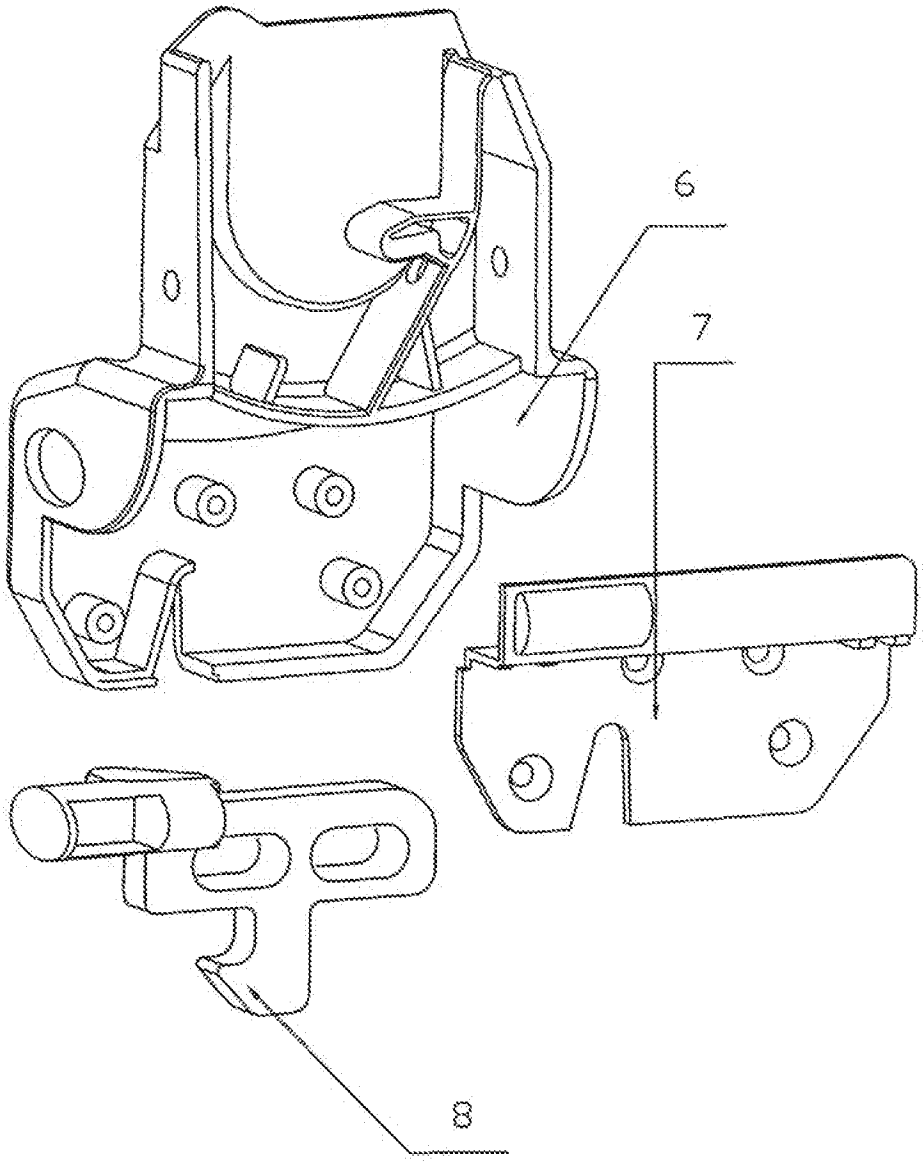


图 2

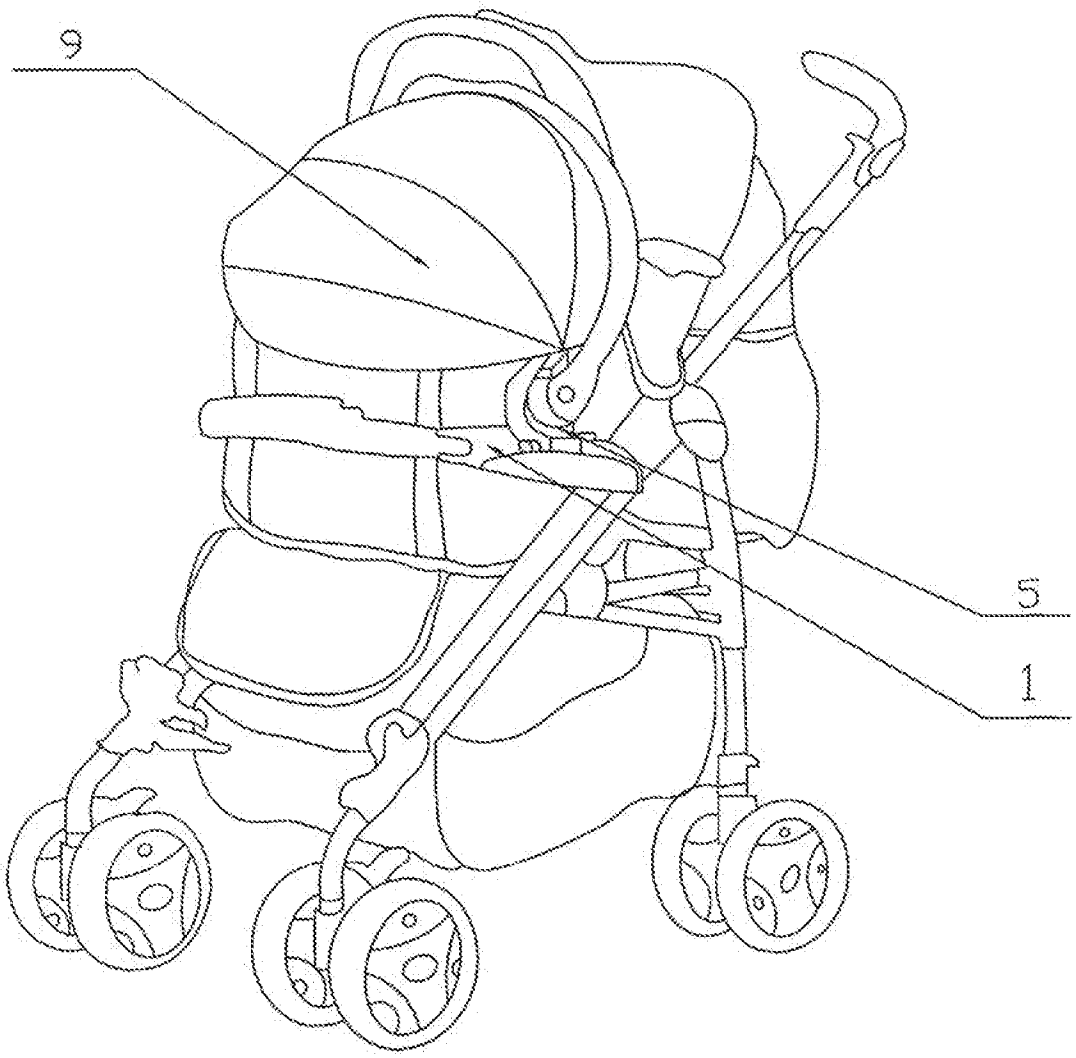


图 3

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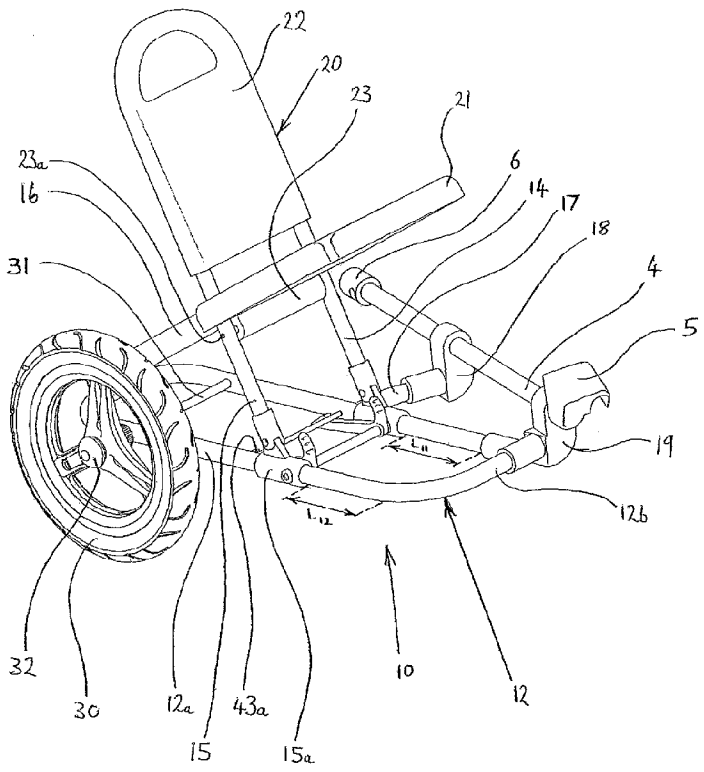
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(54) Title: AUXILIARY PUSHCHAIR SEAT



(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.

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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.

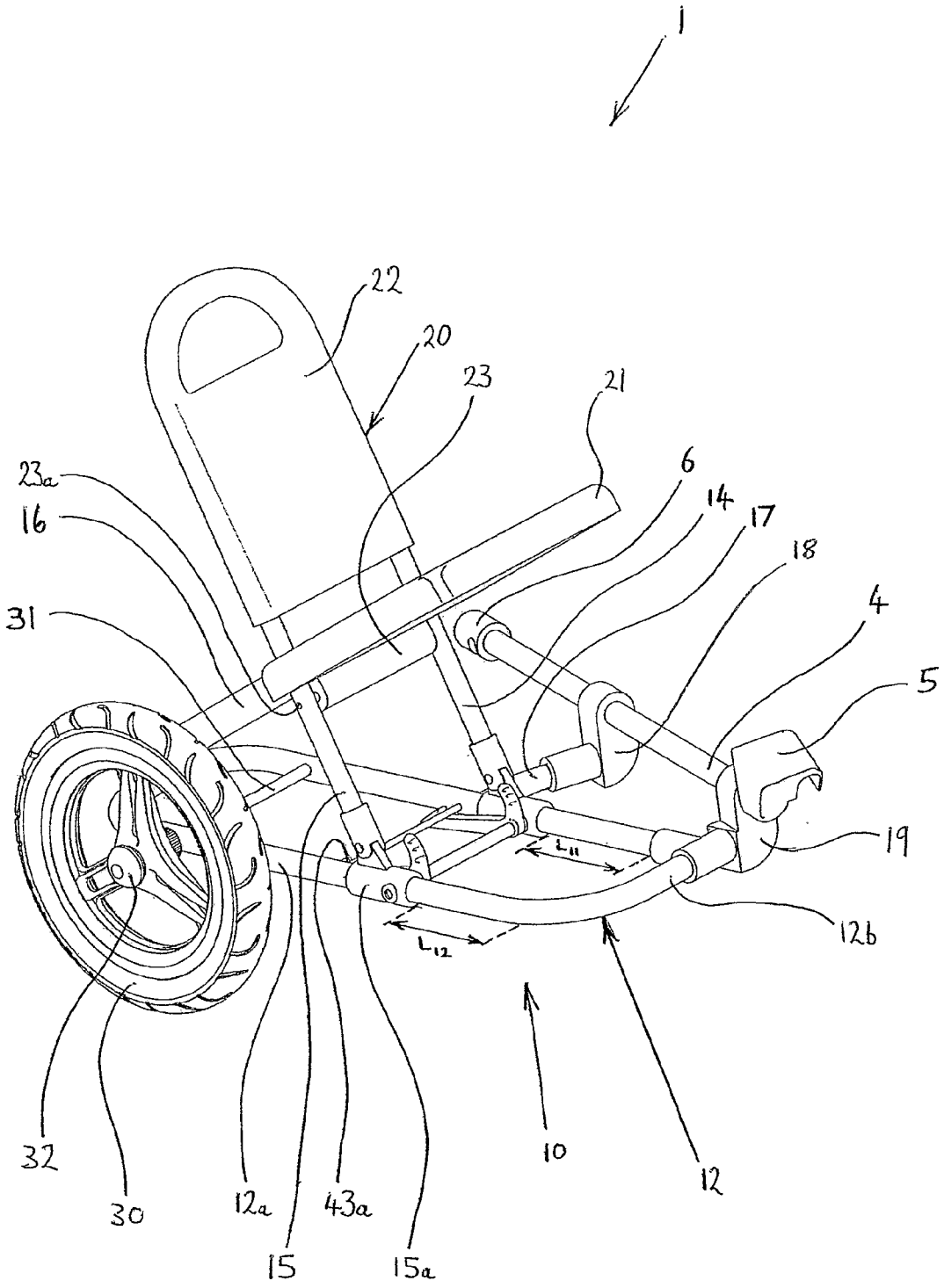

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22
20
23
21
23a
16
6
14
17
18
31
4
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L_{12}
12b
32
30
12a
43a
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15a
10
12

FIGURE 1

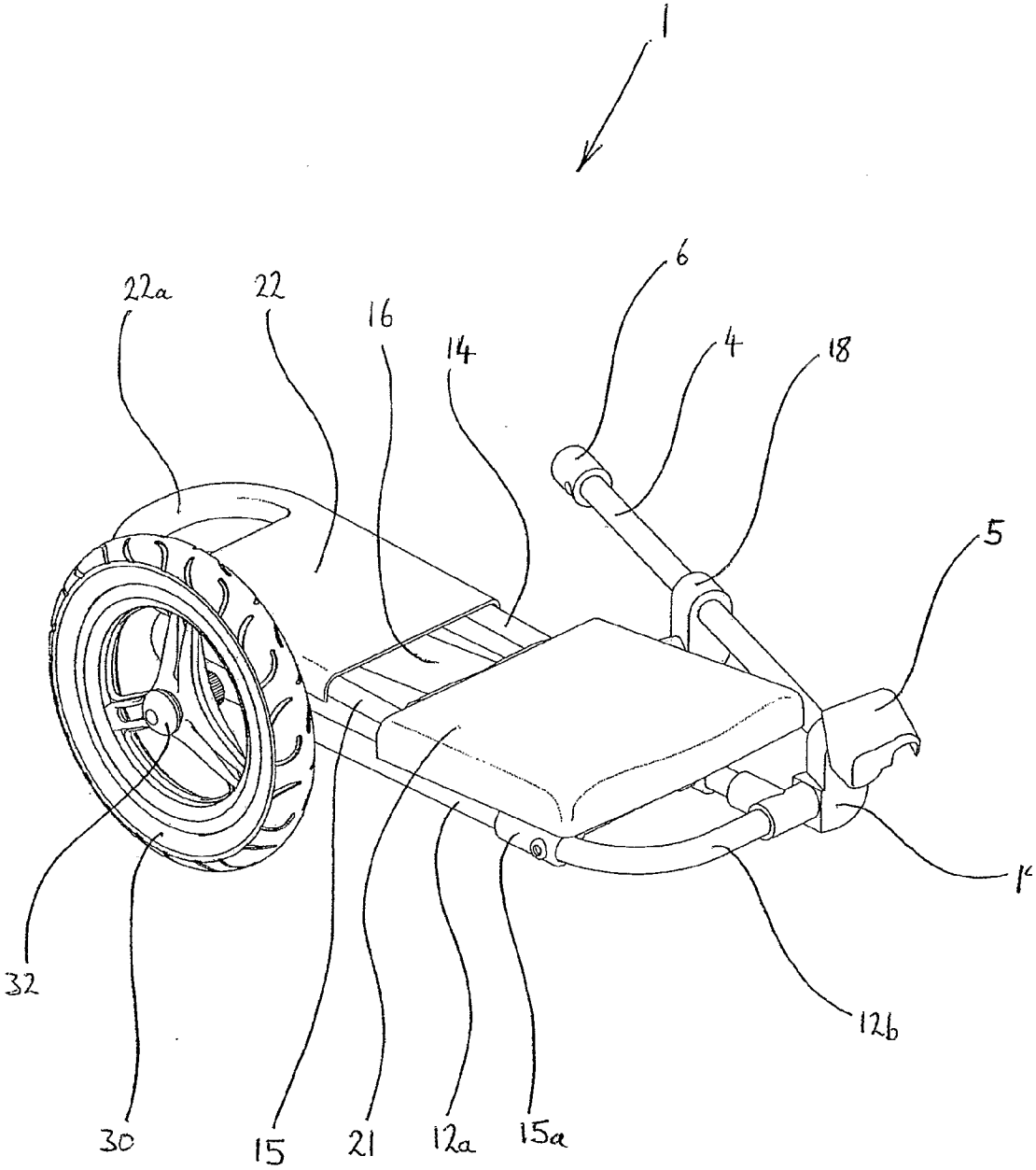


FIGURE 2.

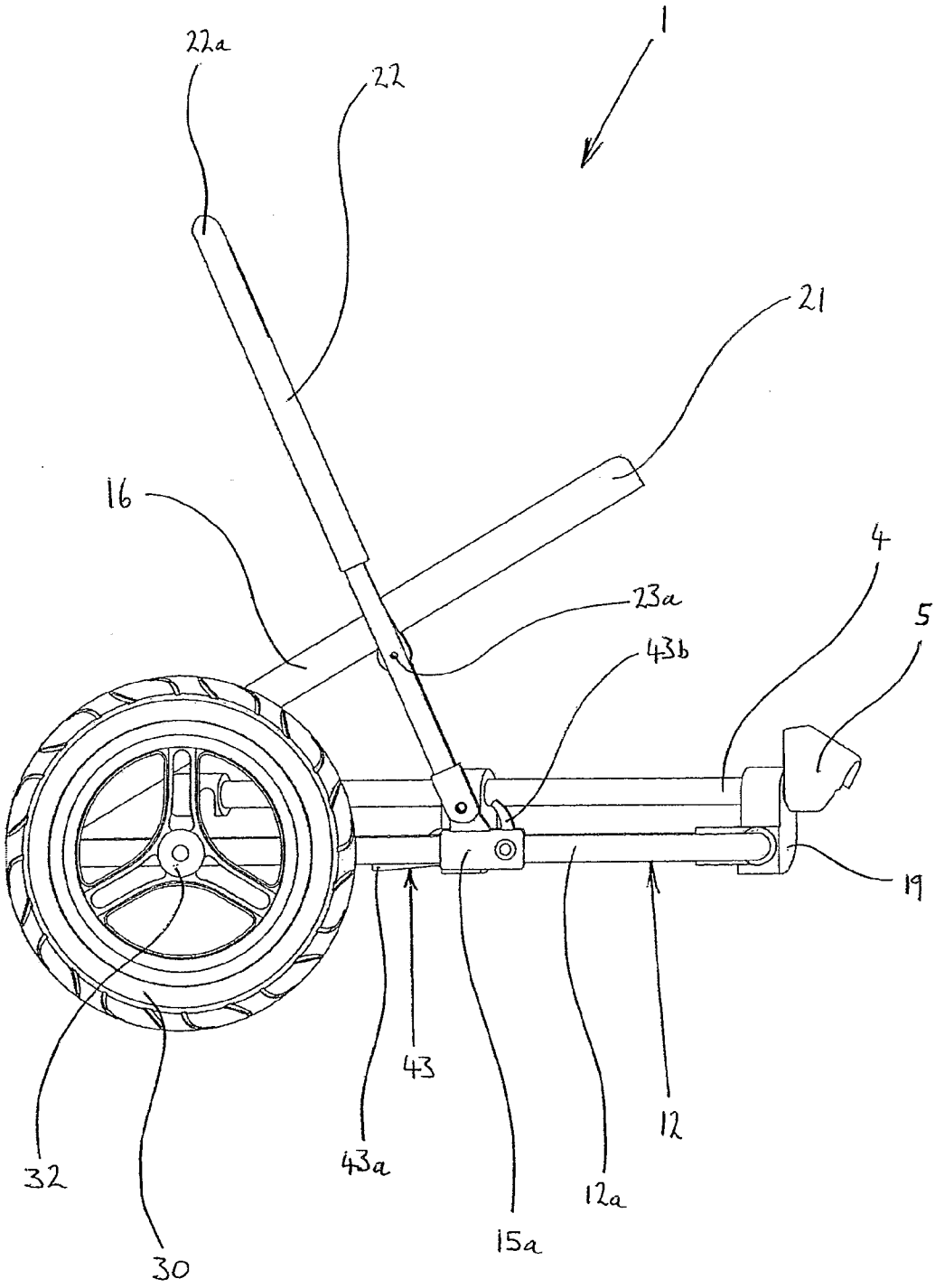


FIGURE 3

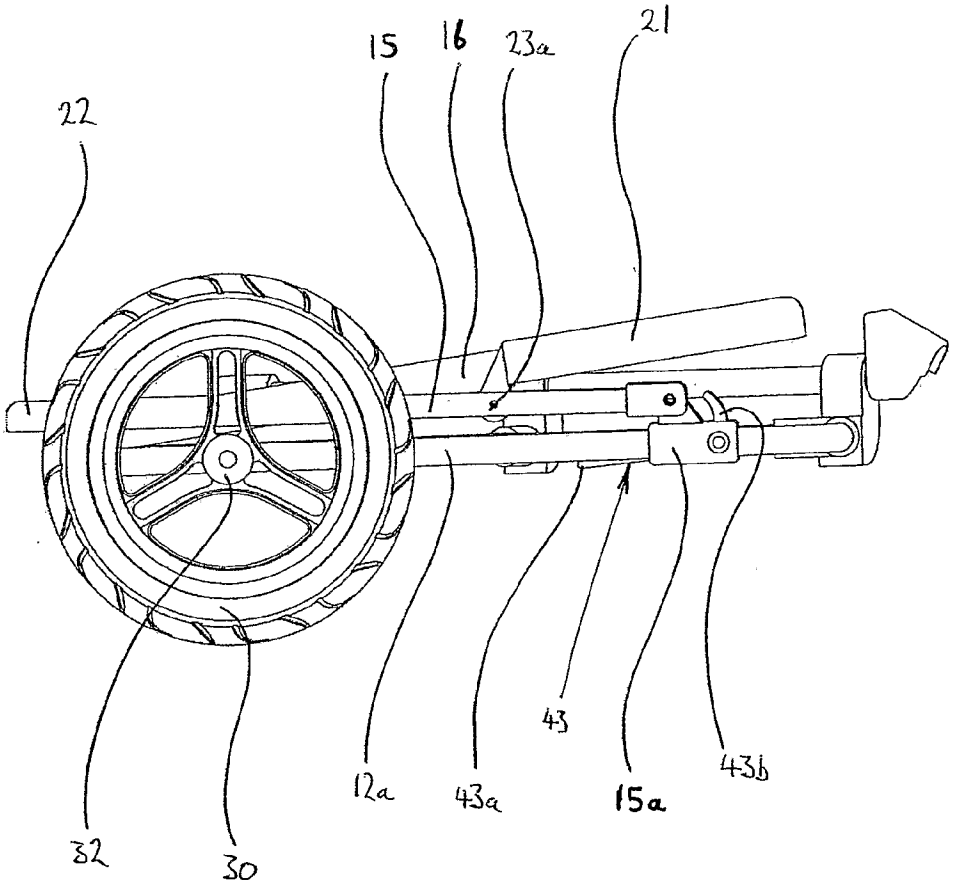


FIGURE 4

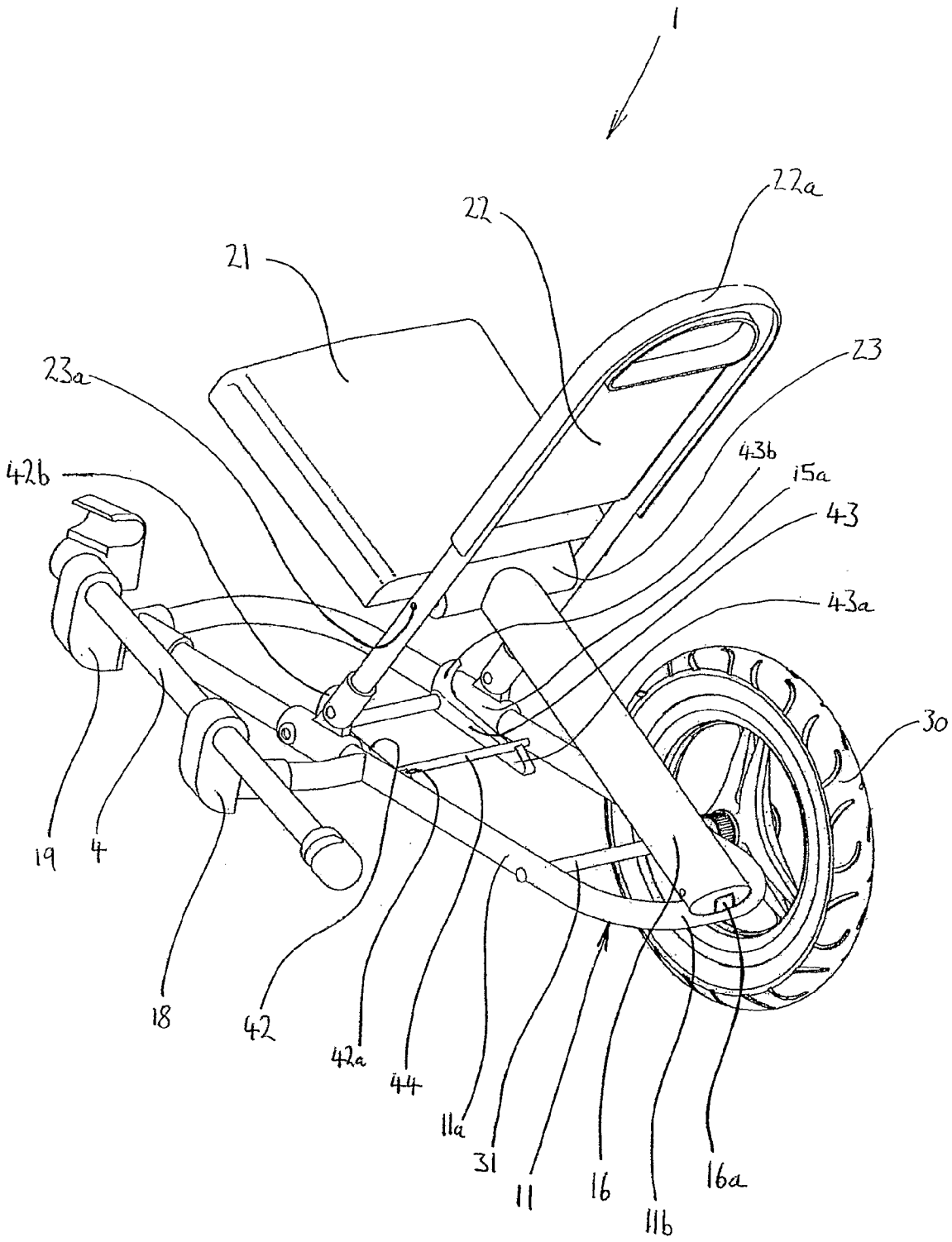

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11b
16a

FIGURE 5

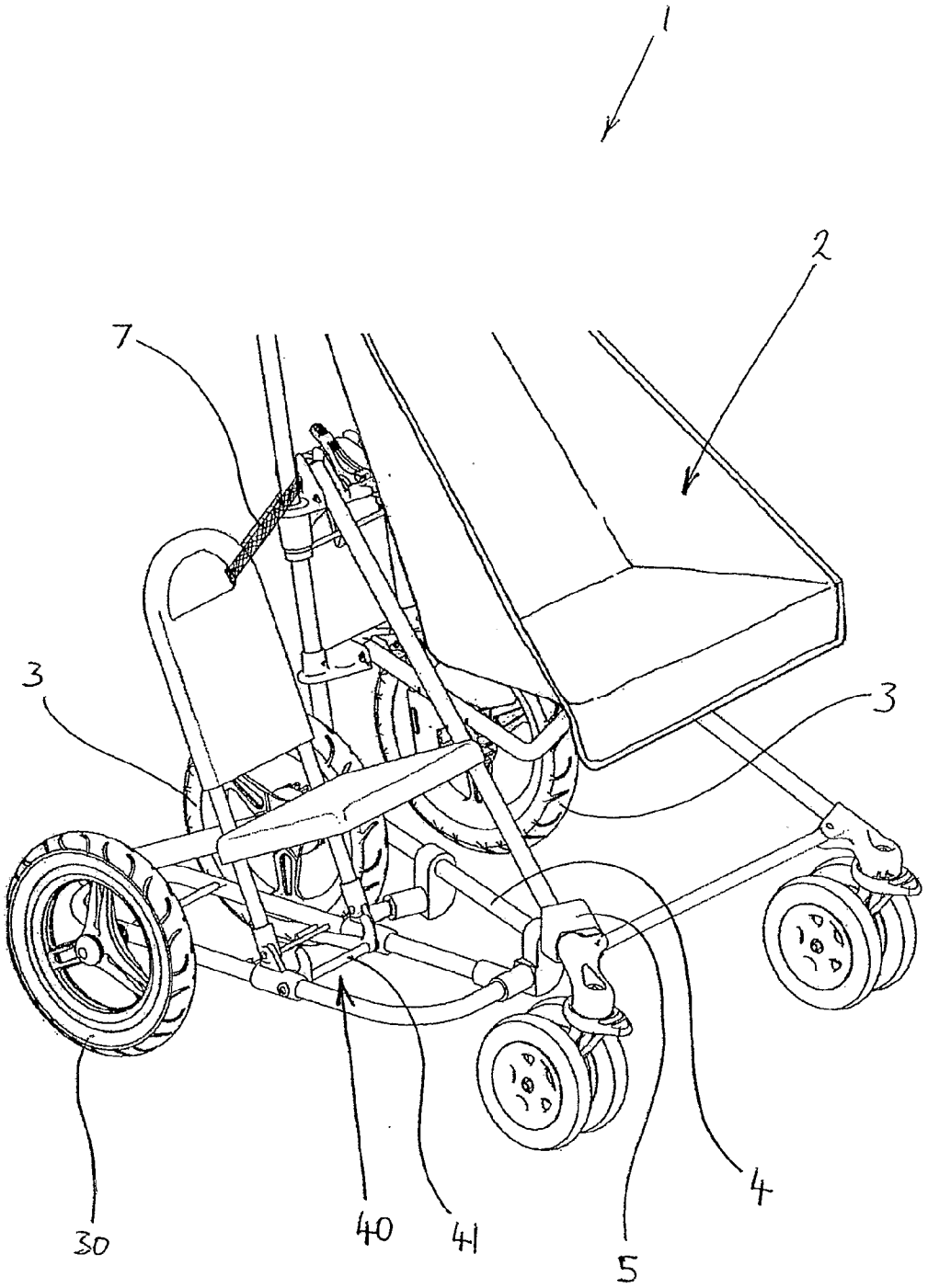


FIGURE 6.

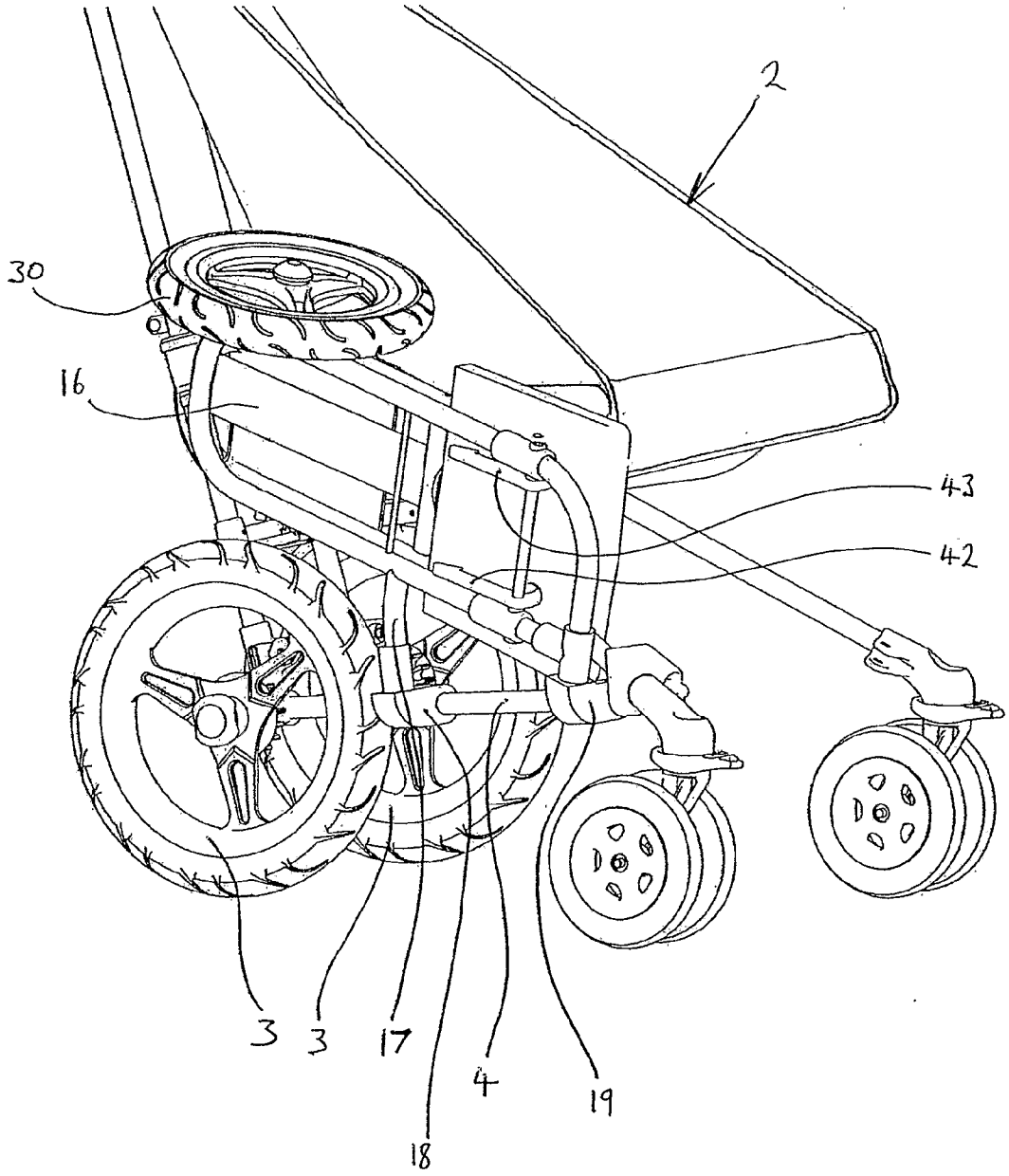


FIGURE 7

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
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[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
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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1. CN113715891 - CHILD STROLLER

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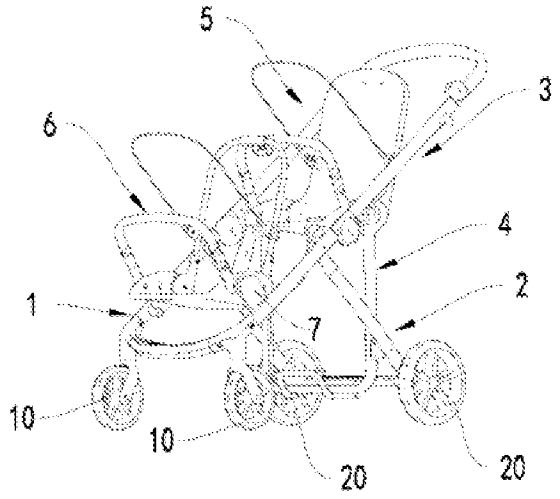
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Title
[EN] Child stroller
[ZH] 儿童推车



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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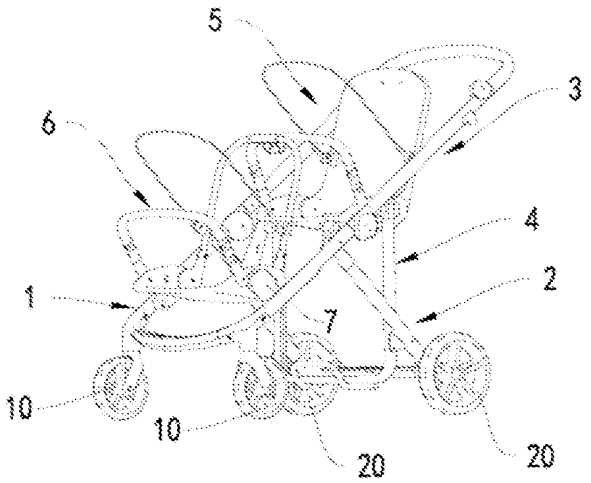
权利要求书2页 说明书5页 附图15页

(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。



CN 113715891 B

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。

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[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。

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[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。

