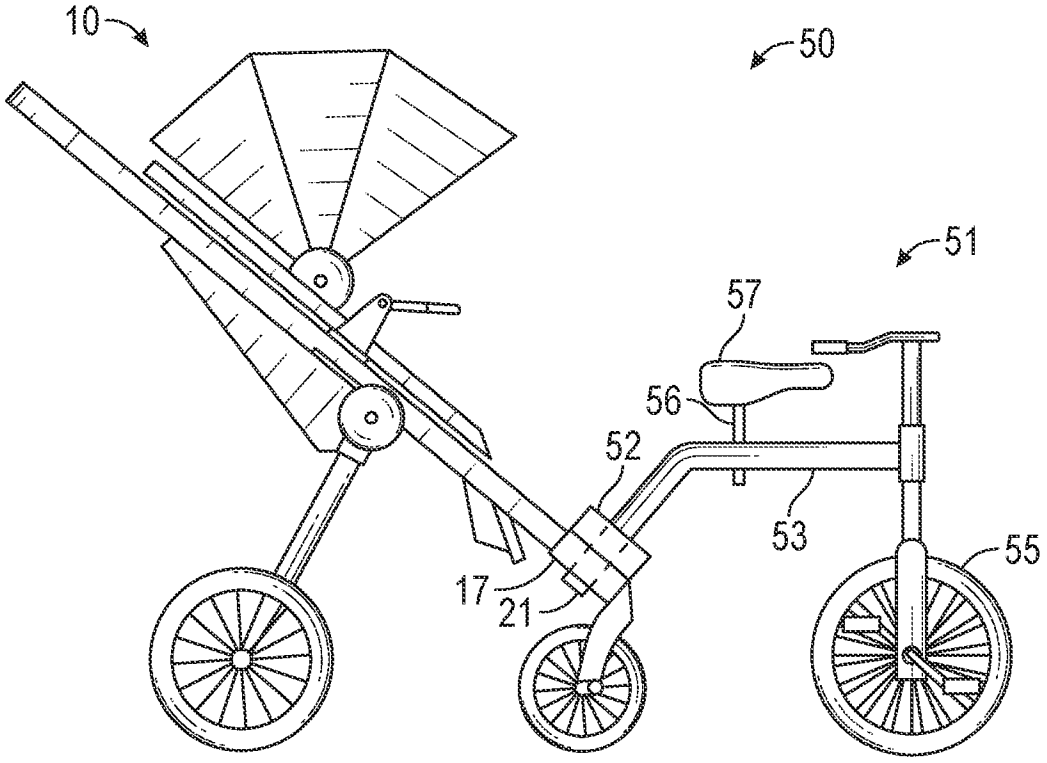


FIG. 5

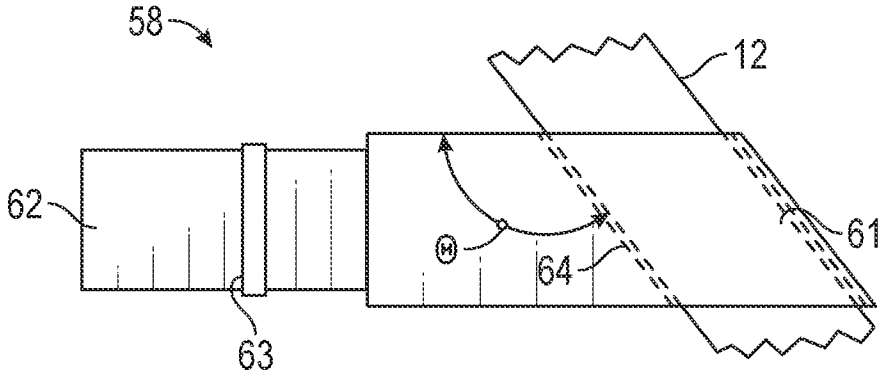


FIG. 6A

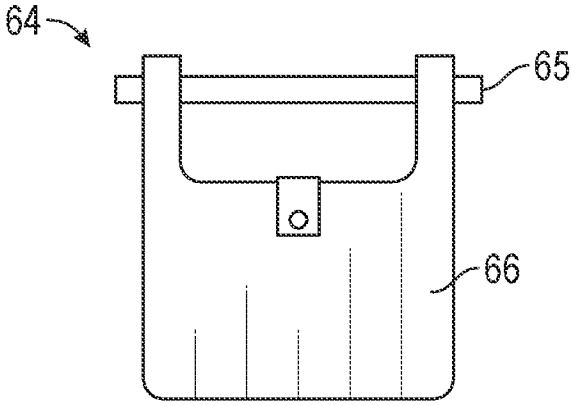


FIG. 6B

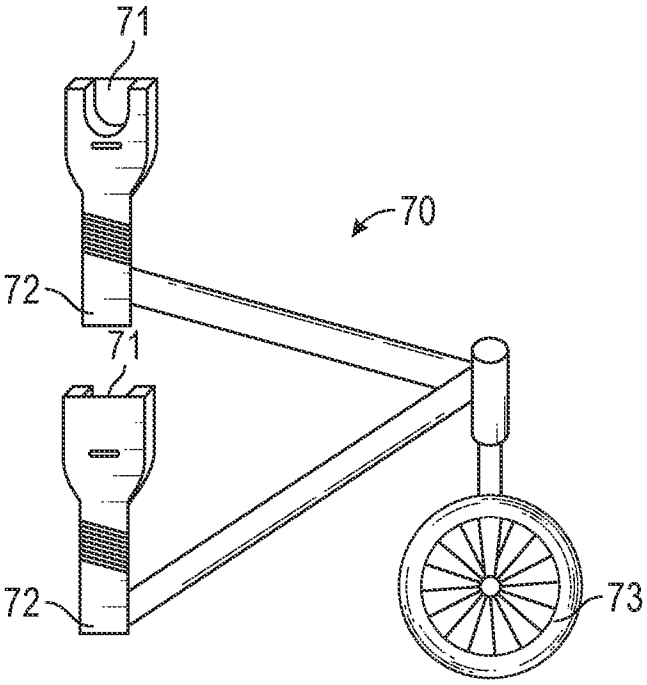