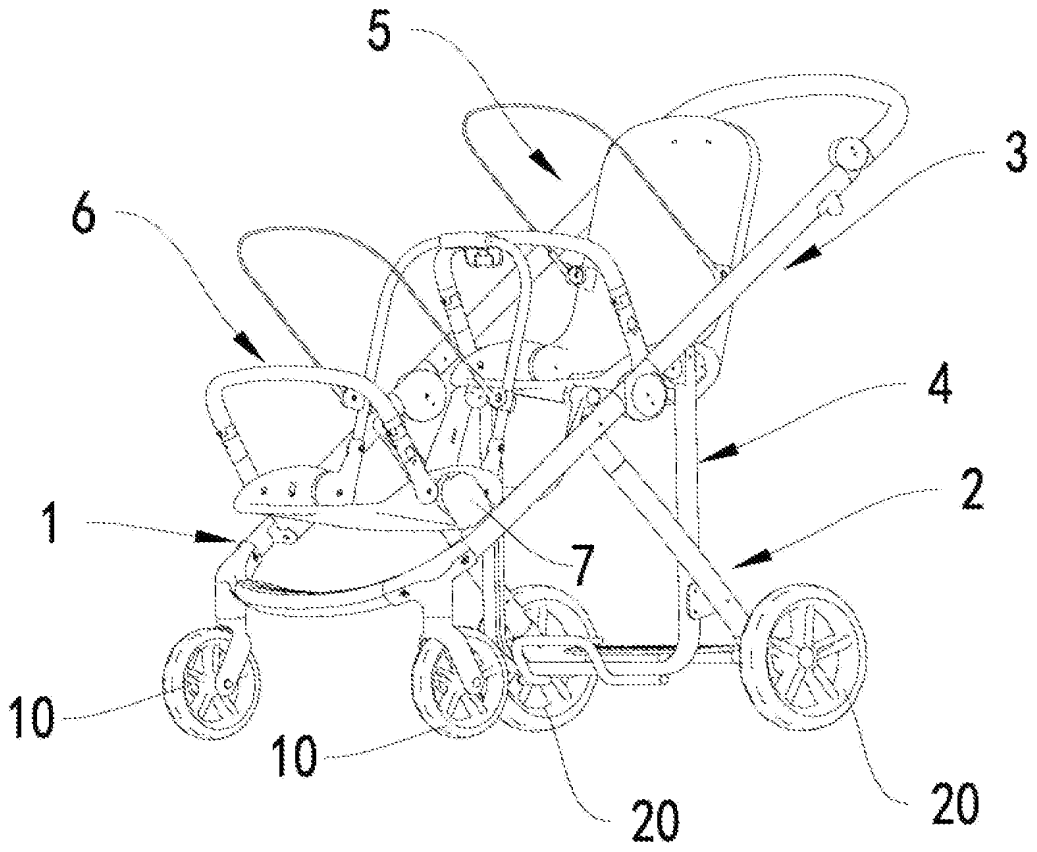


图1

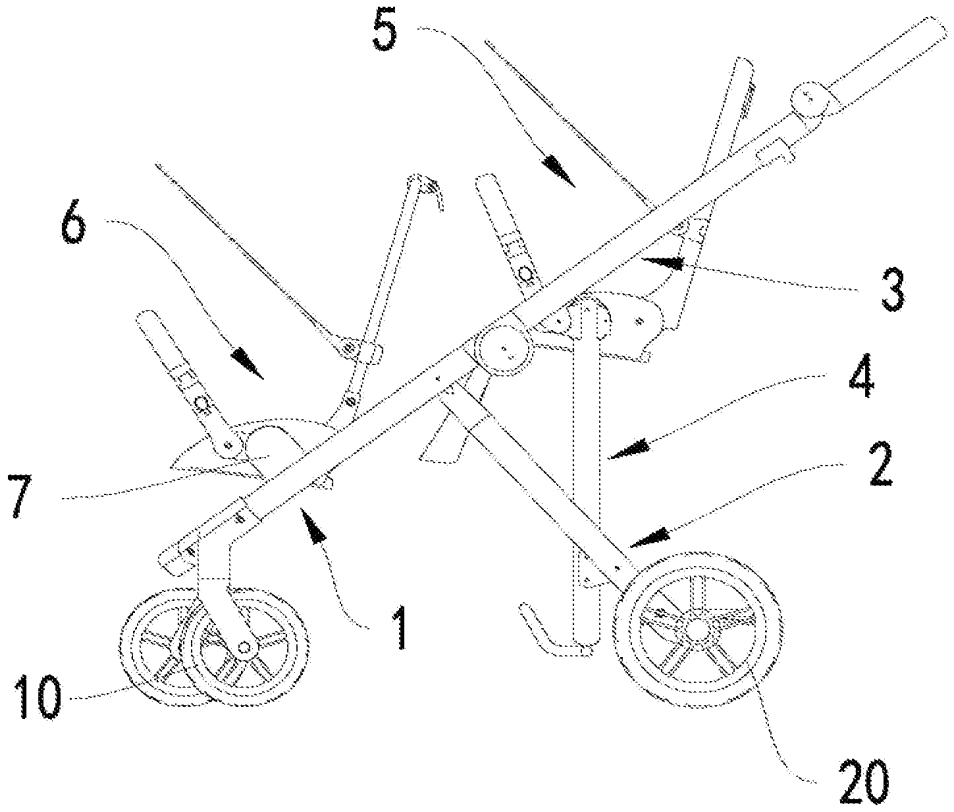


图2

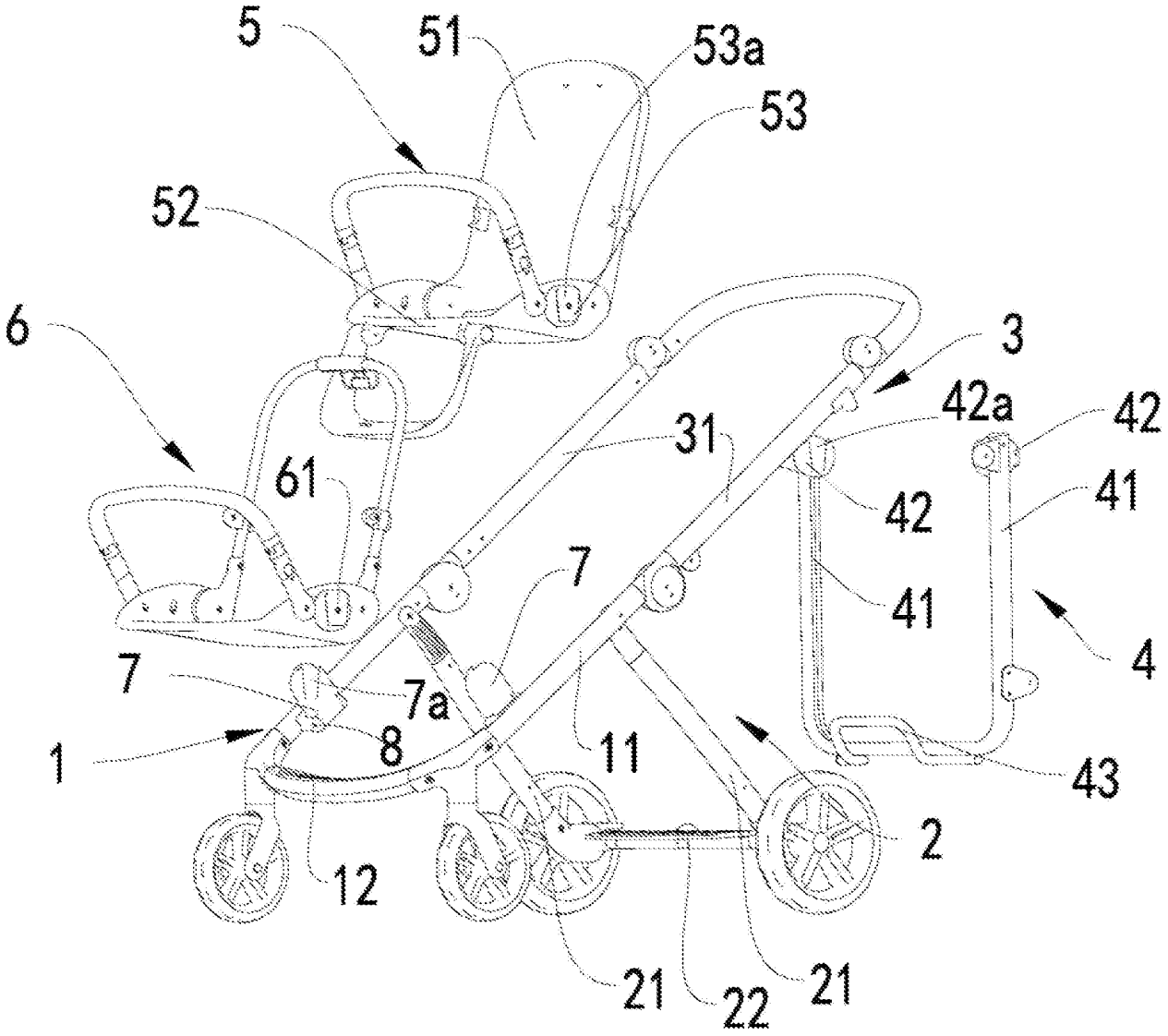


图3

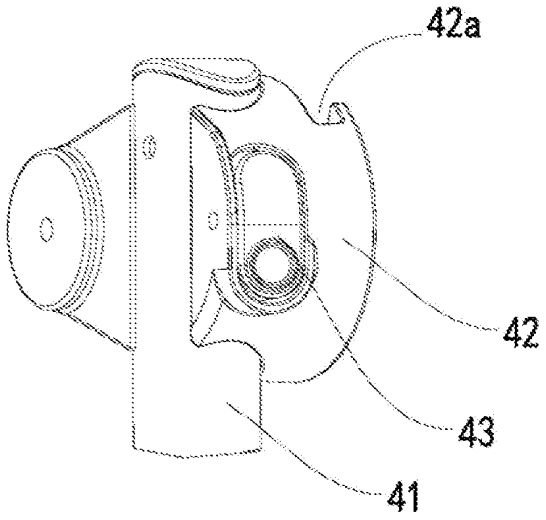


图4

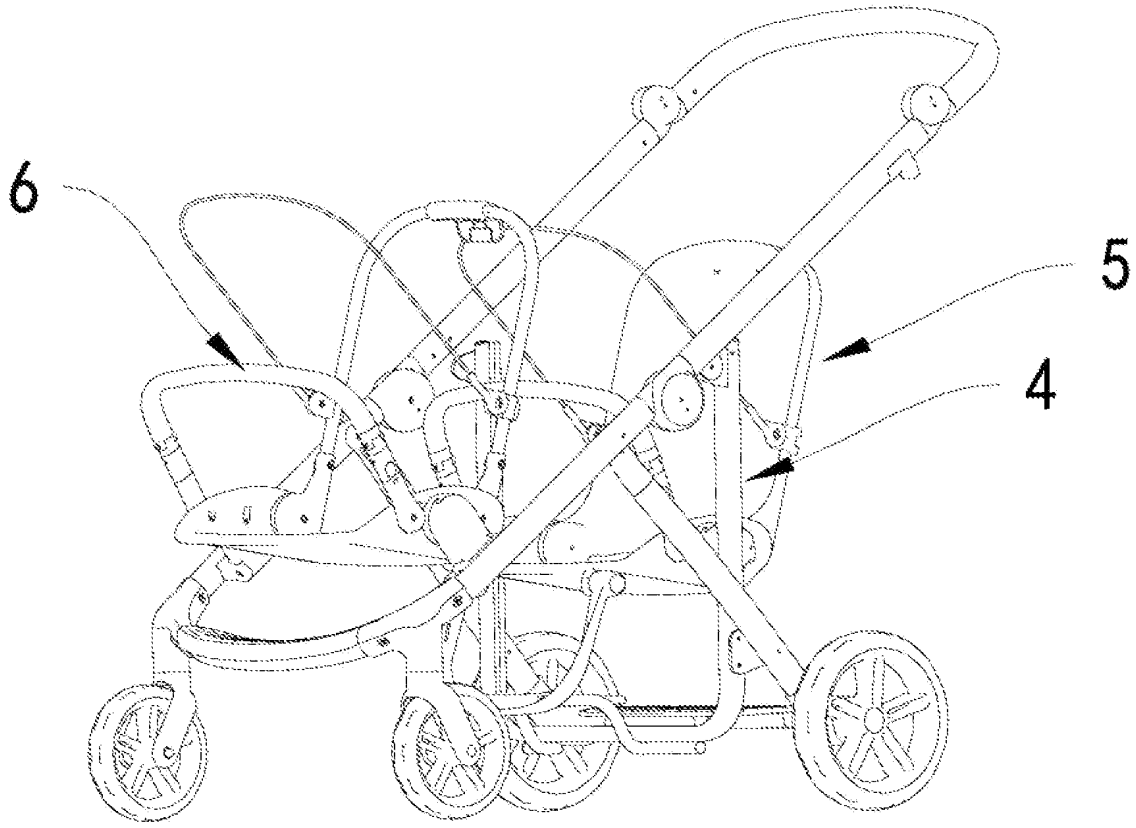


图5

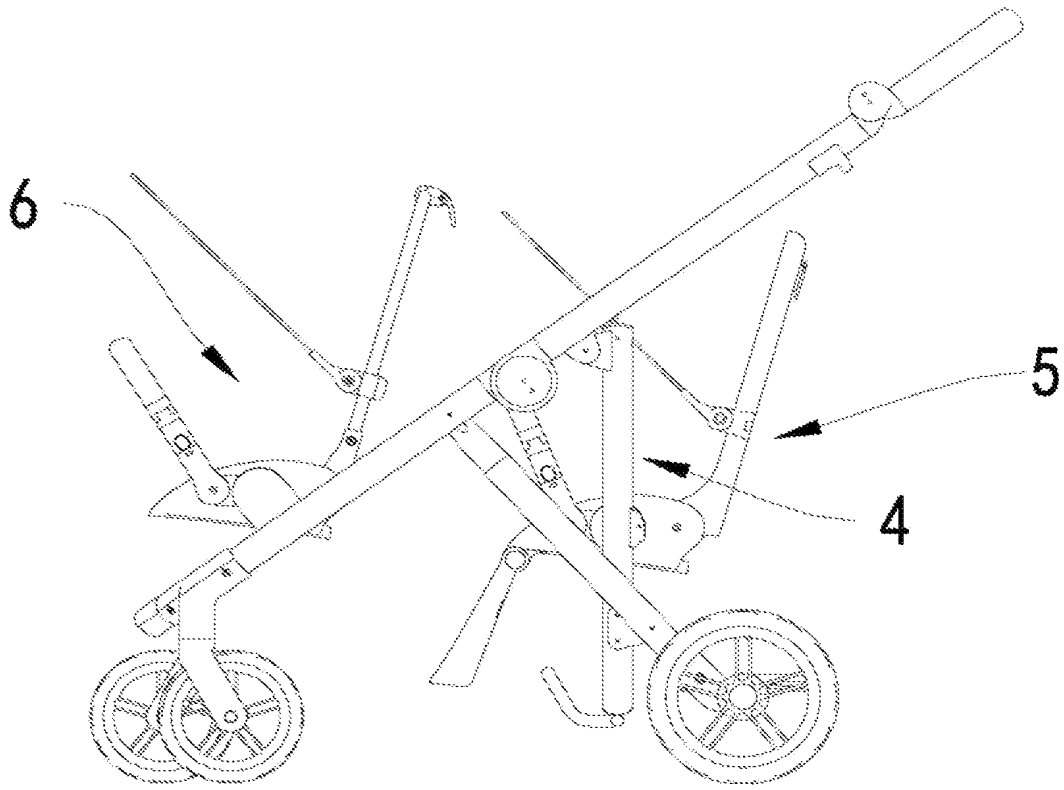


图6

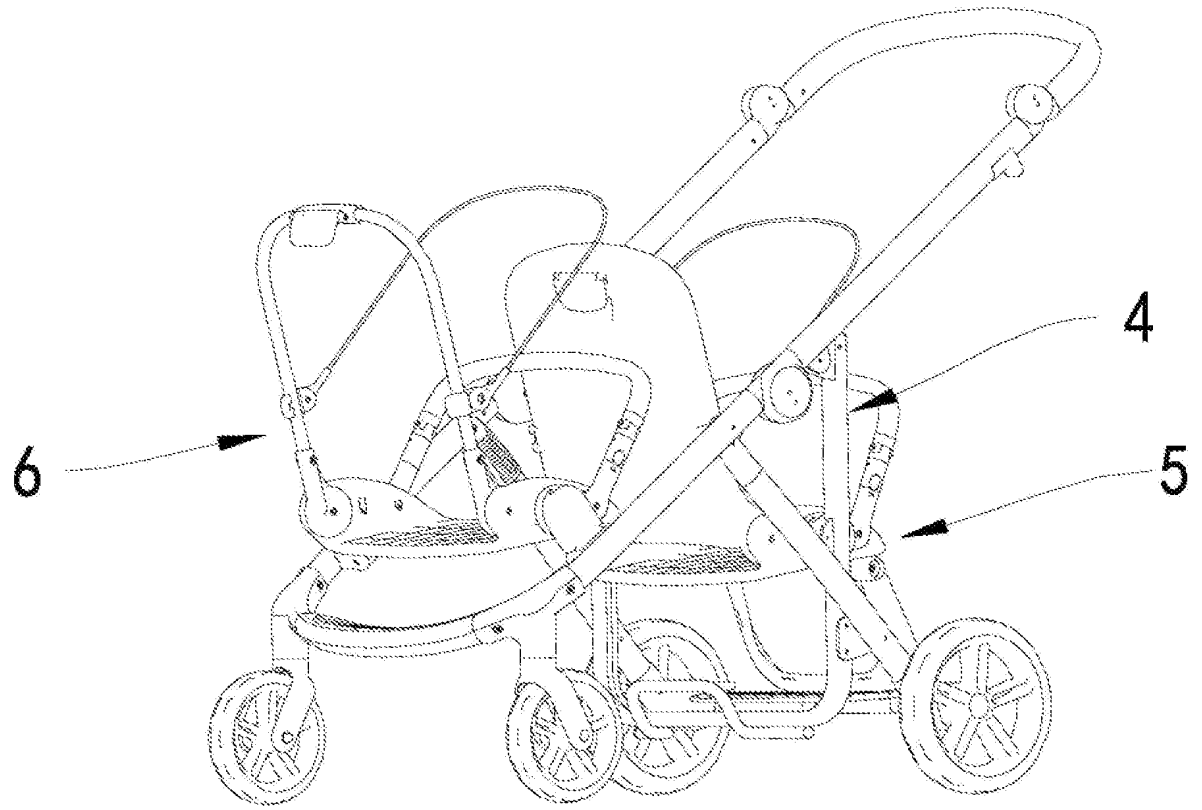


图7

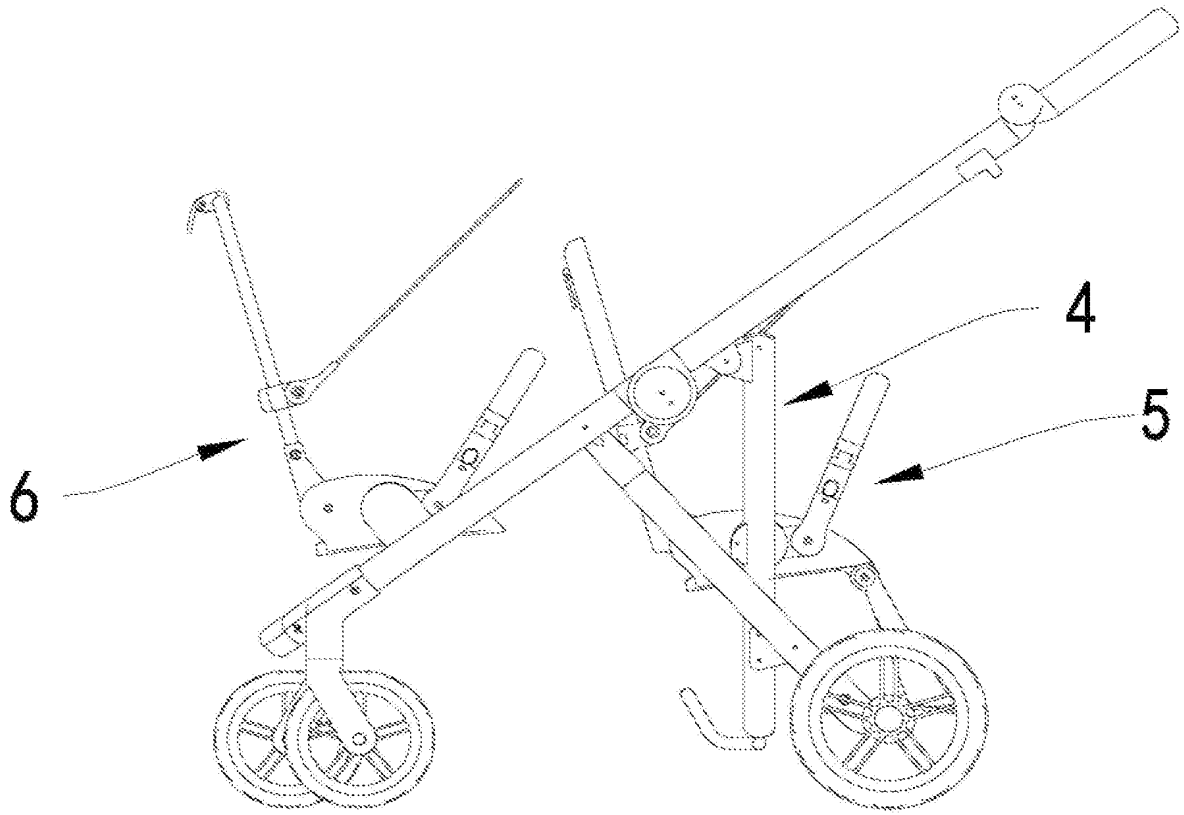


图8

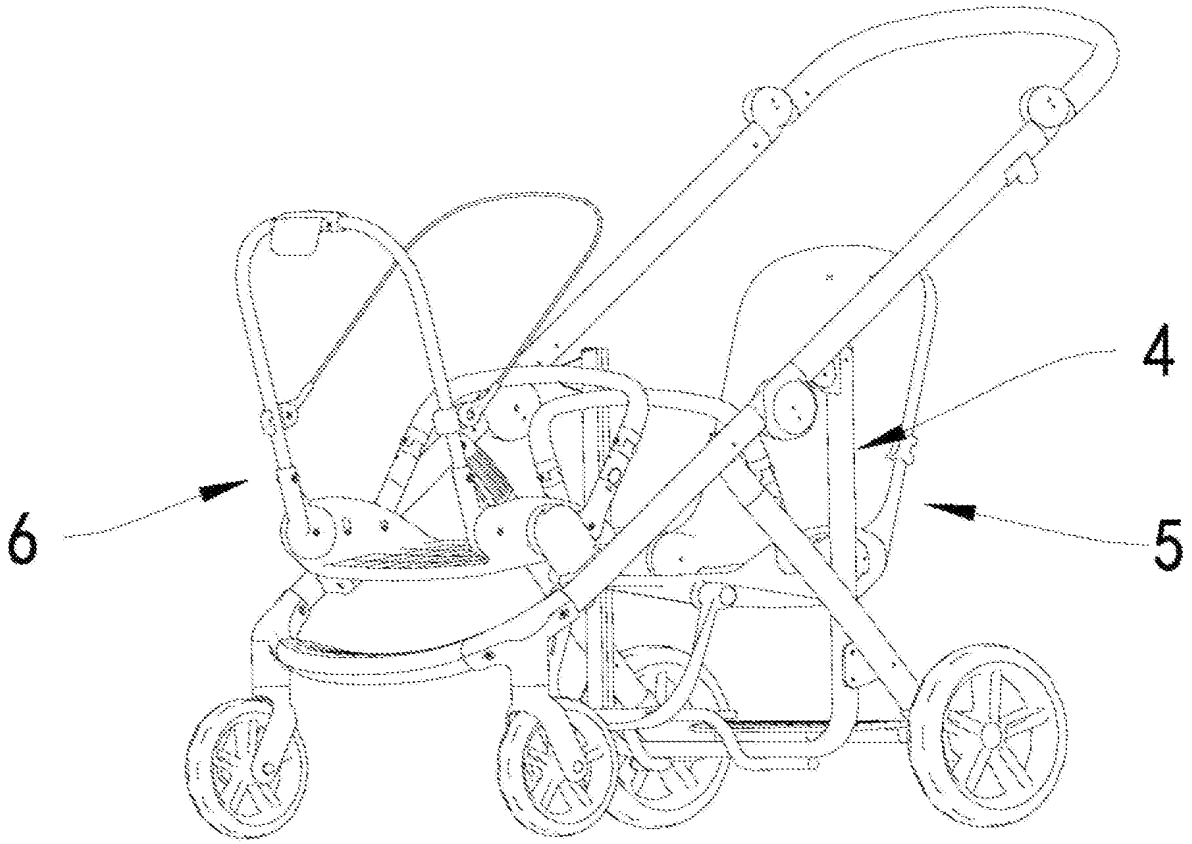


图9

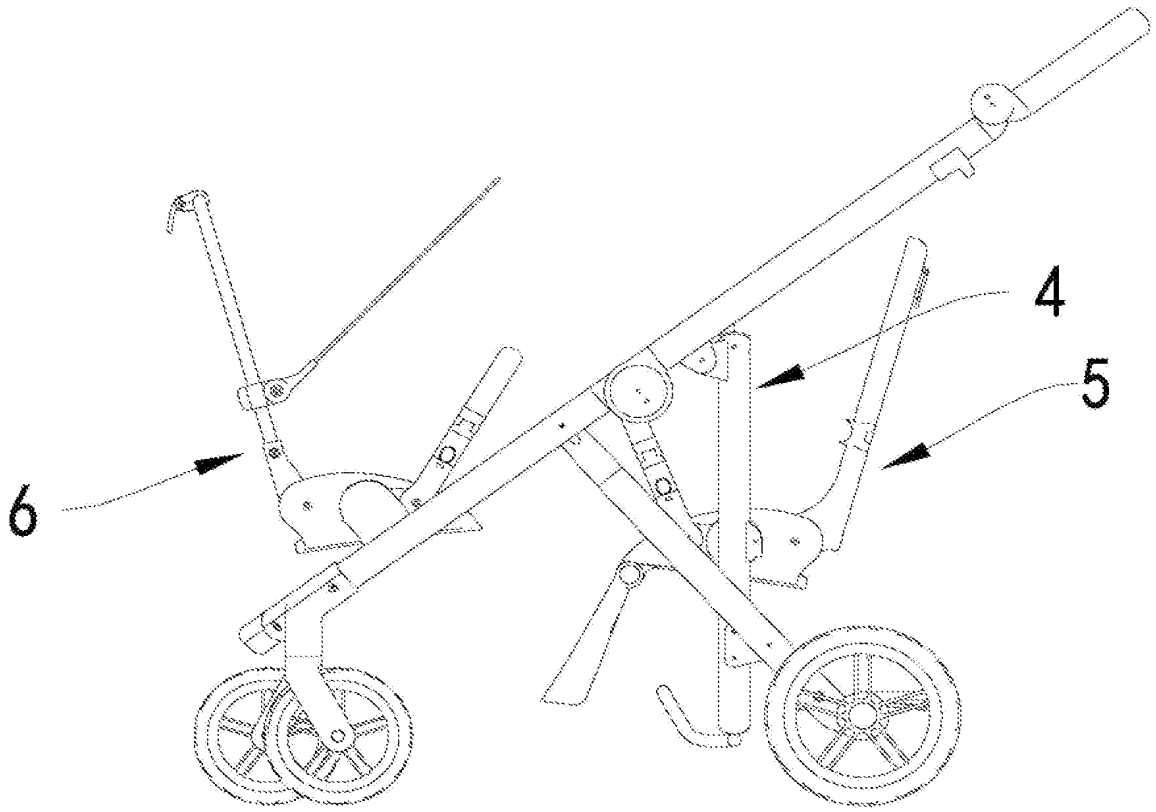


图10

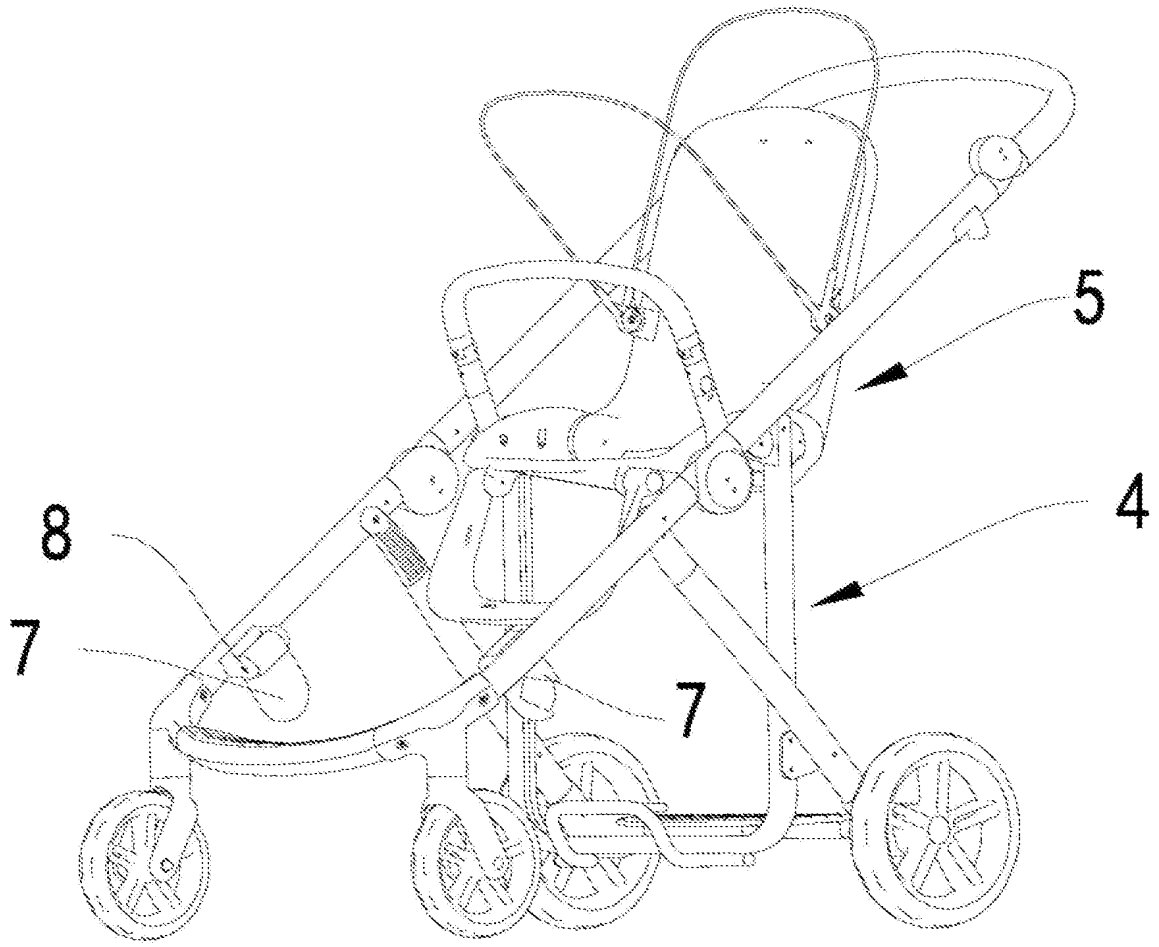


图11

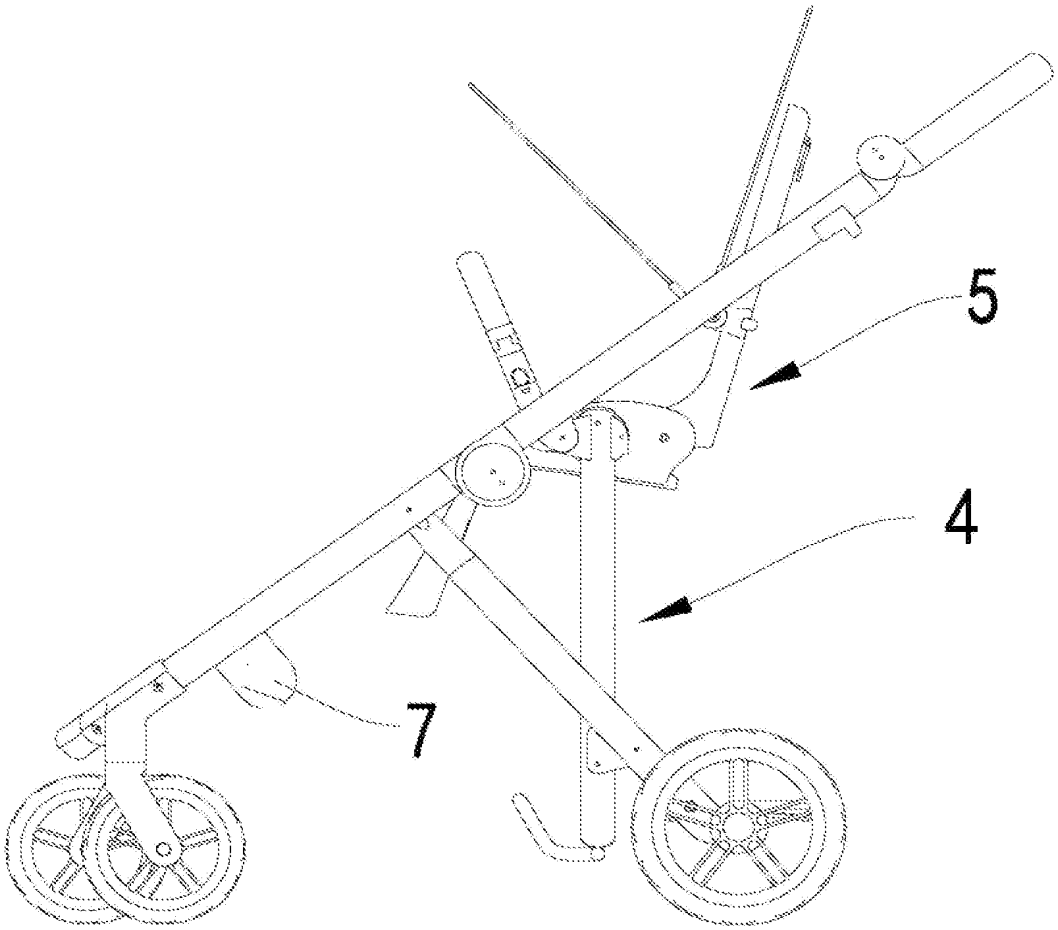


图12

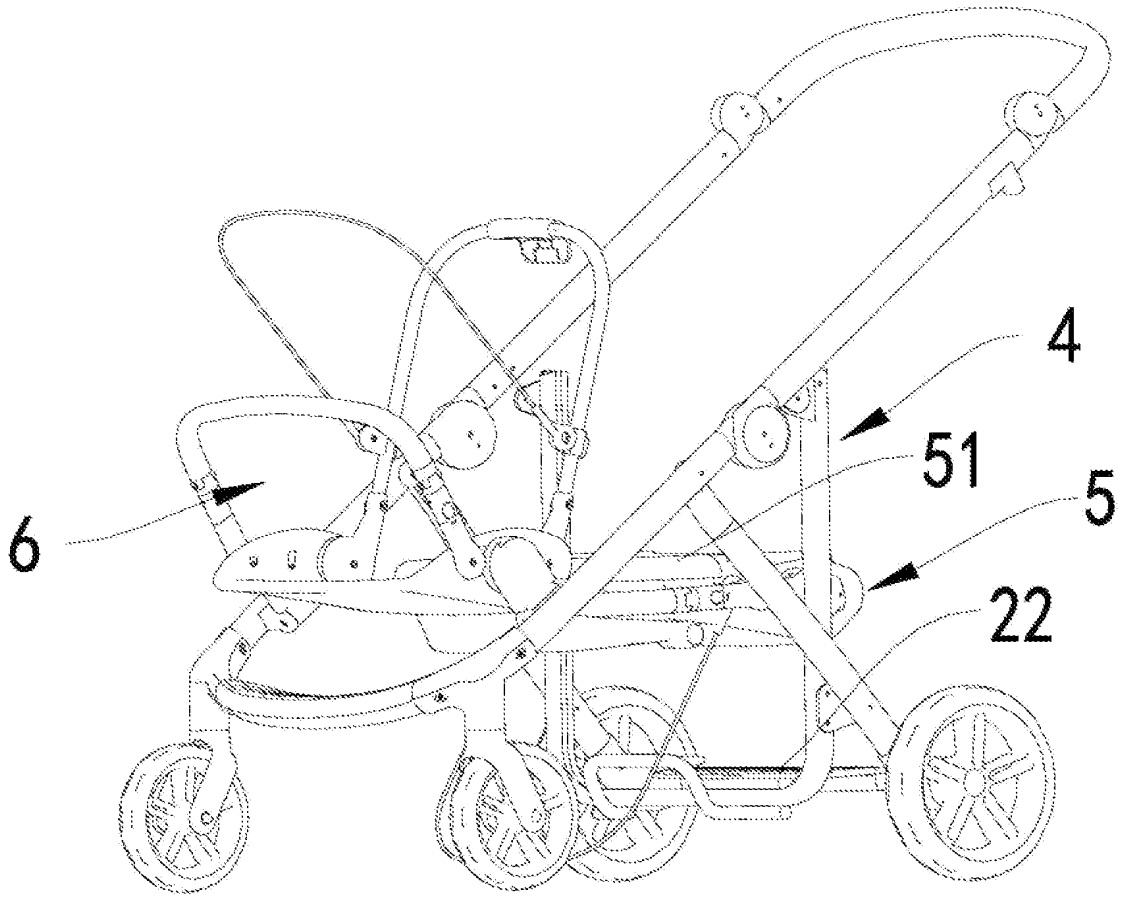


图13

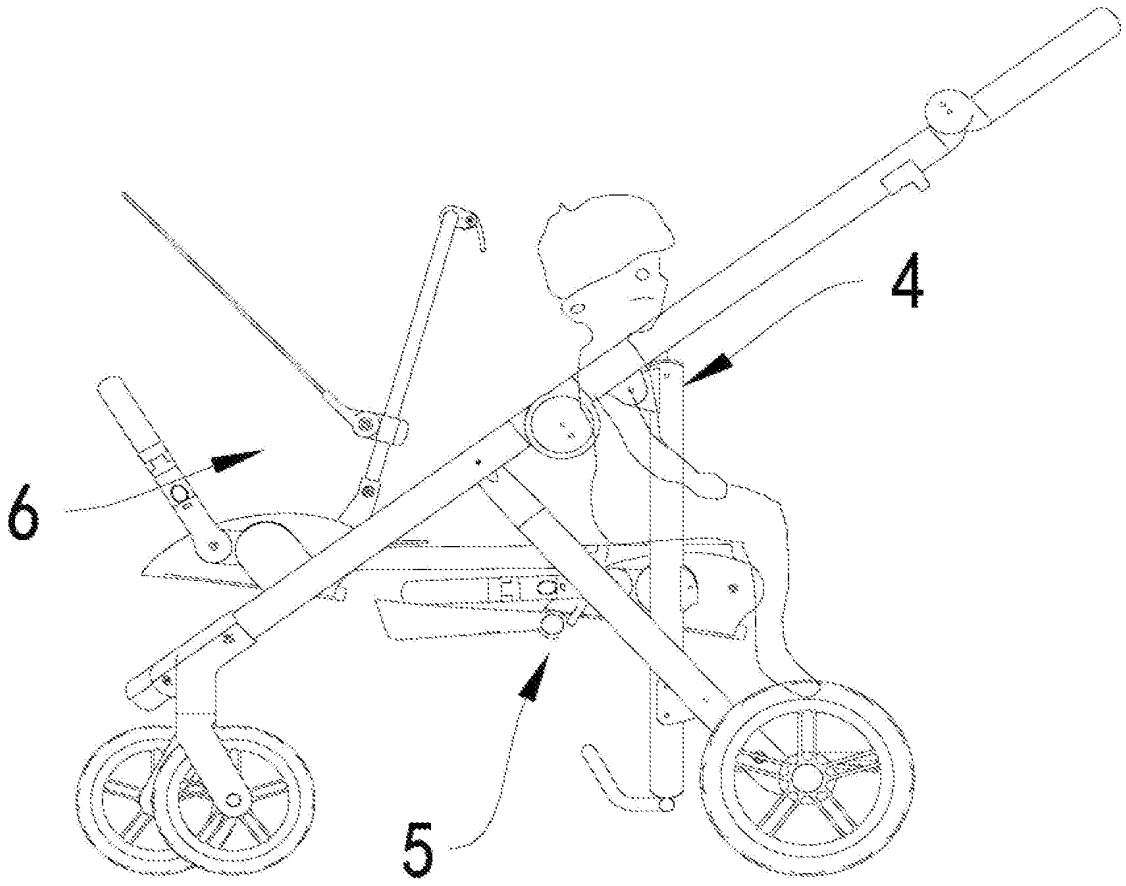


图14

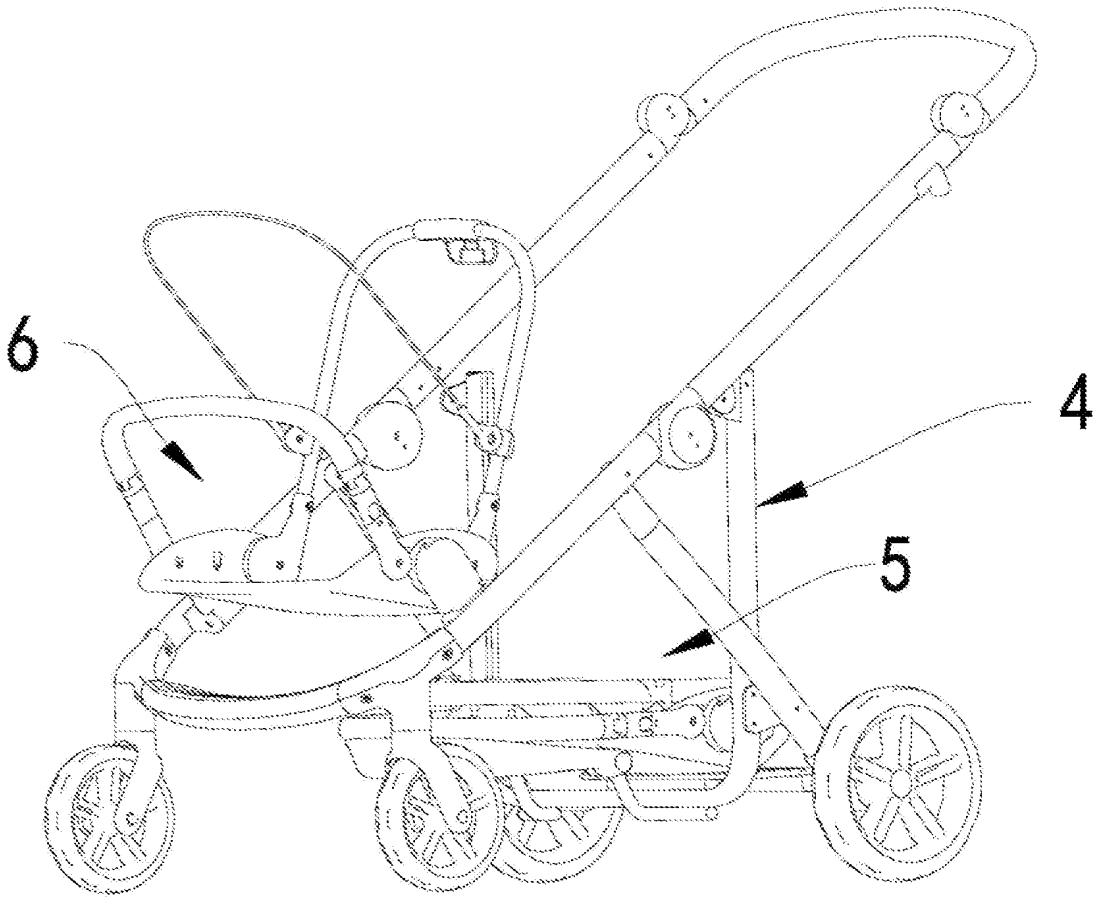


图15

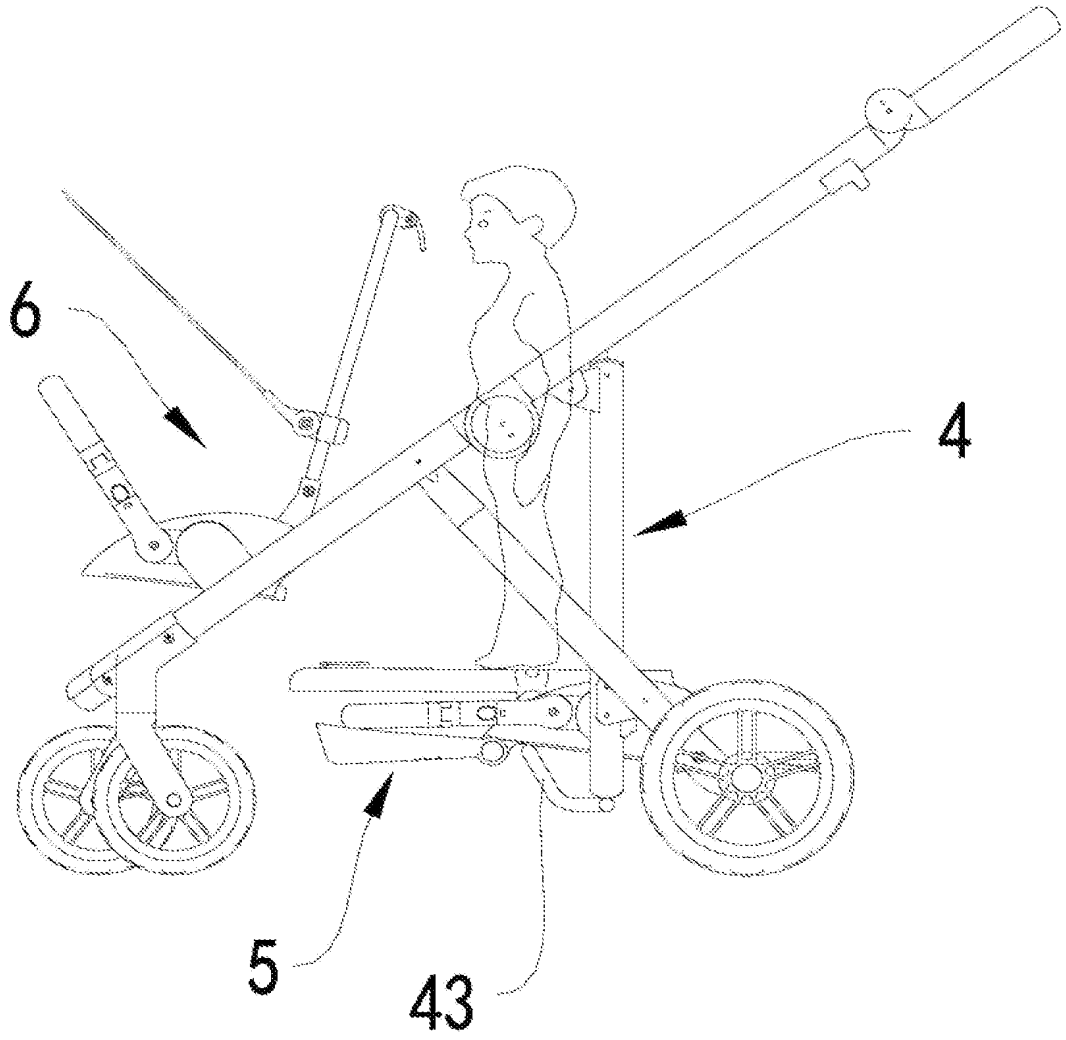


图16

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Date of issue: 1 April 2014

Patent Examination Report No. 1

Application Details

Patent Application No.: 2009322149

Applicant/s: DYNAMIC BRANDS, LLC

Your reference: PNF;NJA;P87221.AU

Earliest Priority Date: 04 December 2008

Examination Request Date: 08 March 2013

Your application has been examined under Section 45 of the *Patents Act 1990*. I consider that the application does not meet the requirements of the Act for the reasons indicated below.

Actions you can take

NOTE: There is a current postponement of acceptance in place. If you overcome all other objections before the expiration of that postponement, the Commissioner will only accept the application at that time if you have filed a clear and unambiguous statement requesting the withdrawal of that postponement. Otherwise, a further adverse report will be issued.

You have **21 months** from the date of this report to overcome all my objection(s) otherwise your application will lapse.

You will need to pay a monthly fee for any response you file after 12 months from the date of the first report.

You will also need to pay any annual continuation fees that apply. Information about fees may be obtained by phoning 1300 651 010 or by visiting www.ipaustralia.gov.au.

Basis of the report

Last amendment item no. 2 .

In examining your application I have taken into account:

- the PCT pamphlet as originally filed
- the proposed amendments under S104 filed on 08 March 2013

Statement of Novelty, Inventive Step and Patentable Subject Matter

Novelty/Inventive Step	Claim No. NONE Claim No. 1-15, 16-18, 27-29, 30-50, 56	**Yes** **No**
Patentable Subject Matter	Claim No. 1-15, 16-18, 27-29, 30-50, 56 Claim No. NONE	**Yes** **No**

Section 40 (Fair Basis, Full Description, Clarity, Lack of Unity)

1 The specification does not comply with Section 40(4) because the claims do not relate to one invention only. I have found different inventions based on the following features that separate the claims into distinct groups:

- Claims 1 to 15, and 56 (in part) are directed to a seat attachment for a stroller. The feature of "a seat support element capable of supporting a seat in either a forward or backward position" is specific to this group of claims.
- Claims 16 to 18 and 56 (in part) are directed to a double stroller. The feature of "the second seat is attached in front of the first seat" is specific to this group of claims.
- Claims 19 to 26 and 56 (in part) are directed to a double stroller. The feature of "a second seat attachment capable of supporting a child seat" is specific to this group of claims.
- Claims 27 to 29 and 56 (in part) are directed to a stroller. The feature of "the seat attachment comprises a connector portion and a seat support element" is specific to this group of claims.
- Claims 30 to 50 and 56 (in part) are directed to a stroller. The feature of "a seat attachment for converting the stroller into a double stroller, the seat attachment comprising: a connector... and a seat attachment element capable of supporting a second seat in either a forward or backward position" is specific to this group of claims.
- Claims 51 to 55 and 56 (in part) are directed to a stroller capable of being converted to a double stroller. The feature of "a releasably connected first seat...in a forward or backward facing position" and "a releasably connected second seat... in a forward or backward facing position" is specific to this group of claims.

Unity of invention is only fulfilled when there is at least one "special technical feature" present in the claims that both:

- provides a technical relationship among all the claims; and,
- makes a contribution over the prior art.

When there is no special technical feature common to all the claimed inventions there is no unity of invention.

In the above groups of claims, the identified features may have the potential to make a contribution over the prior art but are not common to all the claimed inventions and therefore

cannot provide the required technical relationship. The only feature common to all of the claimed inventions and which provides a technical relationship among them is a stroller with a seat. However it is considered that this feature is generic in this particular art. Therefore this common feature cannot be a special technical feature. Hence there is no special technical feature common to all the claimed inventions and the requirements for unity of invention are consequently not satisfied *a priori*.

As a consequence of this I have restricted the examination to the first (Claims 1-15 and 56 in part), second (Claims 16-18 and 56 in part), fourth (Claims 27-29 and 56 in part) and fifth (Claims 30-50 and 56 in part) inventions which are referring to a stroller and the mechanical arrangement of its seat attachment and connector portion. While regarding the third (Claims 19-26 and 56 in part) and sixth inventions (Claims 51-55 and 56 in part), which mainly refer to a stroller with seat attachments supporting a child seat and a stroller with seats being one of a stroller seat, car seat, bassinet seat are not examined in this report, and any comment on the validity of any claims relating to the third and sixth inventions is withheld pending the applicant's response to this report.

Documents Cited or Considered Relevant

D1 : US 2007/0085303 A1 (CHENG) 19 April 2007 ^
Category: X Claims: 27-40, 44, 45, 47-50, 56
Category: Y Claims: 1-18, 41-43, 46

D2 : US 2007/0252352 A1 (ROHL) 01 November 2007 ^
Category: Y Claims: 1-18, 41-43, 46

^ D1 and D2 are earlier publications of US 7475900 and US 7877585, respectively, which were raised in US Exam Report (Final Rejection) dated 28 March 2013 for US Application No. US 12/631,375

Special categories of cited documents:

X: The claimed invention cannot be considered novel under subsection 7(1) in light of the document and/or cannot be considered to involve an inventive step under subsection 7(2) of the Act in light of the common general knowledge considered together with the document.
Y: The claimed invention cannot be considered to involve an inventive step under subsection 7(2) of the Act in light of the common general knowledge when considered together with a combination of the document and one or more other such documents.

Novelty and Inventive Step

2 Claims 27-29, 30-40, 44 and 45 are not novel and lack an inventive step in light of D1 as discussed in item 17 pages 8-9 of the US Exam Report on US 12/631, 375 dated 28 March 2013.

Note that, D1 (US 2007/0085303 A1) is an earlier publication of US 7475900 discussed in above US exam report.

Also note that, above Australian Claims 27, 28, 29, 30-37, 38-40, 44 and 45 are having substantially the same scope as US Claims 28, 32, 33, 35-42, 44-46, 50 and 51 (dated 07 Jan 2013),respectively.

While the objection regarding these documents was not made under Australian law, I agree with the reasons given in that report and consider that they support a corresponding objection against the Australian claims.

3 Claims 1-15, 16-18, 41-43 and 46 lack an inventive step in light of the prior art documents (D1 and D2) as discussed in items 19-22 pages 9-17 of the US Exam Report on US 12/631, 375 dated 28 March 2013.

Note that, D1 (US 2007/0252352 A1) is an earlier publication of US 7677585 B2 discussed in above US exam report.

Also note that, above Australian Claims 1-15, 16, 17, 18, 41-43 and 46 are having substantially the same scope as US Claims 1-15, 16, 18, 19, 47-49 and 53 (dated 07 Jan 2013), respectively.

While the objection regarding these documents was not made under Australian law, I agree with the reasons given in that report and consider that they support a corresponding objection against the Australian claims. It is considered that a person skilled in the art, in view of the problem to be solved and the general state of the art at the time, would have ascertained, understood and regarded these documents as relevant. It is also considered that in seeking a solution to the problem a person skilled in the art would be motivated to combine the disclosures of these documents and arrive at a solution that is the same as the claimed invention.

4 Furthermore, appended claims 47-50 add only features that are either common in the art or mere design choices and which therefore cannot contribute to providing a patentable invention.

5 Omnibus claim 56, when refers to the broadest form of the accompany drawings, the differences are only resides in common general knowledge or mere design choices and therefore do not contribute to provide and inventive step.

Formalities

6 The Commissioner is not satisfied that the applicant is entitled to the grant of a patent under Section 15. You are required to file a Notice of Entitlement before the application can be accepted.

Additional Comments

Attorney's attention is further drawn to US exam report for US application No. 12/631,375 dated 02 August 2013.

I apologise for any inconvenience resulting from your application not being considered within the time limit set out in our Customer Service Charter.

How to contact us

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Application No.	Ref.	Date
09 831 215.0 - 1760	MJB08641EP	13.01.2016
Applicant Baby Jogger, LLC		

Communication pursuant to Article 94(3) EPC

The examination of the above-identified application has revealed that it does not meet the requirements of the European Patent Convention for the reasons enclosed herewith. If the deficiencies indicated are not rectified the application may be refused pursuant to Article 97(2) EPC.

You are invited to file your observations and insofar as the deficiencies are such as to be rectifiable, to correct the indicated deficiencies within a period

of 4 months

from the notification of this communication, this period being computed in accordance with Rules 126(2) and 131(2) and (4) EPC. One set of amendments to the description, claims and drawings is to be filed within the said period on separate sheets (R. 50(1) EPC).

If filing amendments, you must identify them and indicate the basis for them in the application as filed. Failure to meet either requirement may lead to a communication from the Examining Division requesting that you correct this deficiency (R. 137(4) EPC).

Failure to comply with this invitation in due time will result in the application being deemed to be withdrawn (Art. 94(4) EPC).

Registered letter
EPO Form 2001 12.10CSX

Gineste, Bertrand
Primary Examiner
For the Examining Division

Enclosure(s): 3 page/s reasons (Form 2906)

The examination is being carried out on the **following application documents**

Description, Pages

1, 3-12	as published	
2, 13	filed in electronic form on	11-06-2014

Claims, Numbers

1-15	filed in electronic form on	11-06-2014

Drawings, Sheets

1/8-8/8	as published

Reference is made to the following document; the numbering will be adhered to in the rest of the procedure.

D1 ES 2 253 093 A1 (PLAY SA [ES]) 16 May 2006 (2006-05-16)

The arguments of the applicant in his letter dated 10.06.2014 have been duly acknowledged.

1 Amendments filed

The newly filed documents do not meet the requirements of Article 123(2) EPC in that some amendments are not based on the original application documents for the following reasons:

1.1 Claims 1 and 11

1.1.1 The feature of claims 1 and 11 relating to "**separate** left and right attachment frame members" does not have any basis in the application as originally filed which merely discloses a seat attachment provided with left and right attachment frame members (see [0031] of the original description), each of these frame members being removably connected to the stroller frame (12) in a front portion of the stroller (10) adjacent to the corresponding left and right front wheels (see [0029] of the original description).

1.1.2 The original description and the original drawings remains silent with regard to a **potential separation** between left and right attachment frame members (24). According to paragraph [0029] of the original description: "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.". This means that seat 13 can be attached to stroller 10:

- either by a single seat attachment 20 comprising two seat support elements 22 or
- by left and right seat attachments 20, each comprising a seat support element 22.

A seat attached to stroller 10 by **separate** left and right seat attachments 20, i.e. by **separate** left and right frame members 24 is not disclosed in paragraph [0029] of the original description.

1.1.3 Each of attachment frame members 24 is removably connected to the corresponding side of stroller frame 10, both sides of the stroller frame being usually not separable as mentioned by the applicant in his letter dated 10.06.2014, page 3, last paragraph. Thus, there is no reason why left and right attachment frame members should be separable.

Besides, paragraph [0031] of the original description discloses two attachment frame members, wherein wheel support frame 26 connecting seat attachment wheel 23 to attachment support frame 24 is pivotally connected to both attachment frame members (24). Wheel support frame 26 seems therefore to connect left and right attachment frame members.

Also according to paragraph [0031], "attachment frame member 24 may span the width of the stroller between the two attachment frame members 17". It seems therefore that left and right attachment frame members seem to be fixedly connected to each other.

The separation mentioned in claim 1 can therefore not be considered as implicit to a person skilled in the art.

1.1.4 The information concerning the separation of the left and right attachment frame members present in claim 1 is therefore not directly and unambiguously derivable from that previously presented by the original application, even when account is taken of matter which is implicit to a person skilled in the art.

1.1.5 Thus the addition of this feature introduces subject-matter which extends beyond the content of the application as filed, contrary to Article 123(2) EPC (see the Guidelines for Examination in the EPO H-IV; 2).

2 Further prosecution

2.1 Claims 1 and 11 have been drafted as separate independent claims.

Under Article 84 in combination with Rule 43(2) EPC, an application may contain more than one independent claim in a particular category only if the subject-matter claimed falls within one or more of the exceptional situations set out in paragraph (a), (b) or (c) of Rule 43(2) EPC. This is not the case in the present application, however, for the following reason: it seems that the stroller according to claim 1 comprises all of the features of the seat attachment according to claim 11, i.e. that the stroller according to claim 1 could be rewritten as dependent on the seat attachment according to claim 11.

3 Miscellaneous

3.1 The applicant is invited to file new claims which take account of the above comments.

3.2 When filing amended claims the applicant should at the same time bring the description into conformity with the amended claims. Care should be taken during revision, especially of the introductory portion and any statements of problem or advantage, not to add subject-matter which extends beyond the content of the application as originally filed (Article 123(2) EPC).

3.3 The applicant is invited to clearly identify the amendments carried out, irrespective of whether they concern amendments by addition, replacement or deletion and to indicate the passages of the application as filed on which these amendments are based (see article 123(2) EPC as well as the Guidelines for Examination in the EPO H-III; 2.1 and 2.2). The applicant is reminded that the European Patent Office no longer accepts handwritten amendments as set out in the Official Journal, OJ EPO 2013, 603 ("Notice from the European Patent Office dated 8 November 2013 concerning application of Rules 49 and 50 EPC to handwritten amendments").

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

[51] Int. Cl.
B62B 7/14 (2006.01)
B62B 9/18 (2006.01)

[12] 发明专利申请公布说明书

[21] 申请号 200610107155.0

[43] 公开日 2007 年 6 月 13 日

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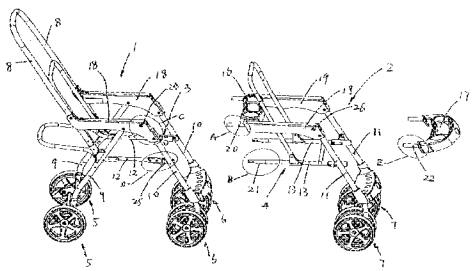
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权利要求书 4 页 说明书 8 页 附图 8 页

[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

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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，

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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

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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。

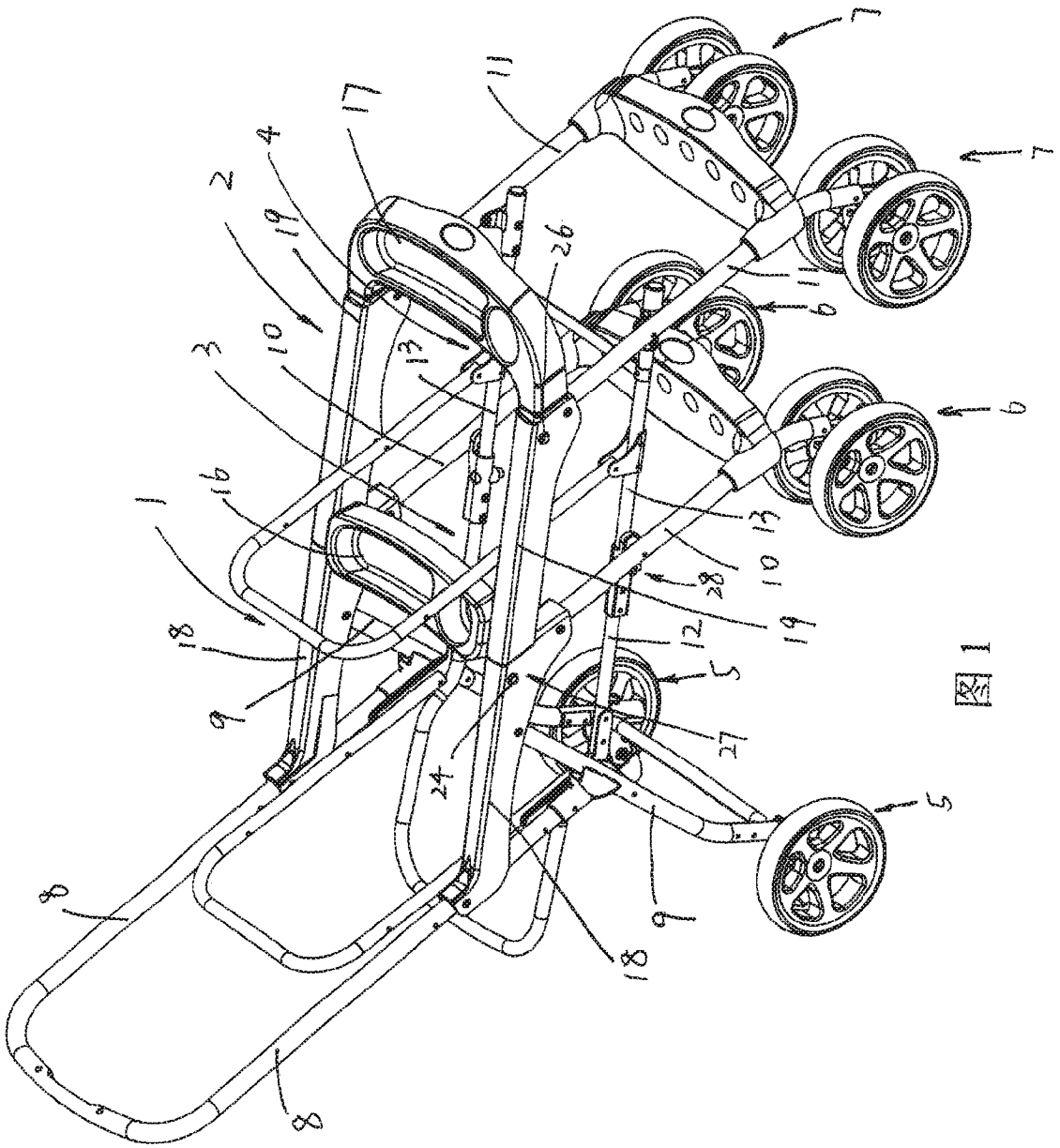


图 1

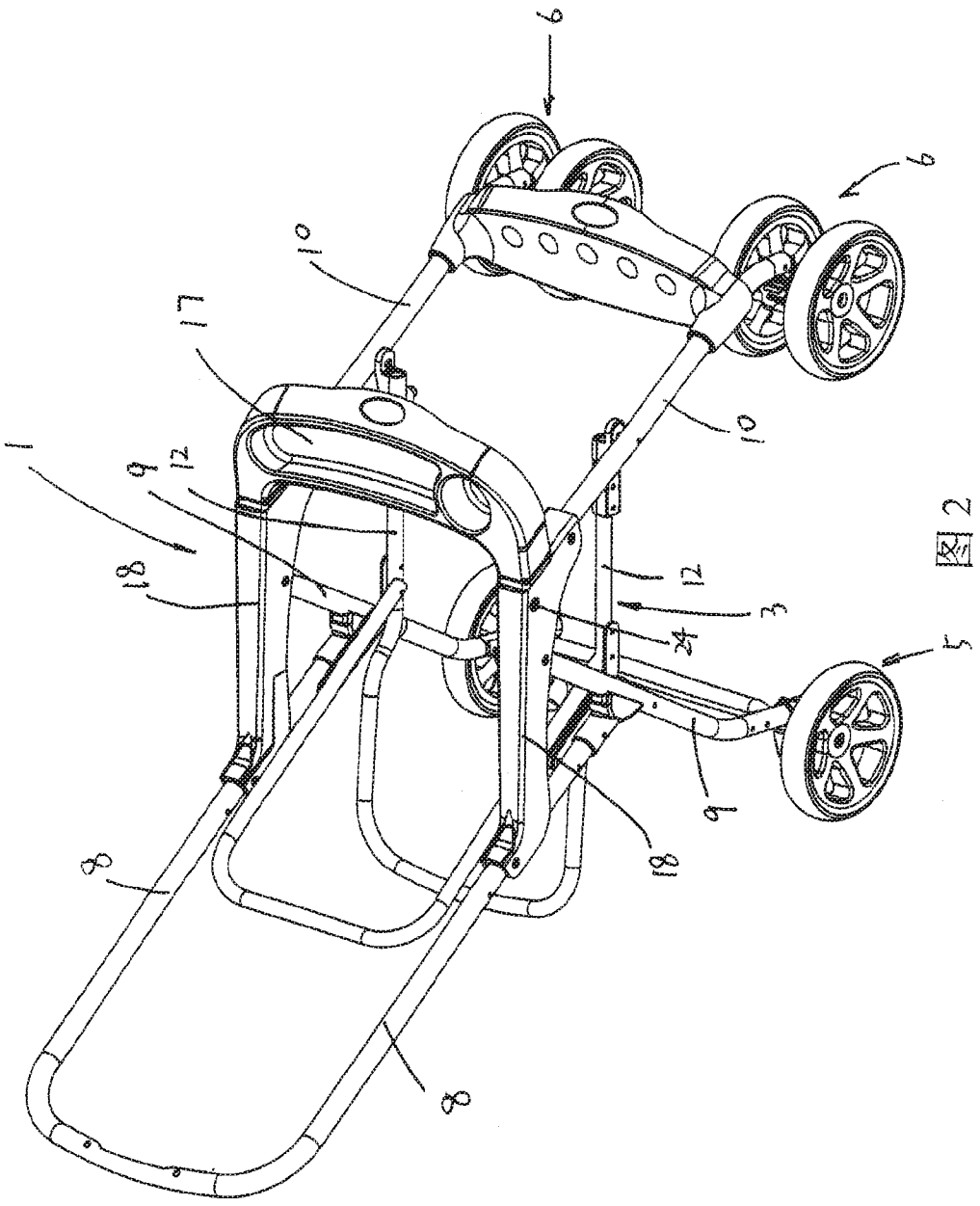


图 2

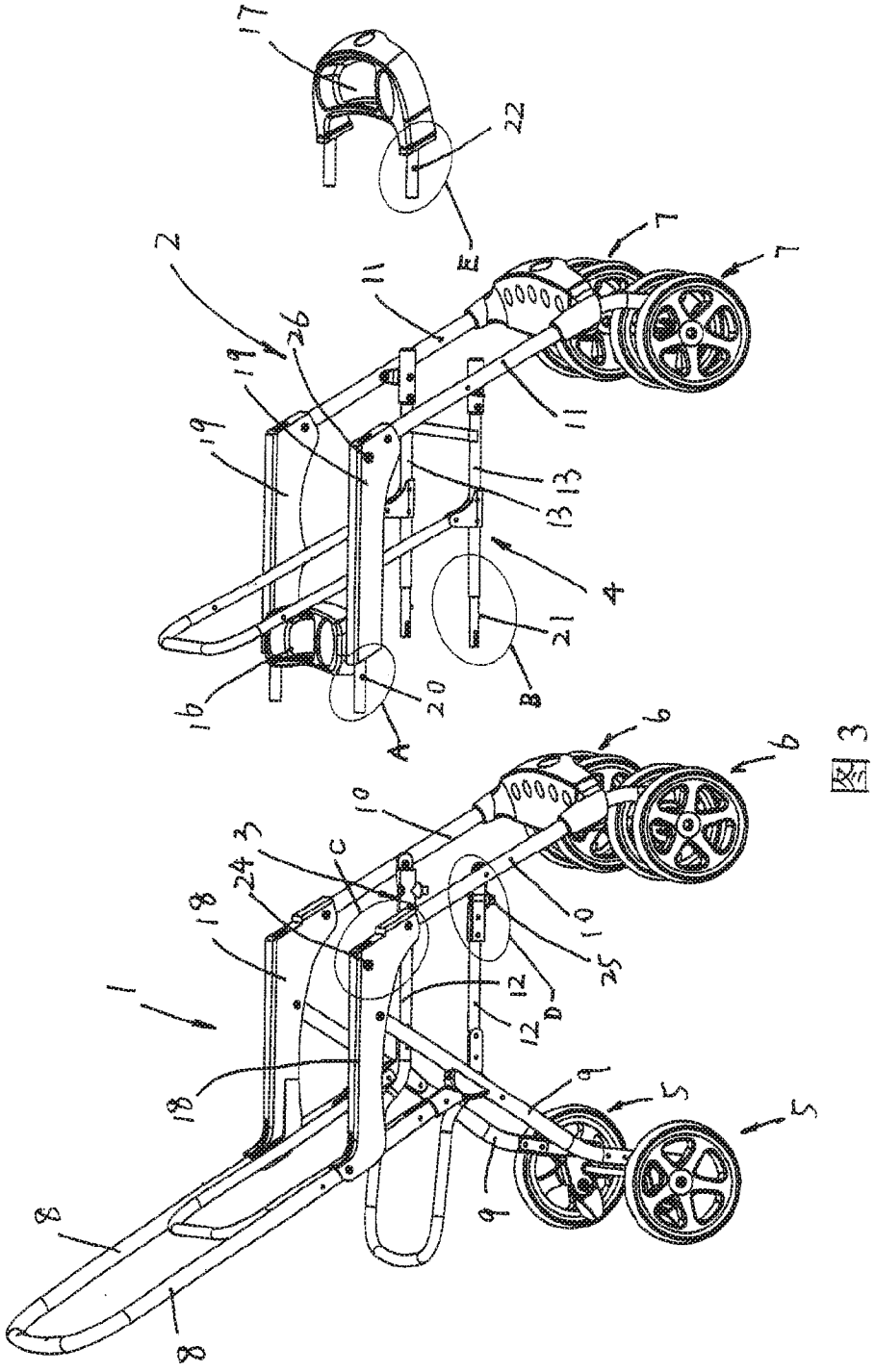

17
22
E
2
7
7
11
26
19
19
11
13
13
4
21
16
20
A
B
6
6
10
3
C
24
18
10
25
12
D
12
1
18
9
5
5
9
8
8

图 3

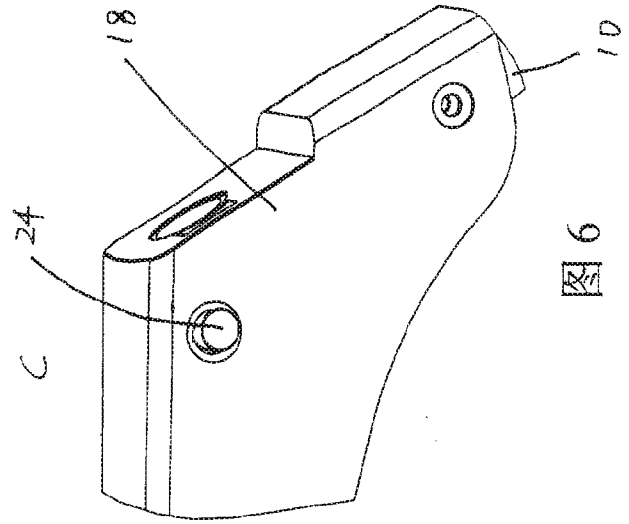


图6

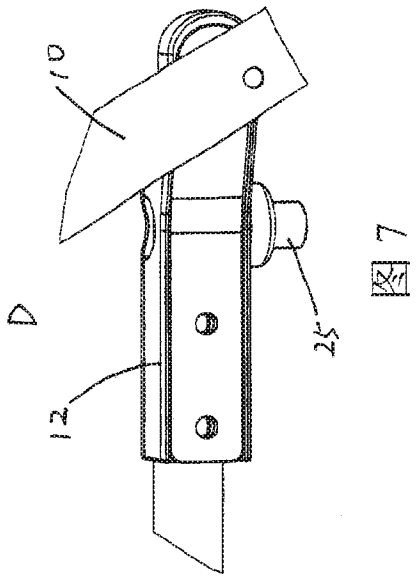


图7

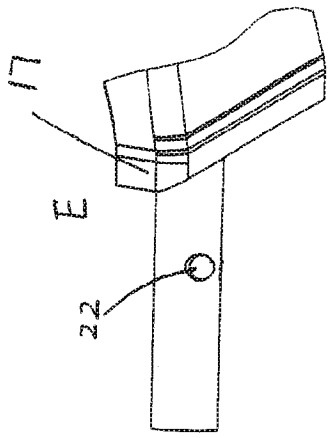


图8

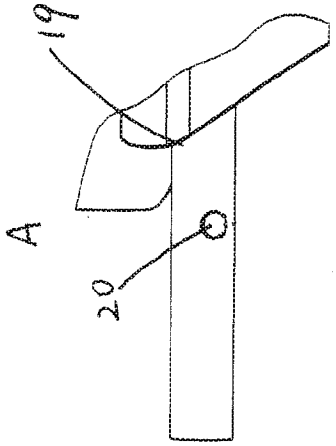


图4

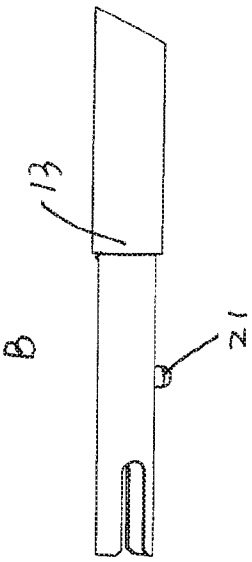


图5

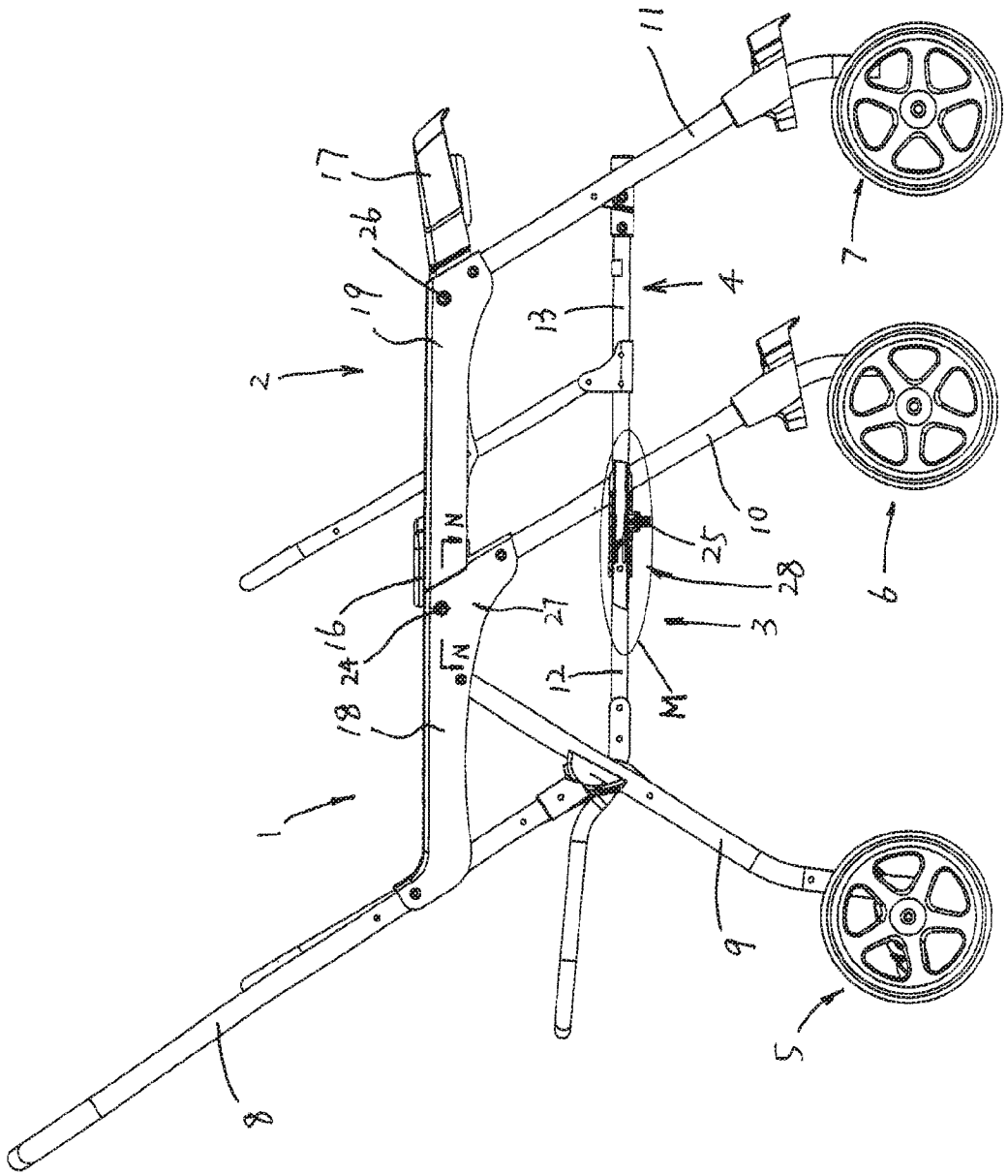


图 9

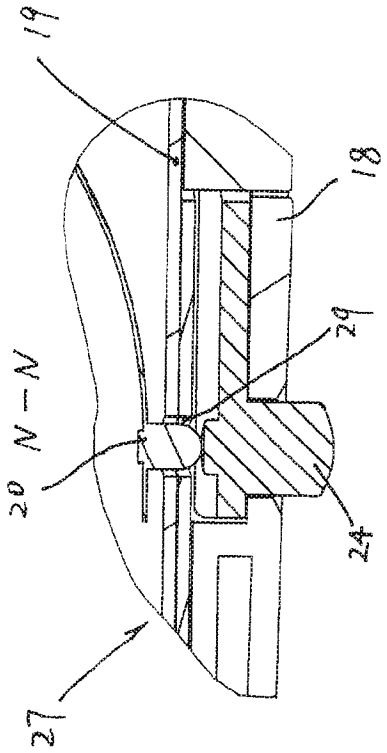


图 10

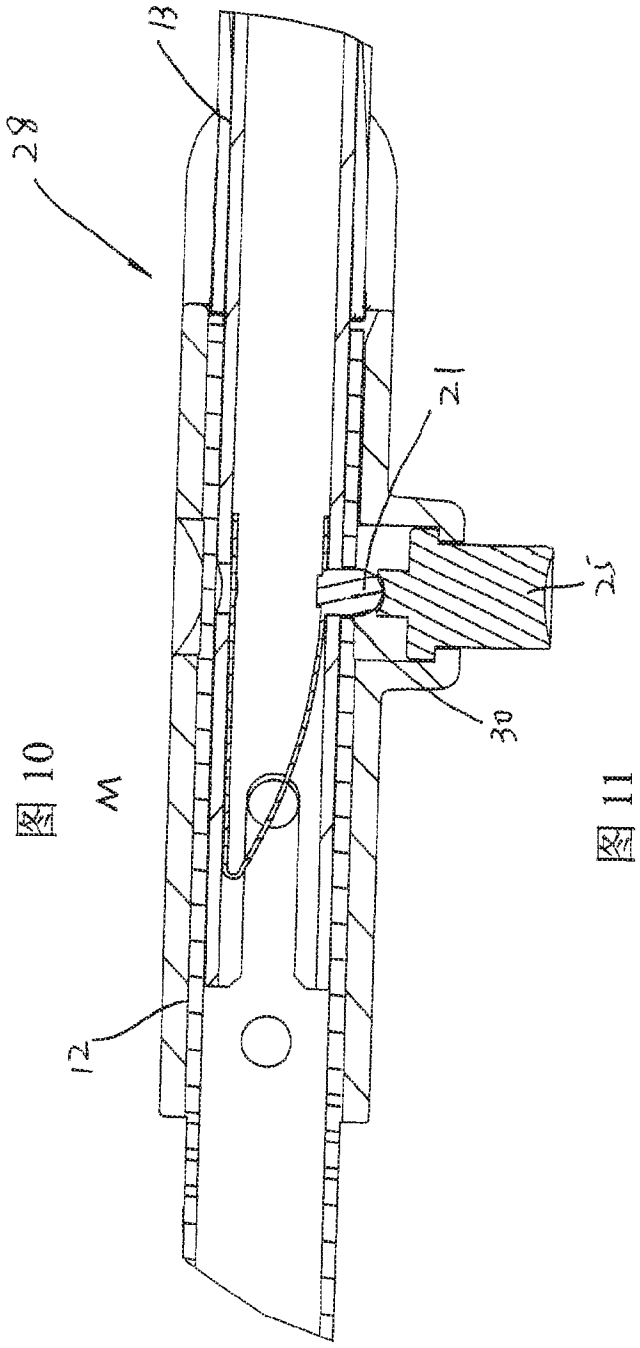


图 11

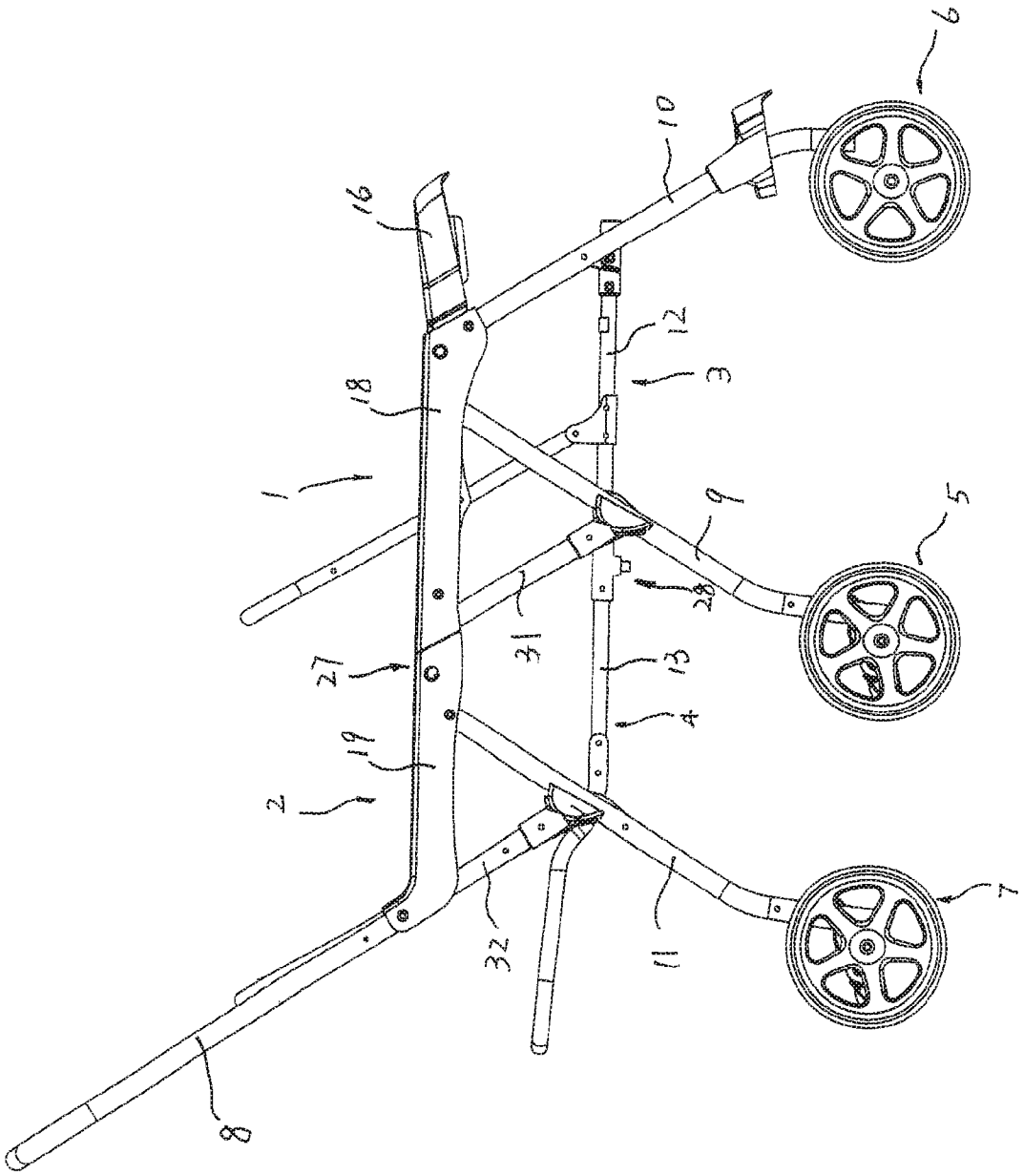


图 12

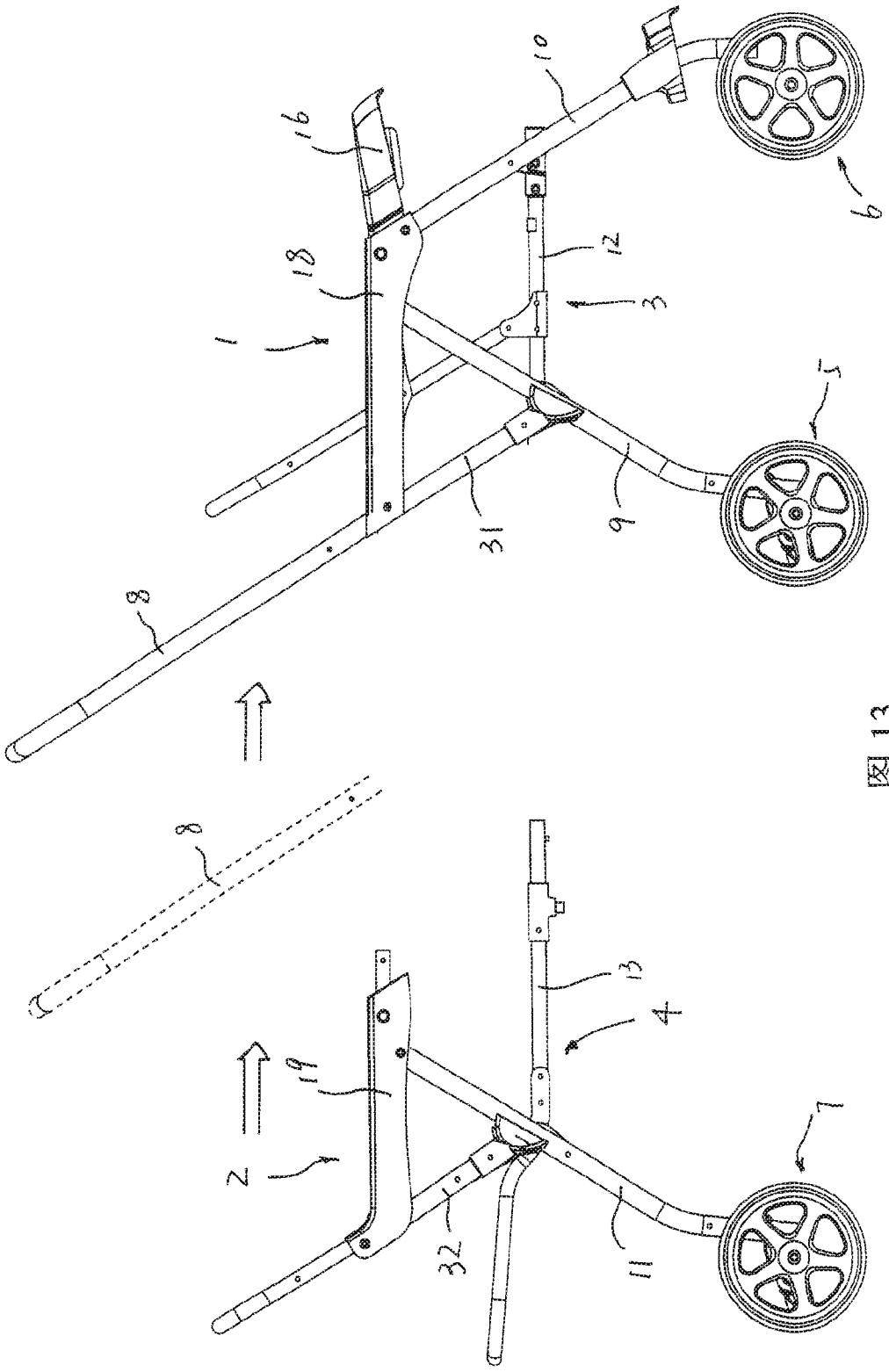


图 13

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 -- 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
"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:

Form PCT/ISA/237 (Box No. I) (July 2009)

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 Fig.s 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

Form PCT/ISA/237 (Box No. V) (July 2009)

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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Date of issue: 2 December 2014

Patent Examination Report No. 2

Application Details

Patent Application No.:	2009322149
Applicant/s:	DYNAMIC BRANDS, LLC
Your reference:	P87221.AU
Earliest Priority Date:	04 December 2008
Examination Request Date:	08 March 2013

Your application has been examined under Section 45 of the *Patents Act 1990*. I consider that the application does not meet the requirements of the Act for the reasons indicated below.

Actions you can take

You have until **01 January 2016** to overcome all my objection(s) otherwise your application will lapse.

You will need to pay a monthly fee for any response you file after 12 months from the date of the first report.

You will also need to pay any annual continuation fees that apply. Information about fees may be obtained by phoning 1300 651 010 or by visiting www.ipaustralia.gov.au.

Basis of the report

In examining your application I have considered:

- the PCT pamphlet as originally filed
- allowed and/or proposed amendment/s under S104 up to and including amendment item number 4, filed on 6 November 2014.

Statement of Novelty, Inventive Step and Patentable Subject Matter

Novelty/Inventive Step	Claim No. 1-5, 9-29 Claim No. 6-8	**Yes** **No**
Patentable Subject Matter	Claim No. 1-29 Claim No. NONE	**Yes** **No**

Section 40 (Fair Basis, Full Description, Clarity, Lack of Unity)

7 Claim 9 is not clear with regard to "separate left and right seat attachment portions..." and "the seat attachment portions comprising: a connector portion..., and a seat support element...".

First, it is indeterminate whether the term "separate" means the two seat attachment portions are "separate" to each other, or they are (as together) separate from the first stroller seat and the two attachment frame members.

Therefore, if it means 'the left and right seat attachments are separate from the first stroller and two attachment members', then "the seat attachment portions comprising: a connector portion..., and a seat support element..." may have a meaning of the (separate left and right) seat attachments together comprising a single (joint) connector portion and a single (joint) seat support element—if the left and right seat attachments are in some way joint together.

But, if it means 'the left and right seat attachment portions are "separate" to each other', then above feature may be construed as the separate left and right seat attachments each respectively comprises a connector portion and a seat support element—since they are separate to each other, they can't have a joint single connector and seat support element.

For the purpose of this report, the above feature is considered as a separate left seat attachment portion and a separate right seat attachment portion, and each of the seat attachment portions comprising a connector portion and a seat support element respectively (eg. similar to the attachment portion defined in claims 1 and 23). However, if the feature is to be construed in a different way (eg. a joint left and right seat attachments together having a connector portion and a seat support element), the novelty/Inventive step of the said feature will be further considered accordingly.

(please also note, at the 5th line of claim 9, "left from wheel" seems to be an error/typo of "left front wheel").

8 The specification does not comply with Section 40(4) because the claims do not relate to one invention only. I have found different inventions based on the following features that separate the claims into distinct groups:

- Claims 1-5 and 23-29 are directed to a seat attachment for a stroller. The feature of the seat attachment with separate left and right attachment frame members which respectively further comprise a connector portion to removably connect to a stroller frame and a seat support element for removably connecting a seat is specific to this

group of claims.

- Claims 6-8 are directed to a stroller. The feature of the stroller with two attachment frame members capable of removably receiving and supporting separate right and left seat attachment portions is specific to this group of claims. It is noted that, the claim *per se* is only directed to a stroller attachment frame capable of receiving/supporting separate seat attachment, and such that, the seat attachment *per se*, as relating to the connector portion and seat support element, is not considered as part of the defined features of the claim.

- Claims 9-22 are directed to a stroller. The feature of the stroller comprising separate left and right seat attachment portions for converting the stroller to a double stroller is specific to this group of claims.

Unity of invention is only fulfilled when there is at least one "special technical feature" present in the claims that both:

- provides a technical relationship among all the claims; and,

- makes a contribution over the prior art.

When there is no special technical feature common to all the claimed inventions there is no unity of invention.

In the above groups of claims, the identified features may have the potential to make a contribution over the prior art but are not common to all the claimed inventions and therefore cannot provide the required technical relationship. The only feature common to all of the claimed inventions is a stroller frame. However it is considered that this feature is generic in this particular art. Therefore there is no special technical feature common to all the claimed inventions and the requirements for unity of invention are consequently not satisfied *a priori*.

Documents Cited or Considered Relevant

D1 : US 2007/0085303 A1 (CHENG) 19 April 2007 ^
Category: **A**

D2 : US 2007/0252352 A1 (ROHL) 01 November 2007 ^
Category: **A**

D3 : WO 2008/135974 A2 (KATZ, GEVA et al.) 13 November 2008 **
Category: **X** Claims: 6-8

** Cited in the EP European search opinion dated 15 November 2013 for Application No. 09831215.0.
^ Cited in the previous examination report.

New Documents

Document D3 brought to my attention from EP examination reports in light of the amended claims.

I apologise for any inconvenience that raising new citation/s at this stage may have caused.

Special categories of cited documents:

X: The claimed invention cannot be considered novel under subsection 7(1) in light of the document and/or cannot be considered to involve an inventive step under subsection 7(2) of the Act in light of the common general knowledge considered together with the document.
A: Document defining the general state of the art which is not considered to be of particular relevance.

Novelty and Inventive Step

9 Claim 6 is not novel and also lacks an inventive step in light of the disclosures in D3.

D3, in Figs 18-19 and accompanying texts in [00108]-[00109] discloses a stroller (200) with a stroller seat (as from Figs 18-19), two front wheels and two rear wheels attached to its frame (206).

In particular to the stroller 200 at the back (Fig 19), feature regarding "two attachment frame members ... capable removably receiving and supporting right and left seat attachment portions" is disclosed as the left and right parallel bars 202 & 204, which adjacent the two front wheels (small wheels) and capable of removably receiving and supporting the other left and right parallel bars (202 & 204) of the front stroller.

Note that, although D3 in Figs 18-19 does not explicitly disclose feature regarding "a separate right and left seat attachment portions, wherein each of the seat attachment portions ... for removably connecting a stroller seat between the seat attachment portions", it is considered that, the claim *per se*, only defines the attachment frame members capable of removably receiving and supporting separate right and left seat attachment portions with such given features, wherein "capable" only directs to a capability. In another word, according to the claim, the two attachment frame members only need to have the capability to removably receive and support the separate right and left seat attachments with features given in the claim. Since there is no further definition in limiting the type/shape of the connector portions, for example, for not being in the shape of parallel bars as shown in Figs 18-19, the attachment frame members 202 & 204 of the stroller at back would be capable of removably receiving and supporting a separate right and left seat attachment wherein their connector portions are also parallel bars for connecting into the attachment frame members 202 & 204.

However, if the claim is directed to the two attachment frame members removably connecting (receiving and supporting) separate right and left seat attachment portions with given features in the claim, wherein the removable left and right seat attachments are part of the defined features of the claim, then the claims should be amended accordingly.

Further, appended claims 7-8 add features regarding "frame members comprise a slot for removably receiving the connector portion", or "a second seat being selected from stroller seat, infant carrier... or a car seat" which are either disclosed in D3 or common in the art that represent mere design choice and therefore do not contribute to provide a patentable invention.

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1. CN114475760 - BABY CARRIAGE WITH LIFTABLE SEAT

Office
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Application Number
202210231907.3

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B62B 9/10 B62B 9/12

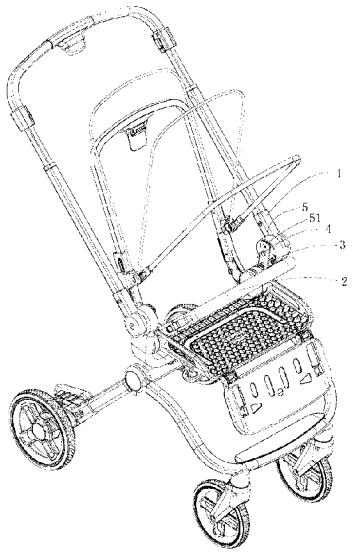
CPC
B62B 9/102 B62B 9/12

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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

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B62B 9/10(2006.01)
B62B 9/12(2006.01)

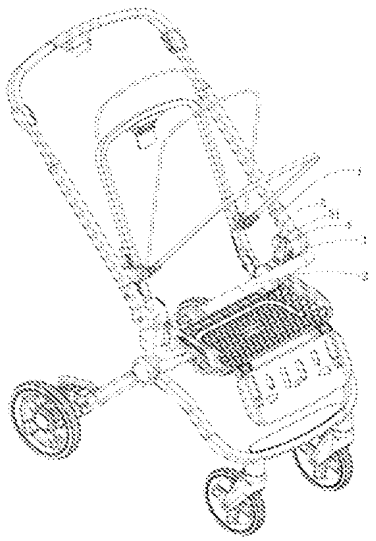
权利要求书1页 说明书5页 附图8页

(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。



CN 114475760 A

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。

[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

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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。