FIG. 7

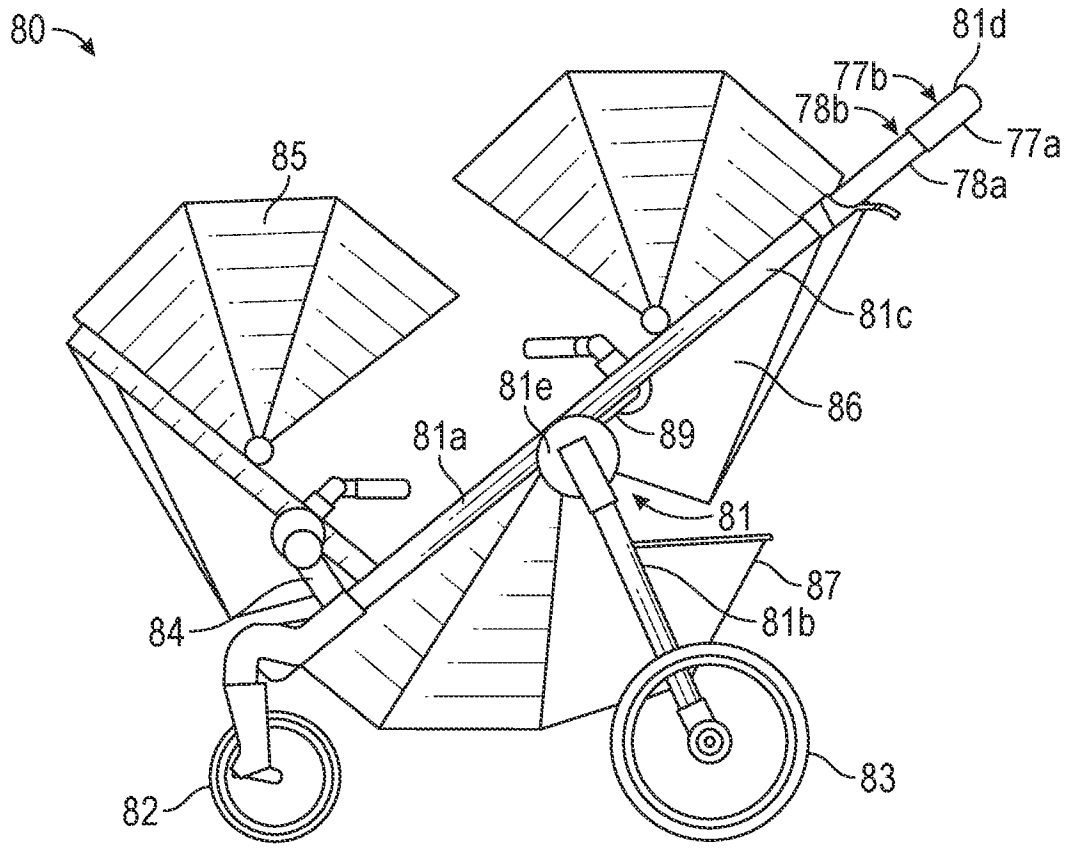


FIG. 8A

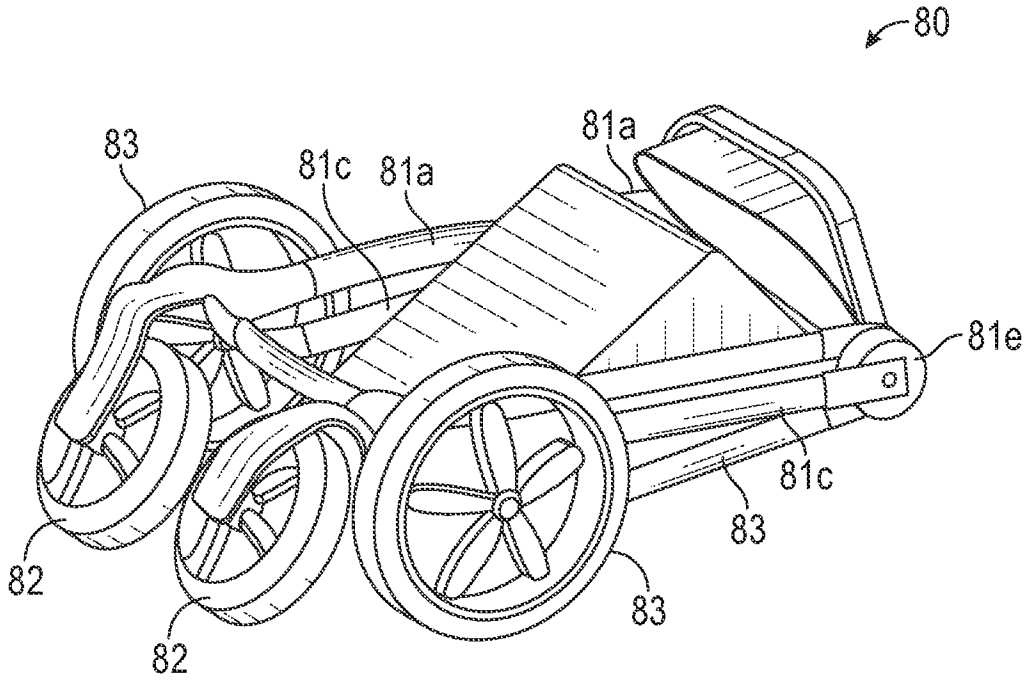


FIG. 8B

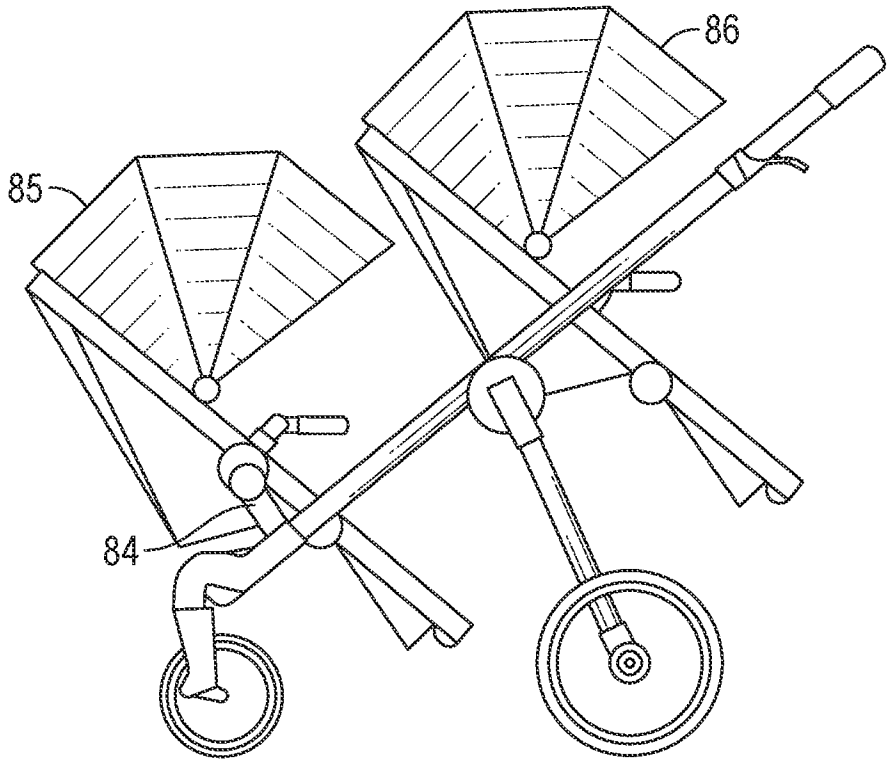


FIG. 8C

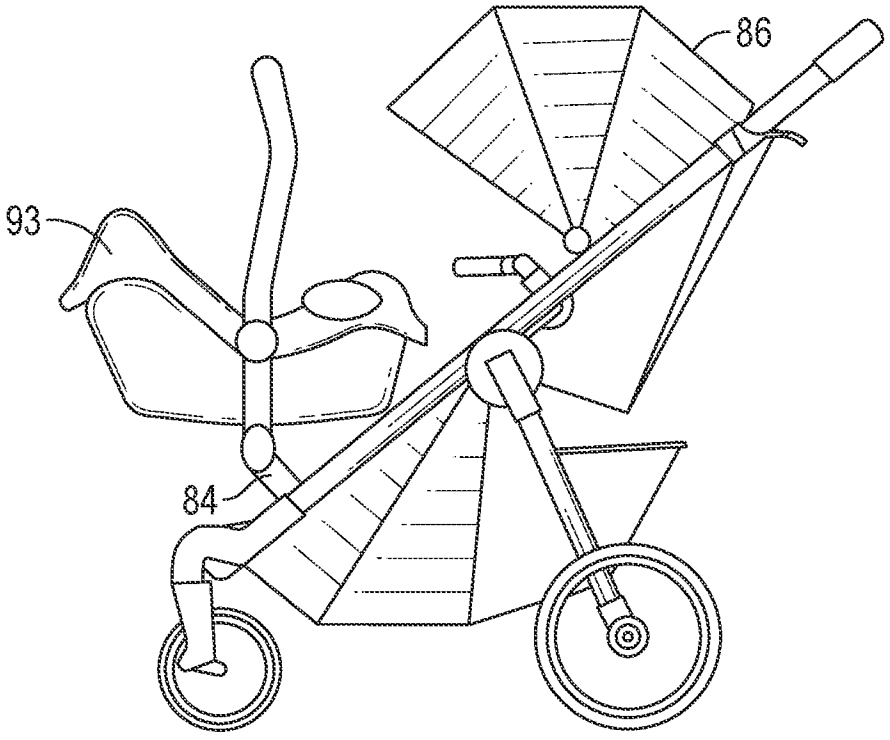


FIG. 8D

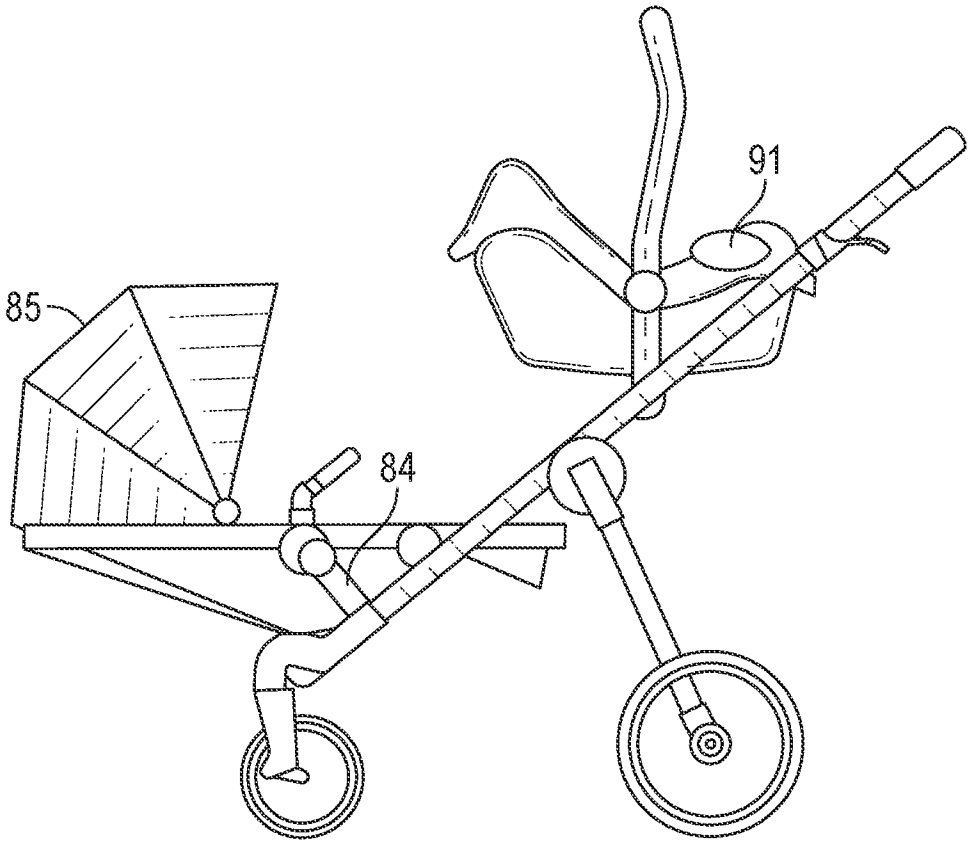


FIG. 8E

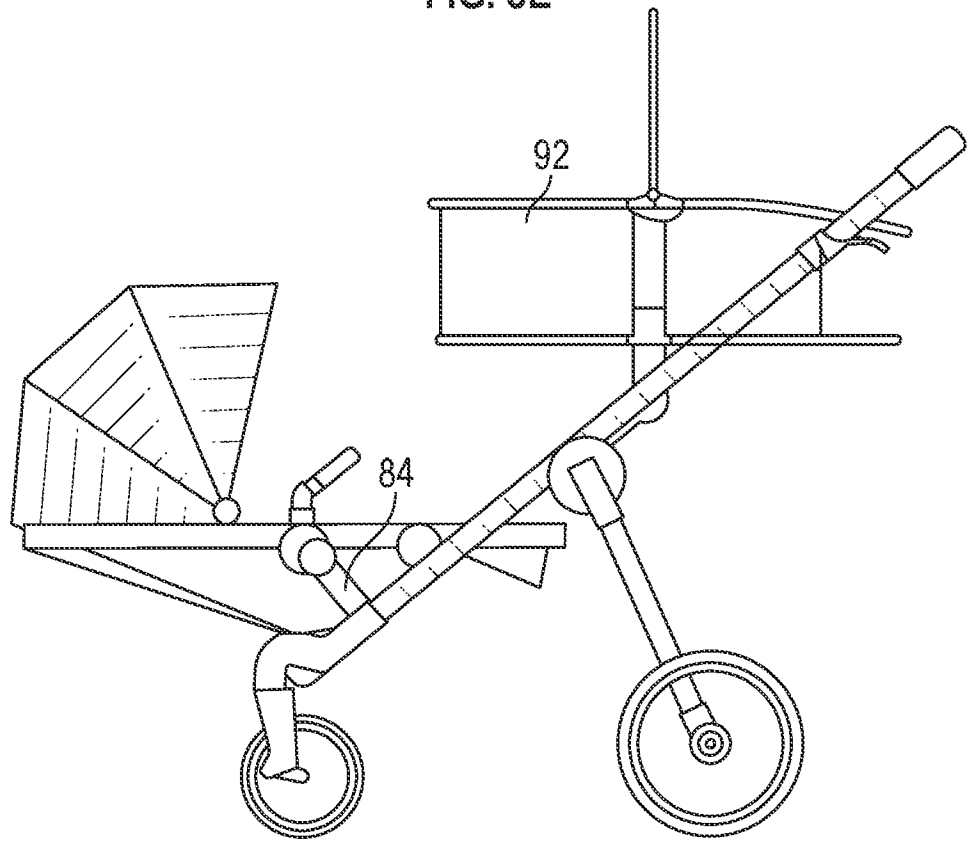


FIG. 8F

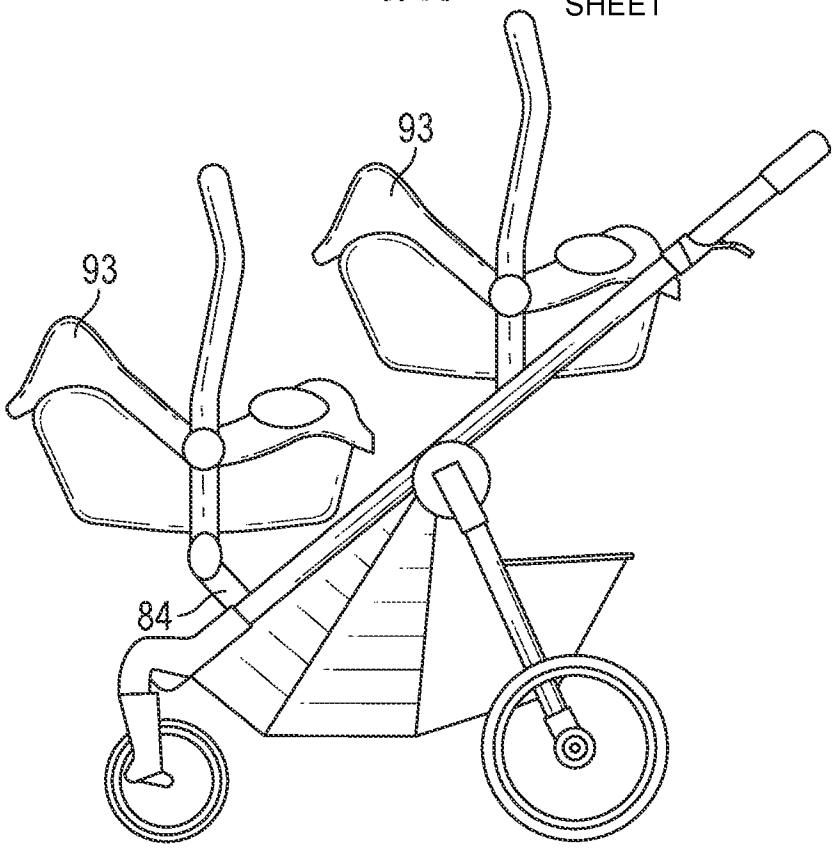


FIG. 8G

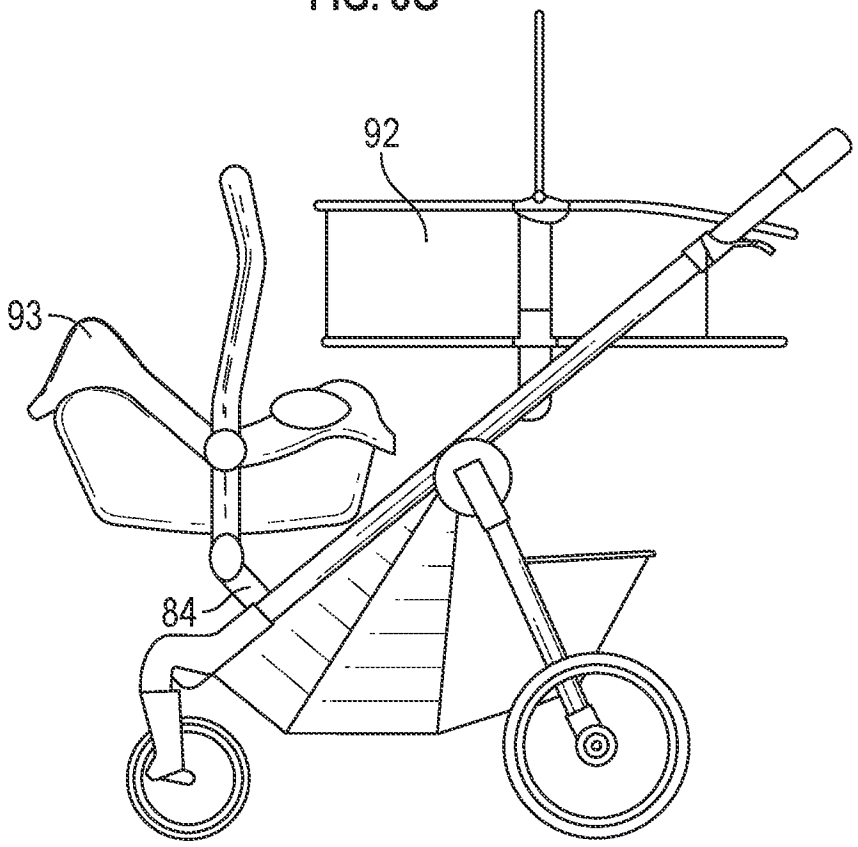