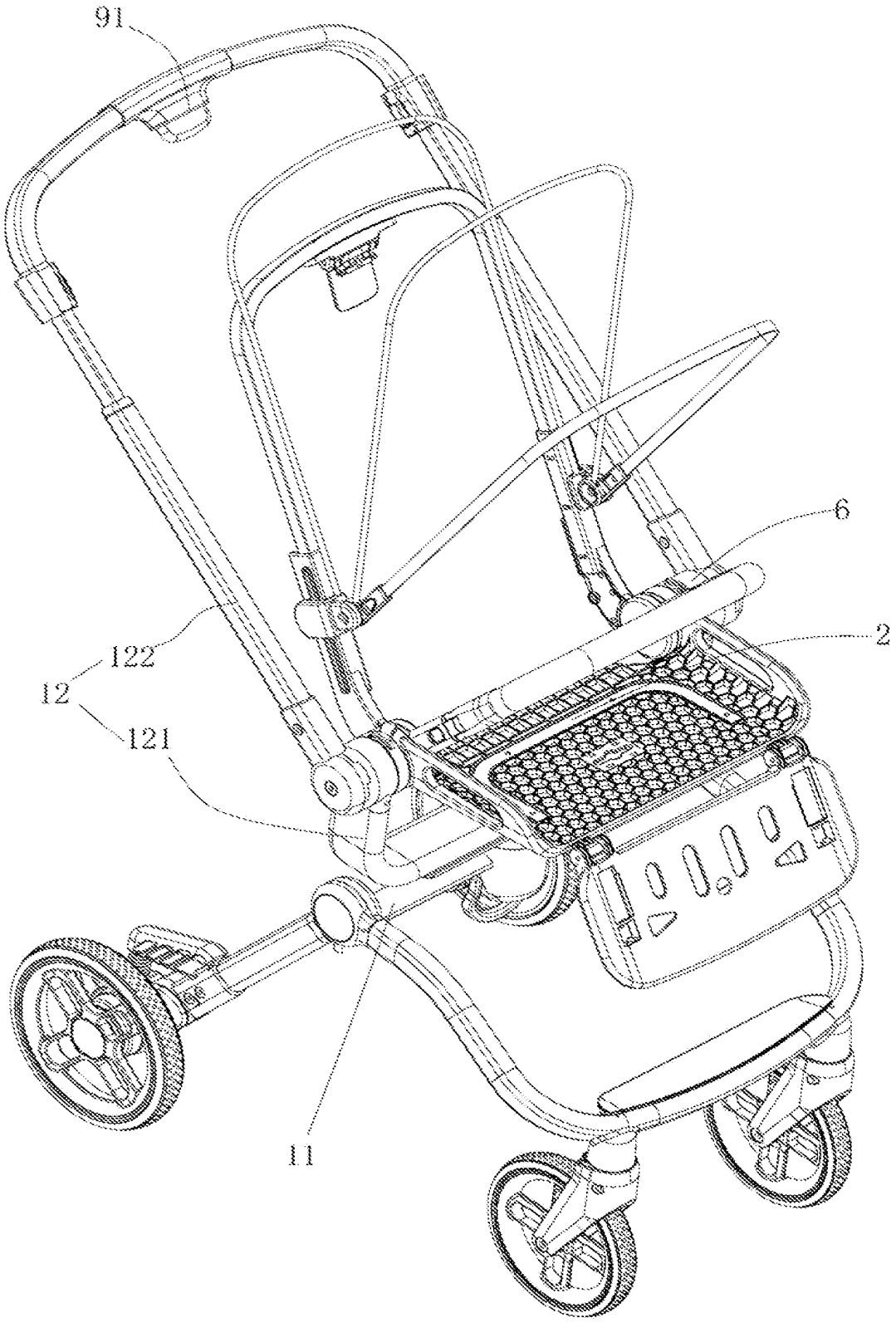


图1

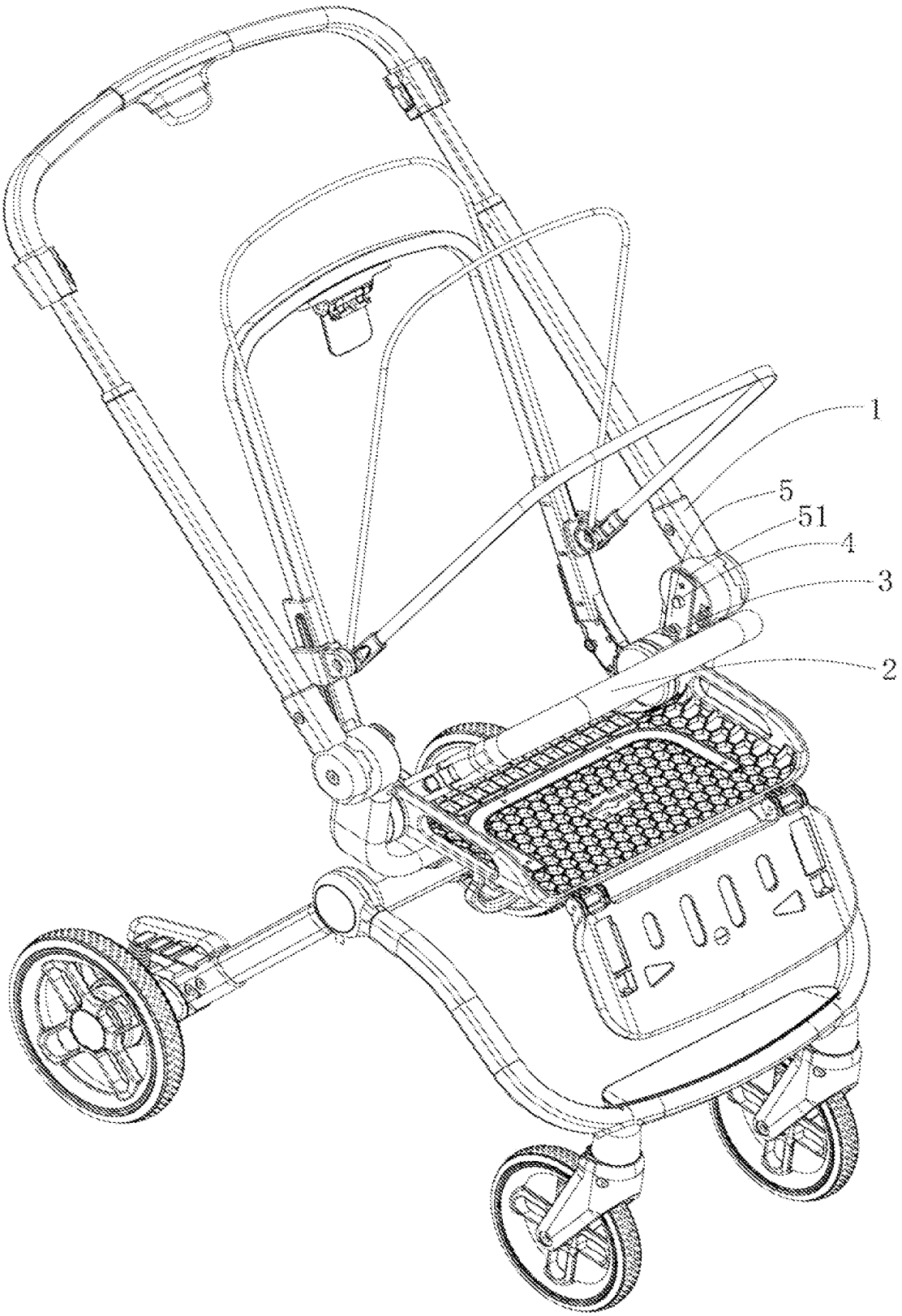


图2

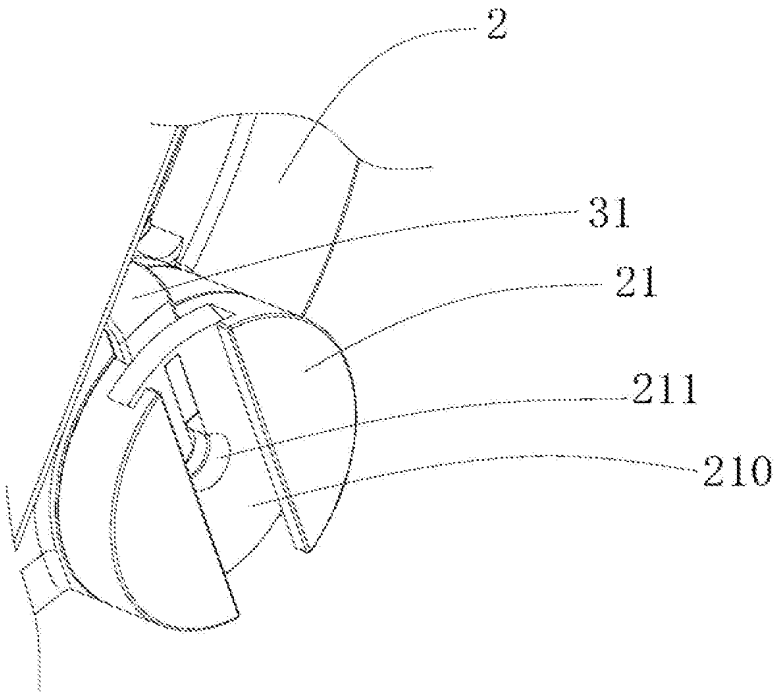


图3

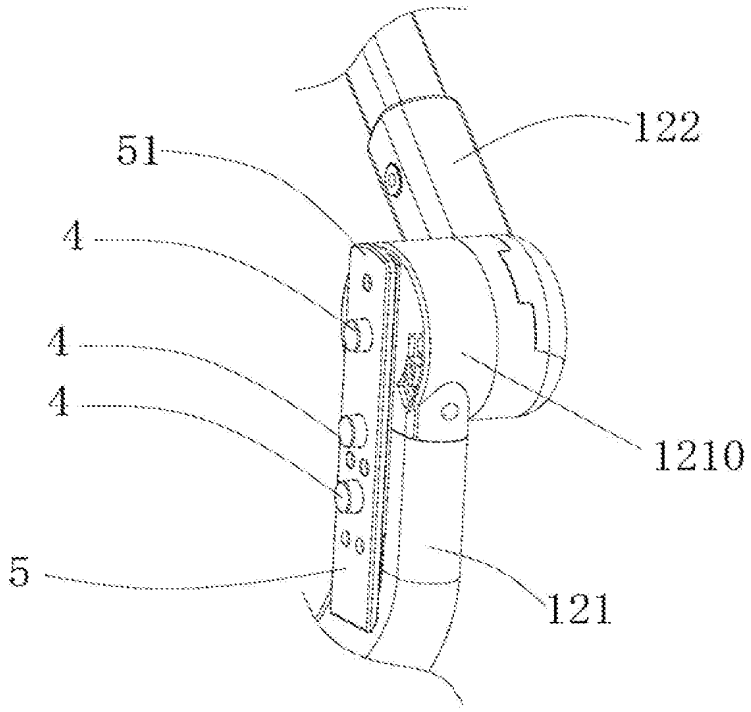


图4

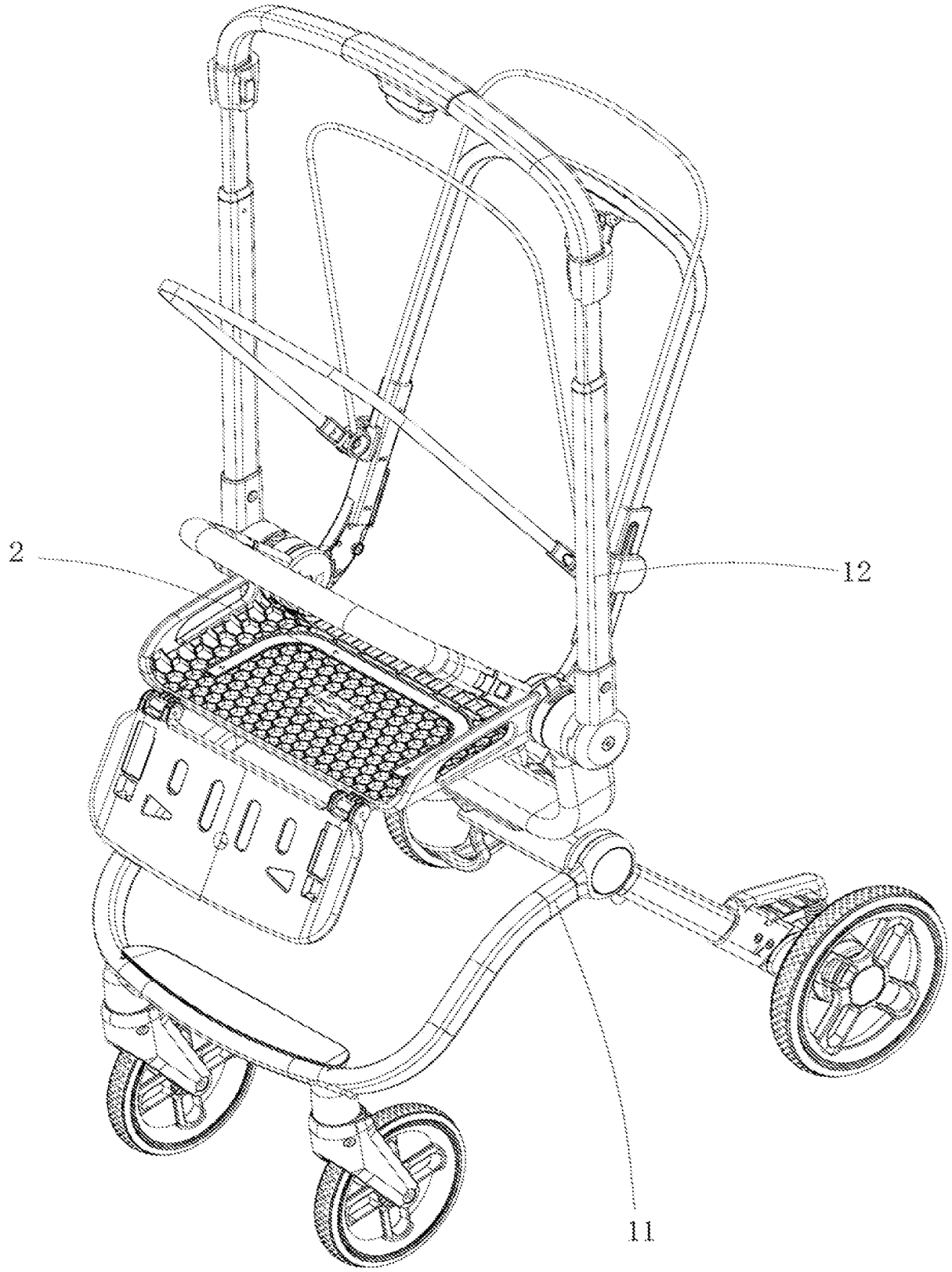


图5

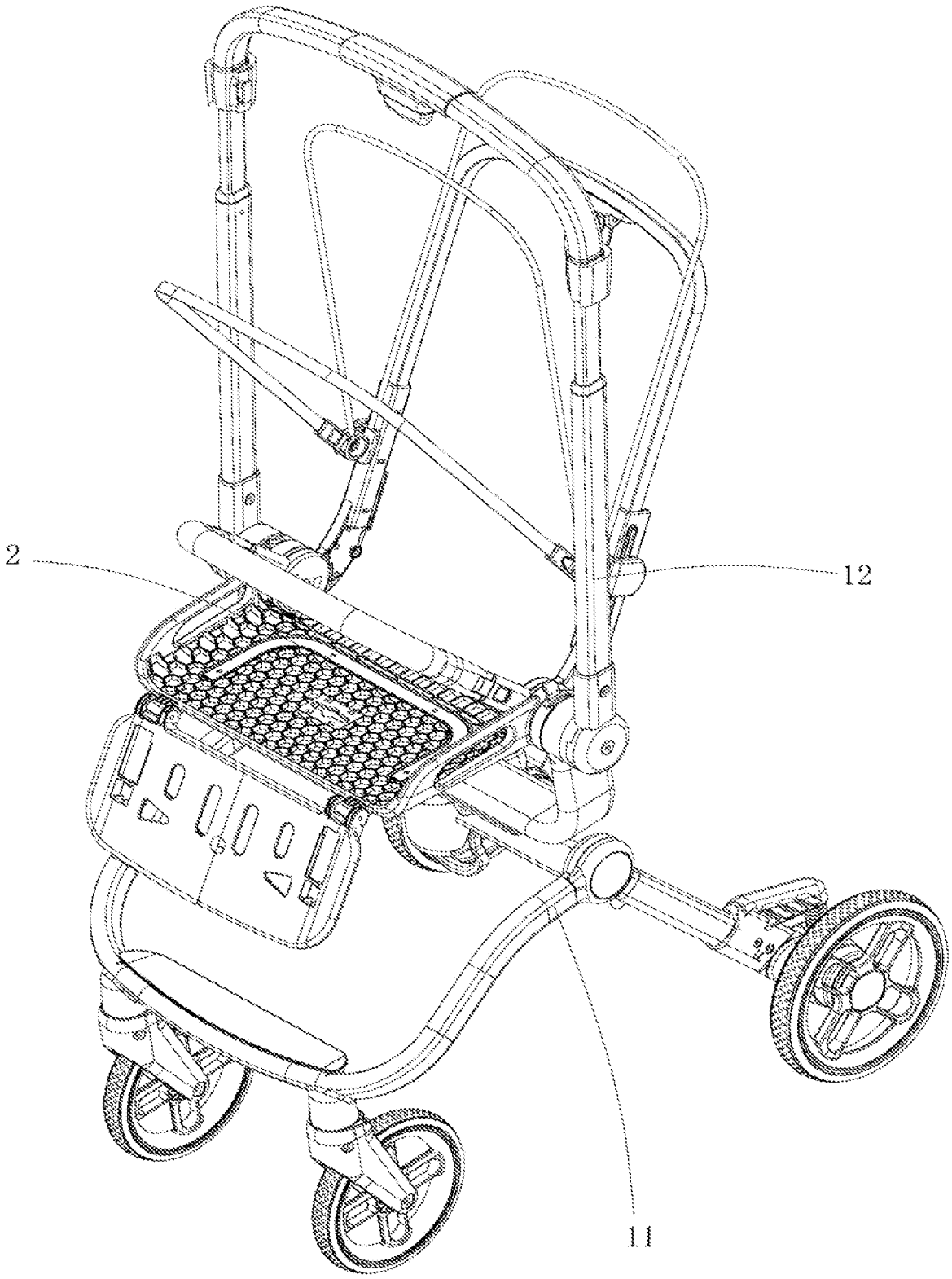


图6

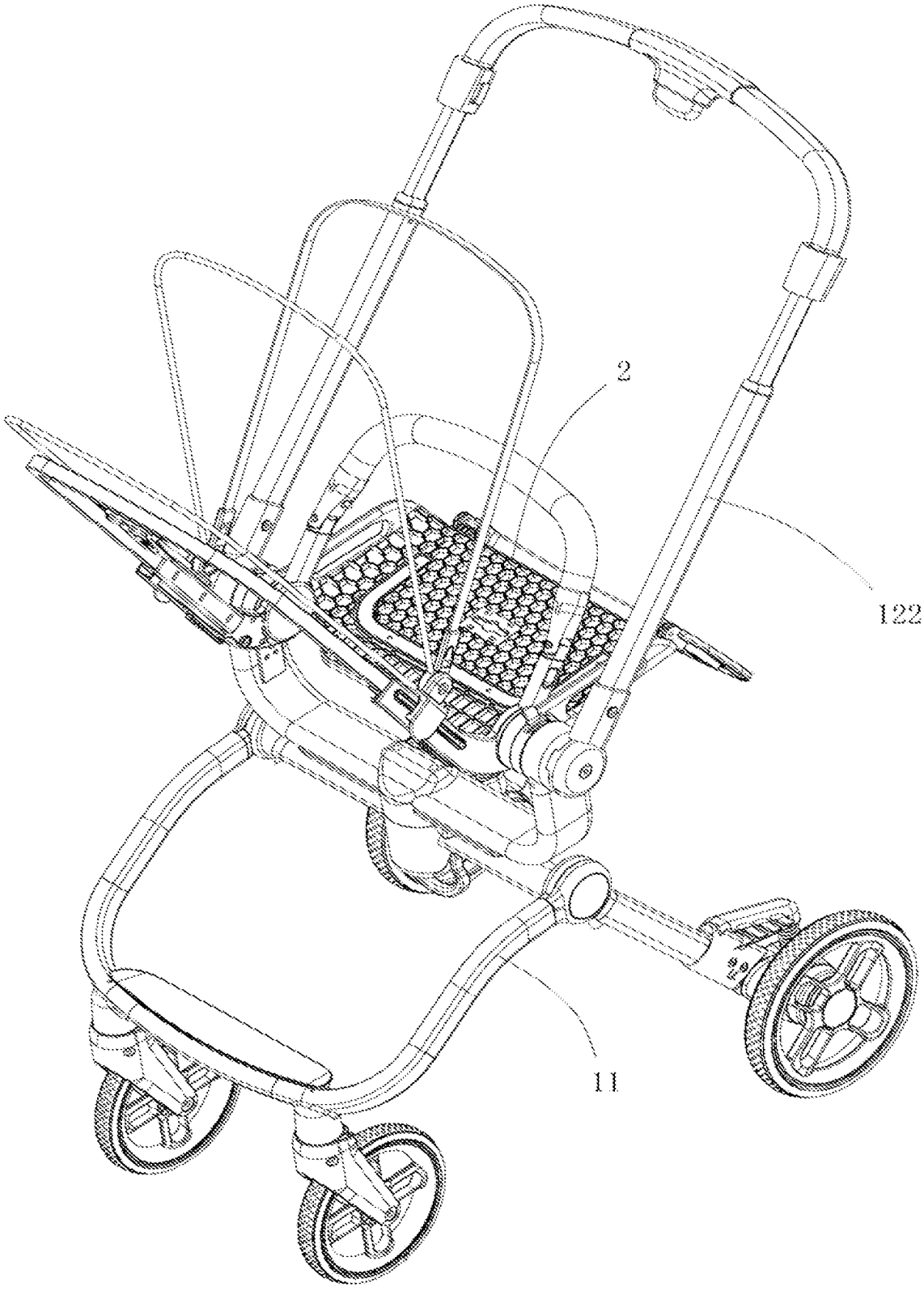


图7

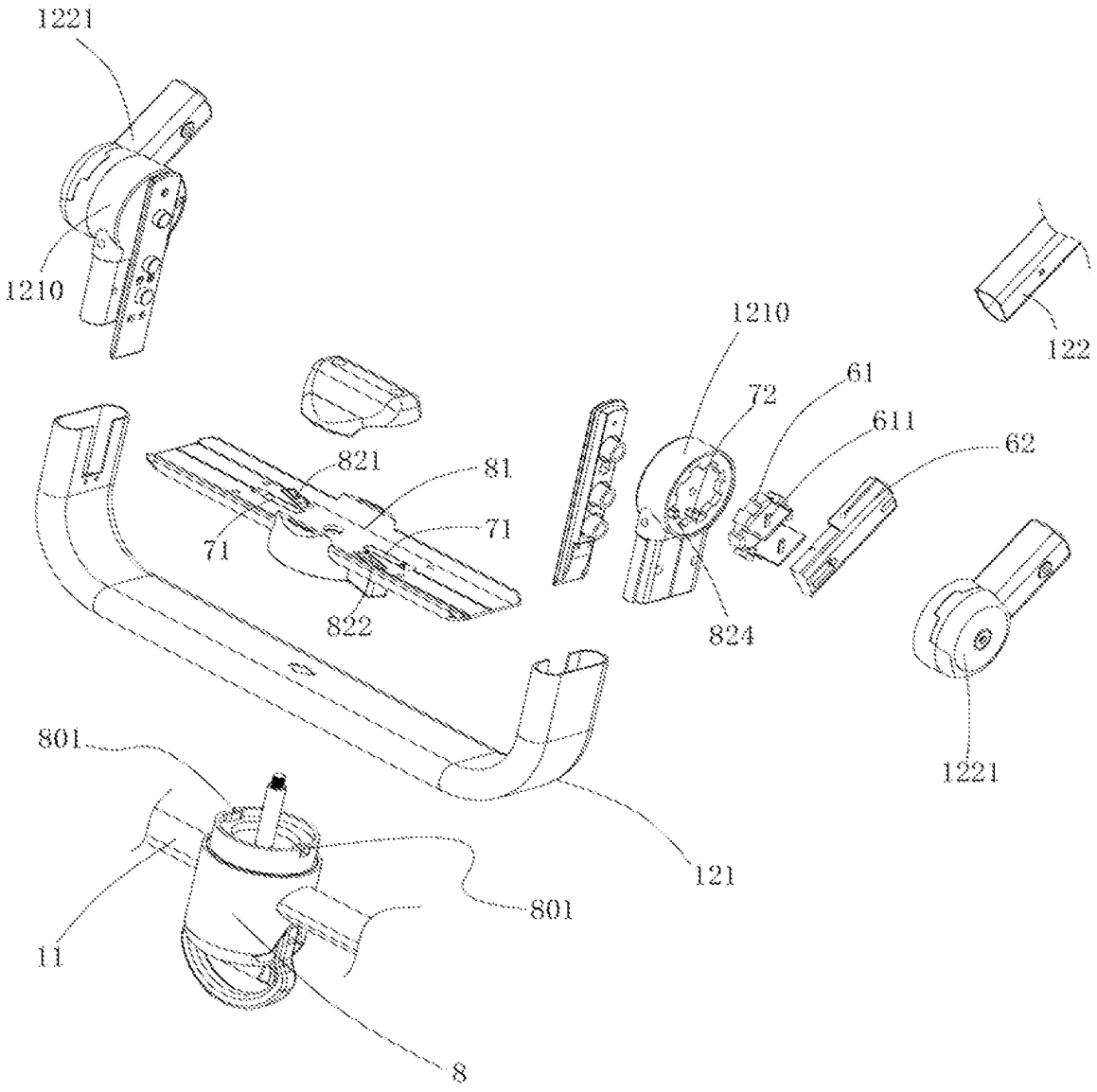

1221
1210
821
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1221
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图8

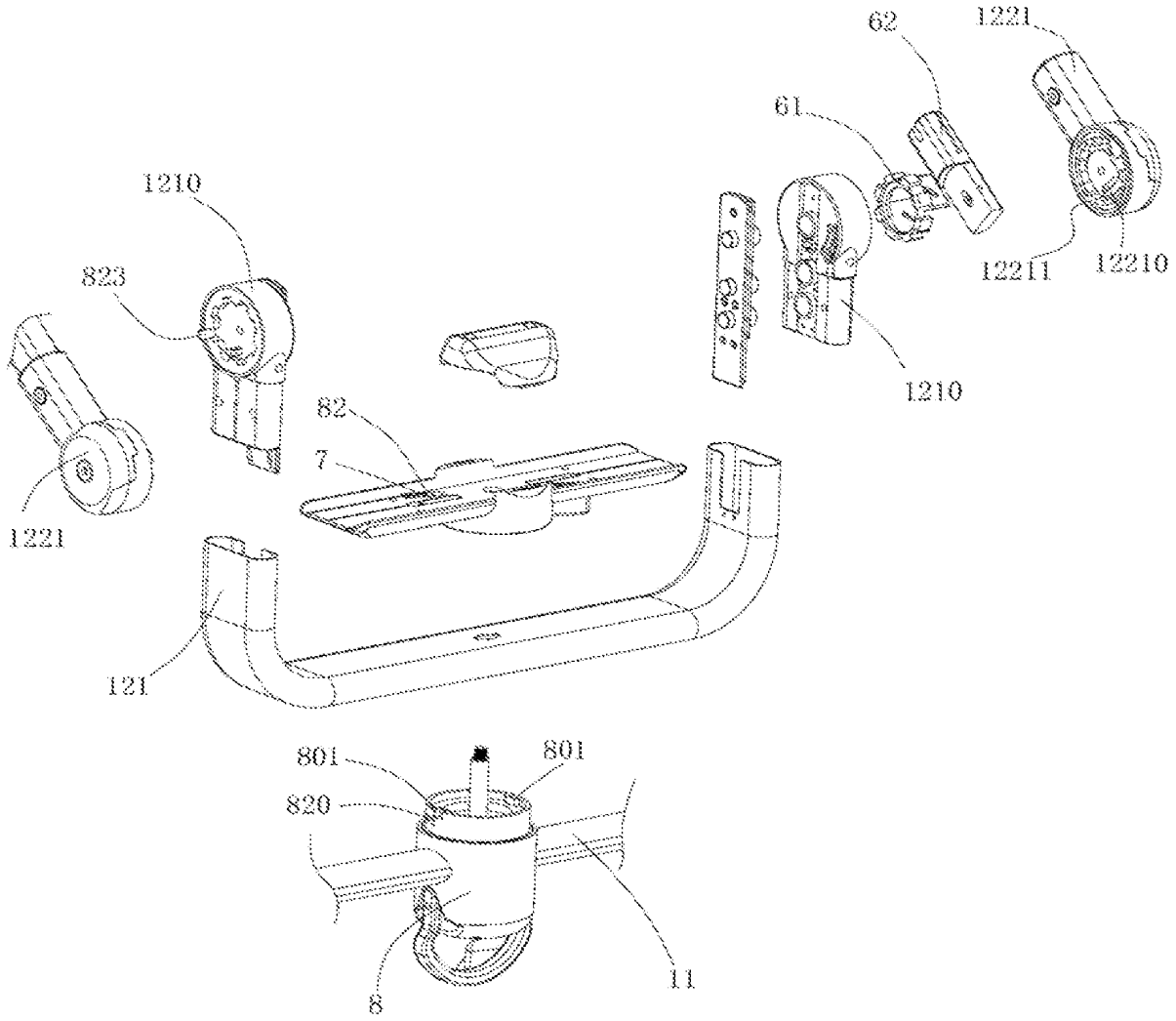

62
1221
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1210
823
12211
12210
1210
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1221
121
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801
820
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图9

PTO/SB/08a (01-22)
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Art Unit	3618
Examiner Name	James M. DOLAK
Attorney Docket Number	34757-2775

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	24	2253093	ES	A1	2006-05-16	PLAY SA	w/English abstract	☐
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	26	2005105545	WO	A1	2005-11-10	STEPHANIE ROHL		☐
	27	2005105546	WO	A1	2005-11-10	STEPHANIE ROHL		☐

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	First Named Inventor	Mark ZEHFUSS
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	28	2010065884	WO	A1	2010-06-10	DYNAMIC BRANDS LLC		☐
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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).	☐
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(54) Title: LOCKING MECHANISM AND CHILD STROLLER INCLUDING THE SAME

(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.

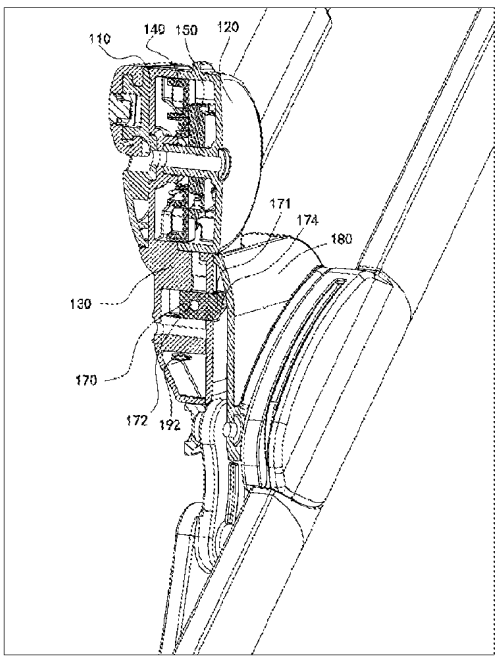


FIG. 12B

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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).