FIG. 8H

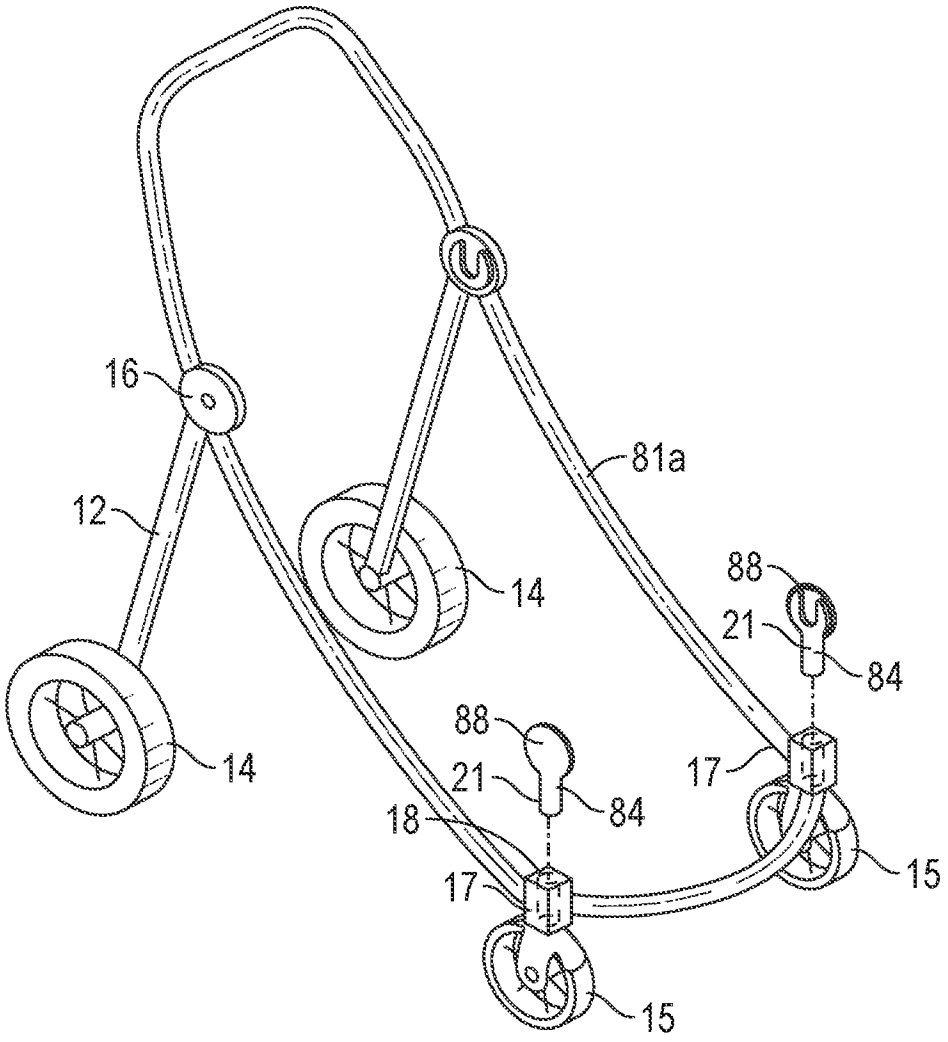


FIG. 9

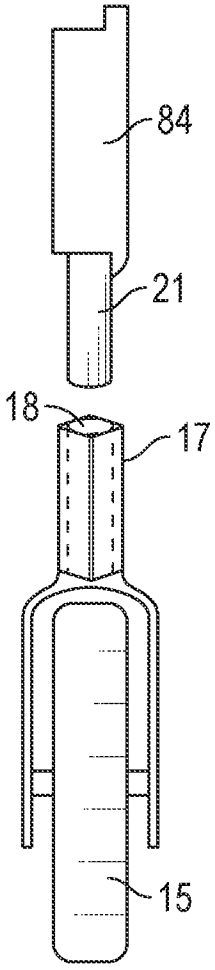
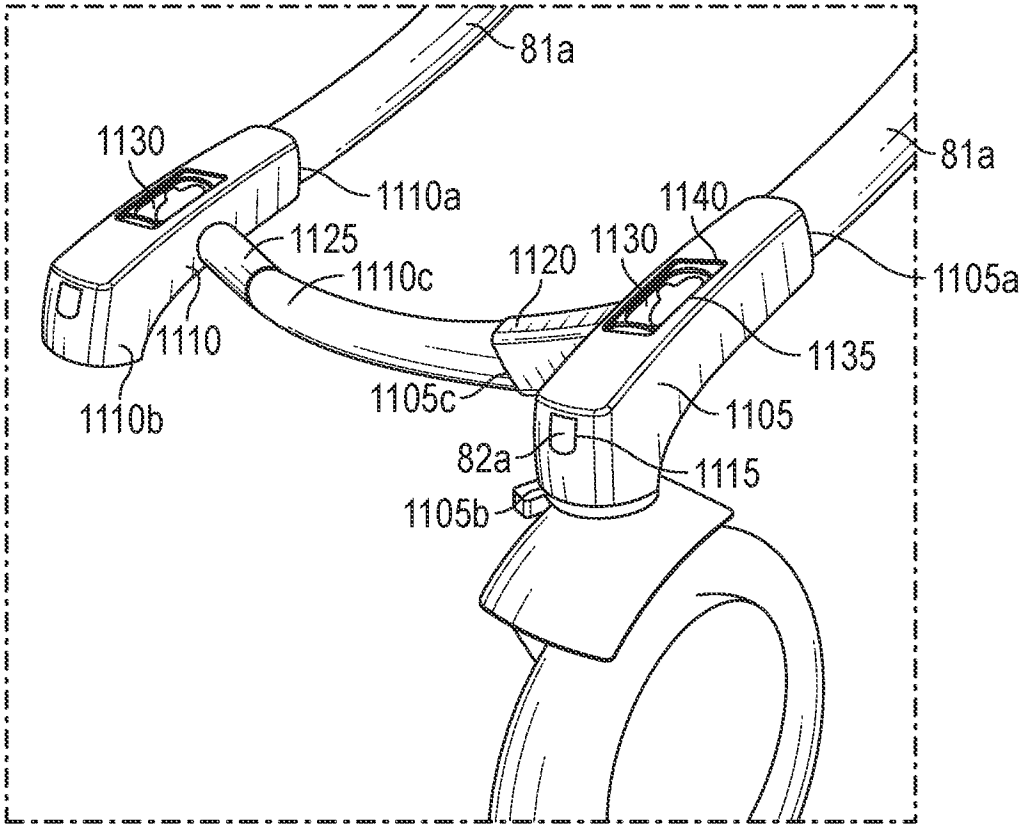


FIG. 10


81a
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1140
81a
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1110c
1105a
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1135
1105c
1105
1110b
82a
1115
1105b