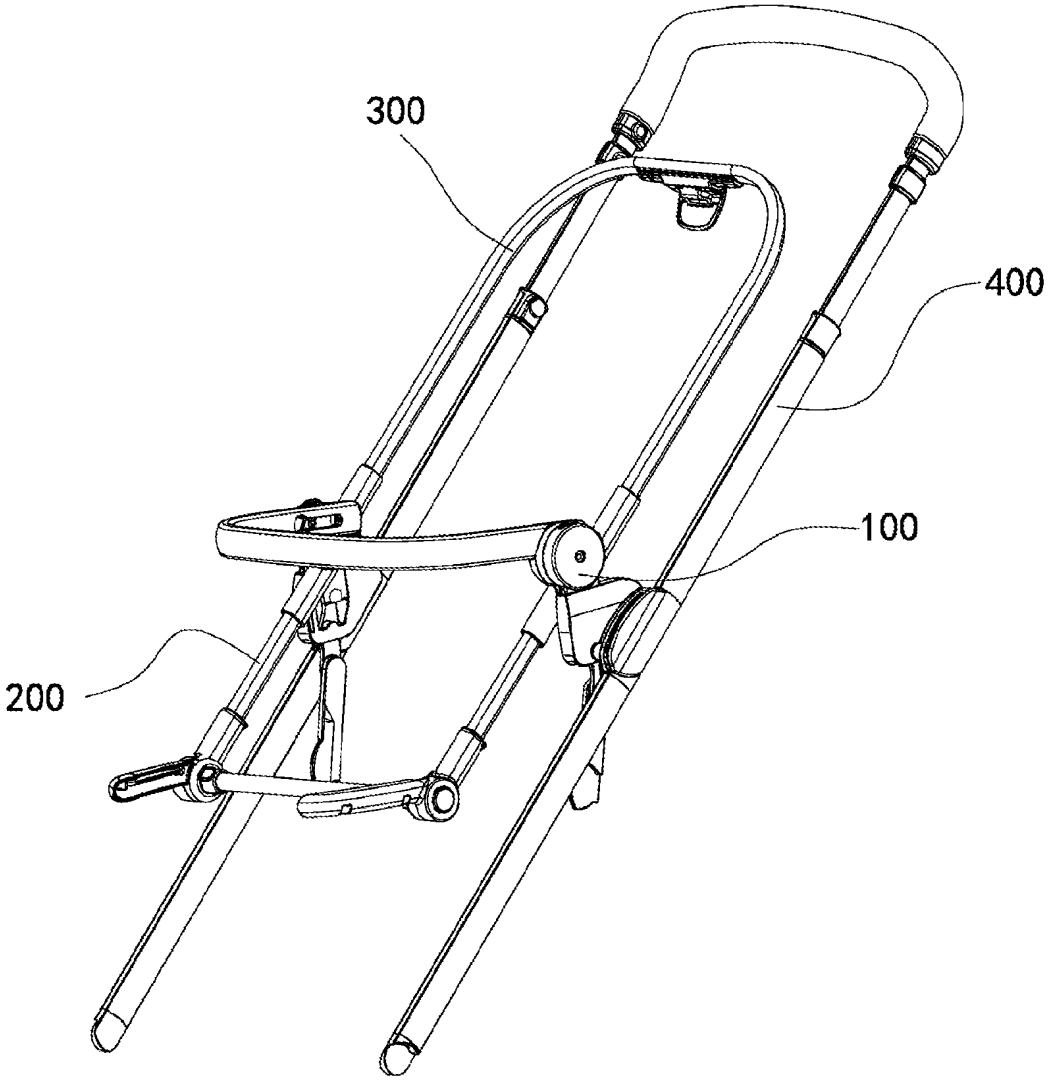


FIG. 1

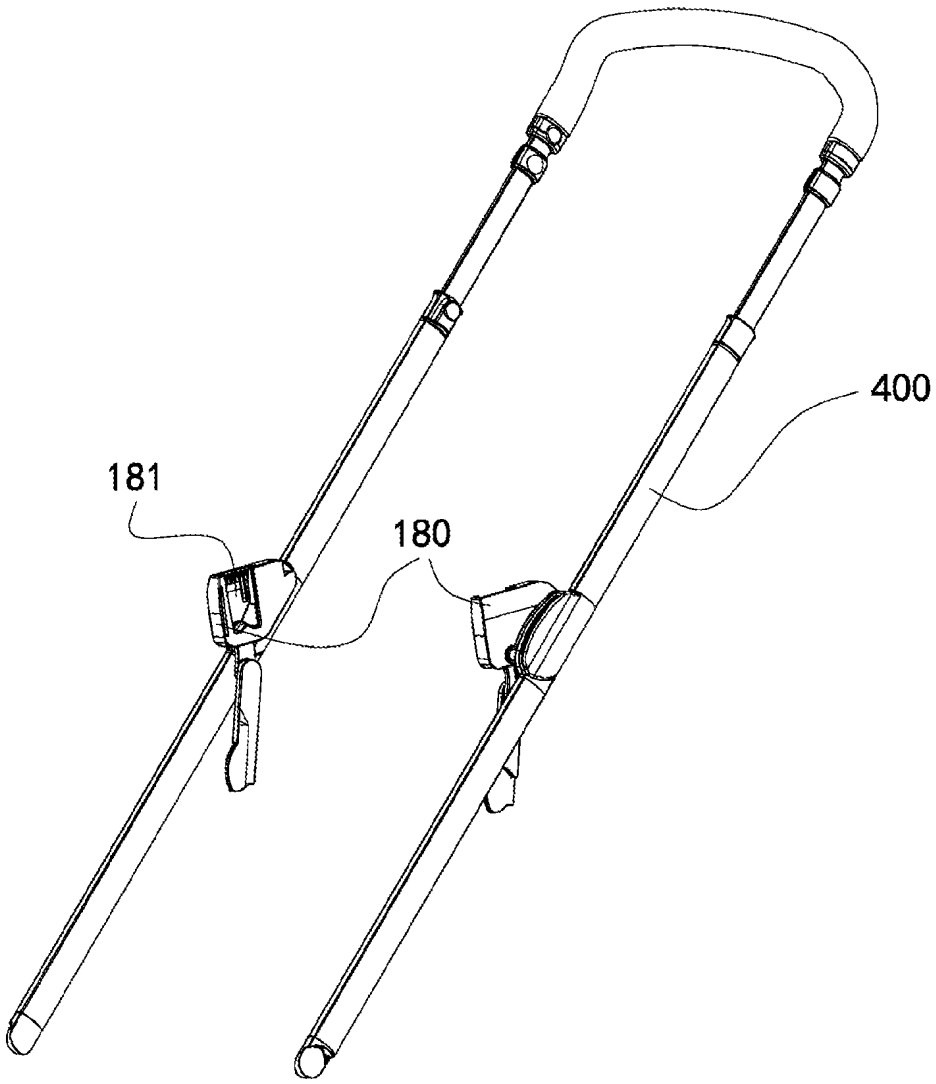


FIG. 2

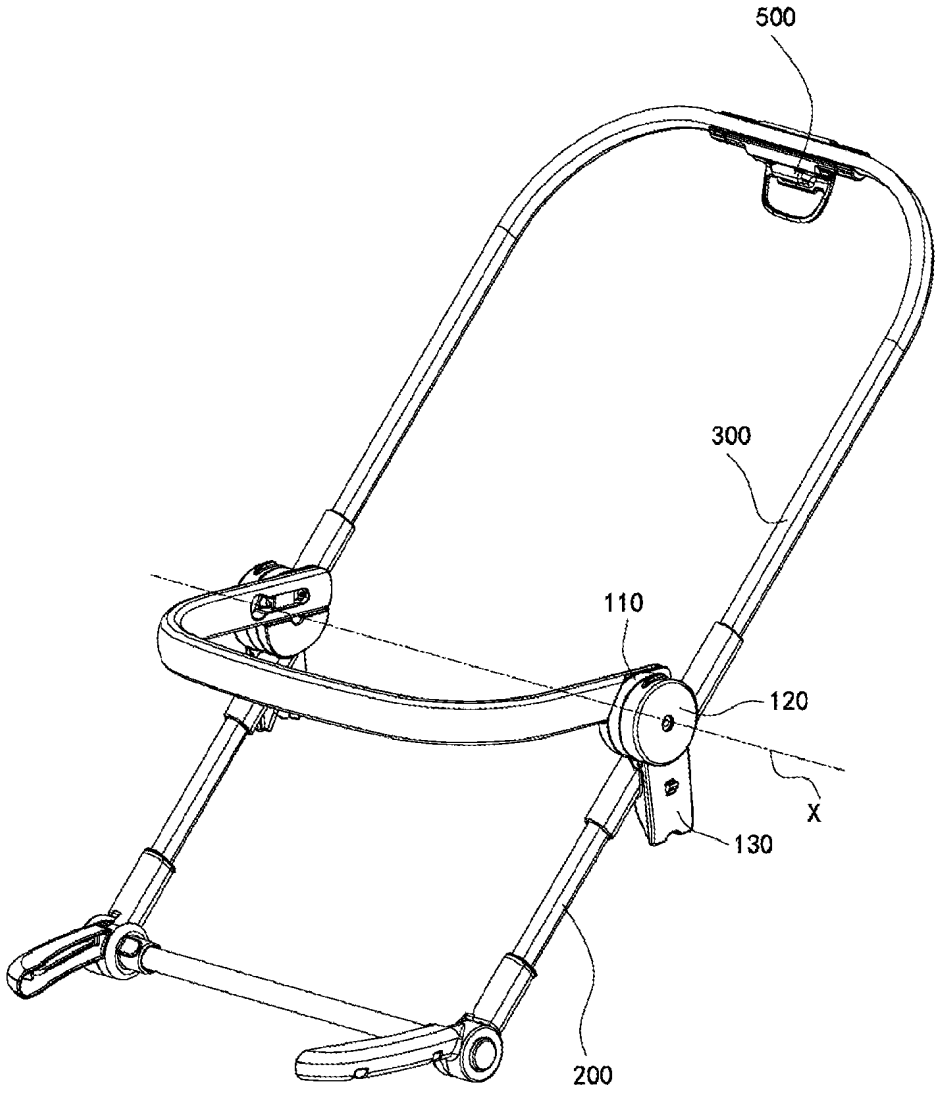


FIG. 3

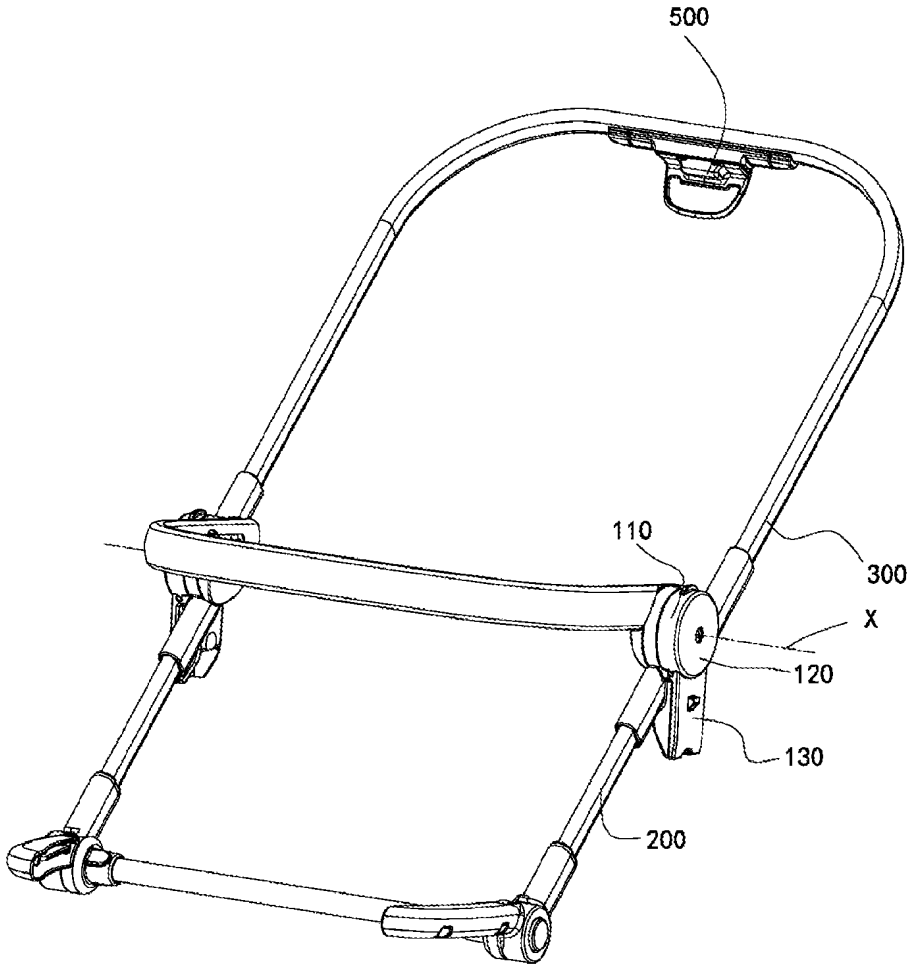


FIG. 4

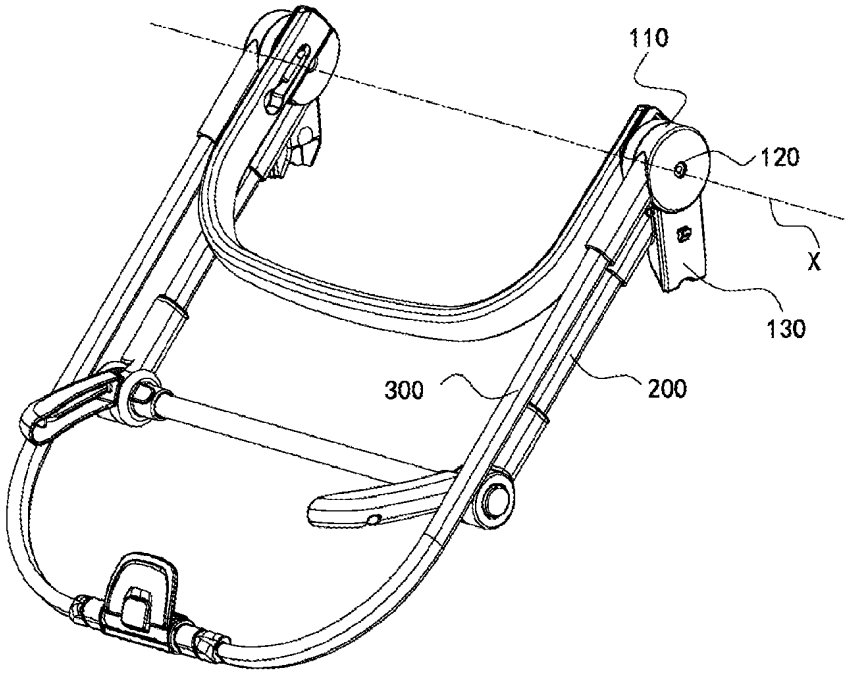


FIG. 5

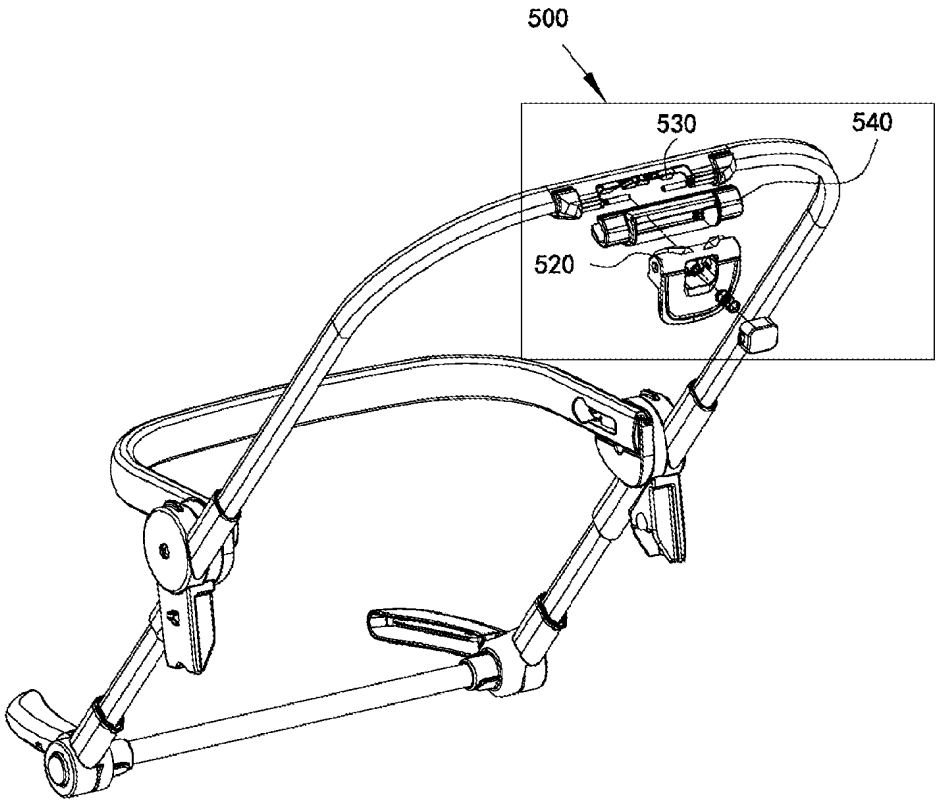


FIG. 6A

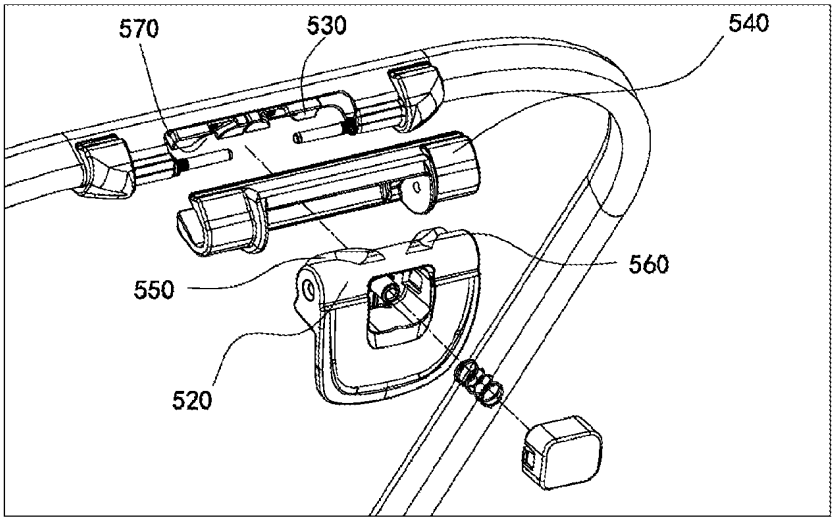


FIG. 6B

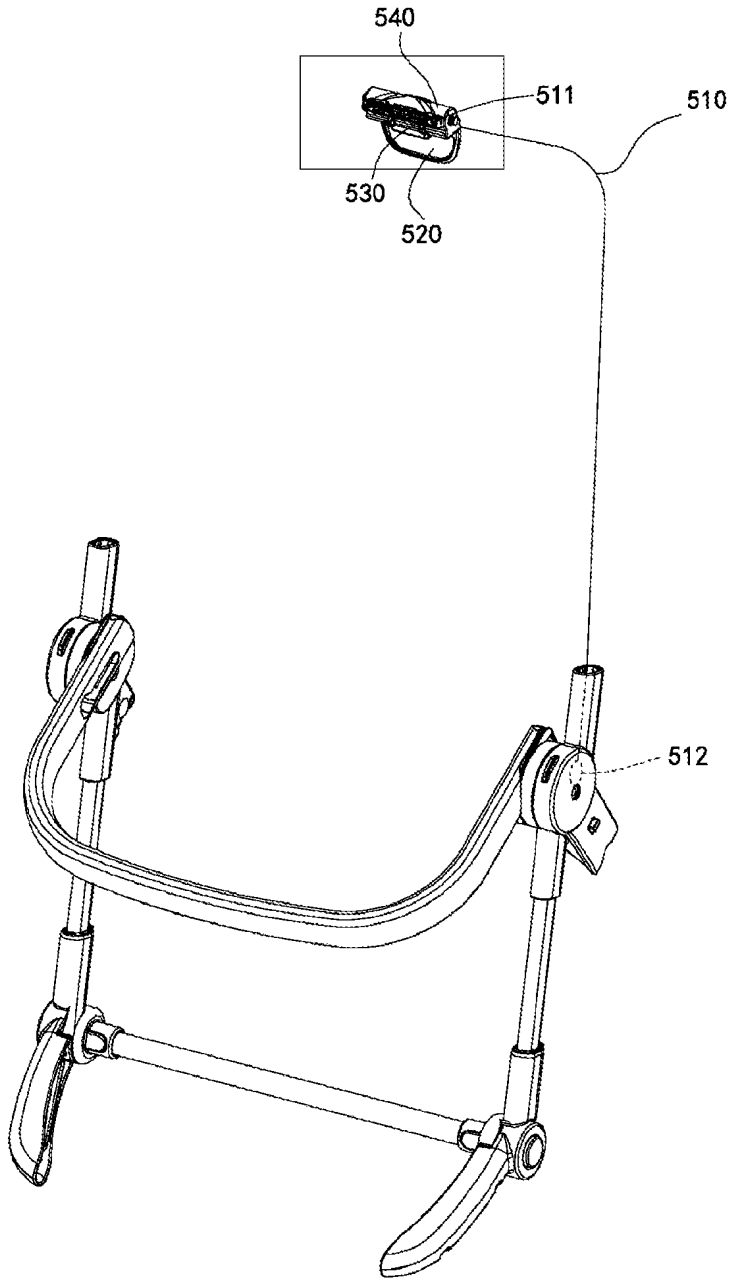


FIG. 7A

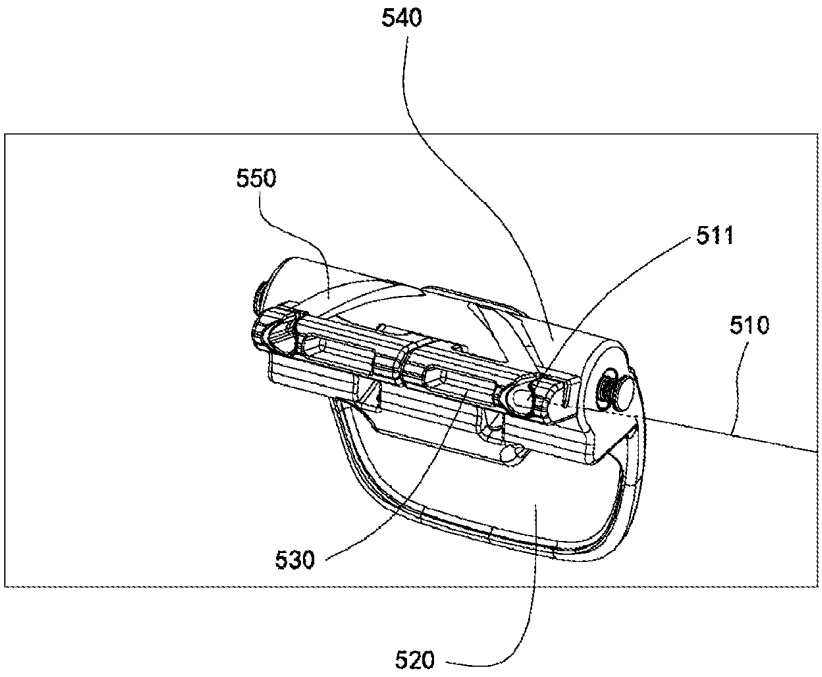


FIG. 7B

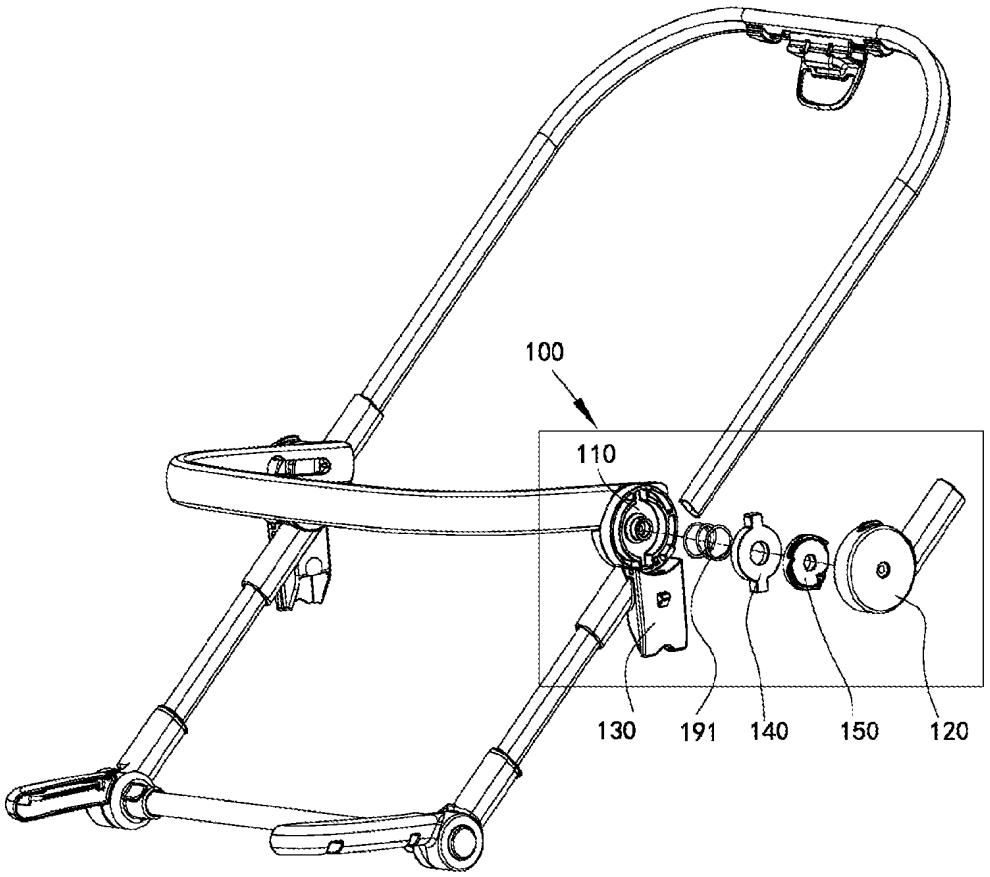


FIG. 8A

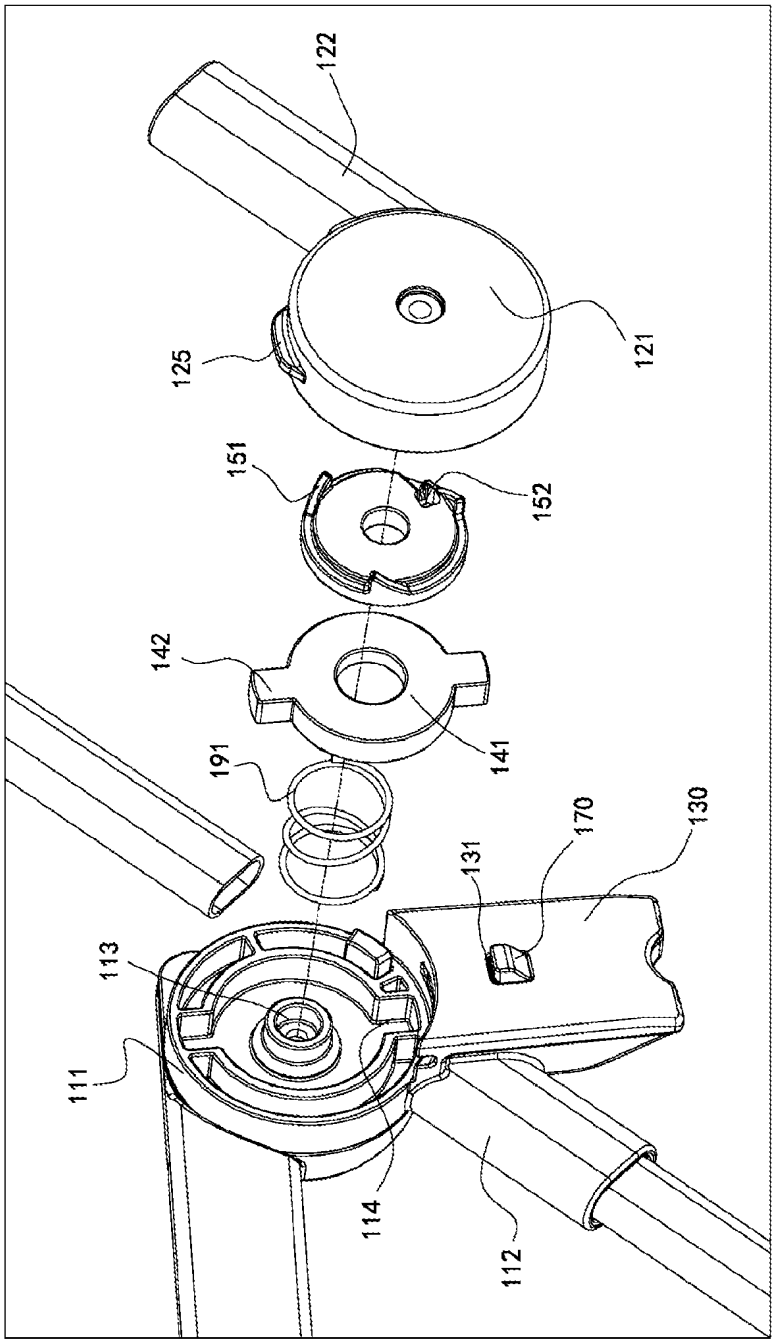


FIG. 8B

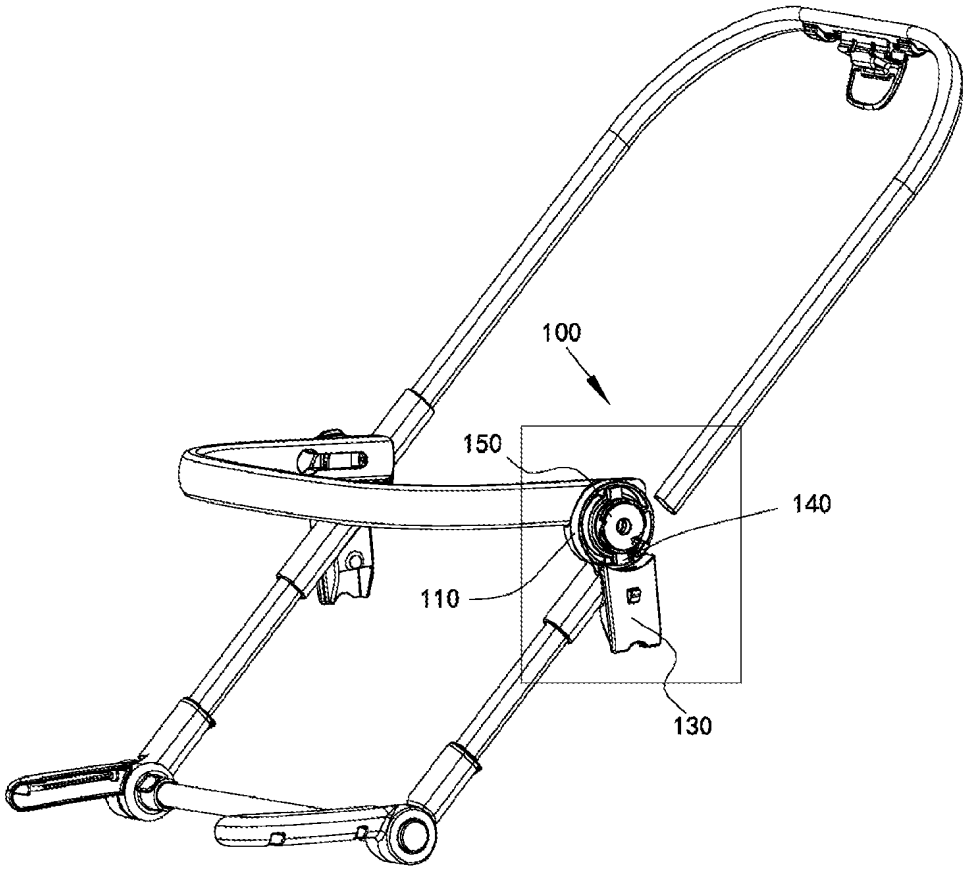


FIG. 9A

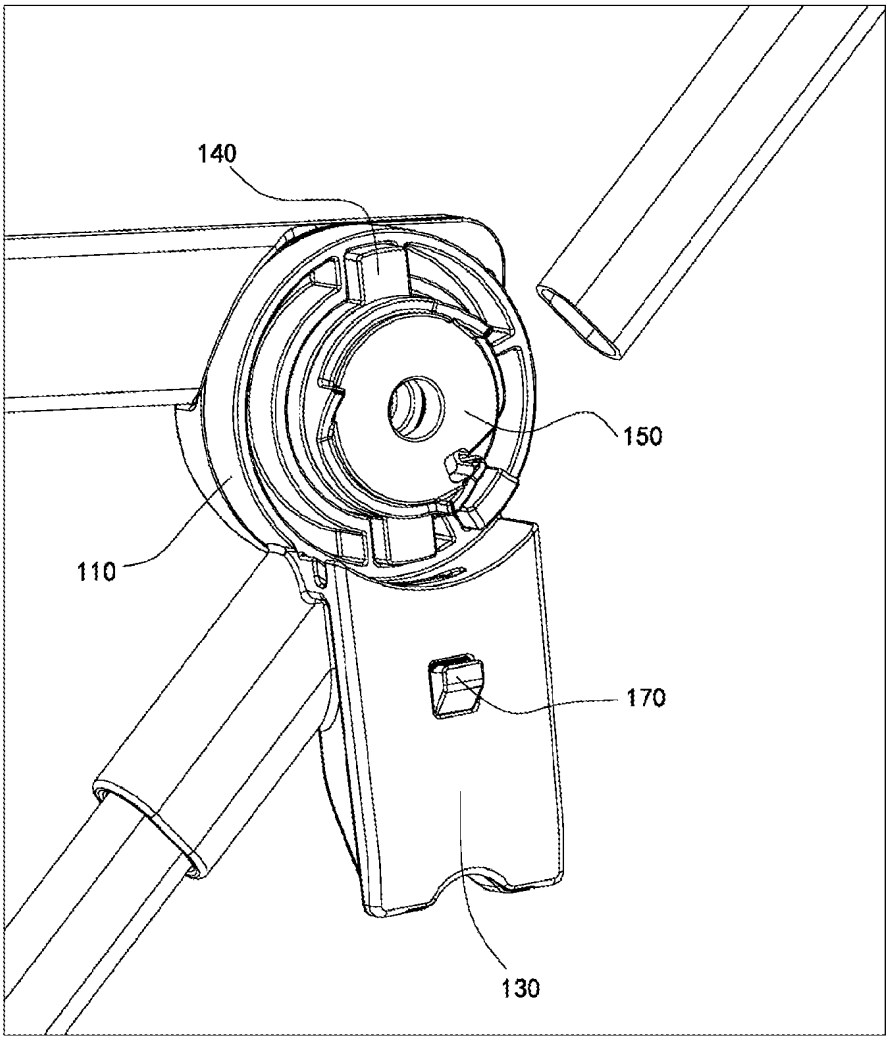


FIG. 9B

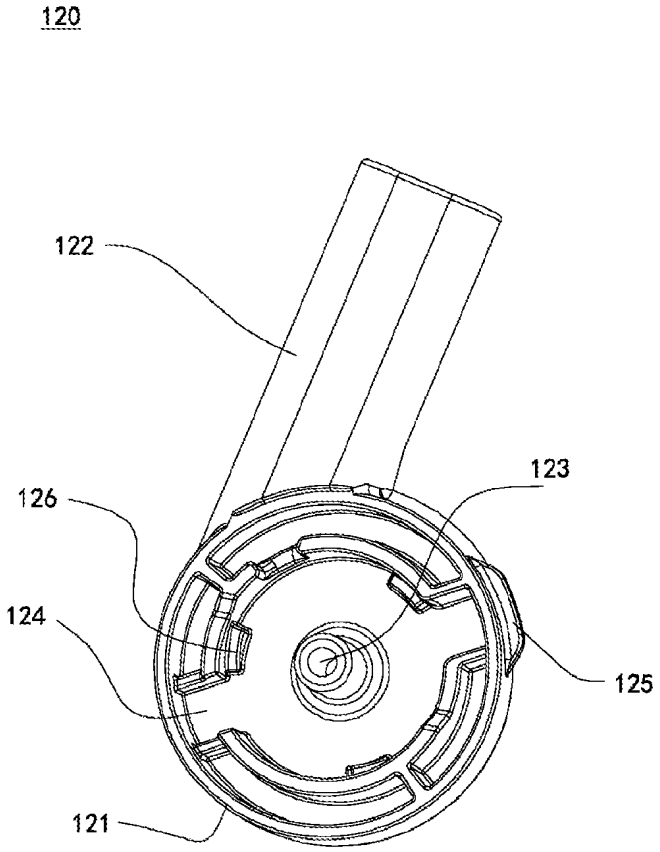


FIG. 10

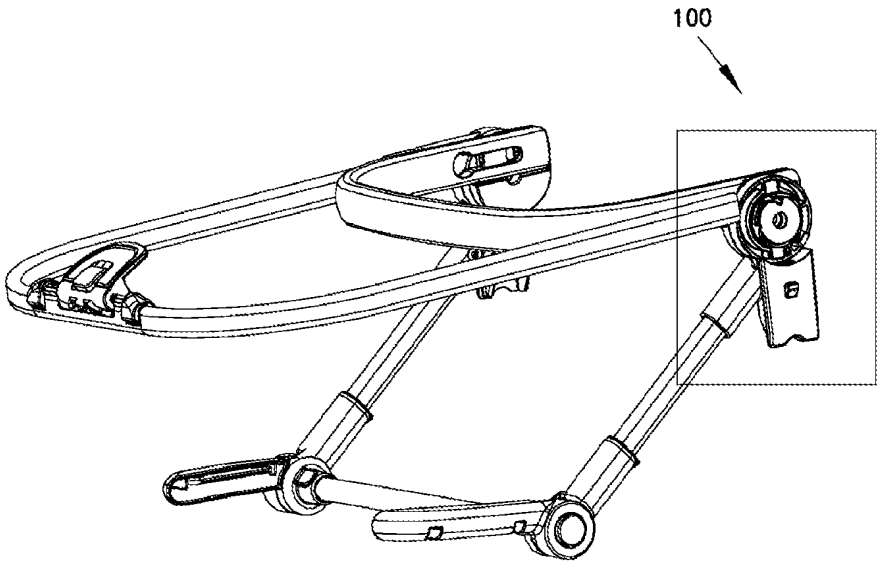


FIG. 11A

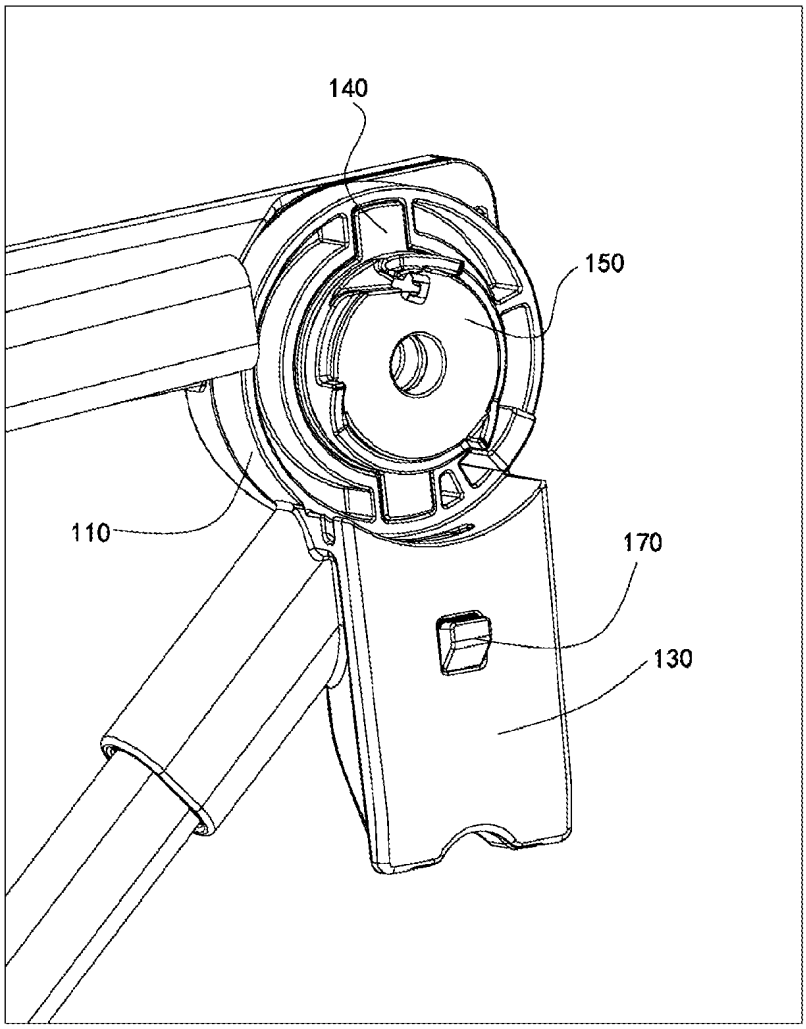


FIG. 11B

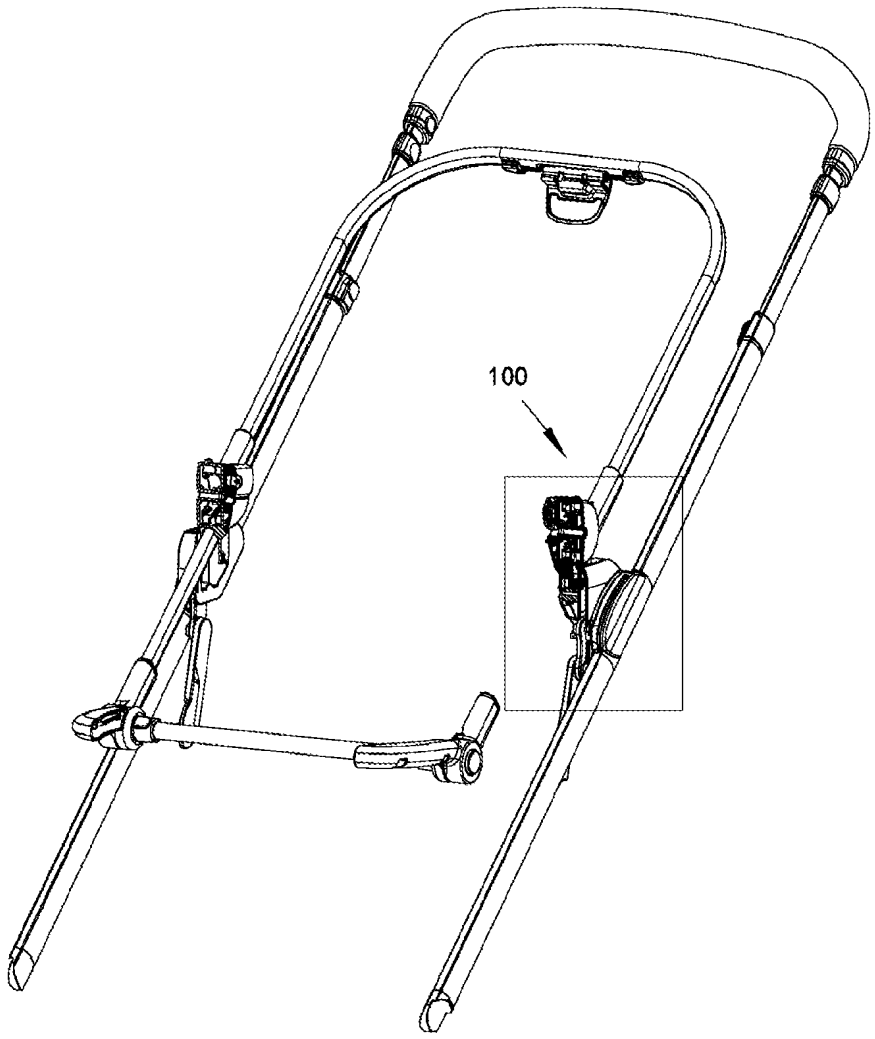


FIG. 12A

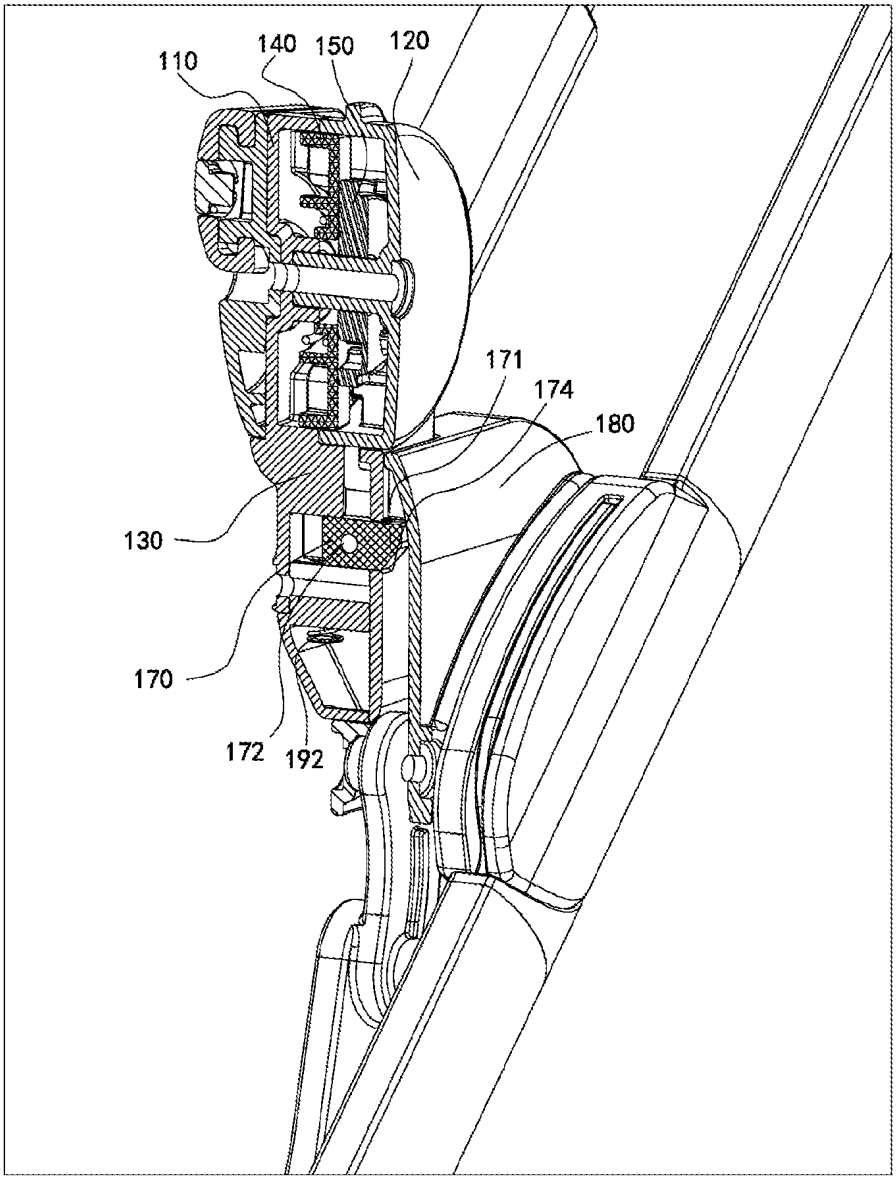


FIG. 12B

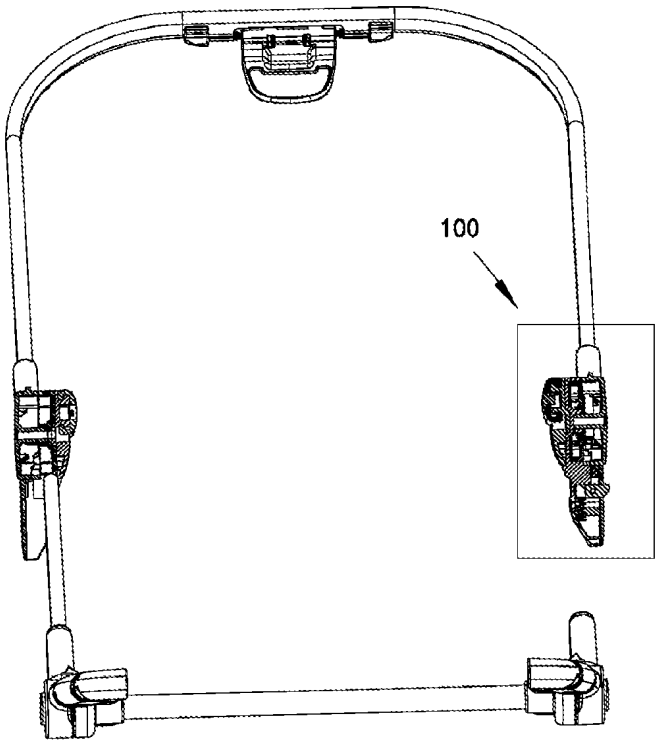


FIG. 12C

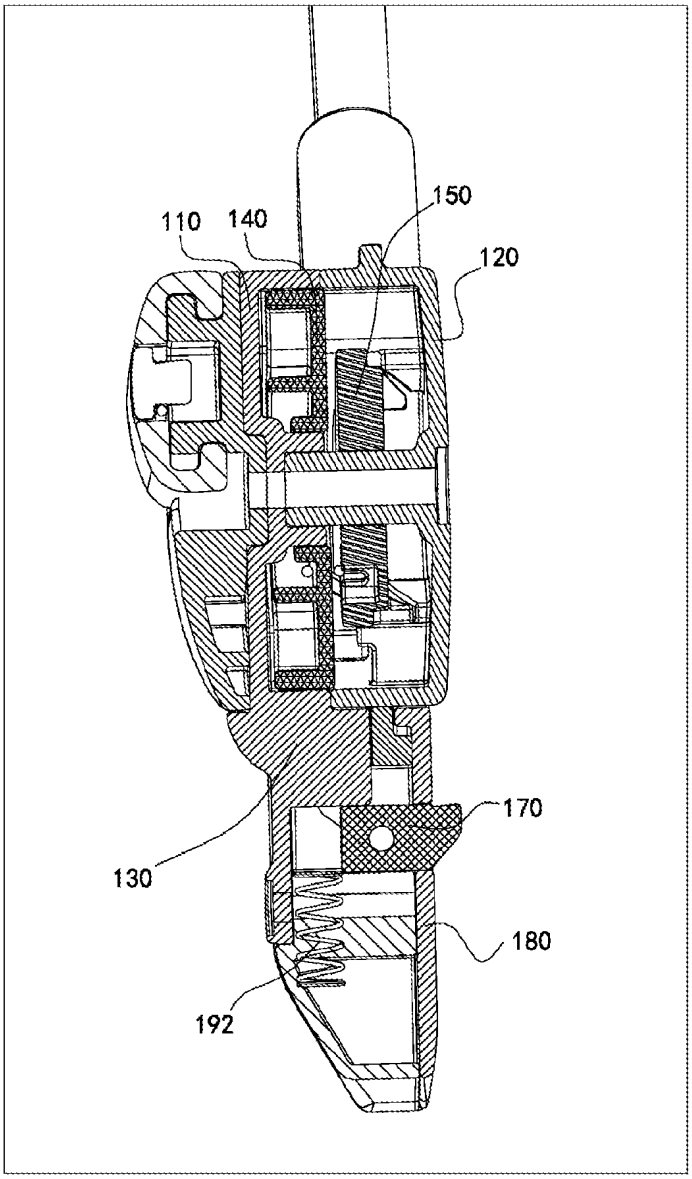


FIG. 12D

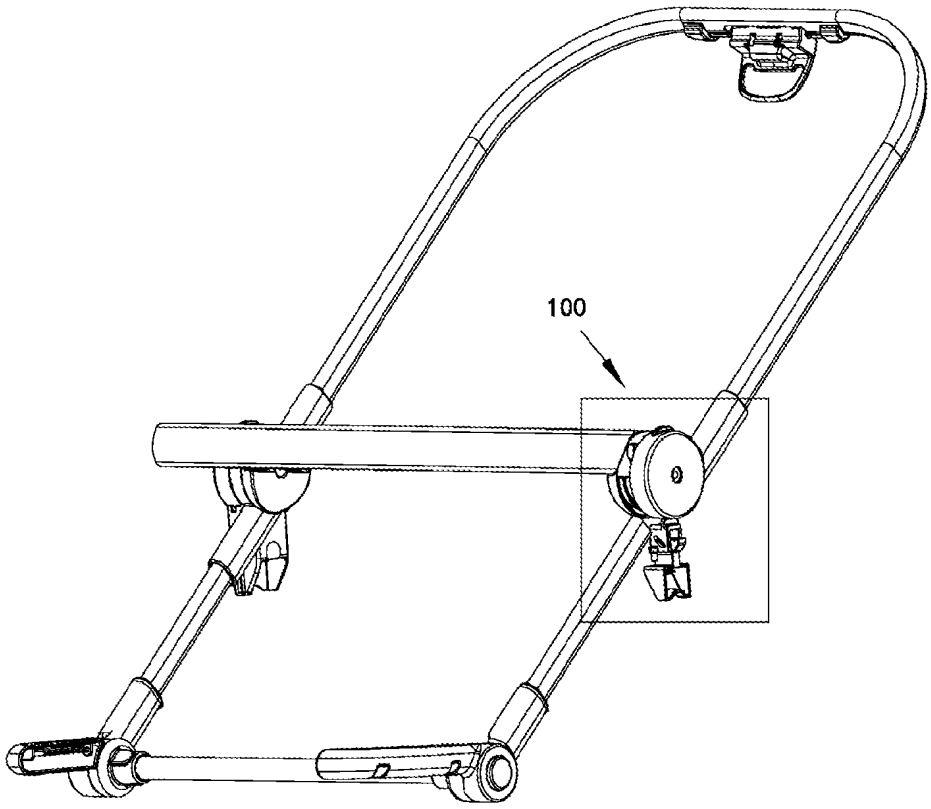


FIG. 13A

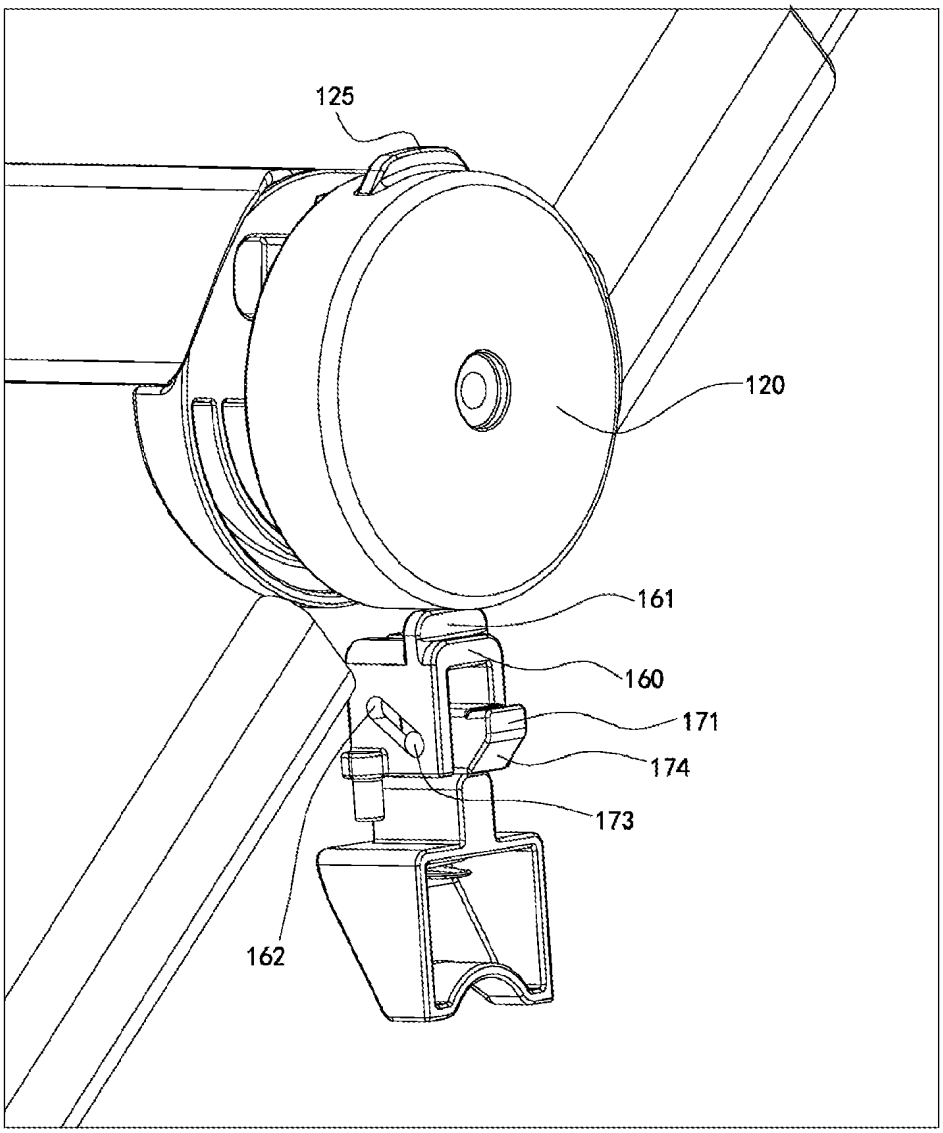


FIG. 13B

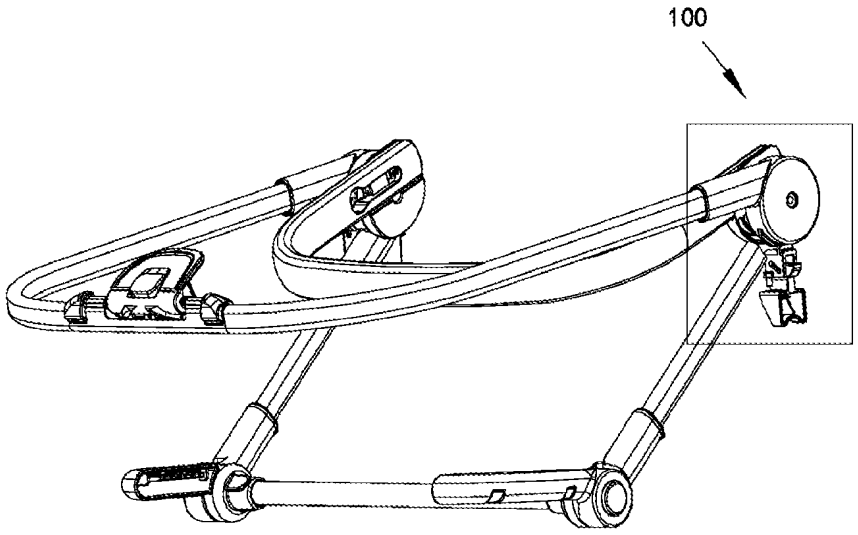


FIG. 14A

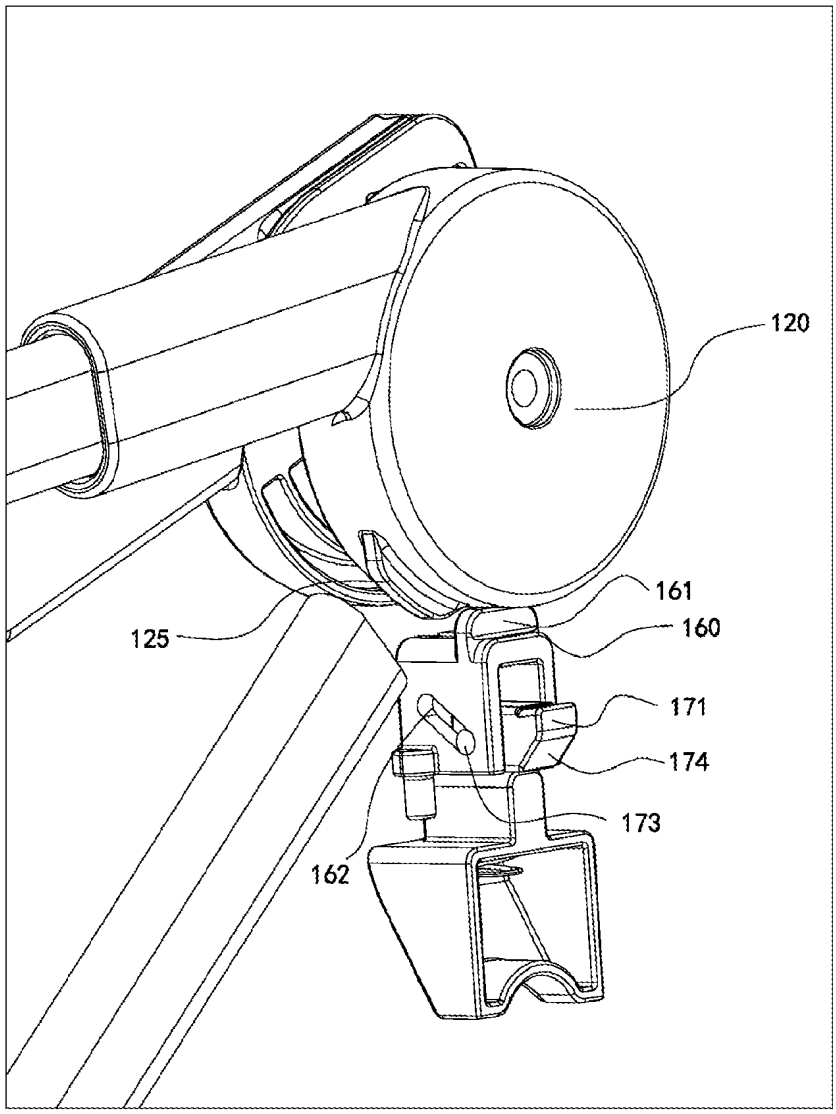


FIG. 14B

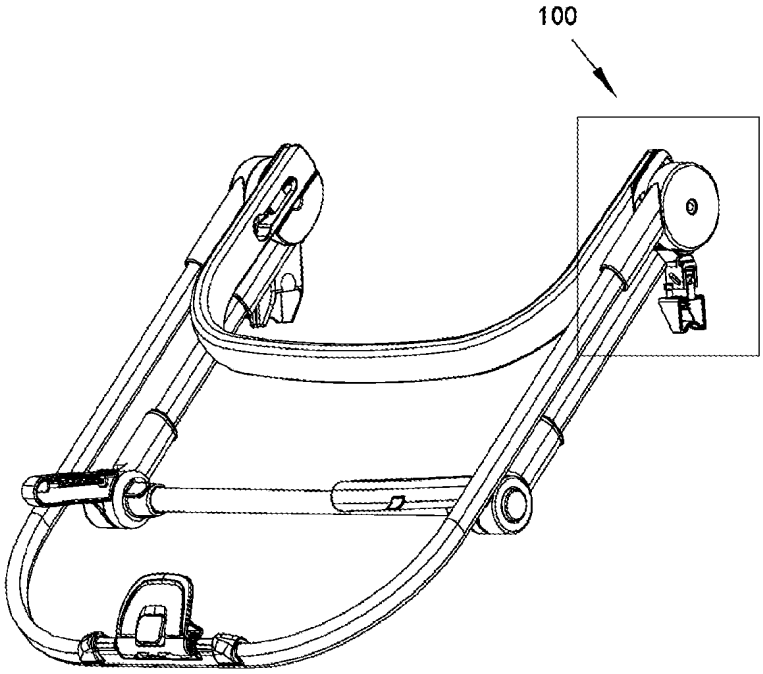


FIG. 15A

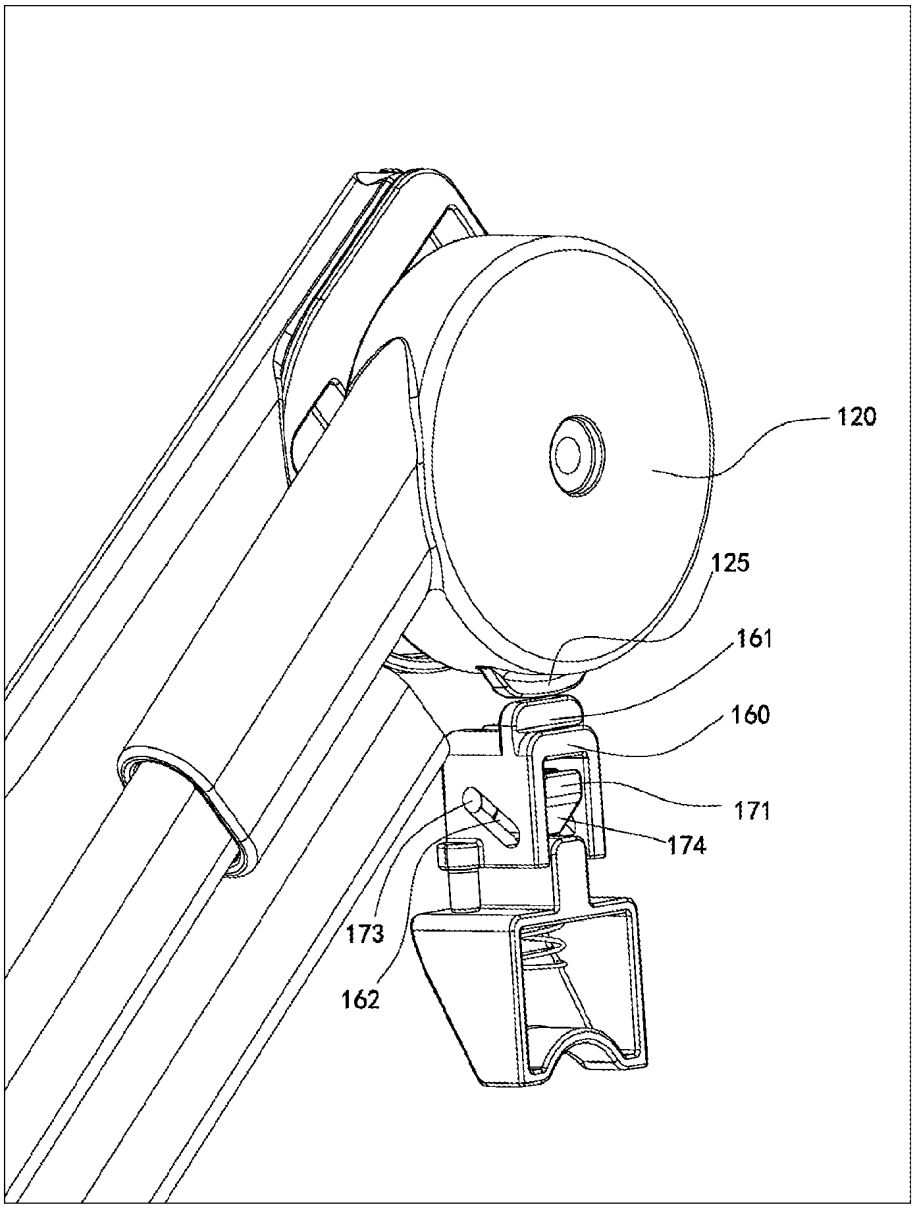


FIG. 15B

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

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"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
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)

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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		JP 7146945 B2	04-10-2022
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		US 2023070407 A1	09-03-2023

Form PCT/ISA/210 (patent family annex) (April 2005)

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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

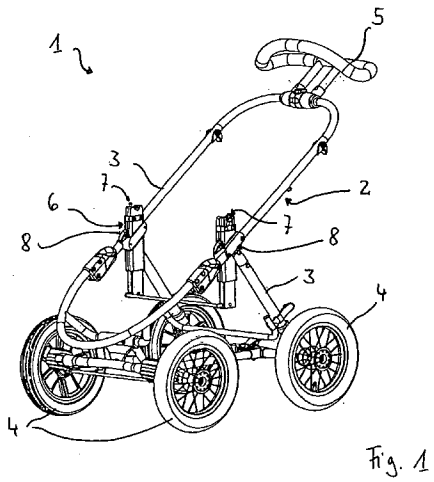


Fig. 1

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

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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).

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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.