FIG. 11

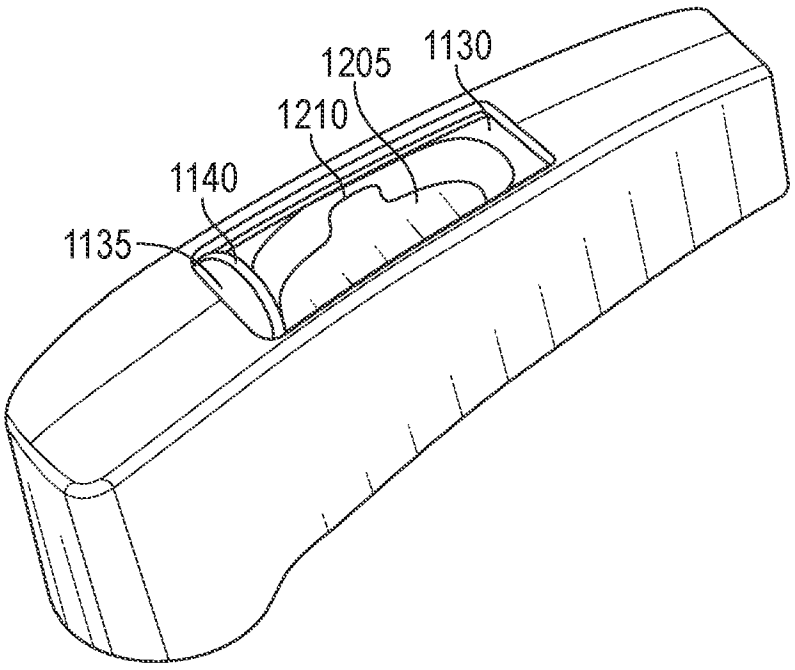

FIG. 12

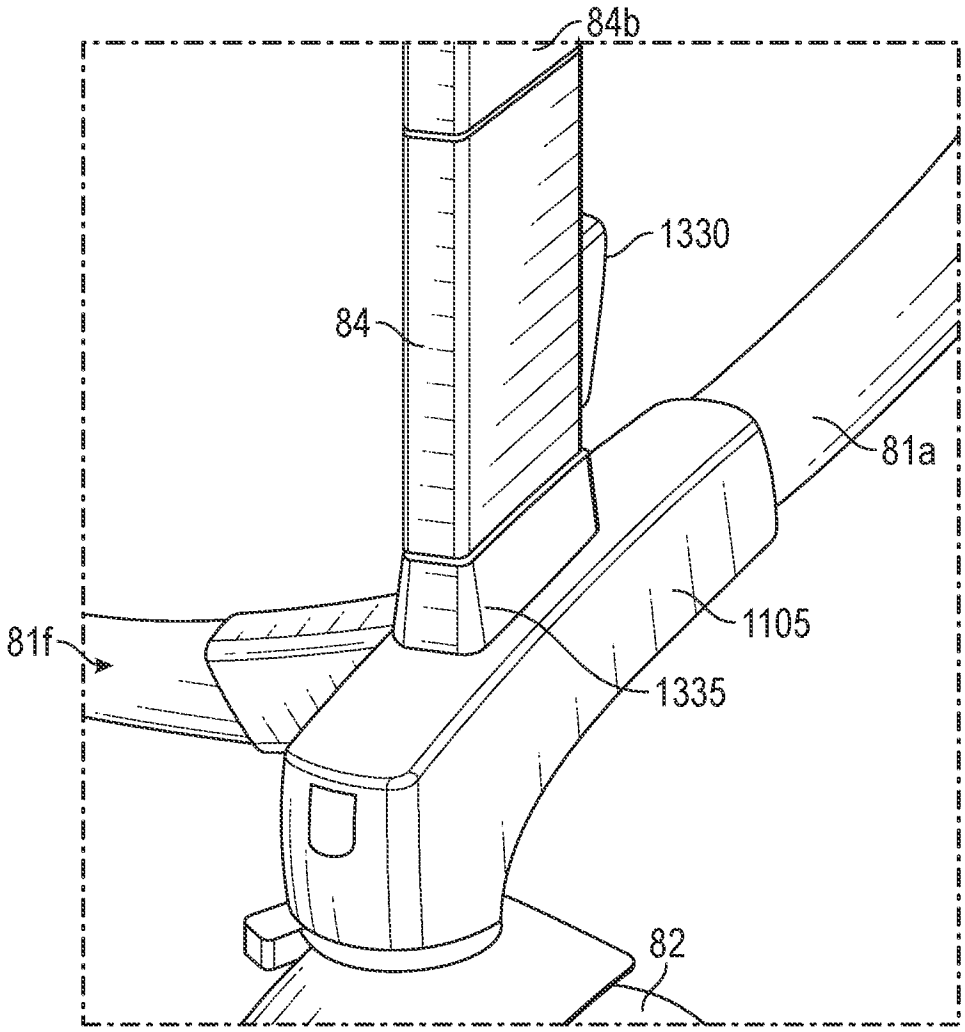

FIG. 13A

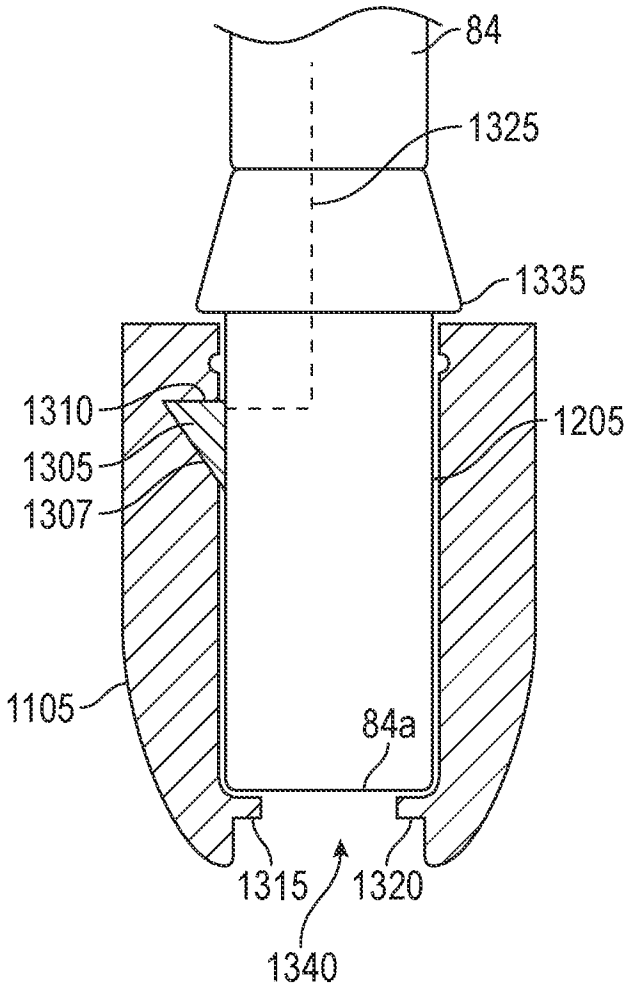

FIG. 13B

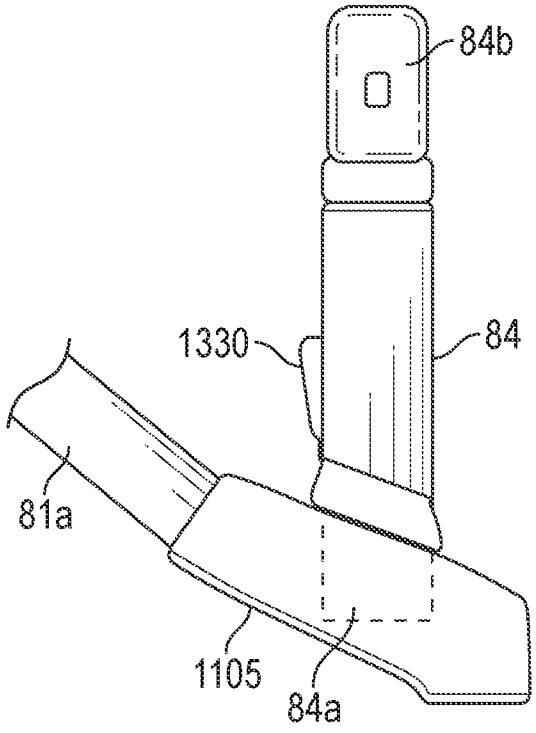

FIG. 13C

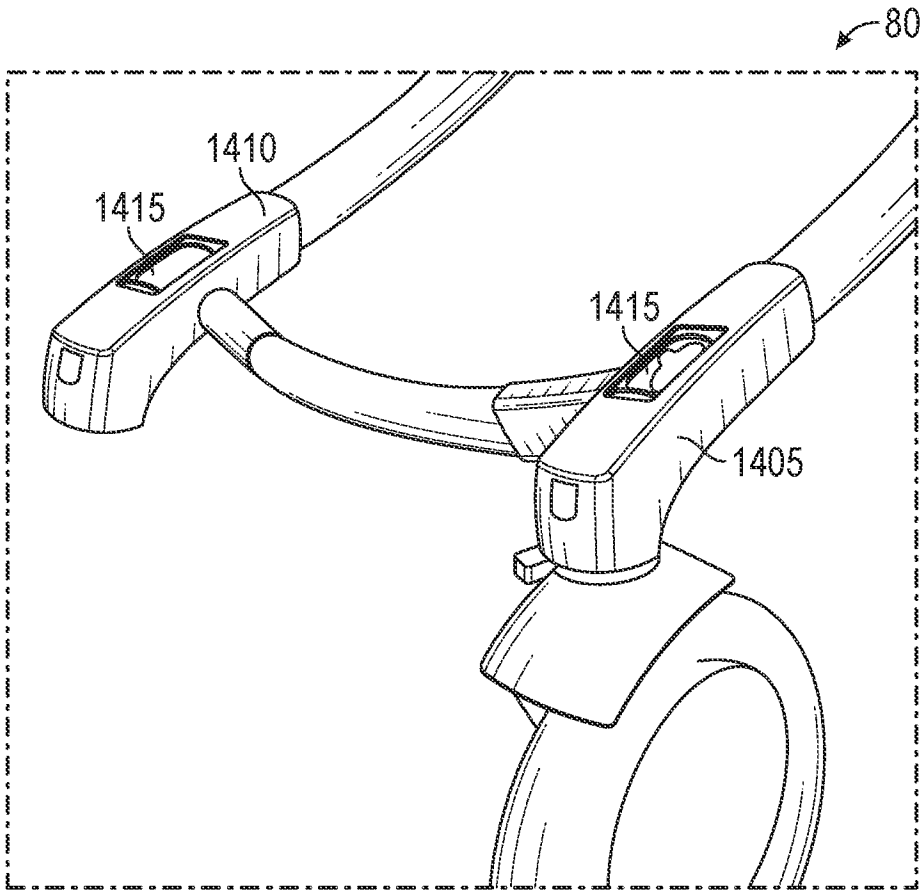

FIG. 14A

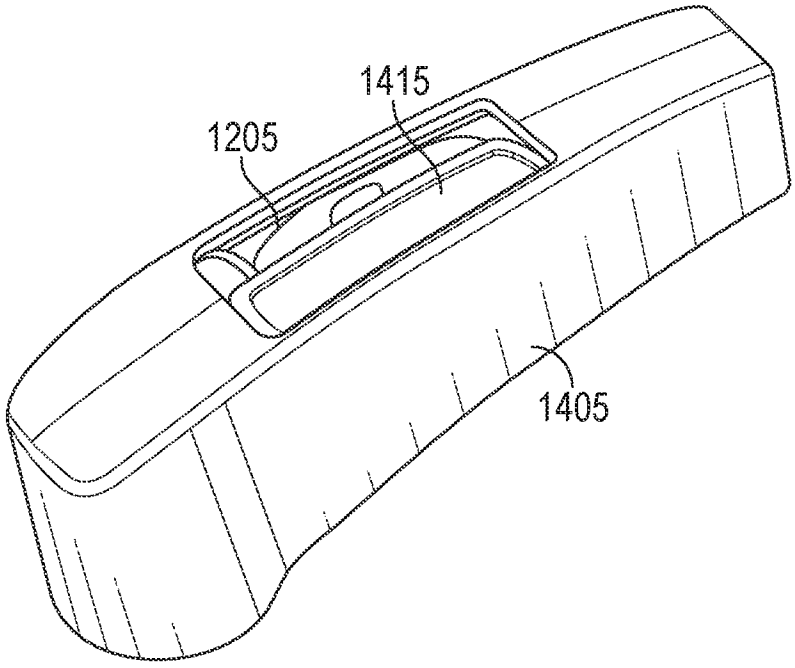

FIG. 14B

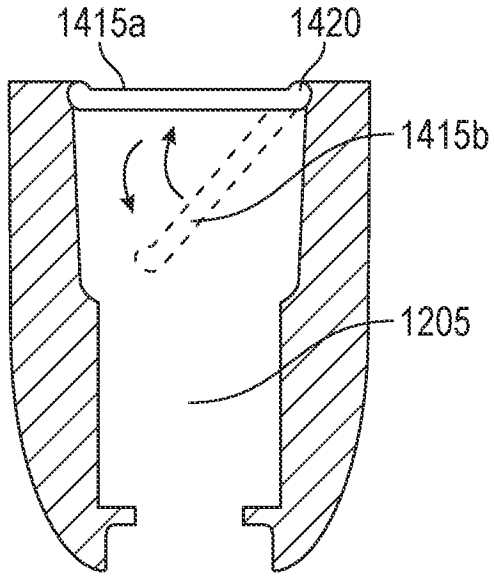

FIG. 14C

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ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/448,417	**01/28/2025 02:36:20 PM Z ET**	**34757-2775**

Title of Invention

REMOVABLE SEAT ATTACHMENT FOR A STROLLER

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	3414	FILED BY	Loretta Garcia
PATENT CENTER #	68949343	FILING DATE	08/11/2023
CUSTOMER #	134811	FIRST NAMED INVENTOR	Mark ZEHFUSS
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	Umar Bakhsh

Documents

TOTAL DOCUMENTS: 3

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
34757-2775 Response to Notice to File Corrected Application Papers.pdf	3	Post Allowance Communication - Incoming	84 KB
34757-2775 Copy of Notice to File Corrected Application Papers.pdf	3	Post Allowance Communication - Incoming	109 KB
34757-2775 Full Replacement Drawing Sheets.pdf	18	Drawings-only black and white line drawings	178 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)

34757-2775 Response to Notice to File Corrected Application Papers.pdf	69D913CA376F3F19AEFF865D85BB991CB2BBC477AA0619B7625EE9D379A5DDA17A8FAEA38D667553510EB9BBC4EA8A4A7316C7FB15A7FFBFDE645C59A2B2A641
34757-2775 Copy of Notice to File Corrected Application Papers.pdf	EE60ABBC9A6A5E363580D6D158B85AE759860C60DEBA416FF569A66D7DCABC3EA3C06B04623ACECCCBCCB4C2A5A449426EBCCB3E1BAC5D1D4FAB9418A976A92F