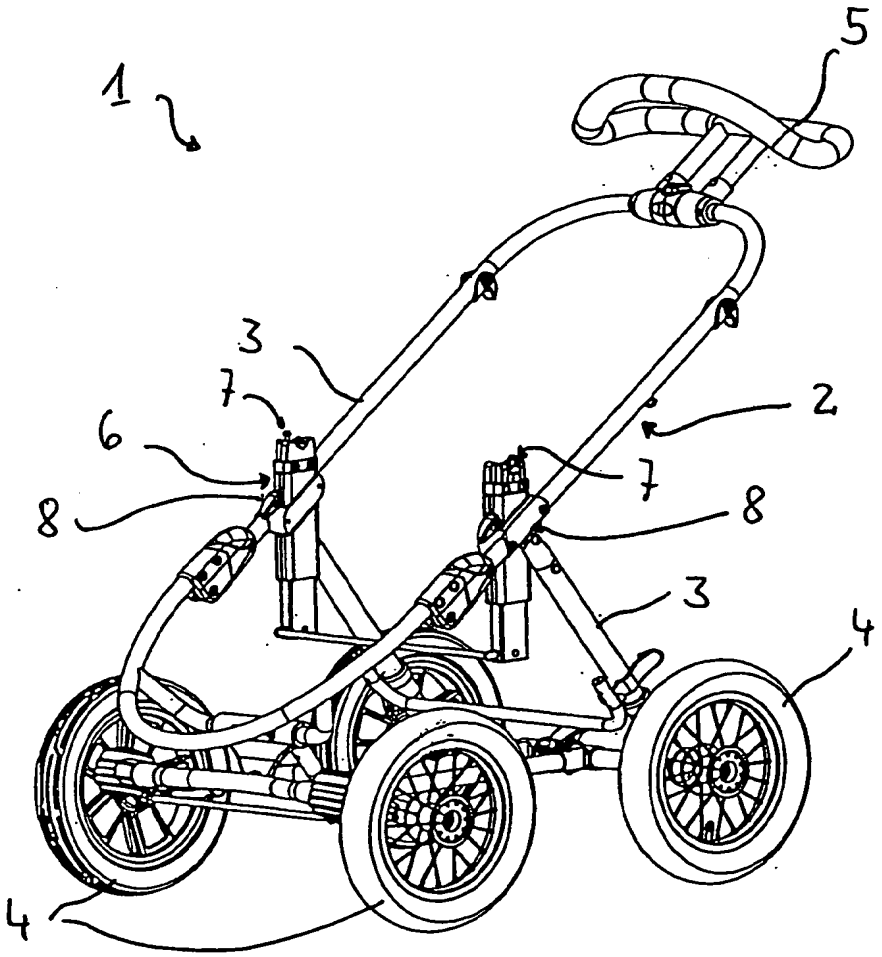


Fig. 1

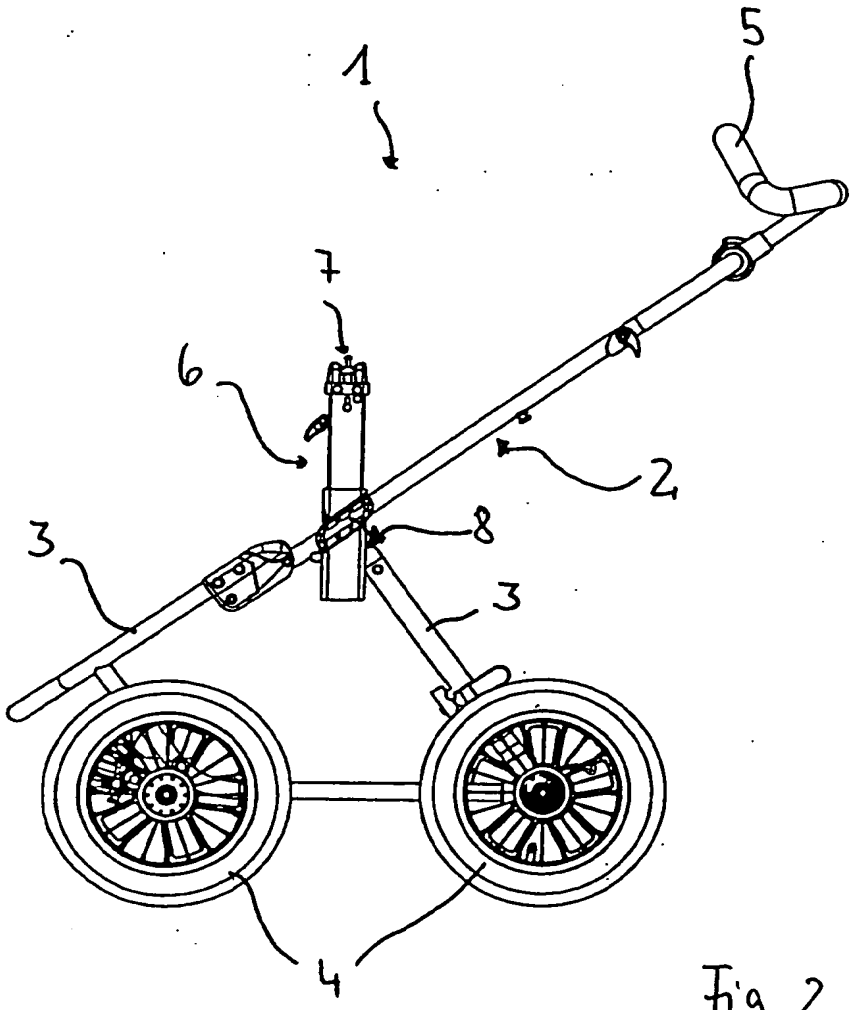


Fig. 2

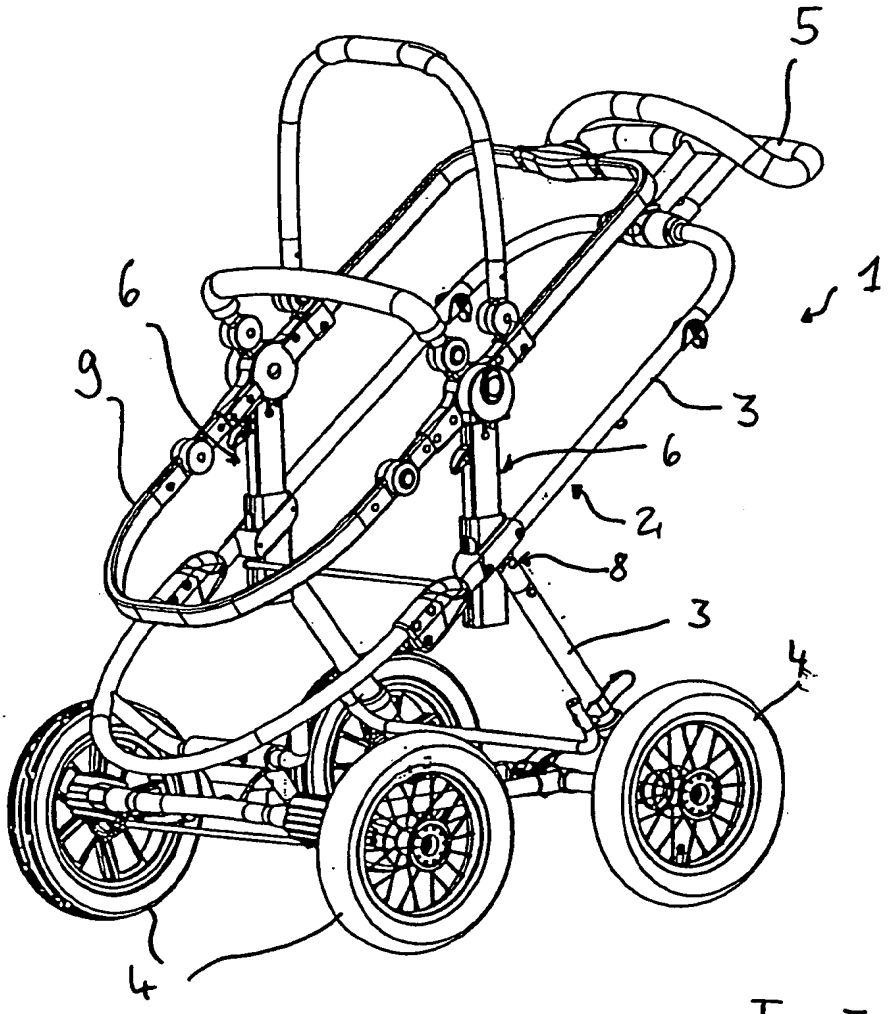


Fig. 3

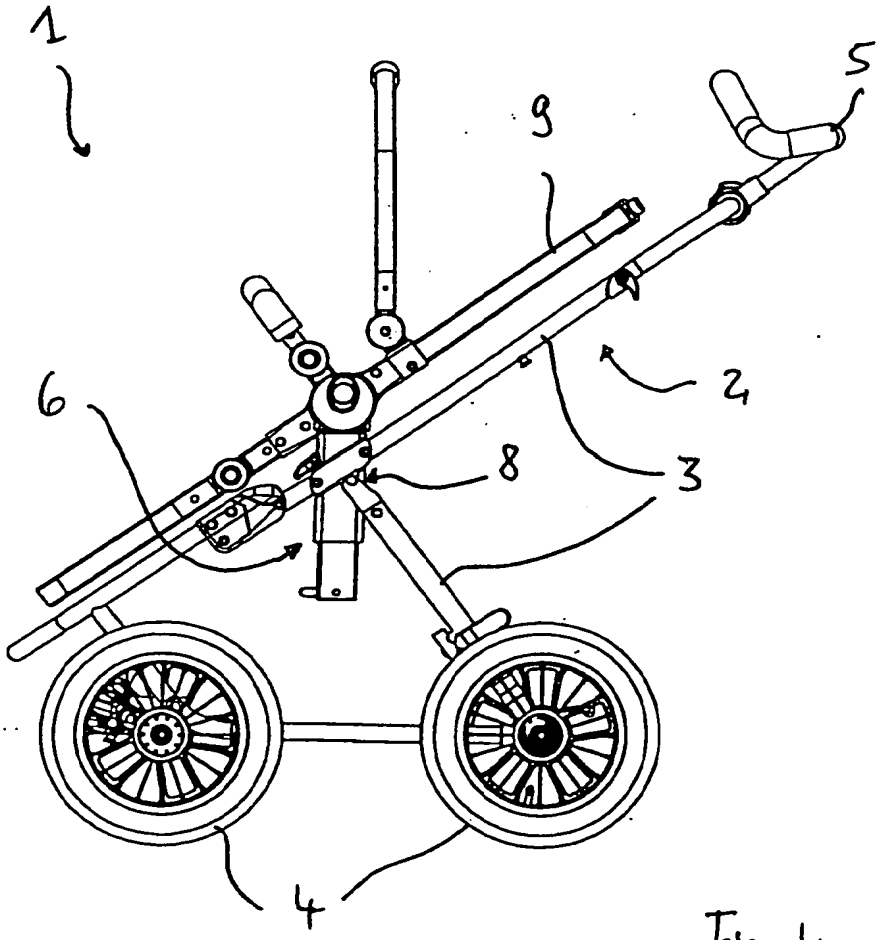


Fig. 4

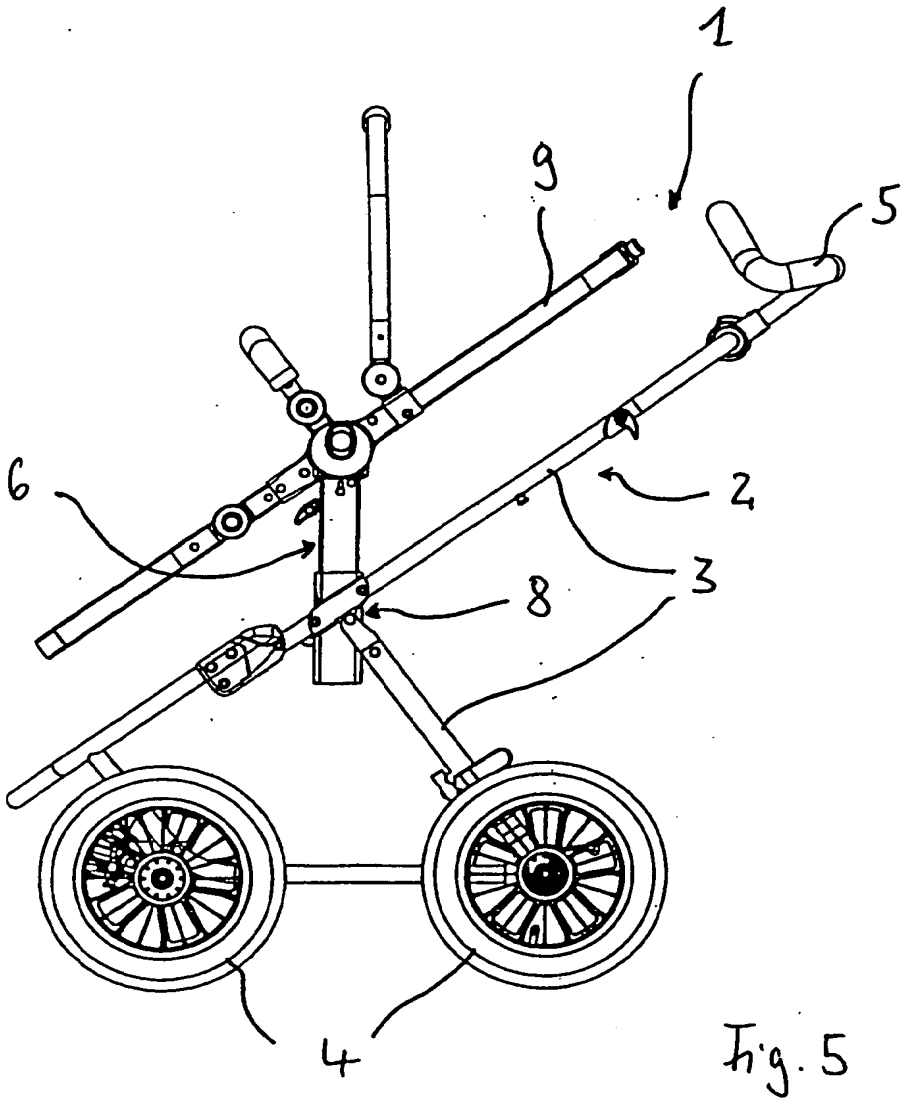


Fig. 5

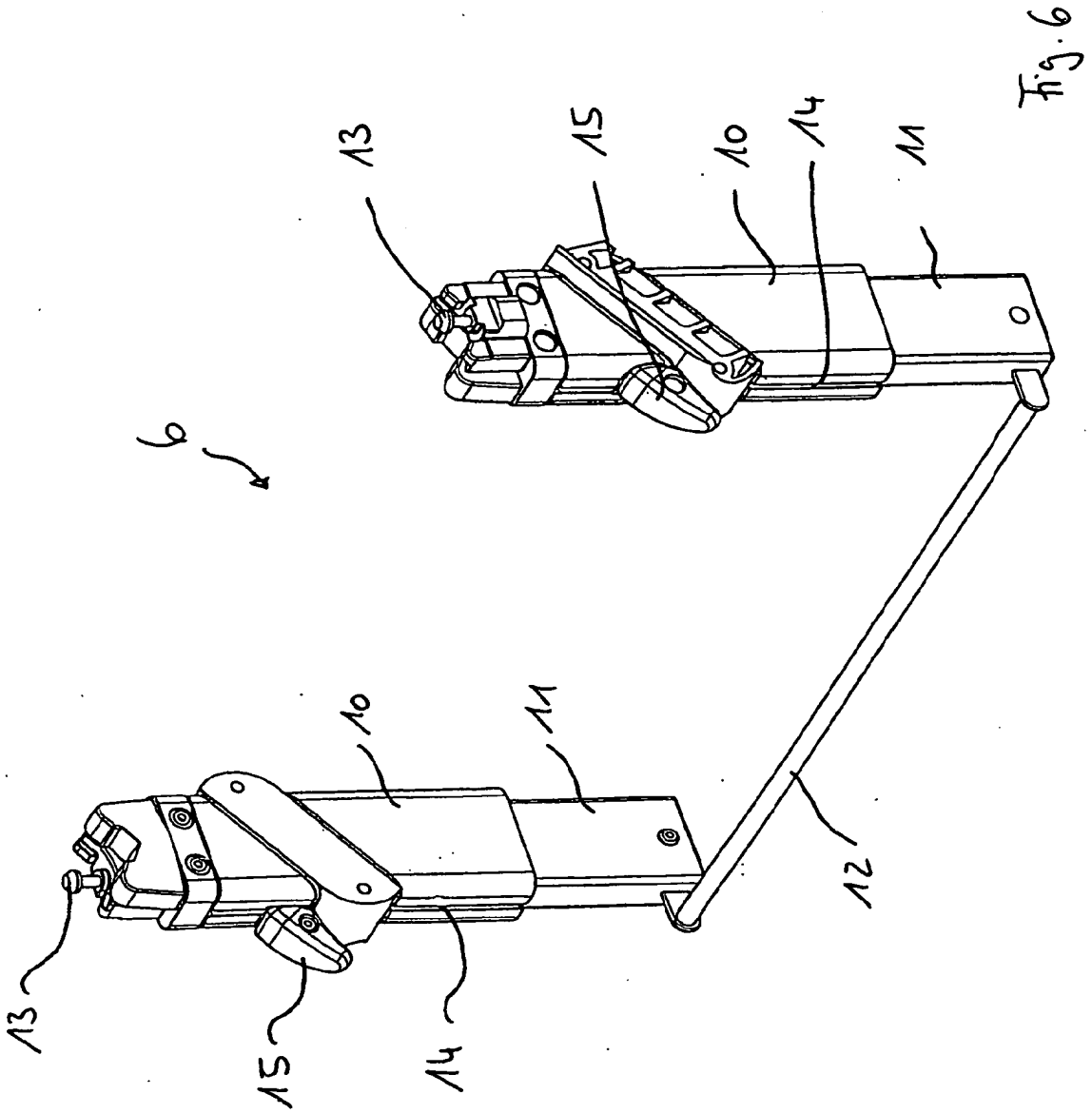


Fig. 6

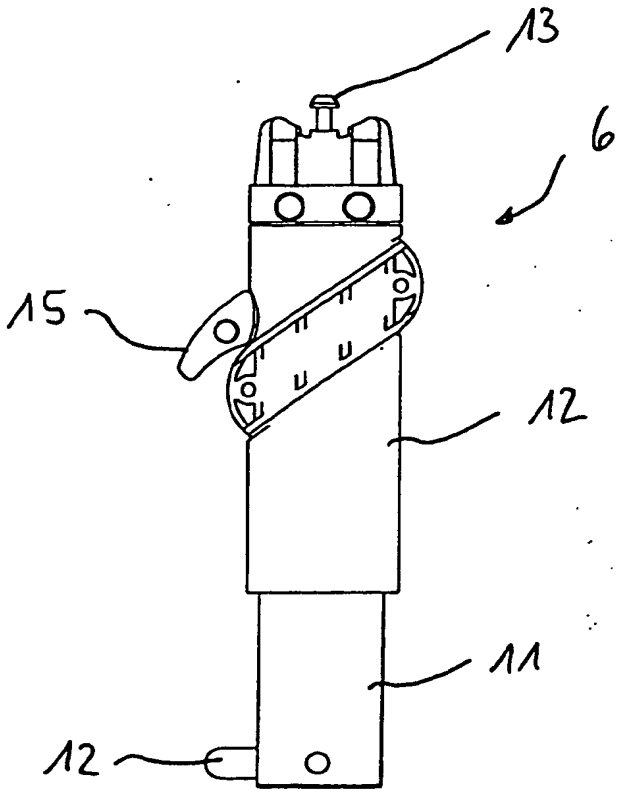


Fig. 7

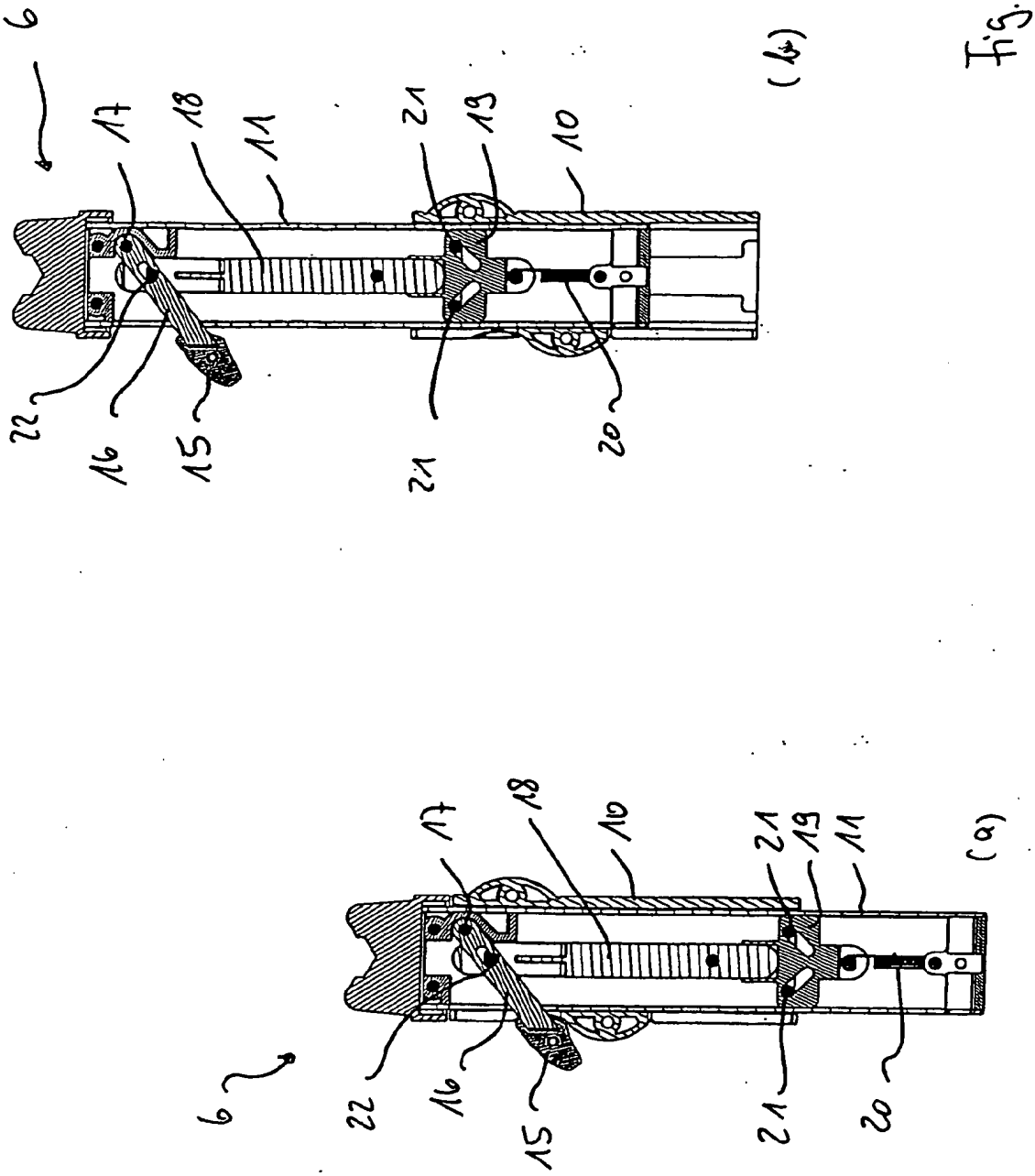


Fig. 8

IN DER BESCHREIBUNG AUFGEFÜHRTE DOKUMENTE

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In der Beschreibung aufgeführte Patentdokumente

- WO 0132493 A1 **[0002] [0007] [0013]**
- DE 4025009 A1 **[0002]**
- WO 2005002945 A2 **[0006] [0012]**
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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
Foreign-5-Part 2.pdf	20	Foreign Reference	17137 KB

Foreign-6.pdf	50	Foreign Reference	24798 KB
Foreign-7.pdf	25	Foreign Reference	12473 KB
Foreign-8.pdf	24	Foreign Reference	10049 KB
Foreign-9.pdf	16	Foreign Reference	10272 KB
Foreign-10.pdf	42	Foreign Reference	7586 KB
Foreign-11.pdf	17	Foreign Reference	1287 KB
Foreign-12.pdf	33	Foreign Reference	5826 KB
Foreign-13.pdf	25	Foreign Reference	6508 KB
Foreign-14.pdf	48	Foreign Reference	1464 KB
Foreign-15.pdf	51	Foreign Reference	8156 KB
Foreign-16.pdf	11	Foreign Reference	578 KB
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Foreign-18.pdf	20	Foreign Reference	1440 KB
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Foreign-22.pdf	47	Foreign Reference	4356 KB
Foreign-23.pdf	21	Foreign Reference	1854 KB
Foreign-24.pdf	9	Foreign Reference	472 KB
Foreign-25.pdf	9	Foreign Reference	292 KB

Foreign-26.pdf	26	Foreign Reference	851 KB
Foreign-27.pdf	69	Foreign Reference	2293 KB
Foreign-28.pdf	28	Foreign Reference	1096 KB
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
NPL-3.pdf	5	Non Patent Literature	719 KB
NPL-4.pdf	5	Non Patent Literature	774 KB
NPL-6.pdf	3	Non Patent Literature	307 KB
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NPL-10.pdf	9	Non Patent Literature	494 KB
NPL-12.pdf	11	Non Patent Literature	1296 KB
NPL-5.pdf	4	Non Patent Literature	381 KB
NPL-11.pdf	5	Non Patent Literature	316 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
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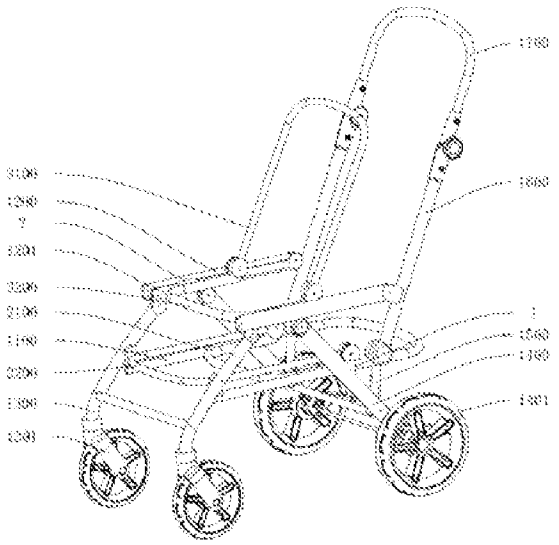
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Title
[EN] Stroller
[ZH] 儿童推车



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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审查员 郝保伟

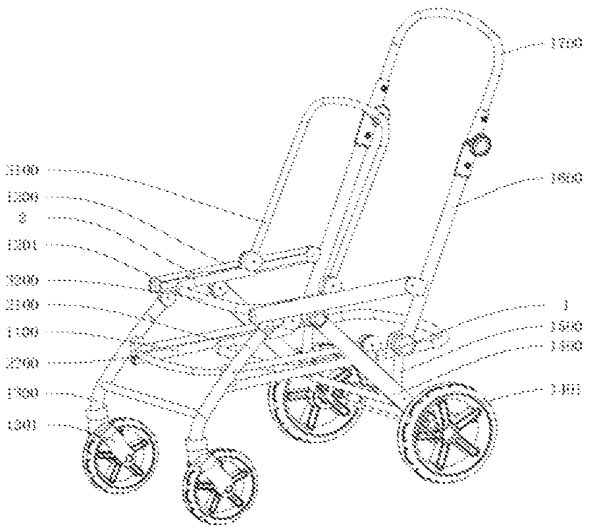
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(54)发明名称

儿童推车

(57)摘要

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CN 113511252 B

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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。

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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

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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。

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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。

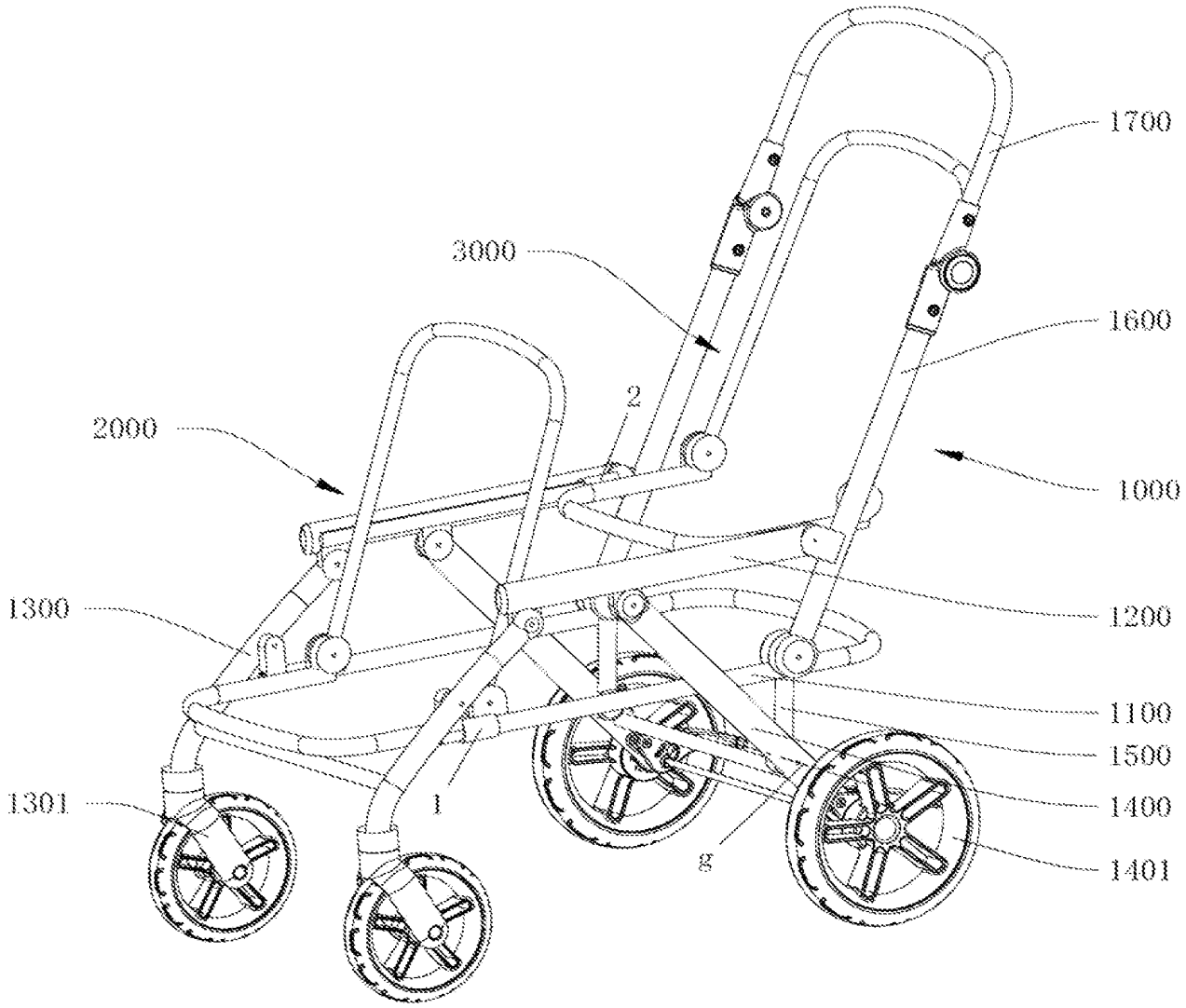

1700
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2000
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1300
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1301
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1401

图1

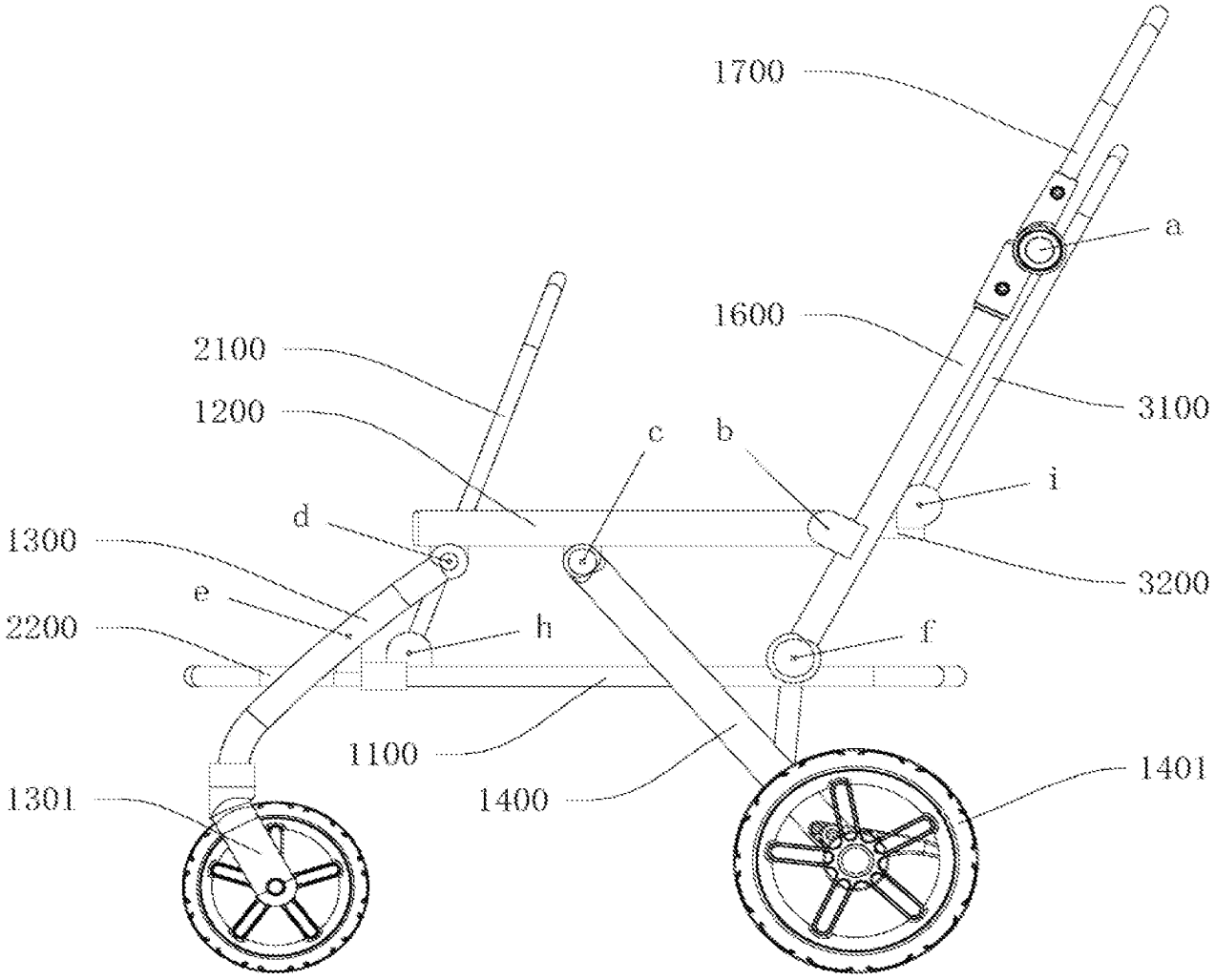

1700
a
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1200
c
b
i
d
1300
3200
e
2200
h
f
1100
1401
1301
1400

图2

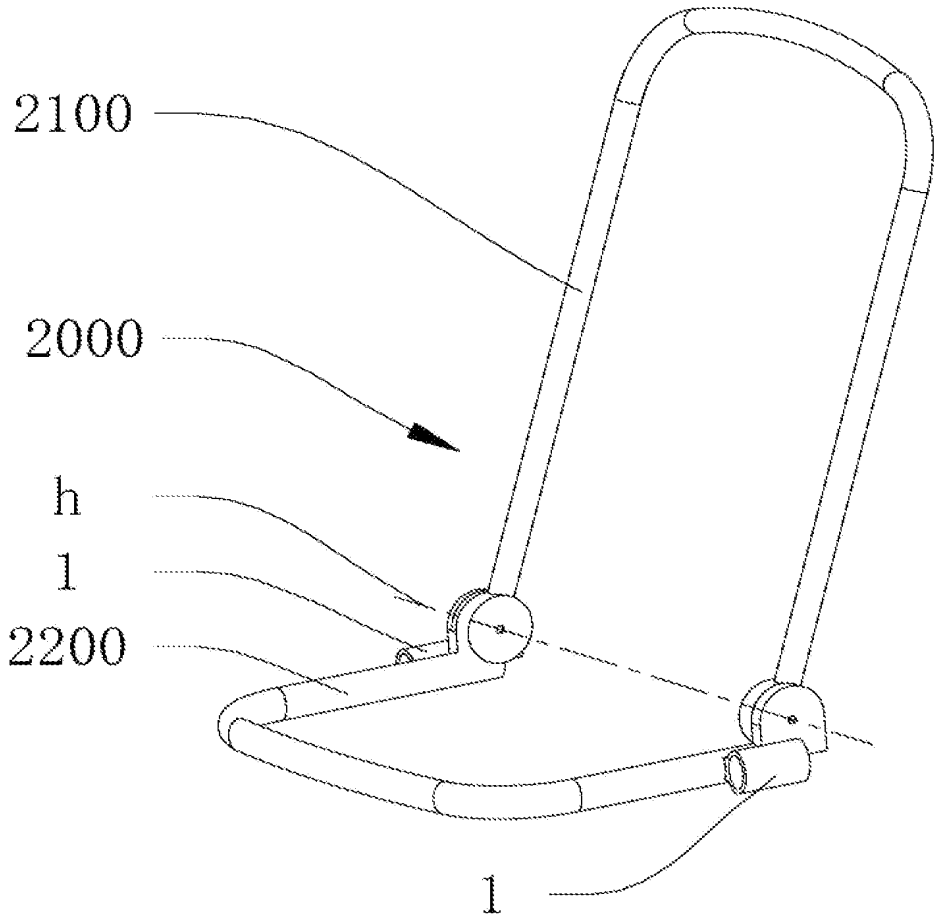


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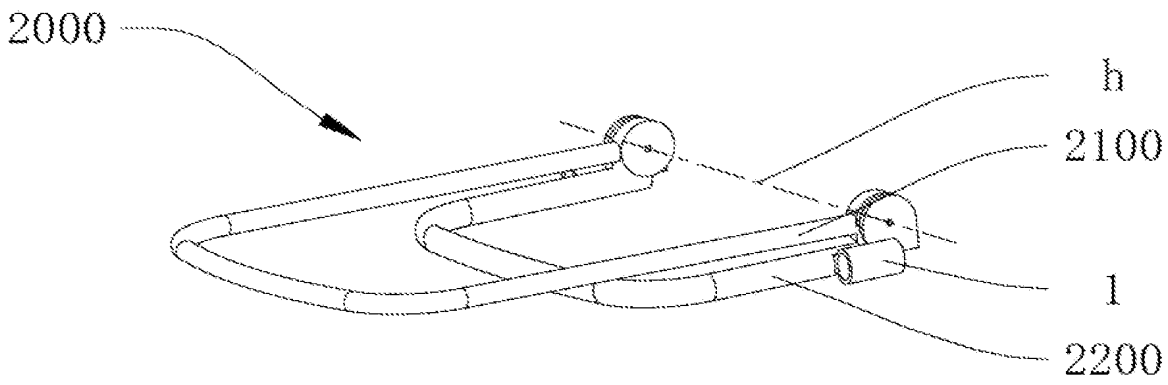


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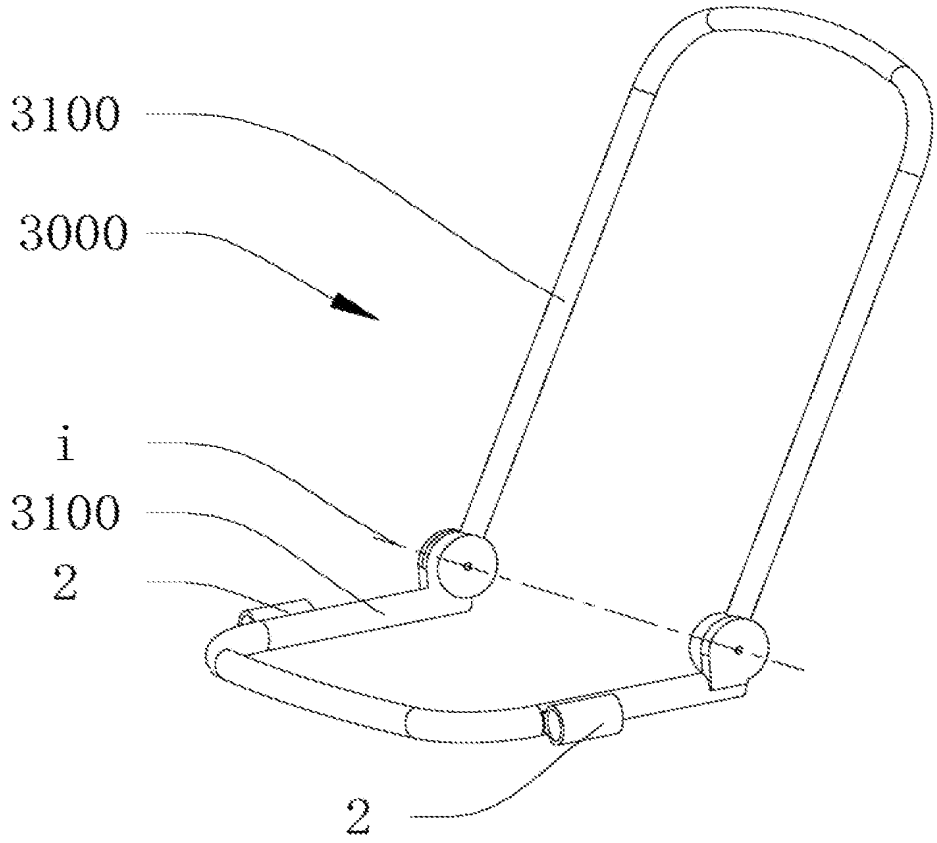


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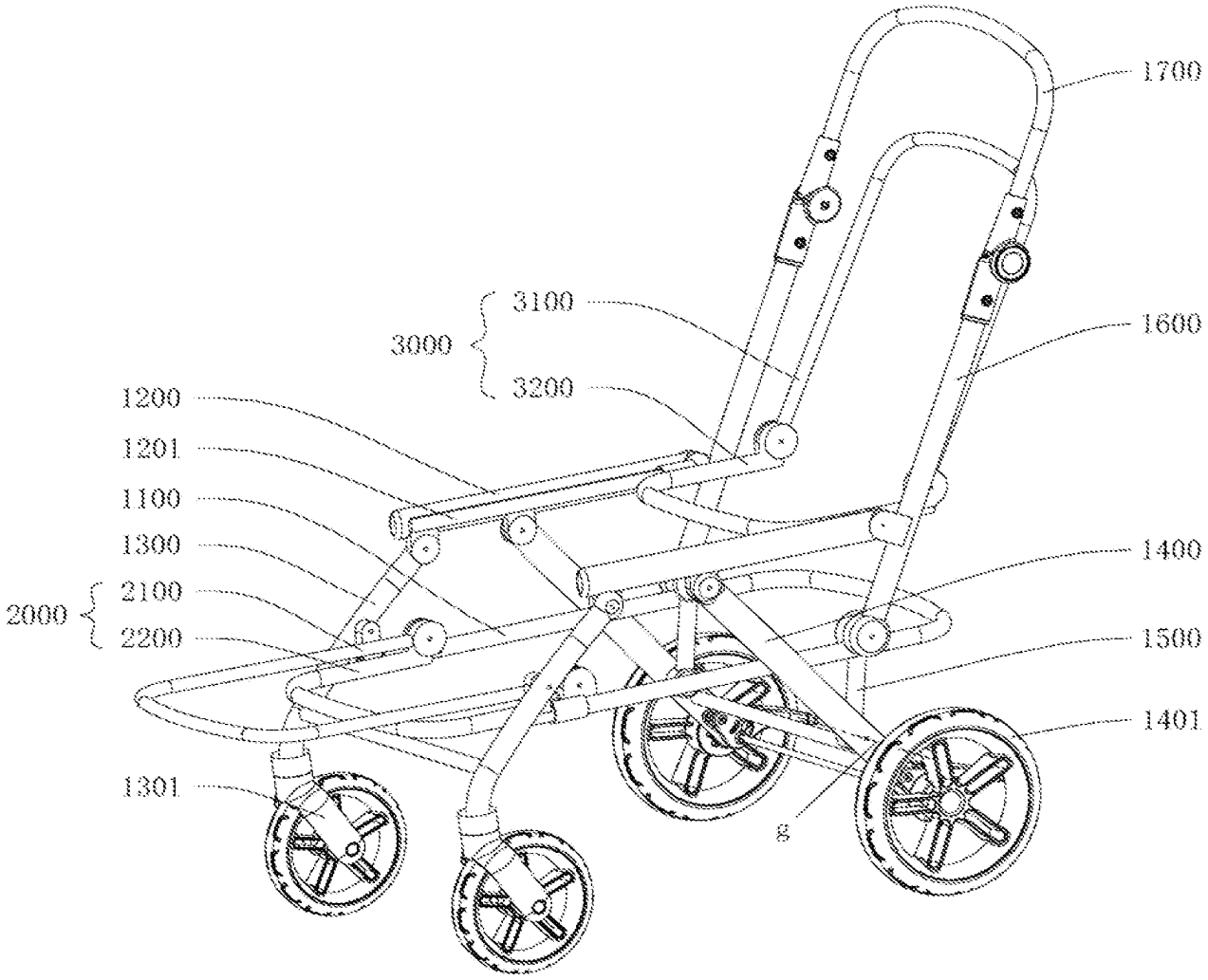

1700
3000
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1301
g

图6

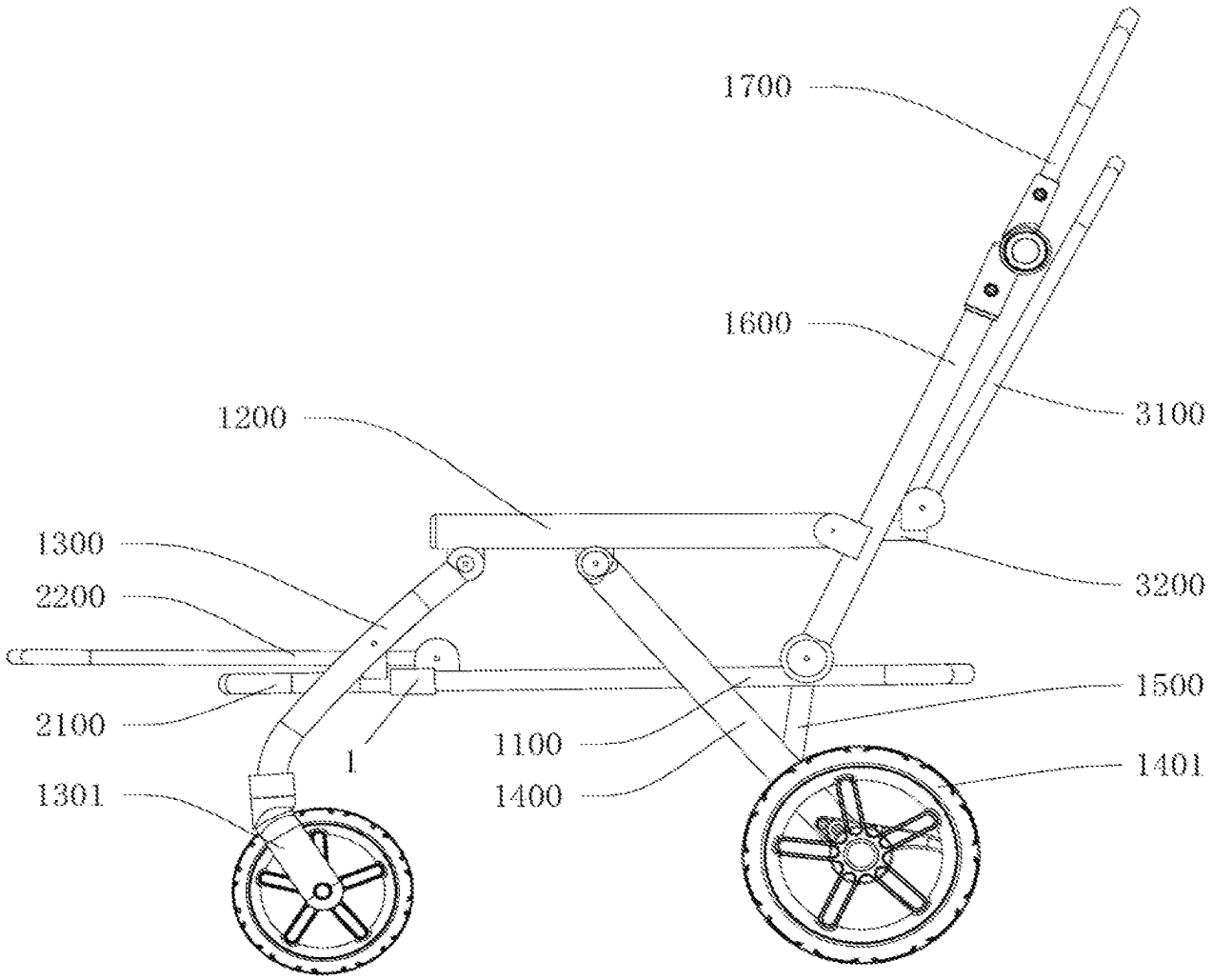

1700
1600
3100
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3200
2200
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2100
1100
1401
1
1400
1301

图7

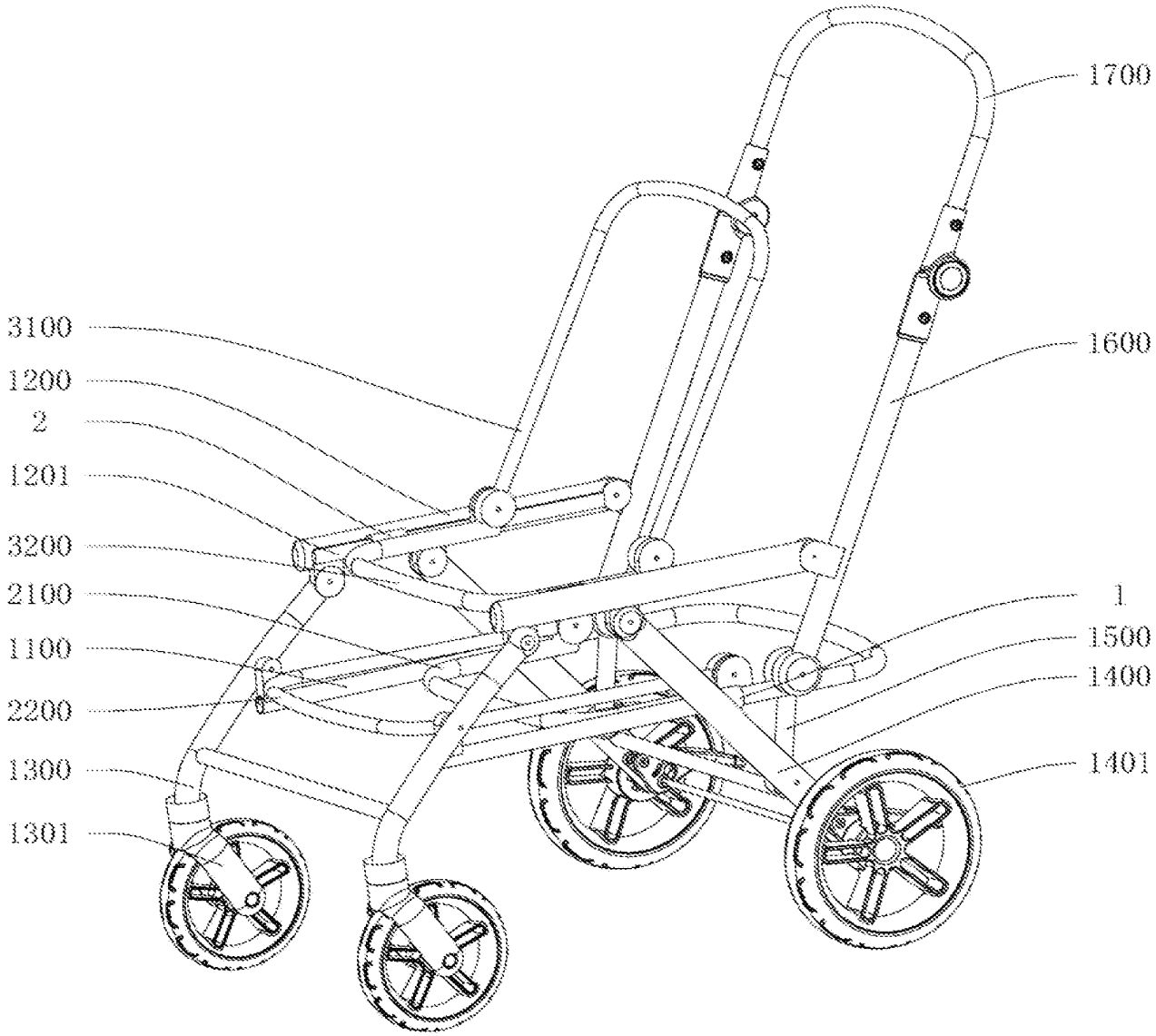

1700
3100
1600
1200
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3200
2100
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1500
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1400
2200
1300
1401
1301

图8

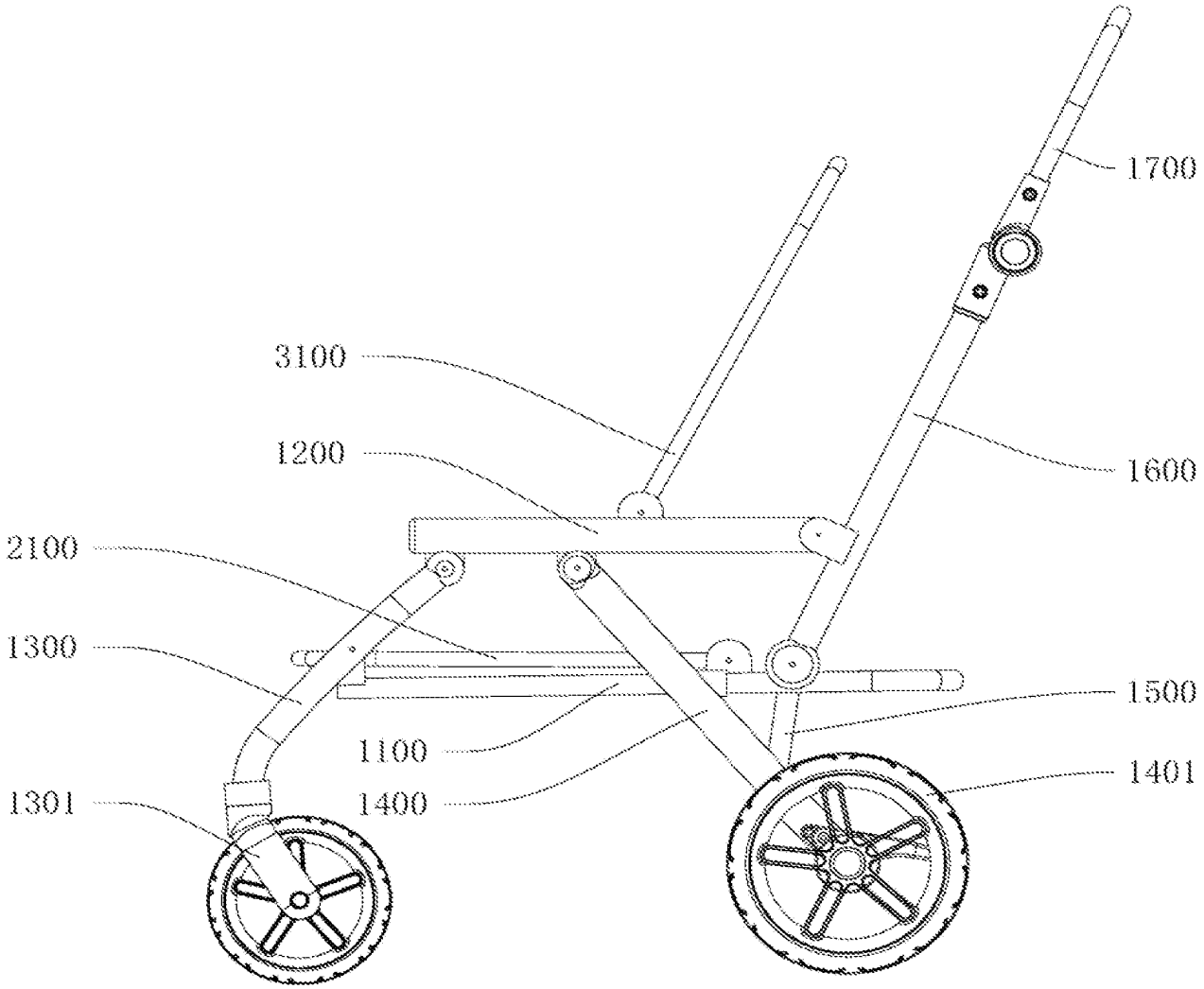


图9

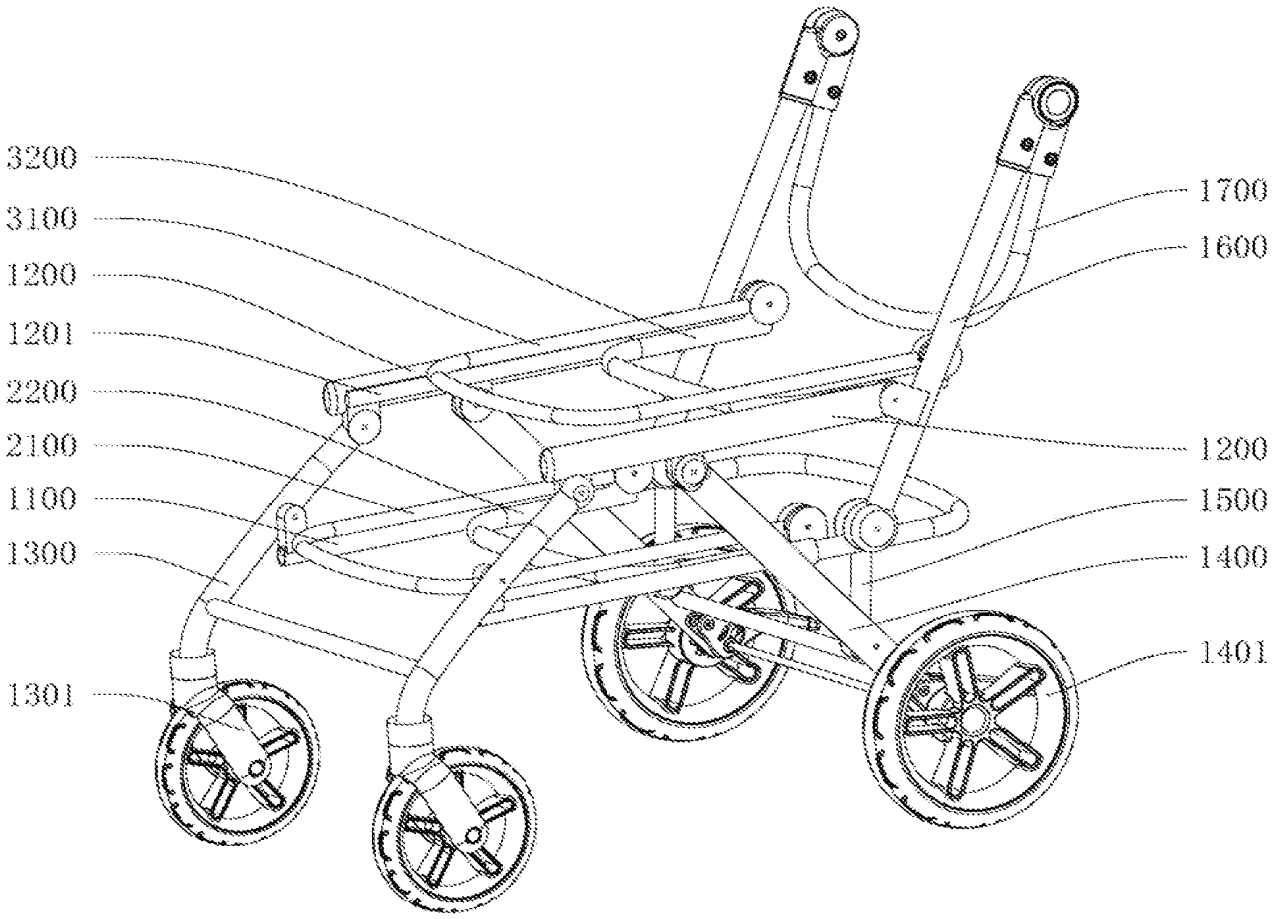

3200
3100
1200
1201
2200
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1100
1300
1301
1700
1600
1200
1500
1400
1401