34757-2775 Full Replacement Drawing Sheets.pdf	A68877581EF2ECEC2E7873668DA01D471638E4007A926F1BFB553E4DA68122FF5DFB60BD4AAA31B62138CF7F0402AC793A3921E9E1D6FE9D0703A66B2566B168

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 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

Serial No.	:	18/448,417	Conf. No.: 3414
Filed	:	August 11, 2023	
Applicant	:	Baby Jogger, LLC	
Inventor(s)	:	Mark ZEHFUSS	
Title	:	REMOVABLE SEAT ATTACHMENT FOR A STROLLER	
Art Unit	:	3613	
Examiner	:	James M. Dolak	
Docket No.	:	34757-2775	
Customer No.	:	134811	

RESPONSE TO NOTICE TO FILE CORRECTED PAPERS

Via EFS-Web

Commissioner for Patents

Alexandria, VA 22313-1450

Dear Commissioner:

This is responsive to the Notice to File Corrected Application Papers dated January 23, 2025. Applicants respectfully request that the specification be amended as follows:

Amendments to the Drawings begin on page **2** of this paper.

Remarks begin on page **3** of this paper.

It is believed that no additional extensions of time or fees for net addition of claims are required. However, if additional extensions of time are necessary to prevent abandonment of this application, and any fees required therefore (including fees for net addition of claims), then such extensions of time and fees are hereby respectively petitioned under 37 C.F.R. § 1.136(a) and authorized to be charged to our Deposit Account No. 19-5029.

AMENDMENTS TO THE DRAWINGS

Please replace the originally filed drawings with the respective Replacement Sheets submitted herewith.