图10

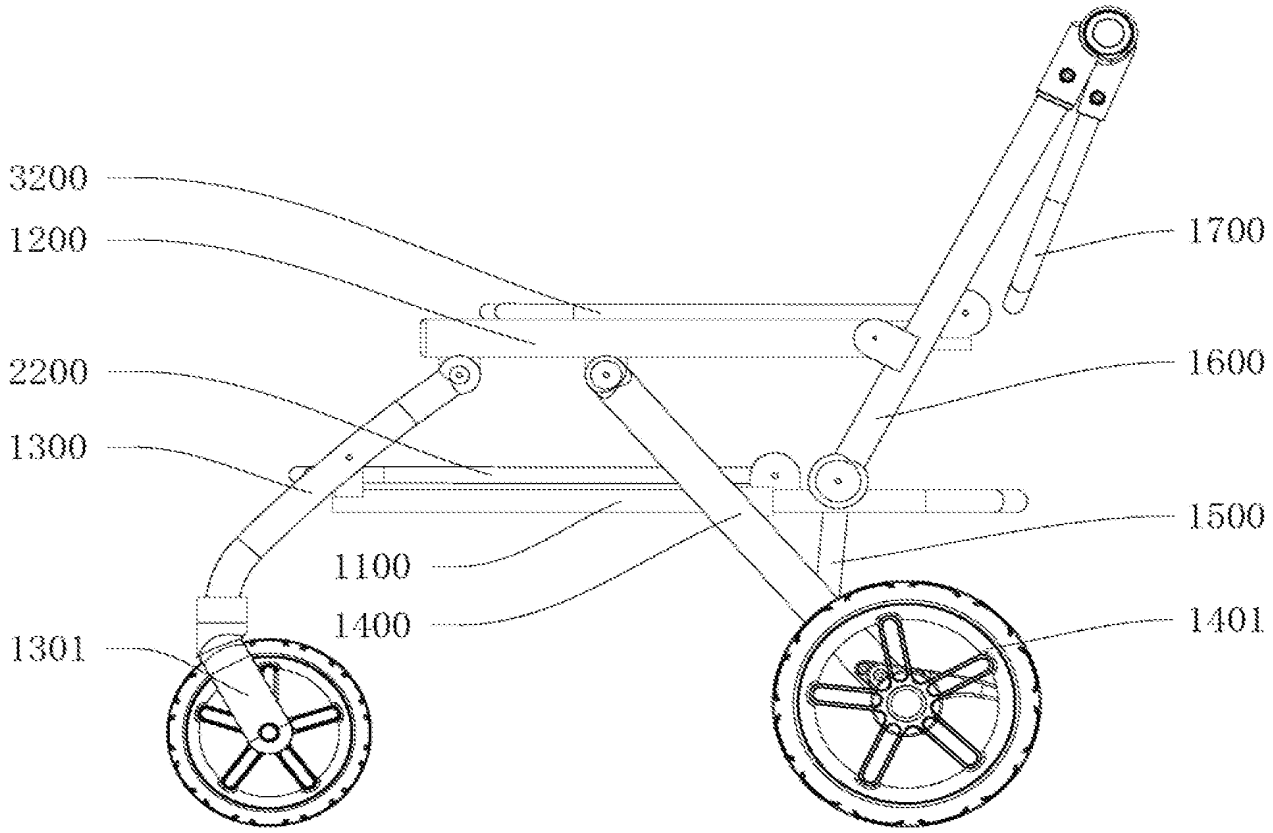


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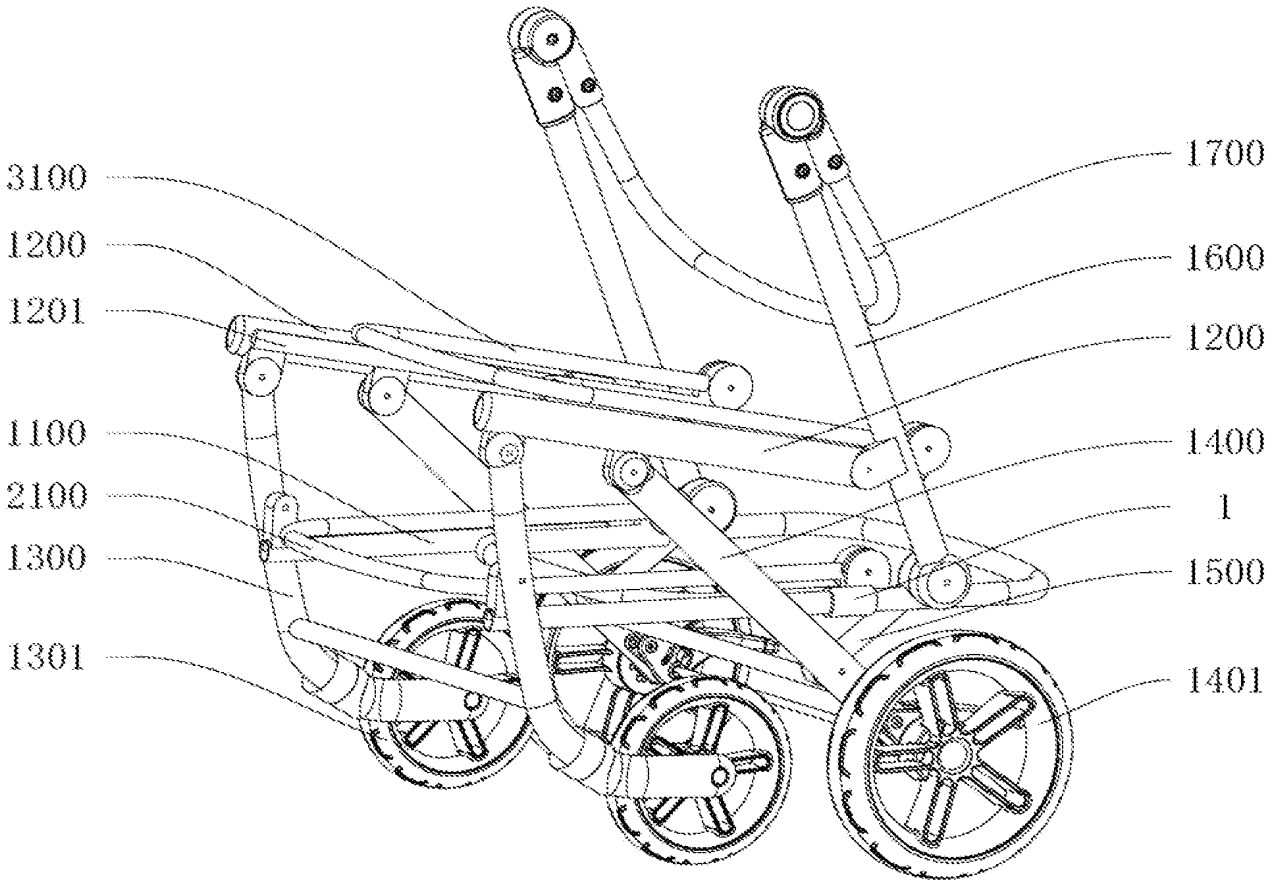

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1201
1100
2100
1300
1301
1700
1600
1200
1400
1
1500
1401

图12

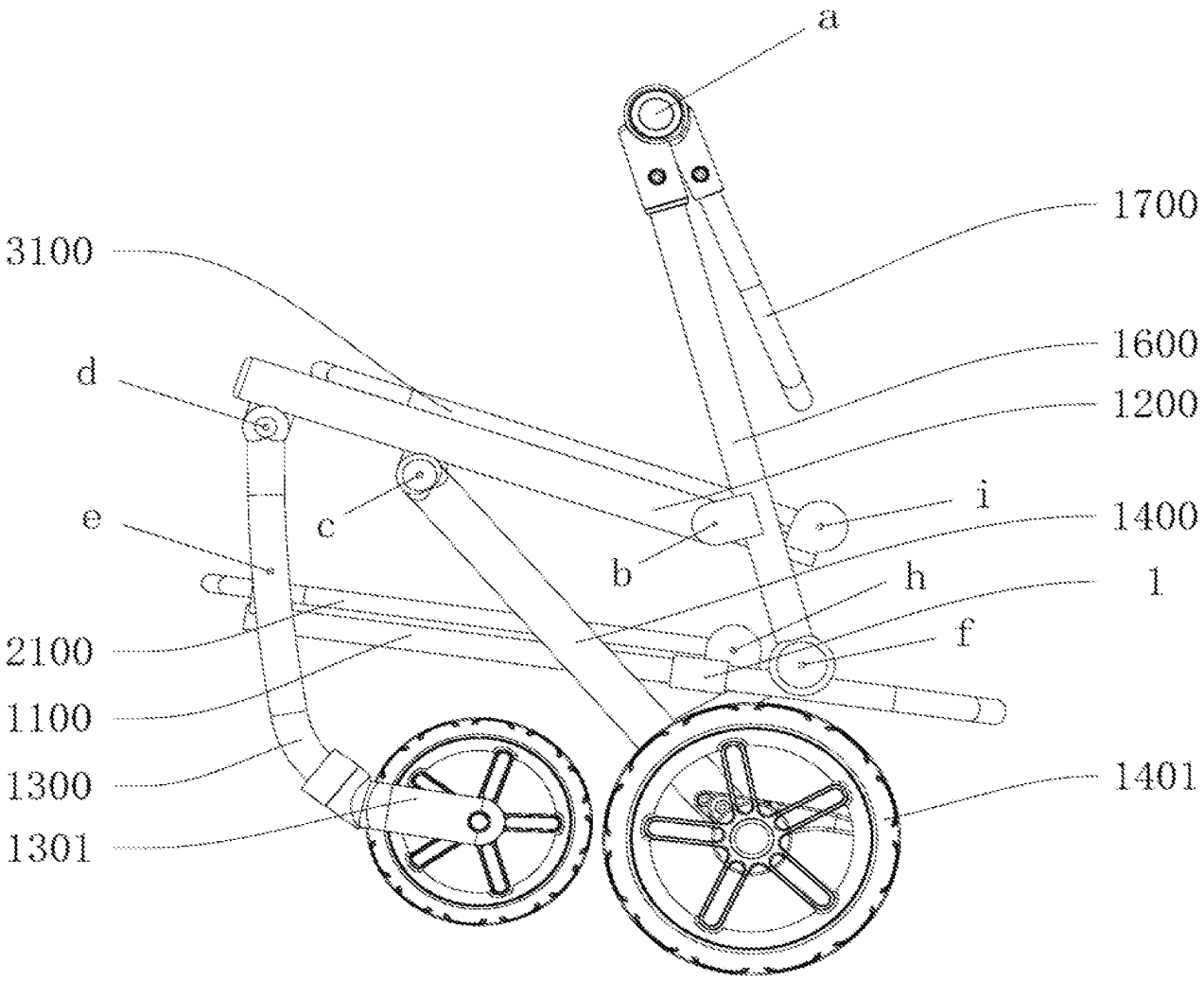


图13

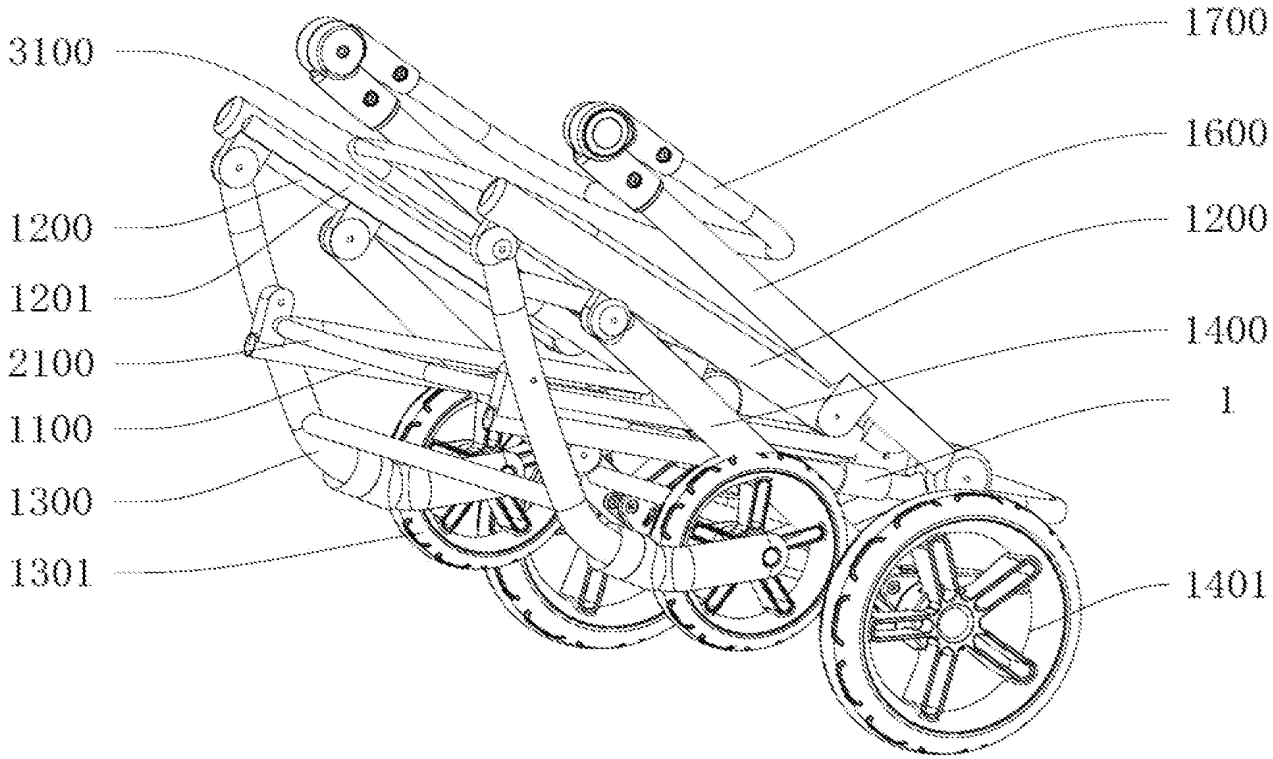


图14

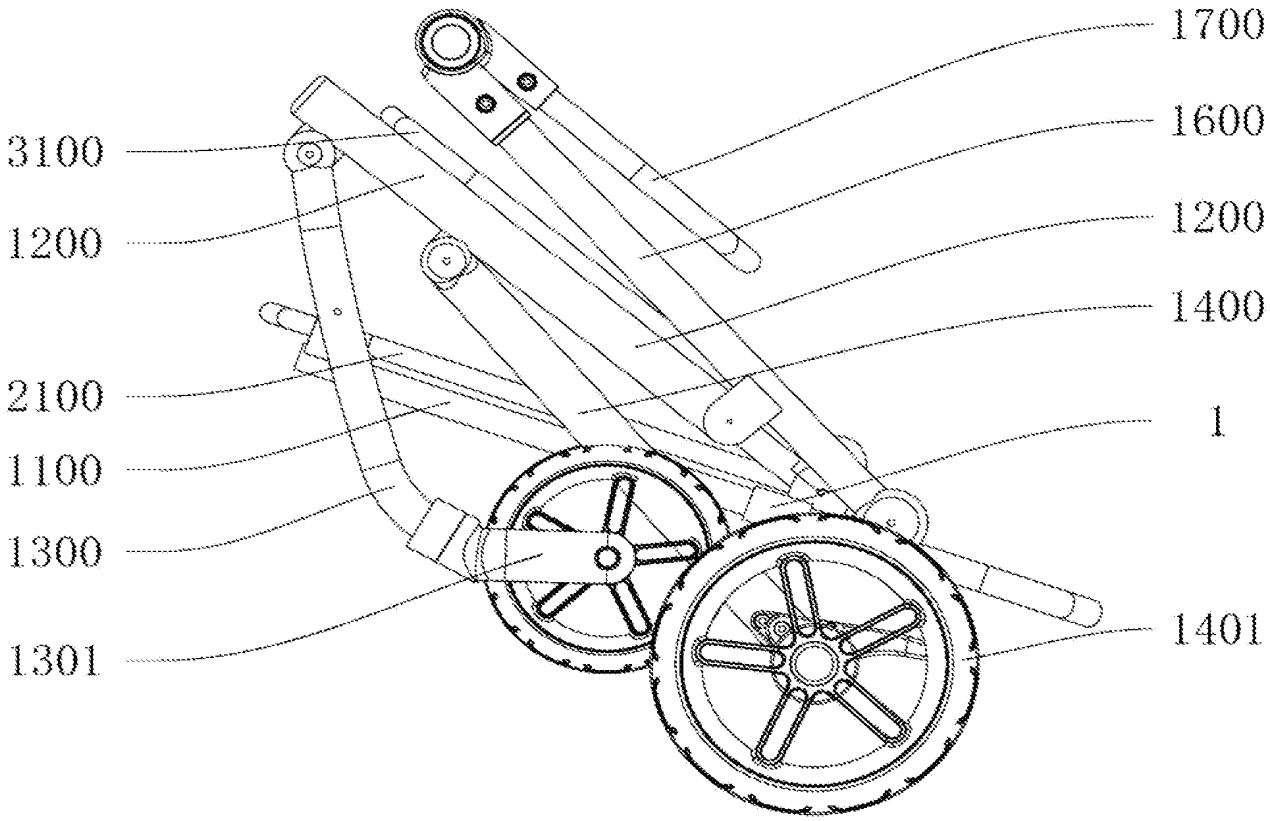


图15

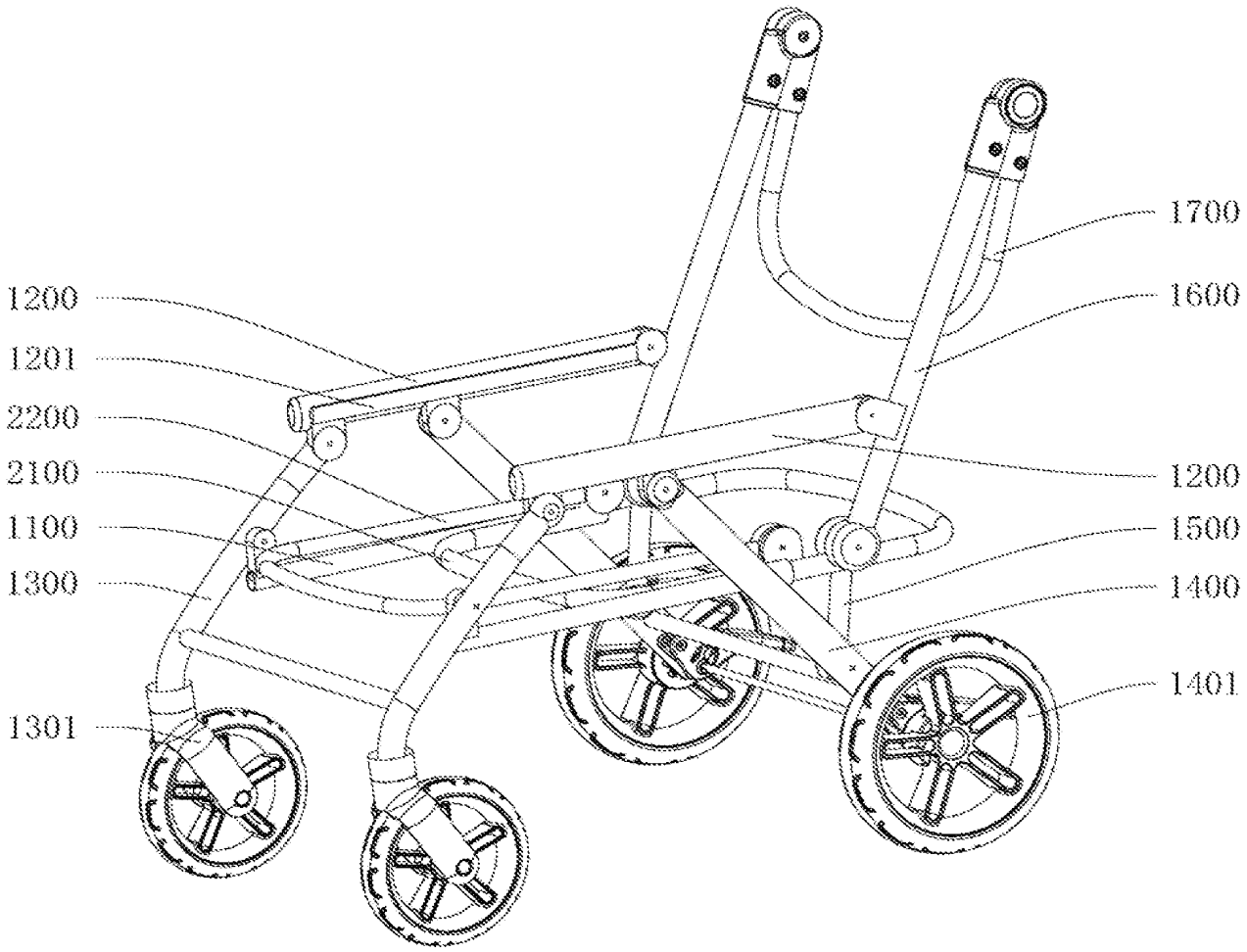

1700
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2200
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图16

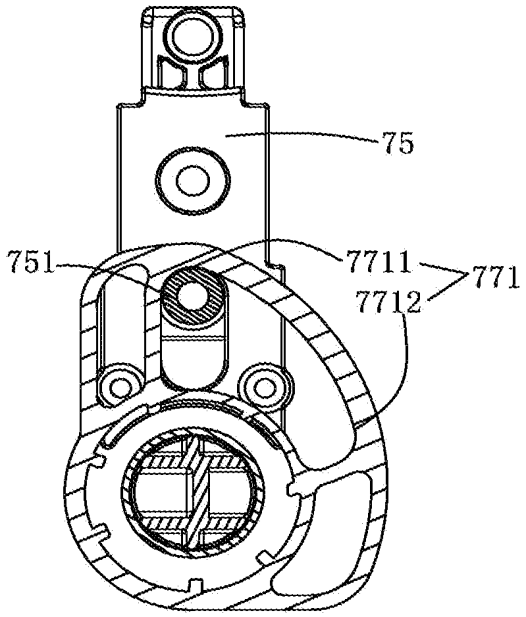


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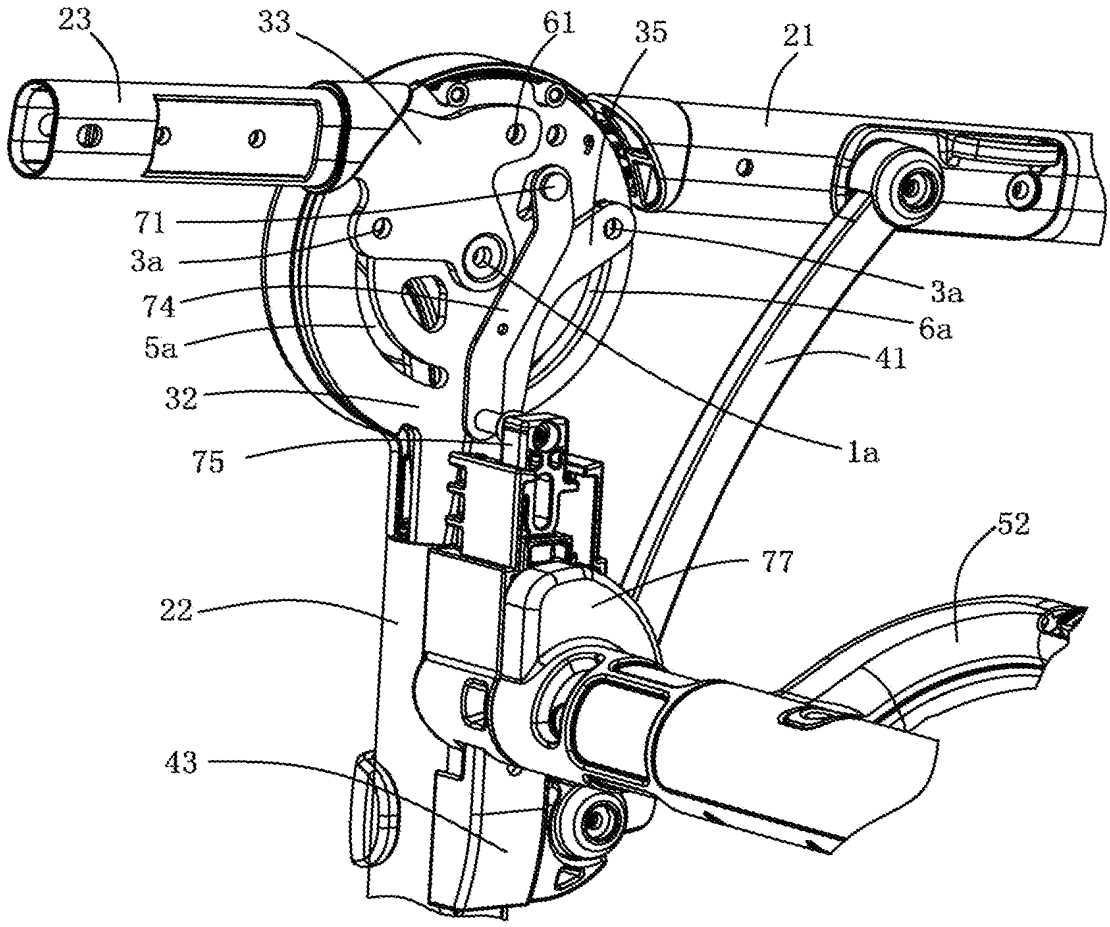


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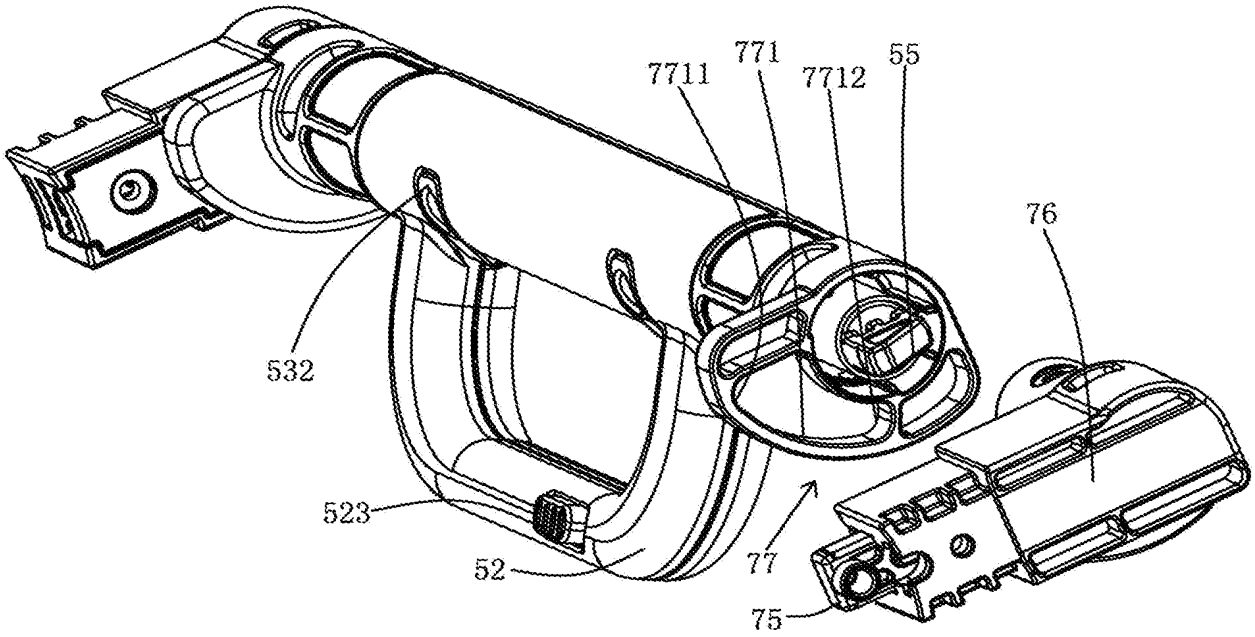

7711
771
7712
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76
532
523
52
77
75

图9

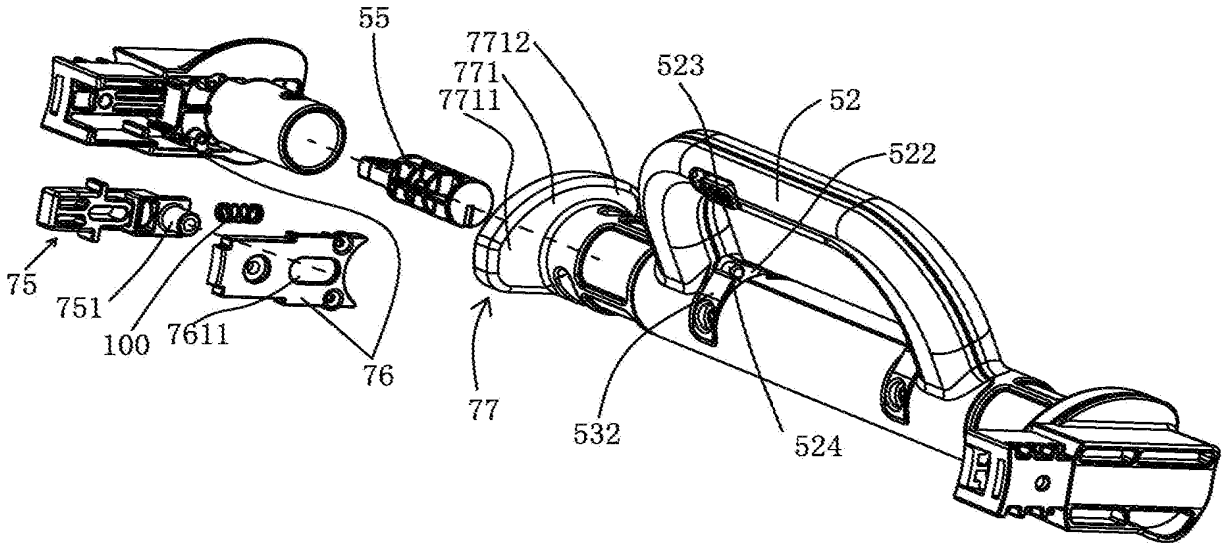

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52
522
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751
100
7611
76
77
532
524

图10

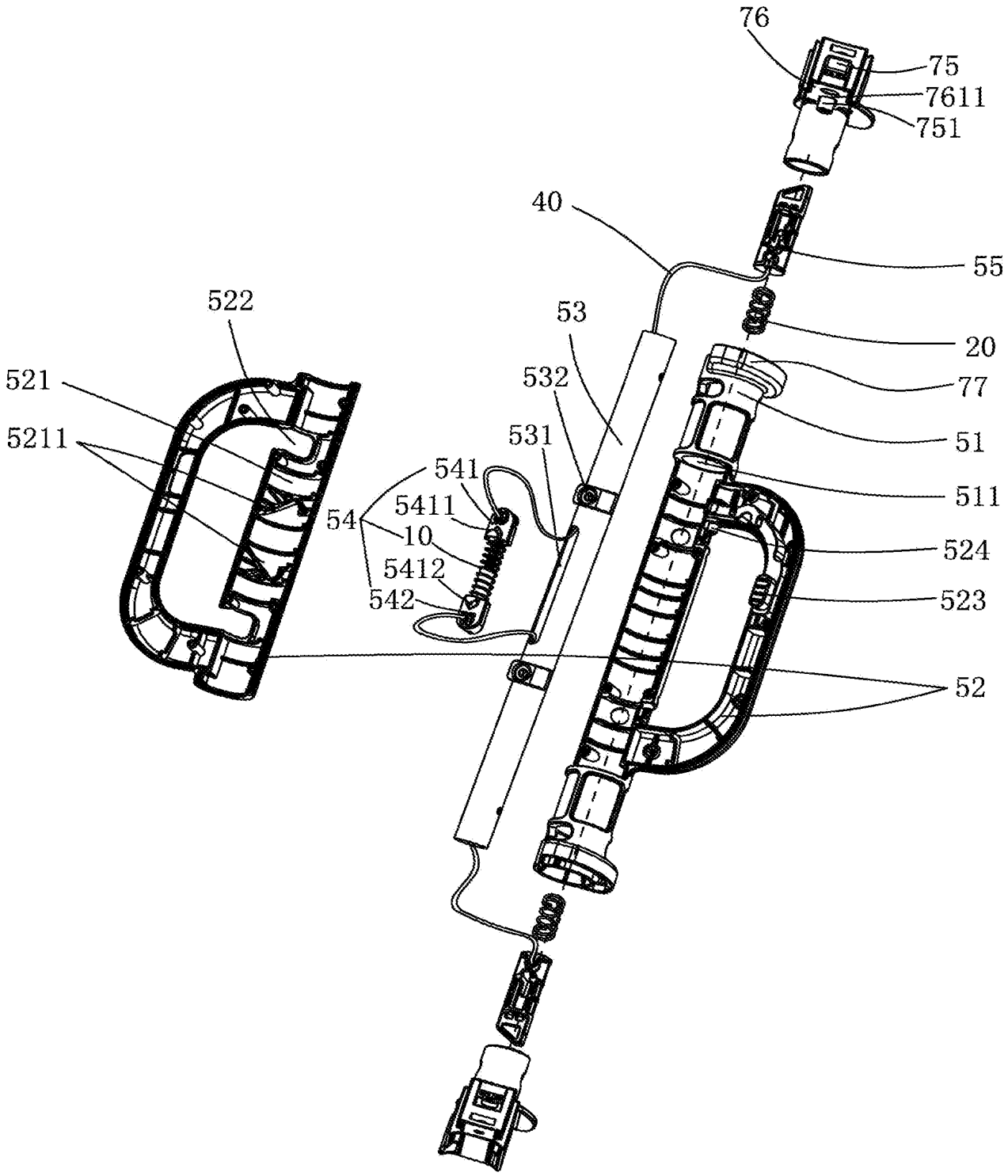

76
75
7611
751
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55
522
53
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5411
10
524
5412
542
523
52

图11

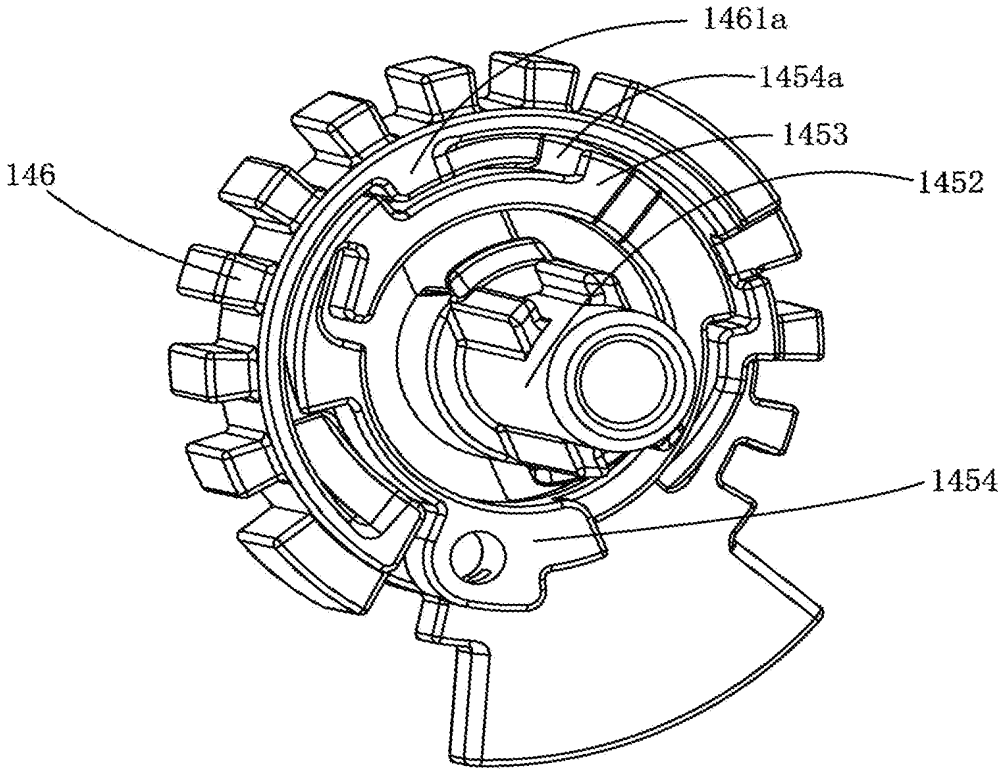


图12

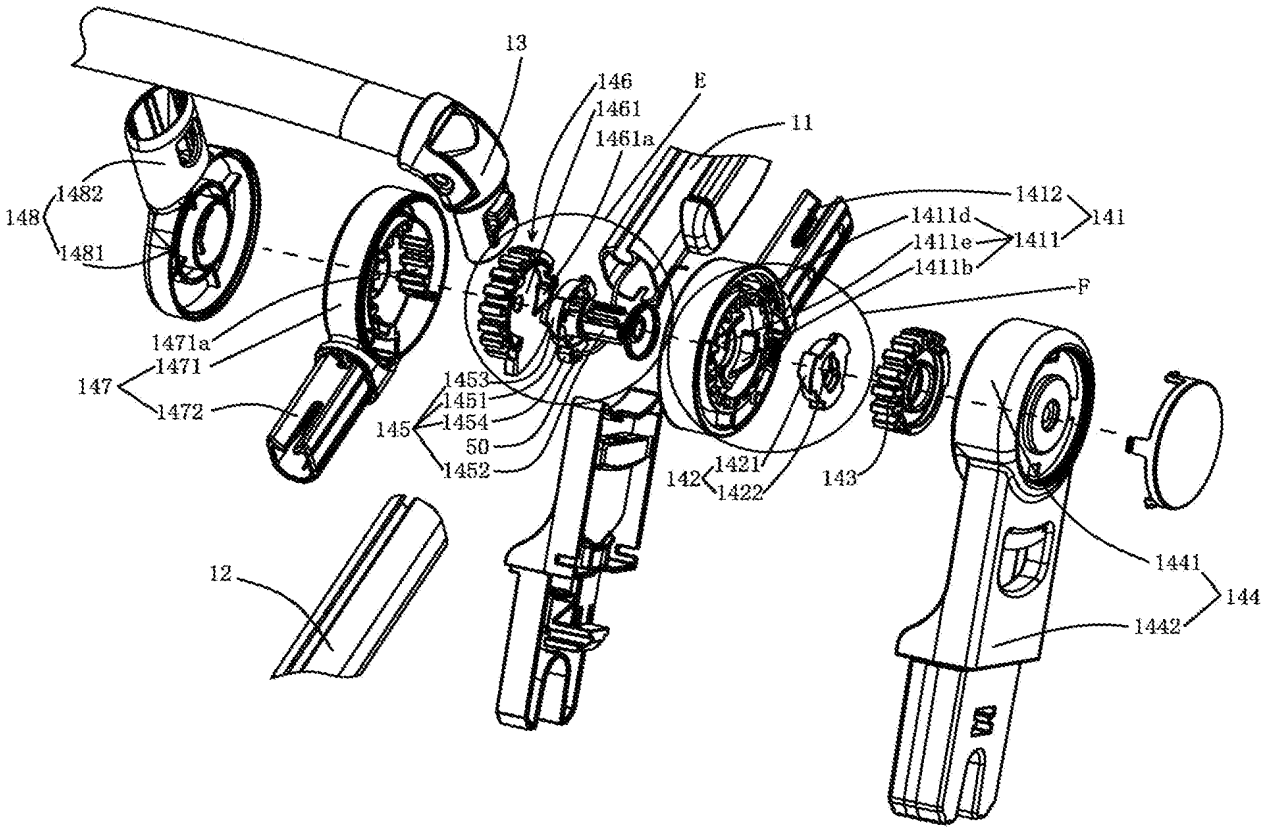

13
146
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E
11
1482
148
1481
1412
1411d
1411e
1411b
1411
141
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1471a
1471
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144
1442
12

图13

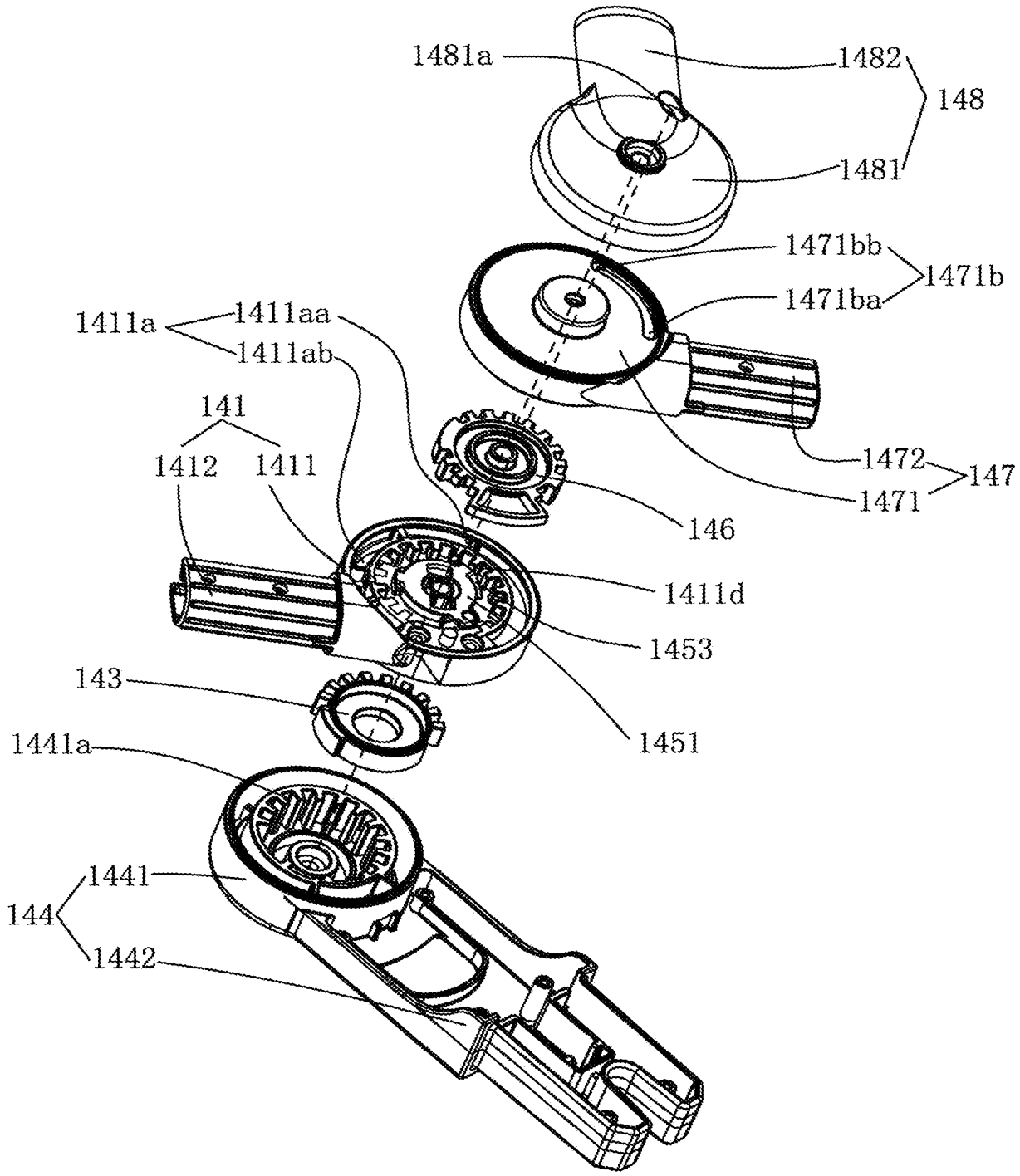

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1481
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1471b
1471ba
1411a
1411aa
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1442

图14

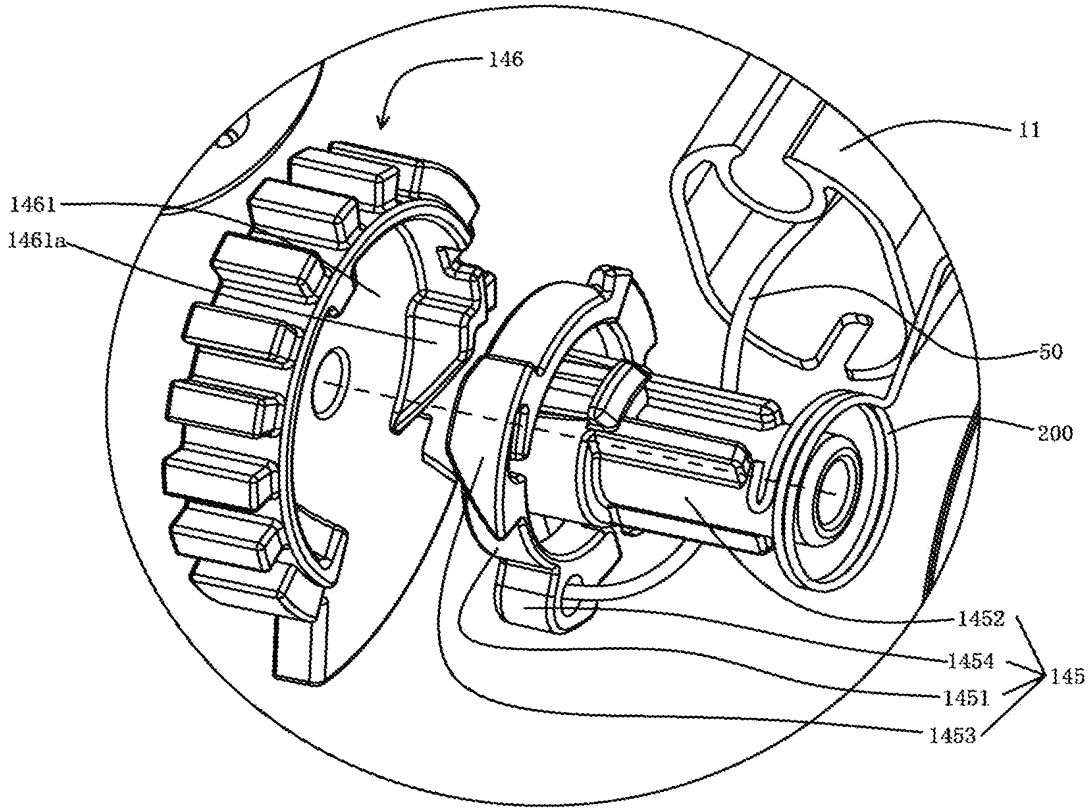


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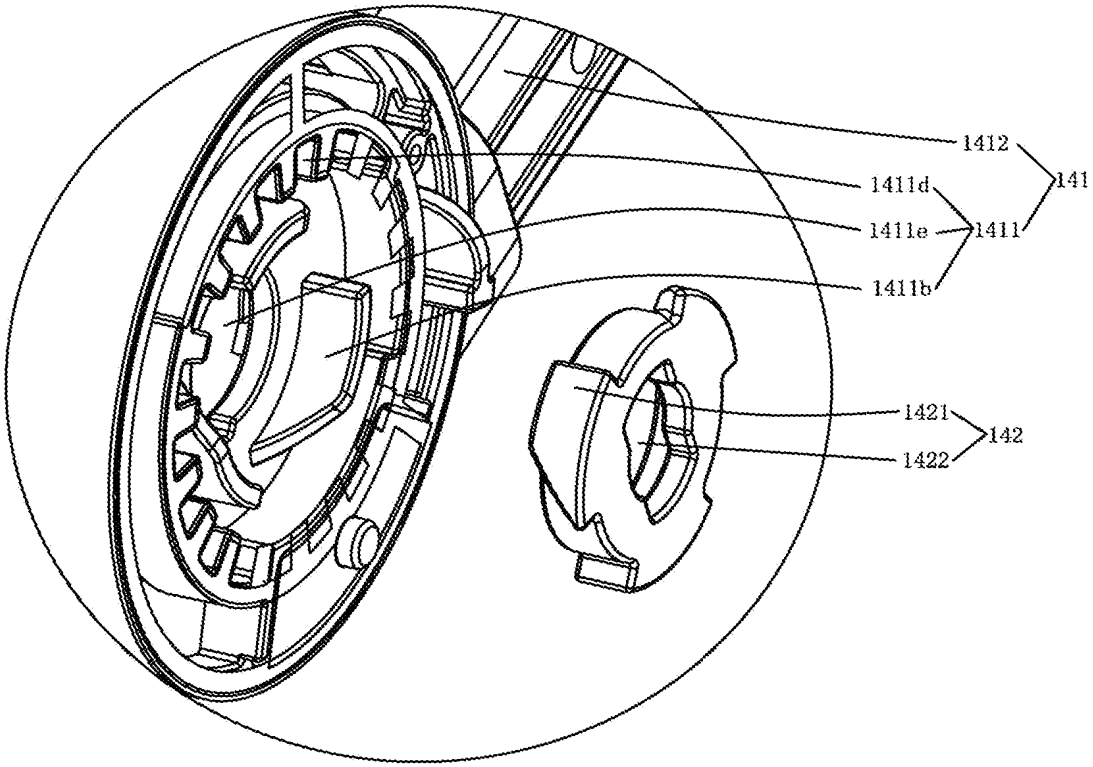


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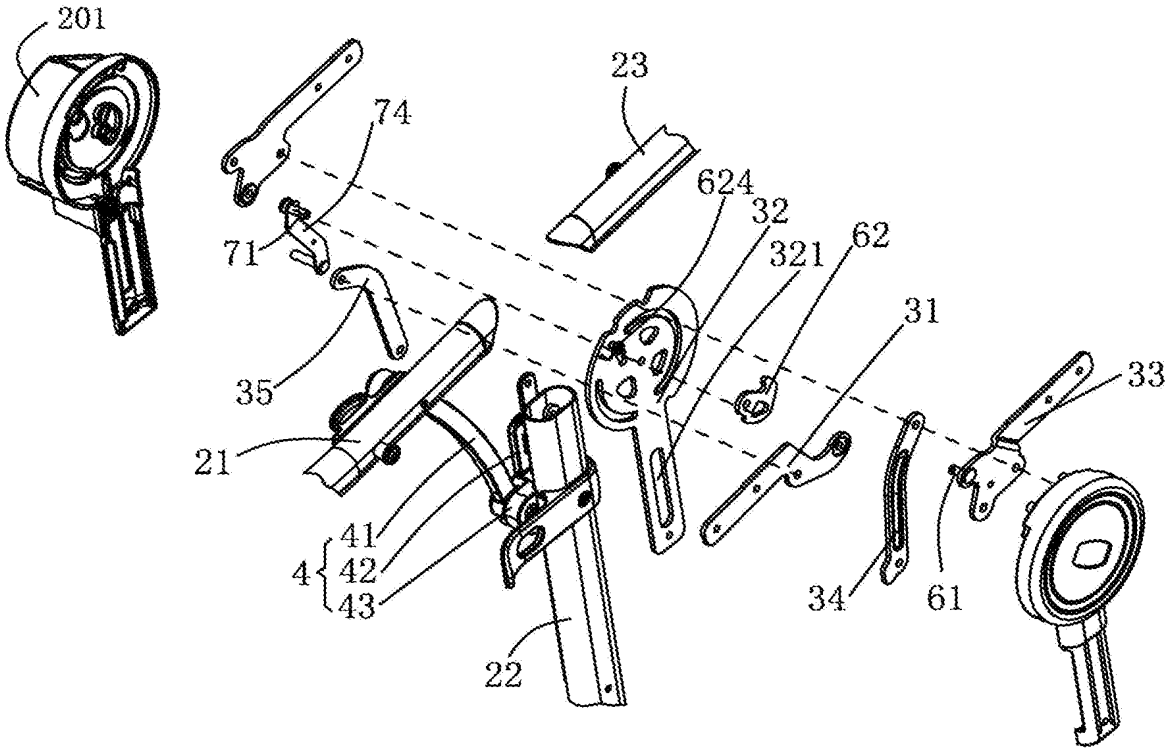