4114031.1
1046 of 1056 UPPABABY ET AL. EX. 1068

REMARKS

I. AMENDMENTS TO THE DRAWINGS

The Notice requested that certain figures be resubmitted to address deficiencies. The Replacement Sheets submitted herewith correct the issues. No new matter has been added.

CONCLUSION

The foregoing is submitted as a full and complete response to the Notice to File Corrected Papers. No fees are believed to be due, however, should there be any fees associated with this filing, the Commissioner is hereby authorized to charge Deposit Account No. 19-5029.

Respectfully submitted,

/Umar R. Bakhsh/

Umar R. Bakhsh
Reg. No. 67,307

Date: January 28, 2025

EVERSHEDS SUTHERLAND (US) LLP
999 Peachtree Street, N.E.
Atlanta, Georgia 30309-3996
(404) 853-8084

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PATENT AND TRADEMARK OFFICE

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ELECTRONIC PAYMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/448,417	**03/10/2025 03:17:48 PM Z ET**	**34757-2775**

Title of Invention

REMOVABLE SEAT ATTACHMENT FOR A STROLLER

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	3414	FILED BY	Loretta Garcia
PATENT CENTER #	69510086	AUTHORIZED BY	Umar Bakhsh
CUSTOMER #	134811	FILING DATE	08/11/2023
CORRESPONDENCE ADDRESS	-	FIRST NAMED INVENTOR	Mark ZEHFUSS

Payment Information

PAYMENT METHOD	PAYMENT TRANSACTION ID	PAYMENT AUTHORIZED BY
DA / 195029	**E202530F18405117**	**Loretta Garcia**

PRE-AUTHORIZED ACCOUNT	PRE-AUTHORIZED CATEGORY
195029	**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)**

FEE CODE	DESCRIPTION	ITEM PRICE($)	QUANTITY	ITEM TOTAL($)
1501	UTILITY ISSUE FEE	1200.00	1	1200.00
			TOTAL AMOUNT:	**$1,200.00**

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.

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ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/448,417	**03/10/2025 03:17:48 PM Z ET**	**34757-2775**

Title of Invention

REMOVABLE SEAT ATTACHMENT FOR A STROLLER

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PATENT CENTER #	69510086	FILING DATE	08/11/2023
CUSTOMER #	134811	FIRST NAMED INVENTOR	Mark ZEHFUSS
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	Umar Bakhsh

Documents

TOTAL DOCUMENTS: 1

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
34757-2775 Issue Fee Payment.pdf	1	Issue Fee Payment (PTO-85B)	99 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
34757-2775 Issue Fee Payment.pdf	E44752B93726BE33A625201079F8B26A50983DA7E192122FE1 E5C14E8146D86FB1F3727BECB5F33B19BE27A10F15FB51EC C7B3DB262959DF221DF77770DFE60B

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.

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PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via the USPTO patent electronic filing system.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications. **Because electronic patent issuance may occur shortly after issue fee payment, any desired continuing application should preferably be filed prior to payment of this issue fee in order not to jeopardize copendency.**

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

134811 7590 12/11/2024
Eversheds Sutherland (US) LLP/NWL
999 Peachtree Street
Suite 2300
Atlanta, GA 30309

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 the USPTO patent electronic filing system 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.
18/448,417	08/11/2023	Mark ZEHFUSS	34757-2775	3414

TITLE OF INVENTION: REMOVABLE SEAT ATTACHMENT FOR A STROLLER

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	03/11/2025

EXAMINER	ART UNIT	CLASS-SUBCLASS
DOLAK, JAMES M	3613	280-047350

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/AIA/122 or PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/AIA/47 or PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 Eversheds Sutherland (US) LLP
2
3

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE: Baby Jogger, LLC

(B) RESIDENCE: (CITY and STATE OR COUNTRY): Atlanta, GA

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☒ Corporation or other private group entity ☐ Government

4a. Fees submitted: ☒ Issue Fee ☐ Publication Fee (if required)

4b. Method of Payment: *(Please first reapply any previously paid fee shown above)*

☒ Electronic Payment via the USPTO patent electronic filing system ☐ 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. 195029

5. **Change in Entity Status** (from status indicated above)

☐ Applicant certifying micro entity status. See 37 CFR 1.29

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.

☐ Applicant asserting small entity status. See 37 CFR 1.27

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.

☐ Applicant changing to regular undiscounted fee 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 /Umar R. Bakhsh/ Date March 10, 2025

Typed or printed name Umar R. Bakhsh Registration No. 67,307

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
18/448,417	04/15/2025	12275449	34757-2775	3414

134811 7590 03/26/2025

Eversheds Sutherland (US) LLP/NWL
999 Peachtree Street
Suite 2300
Atlanta, GA 30309

ISSUE NOTIFICATION

The projected patent number and issue date are specified above. The patent will issue electronically. The electronically issued patent is the official patent grant pursuant to 35 U.S.C. § 153. The patent may be accessed on or after the issue date through Patent Center at https://patentcenter.uspto.gov/. The patent will be available in both the public and the private sides of Patent Center. Further assistance in electronically accessing the patent, or about Patent Center, is available by calling the Patent Electronic Business Center at 1-888-217-9197.

The USPTO is implementing electronic patent issuance with a transition period, during which period the USPTO will mail a ceremonial paper copy of the electronic patent grant to the correspondence address of record. Additional copies of the patent (i.e., certified and presentation copies) may be ordered for a fee from the USPTO's Certified Copy Center at https://certifiedcopycenter.uspto.gov/index.html. The Certified Copy Center may be reached at (800)972-6382.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment is 0 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Center (https://patentcenter.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Patents Stakeholder Experience (OPSE), Stakeholder Support Division (SSD) at (571)-272-4200.

INVENTOR(s) (Please see PATENT CENTER site https://patentcenter.uspto.gov for additional inventors):

Mark ZEHFUSS, Glen Allen, VA;

APPLICANT(s) (Please see PATENT CENTER site https://patentcenter.uspto.gov for additional applicants):

Baby Jogger, LLC, Atlanta, GA;

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The USA offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to encourage and facilitate business investment. To learn more about why the USA is the best country in the world to develop technology, manufacture products, and grow your business, visit SelectUSA.gov.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
18/448,417	08/11/2023	Mark ZEHFUSS	34757-2775	3414

134811 7590 04/15/2025

Eversheds Sutherland (US) LLP/NWL
999 Peachtree Street
Suite 2300
Atlanta, GA 30309

EXAMINER	
DOLAK, JAMES M	

ART UNIT	PAPER NUMBER
3613	

NOTIFICATION DATE	DELIVERY MODE
04/15/2025	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):

patentdocket@eversheds-sutherland.com

APPLICATION NO.	ISSUE DATE	PATENT NO.
18/448,417	15-Apr-2025	12275449

Eversheds Sutherland (US) LLP/NWL
999 Peachtree Street
Atlanta, GA 30309

EGRANT NOTIFICATION

Your electronic patent grant (eGrant) is now available, which can be accessed via Patent Center at https://patentcenter.uspto.gov

The electronic patent grant is the official patent grant under 35 U.S.C. 153. For more information, please visit https://www.uspto.gov/electronicgrants