图17

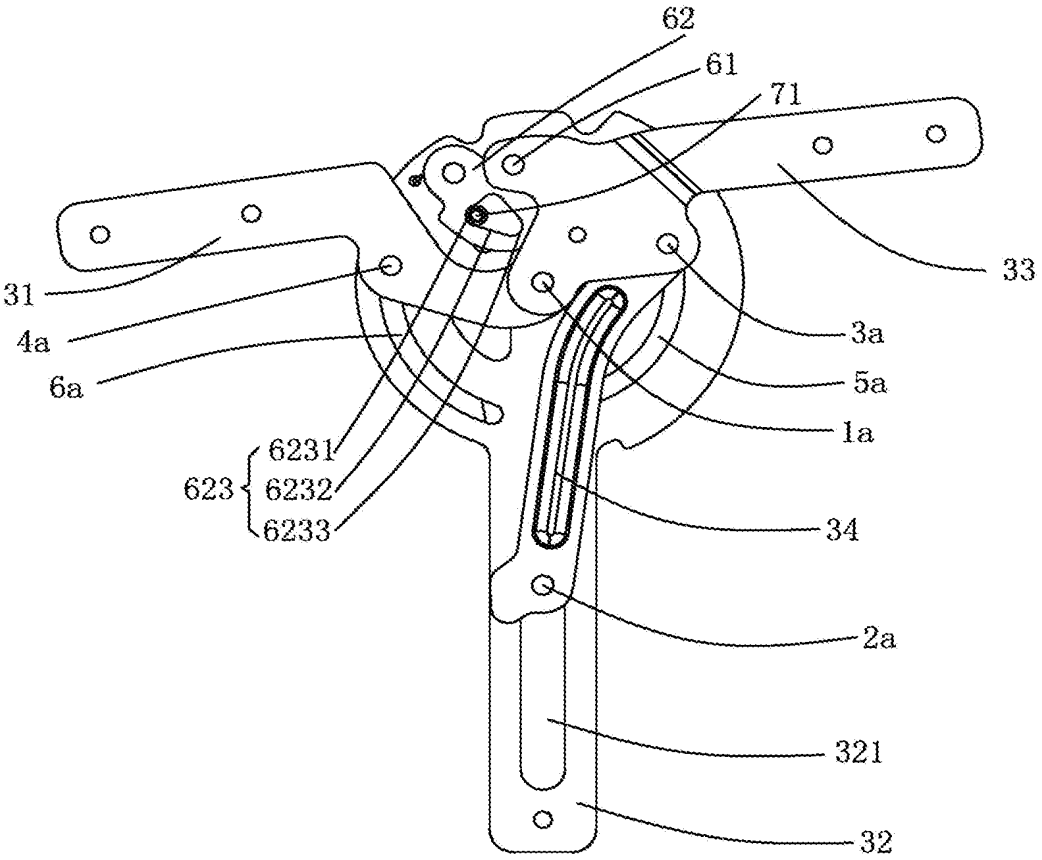


图18

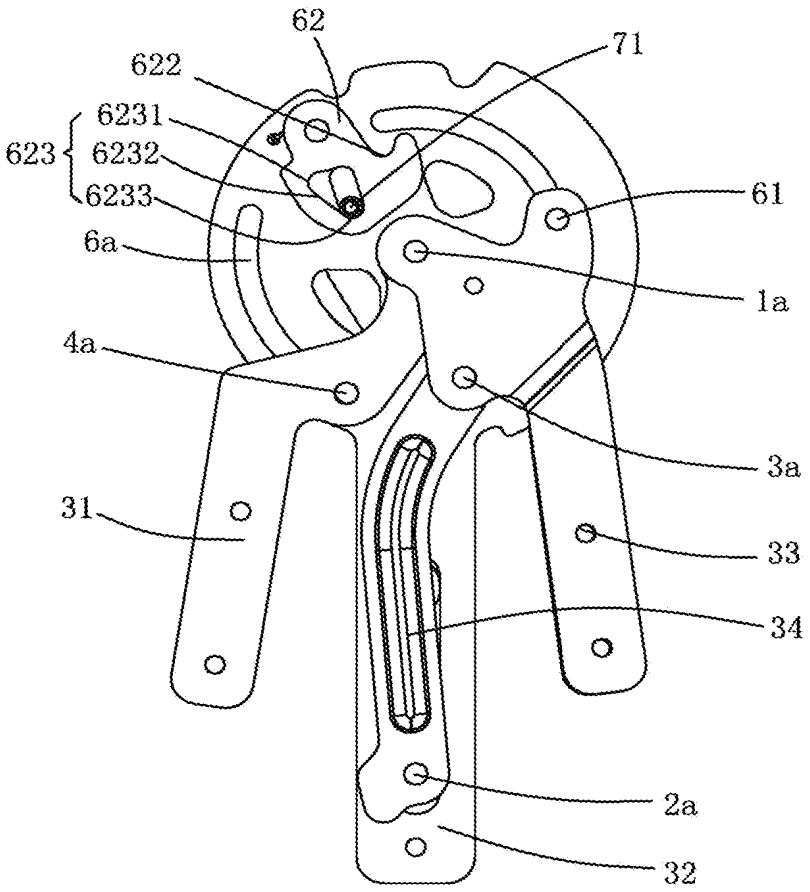


图19

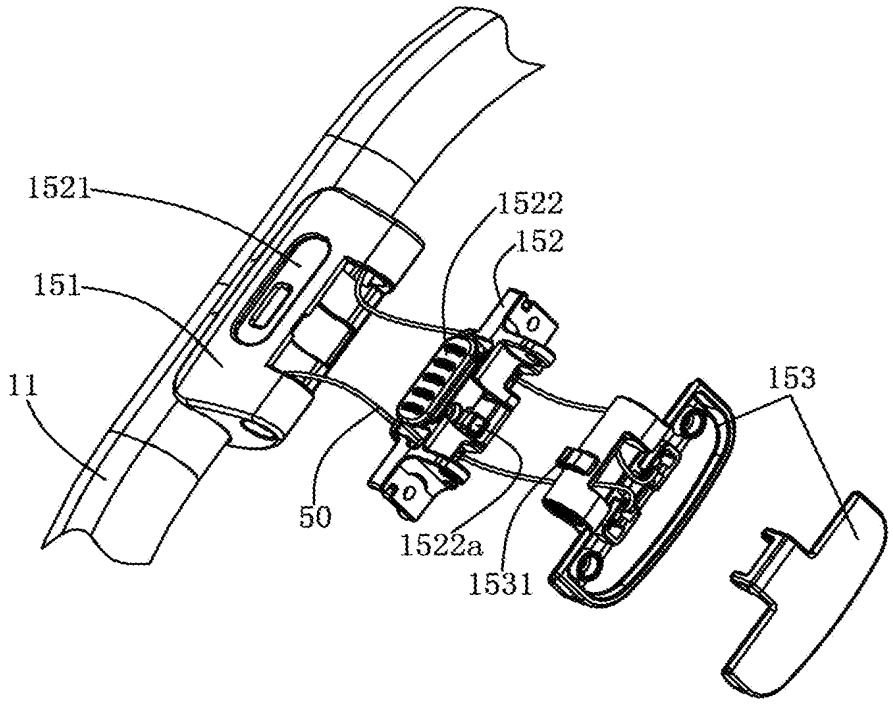


图20

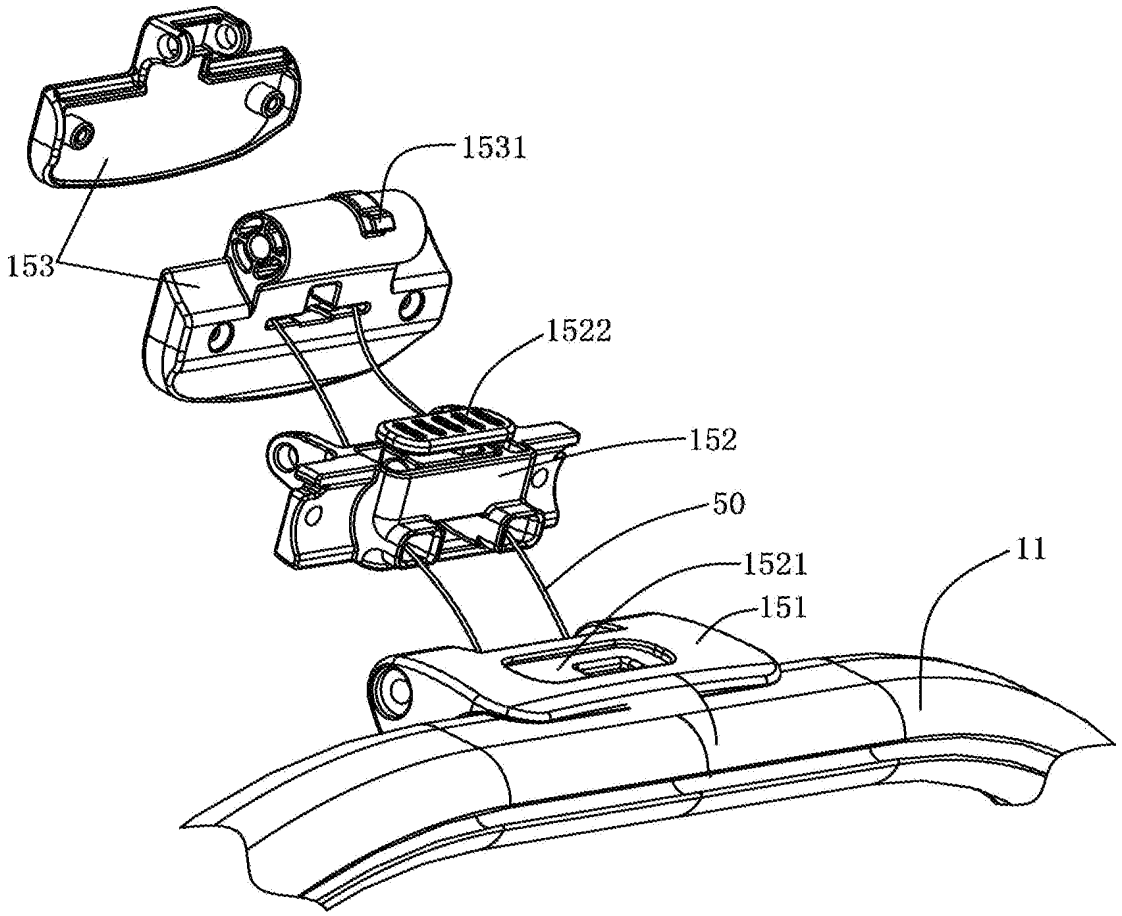


图21

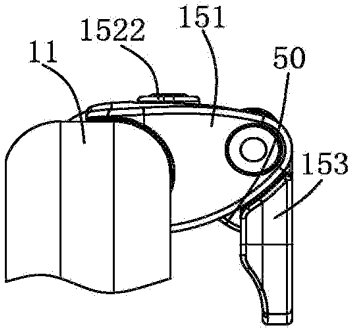


图22

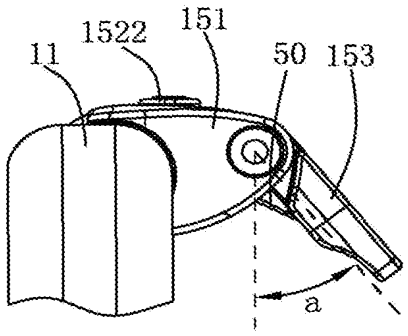


图23

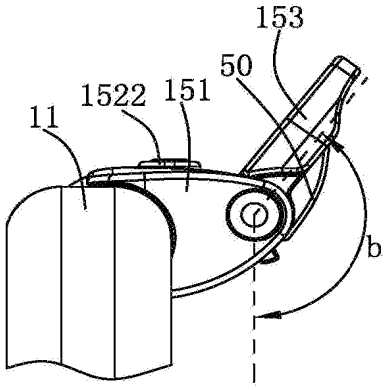


图24

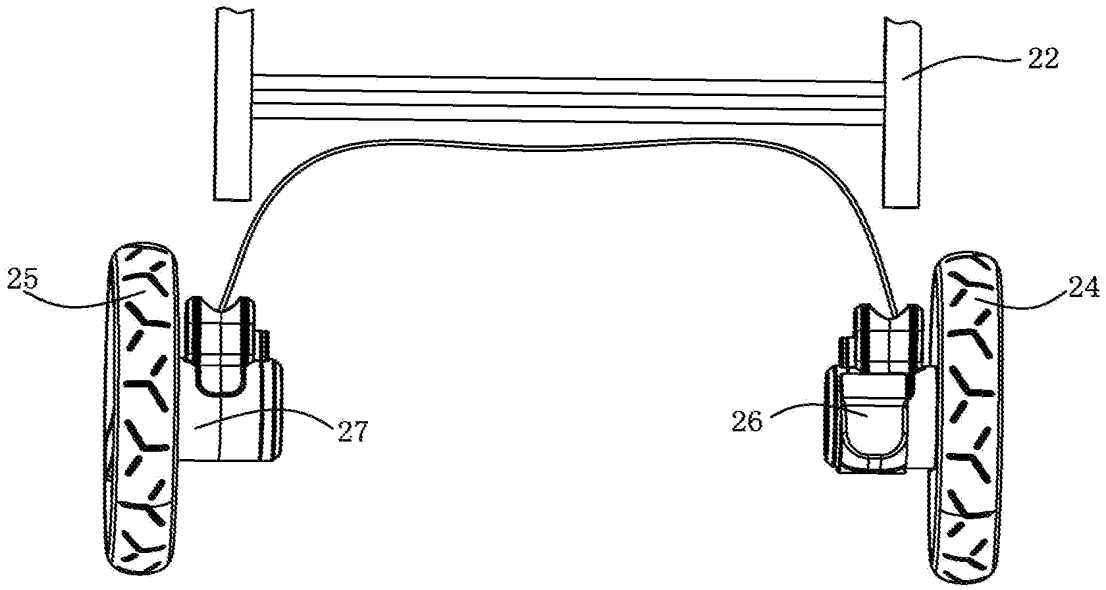


图25

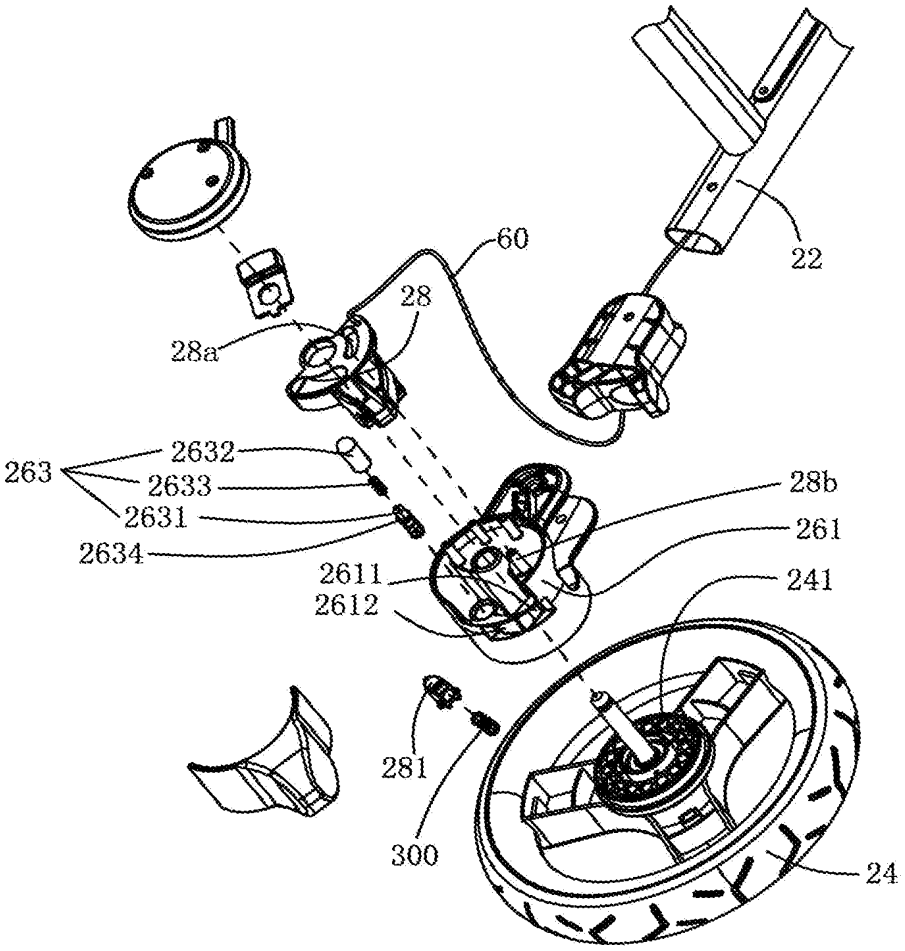

60
22
28
28a
263
2632
2633
2631
2634
28b
261
241
2611
2612
281
300
24

图26

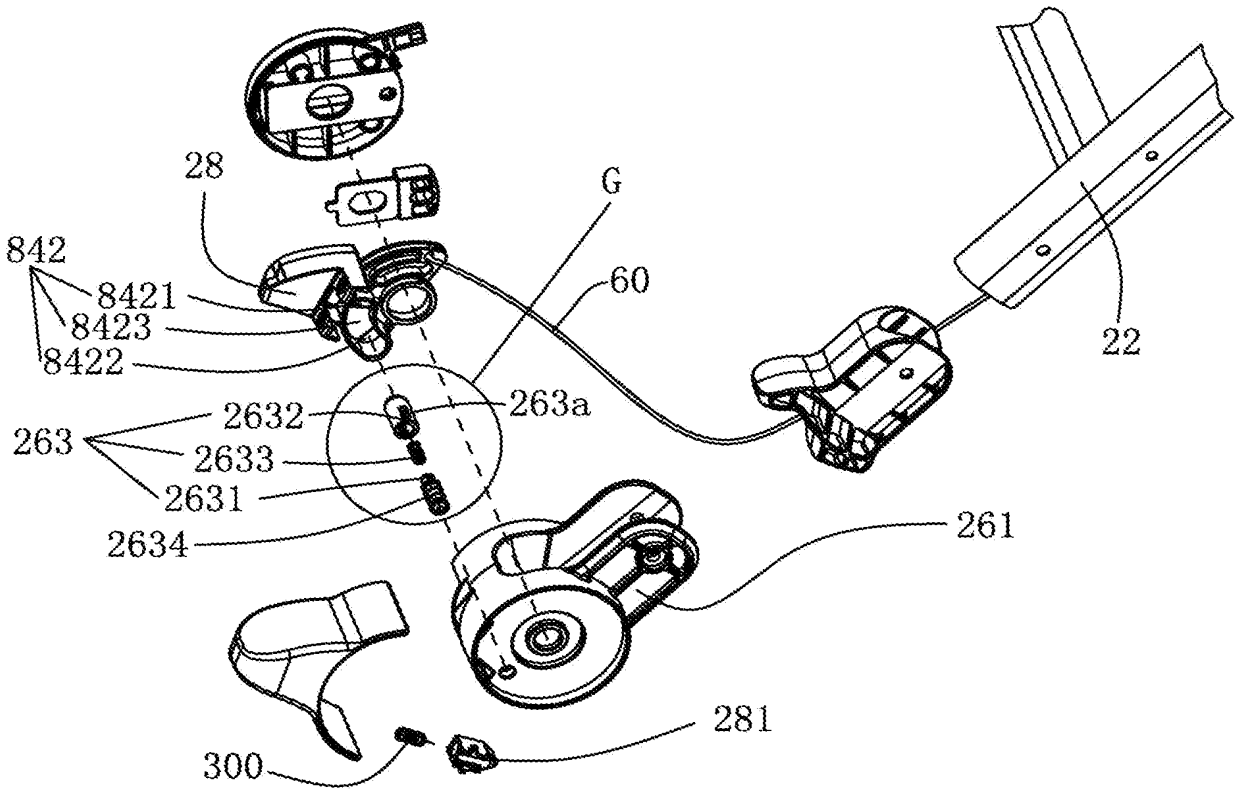

28
G
842
8421
8423
8422
60
22
2632
263a
263
2633
2631
2634
261
281
300

图27

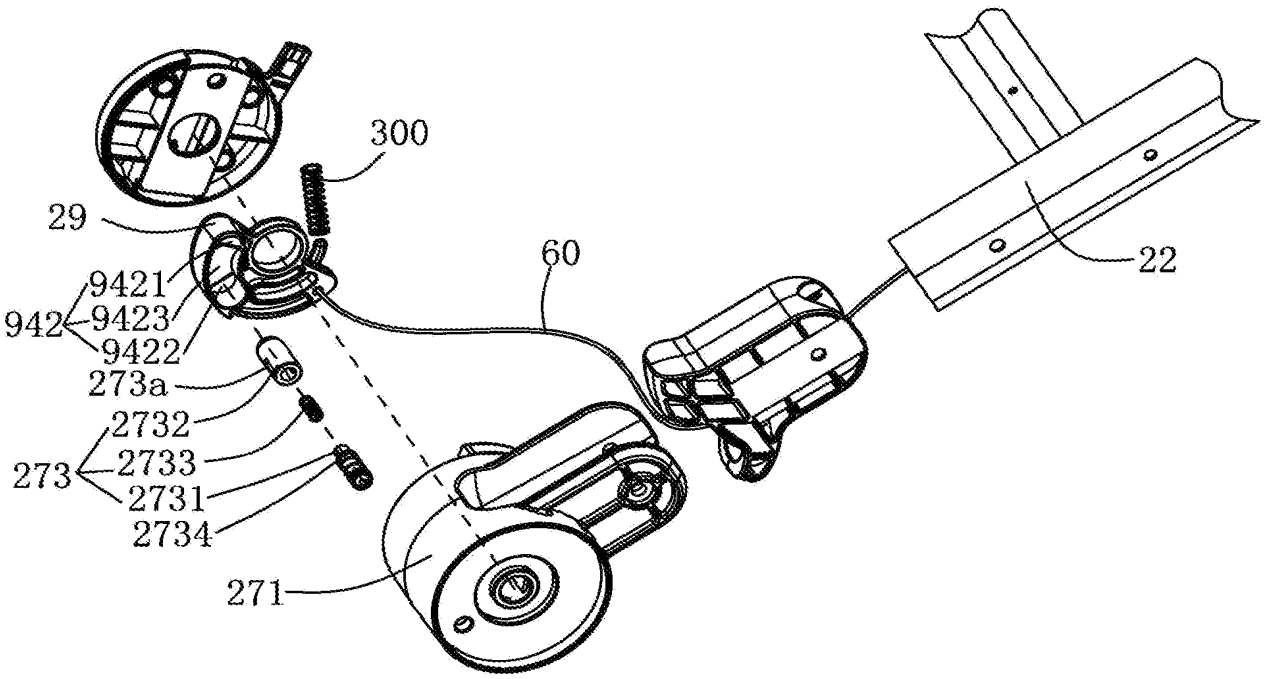

300
29
60
22
9421
942
9423
9422
273a
2732
273
2733
2731
2734
271

图28

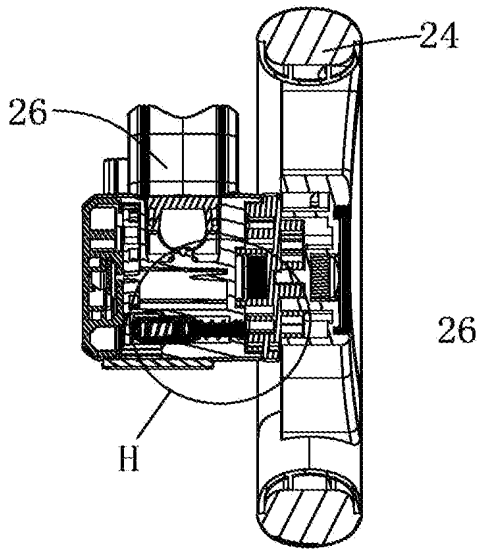


图 29

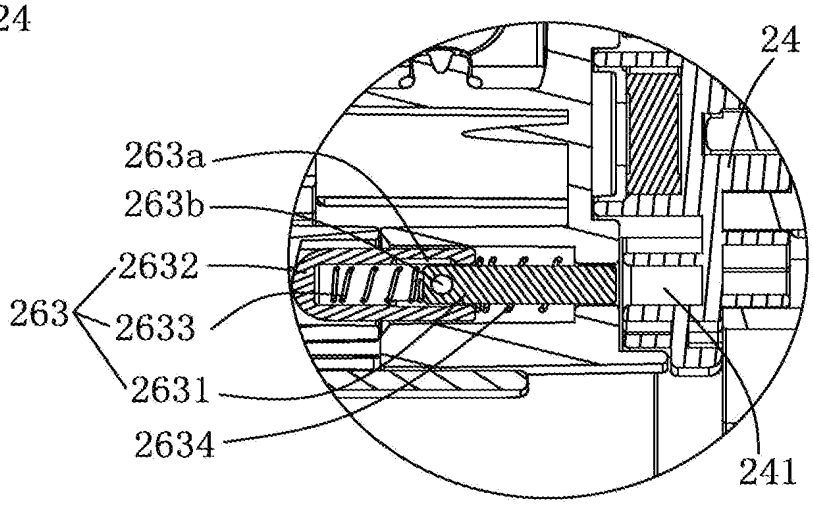


图 30

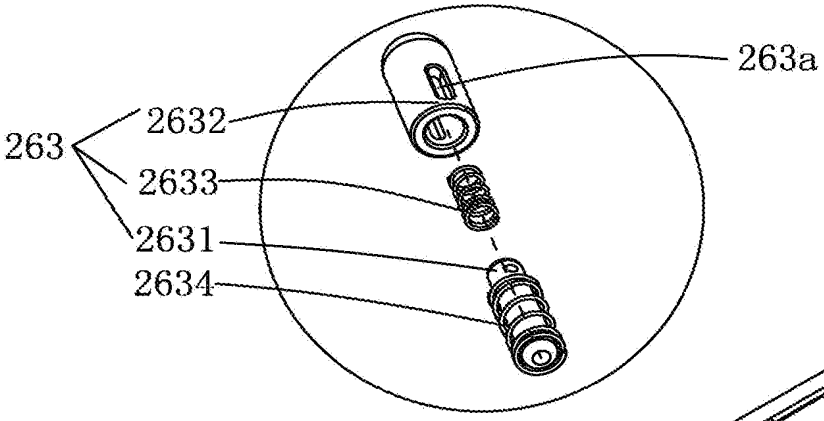

263a
2632
263
2633
2631
2634

图 31

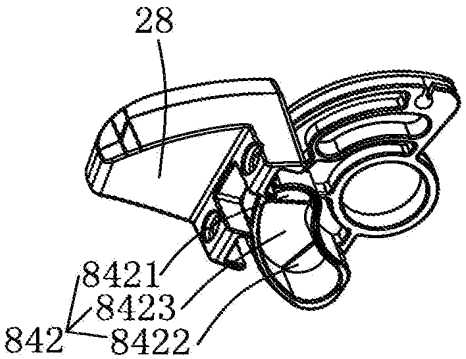

28
8421
8423
842
8422

图 32

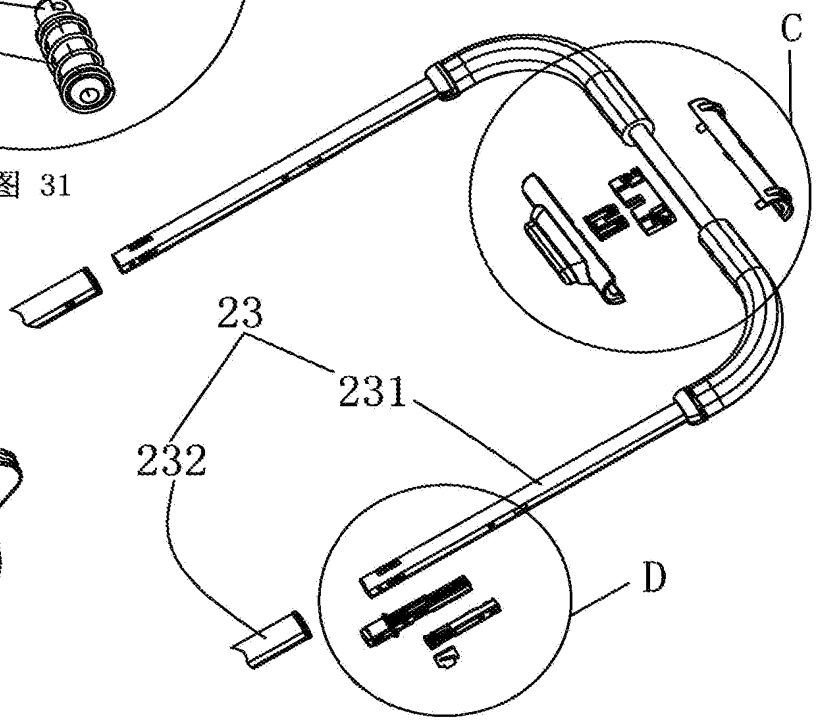

C
23
231
232
D

图 33

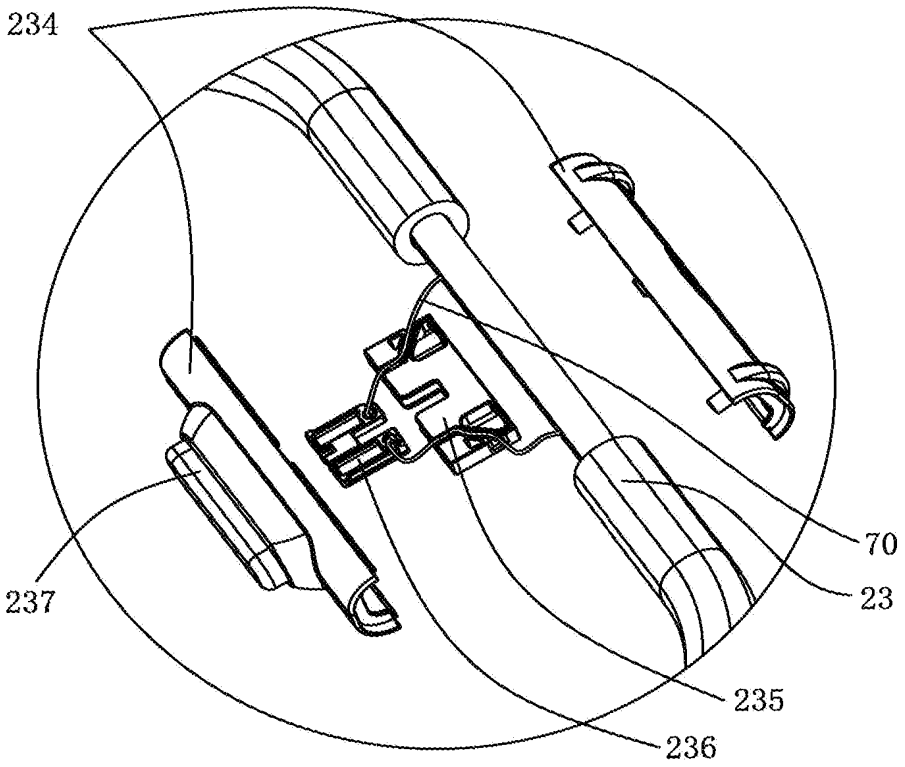


图34

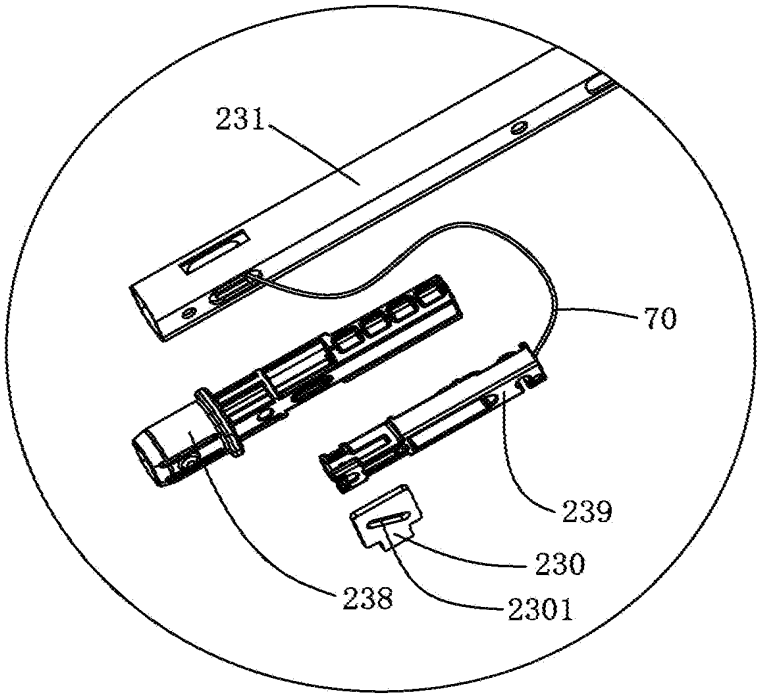


图35

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(54) Title: STROLLER

(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.

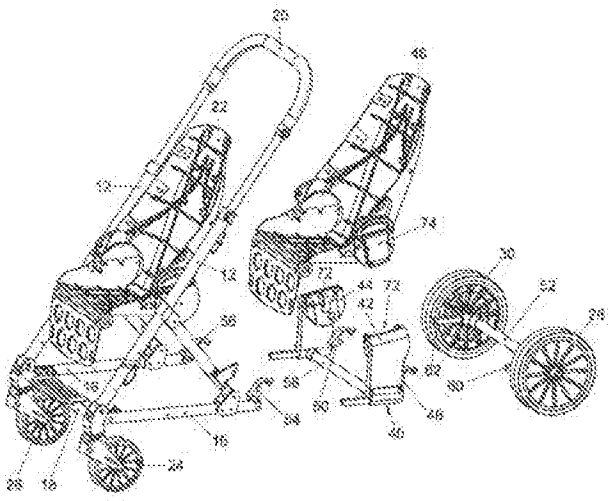


Fig. 6

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).

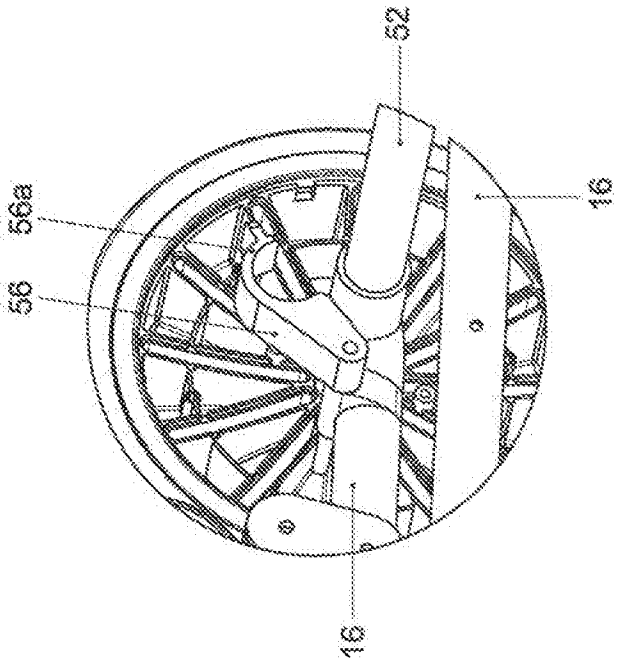


Fig. 2

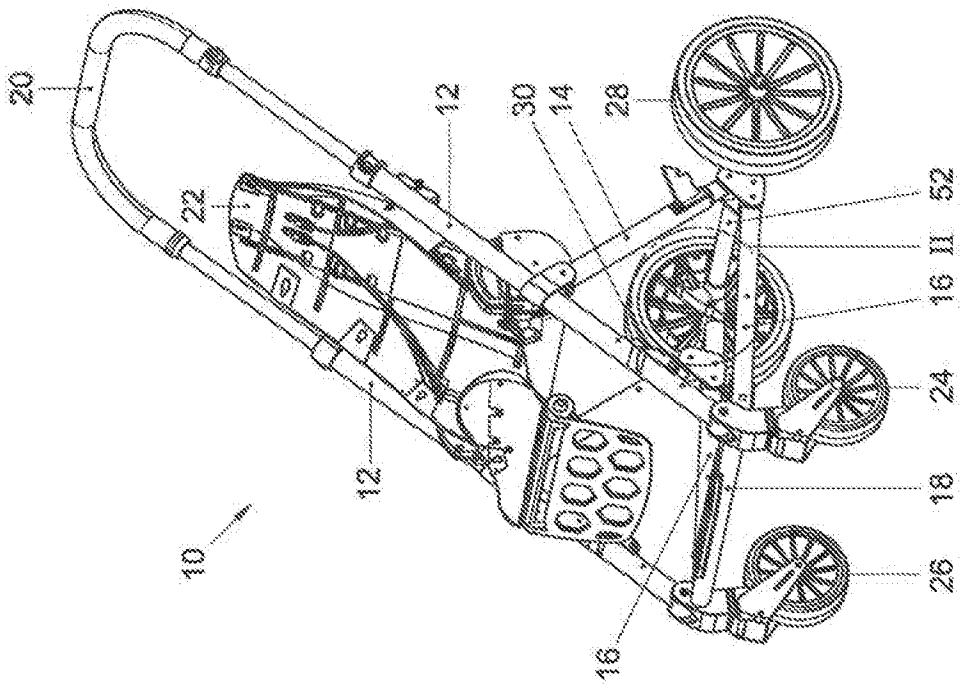


Fig. 1

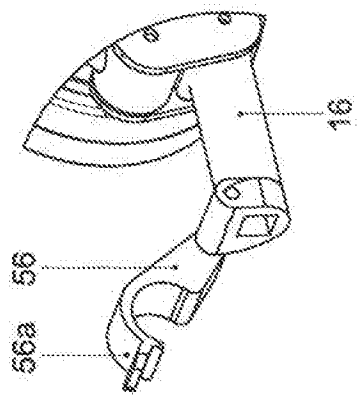


Fig. 4

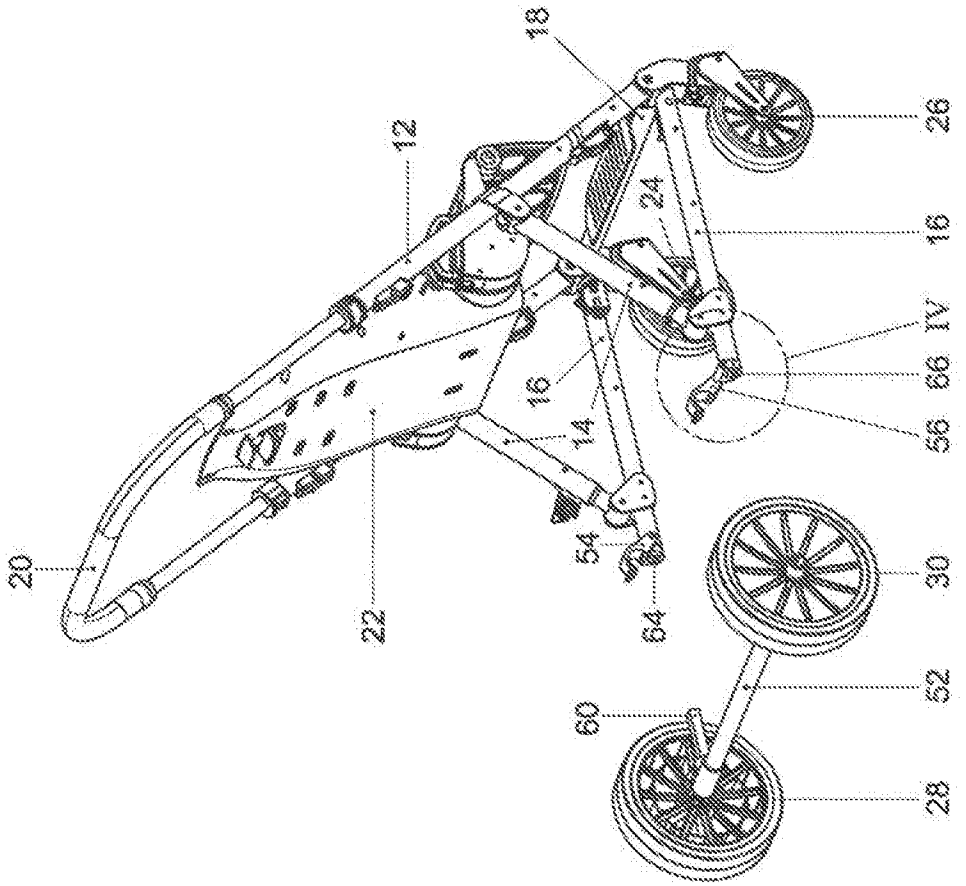


Fig. 3

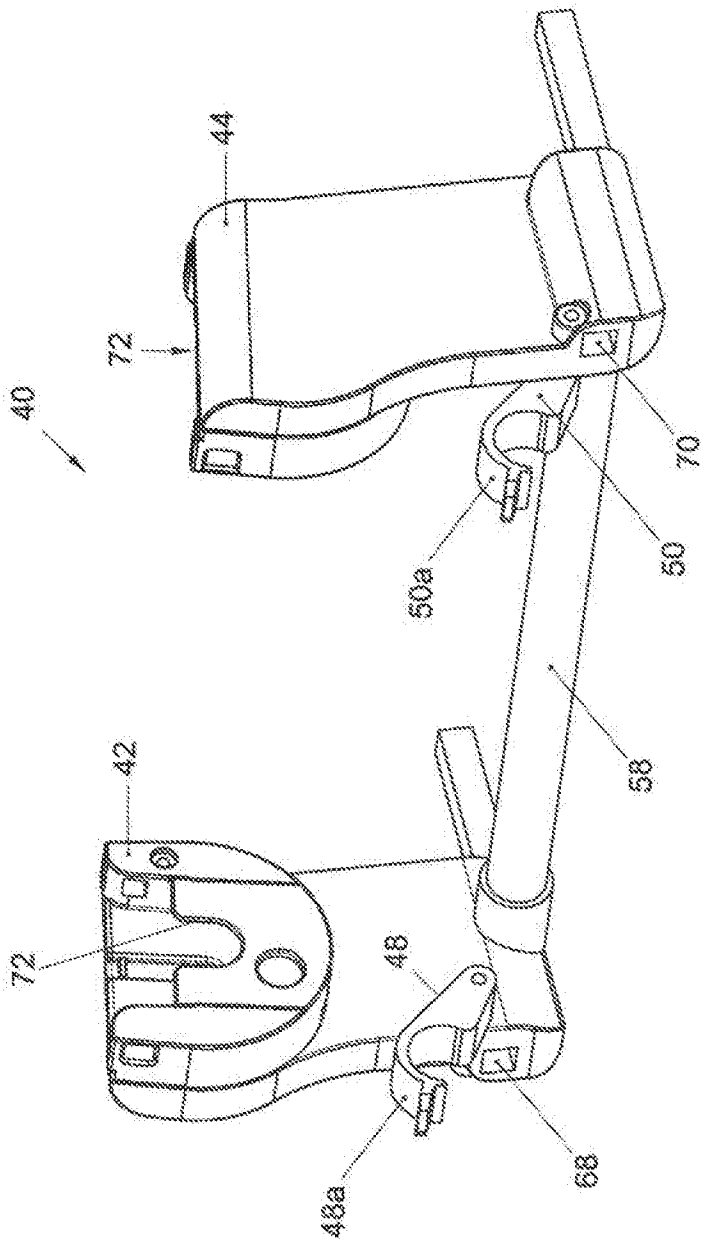


Fig. 5

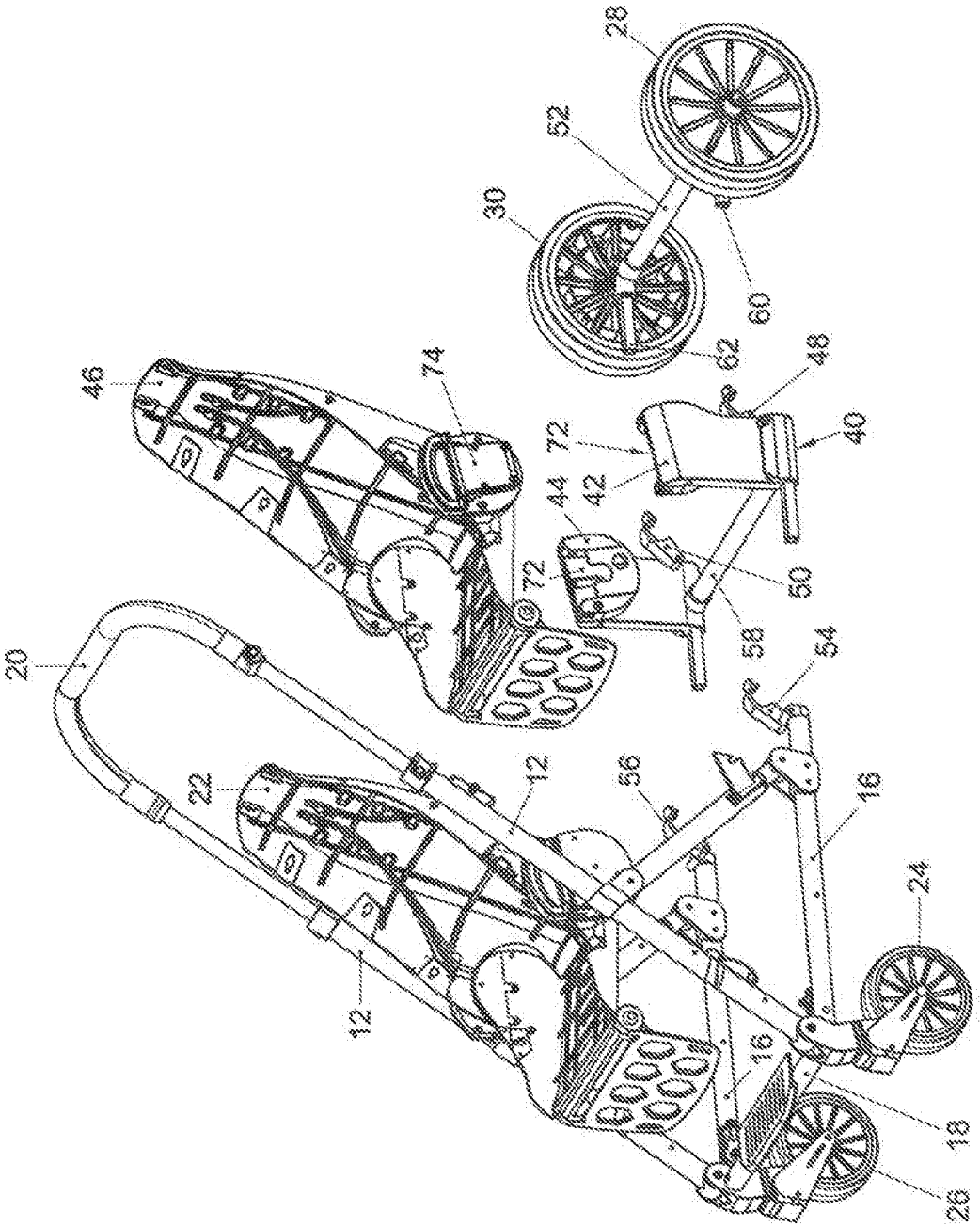

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Fig. 6

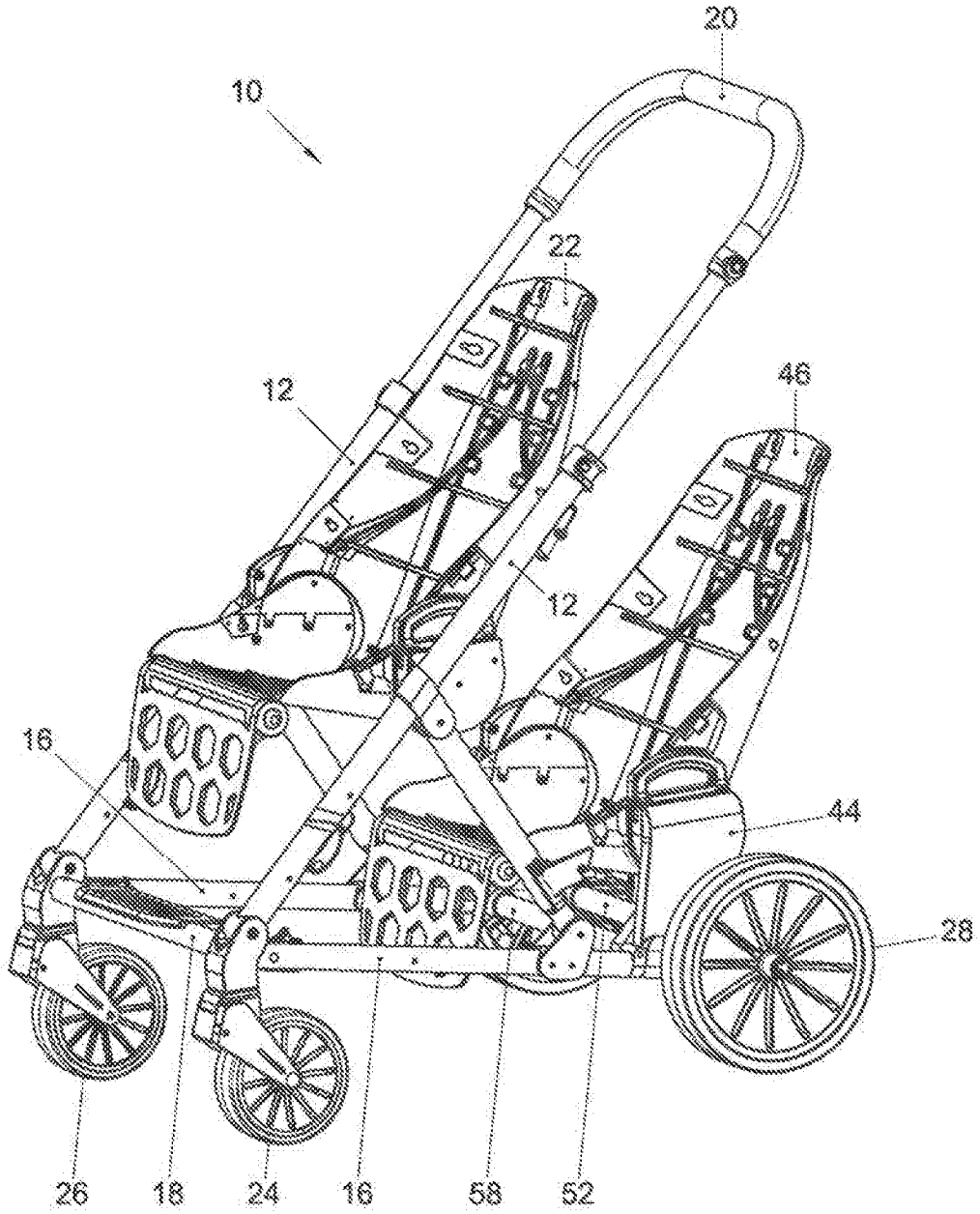


Fig. 7

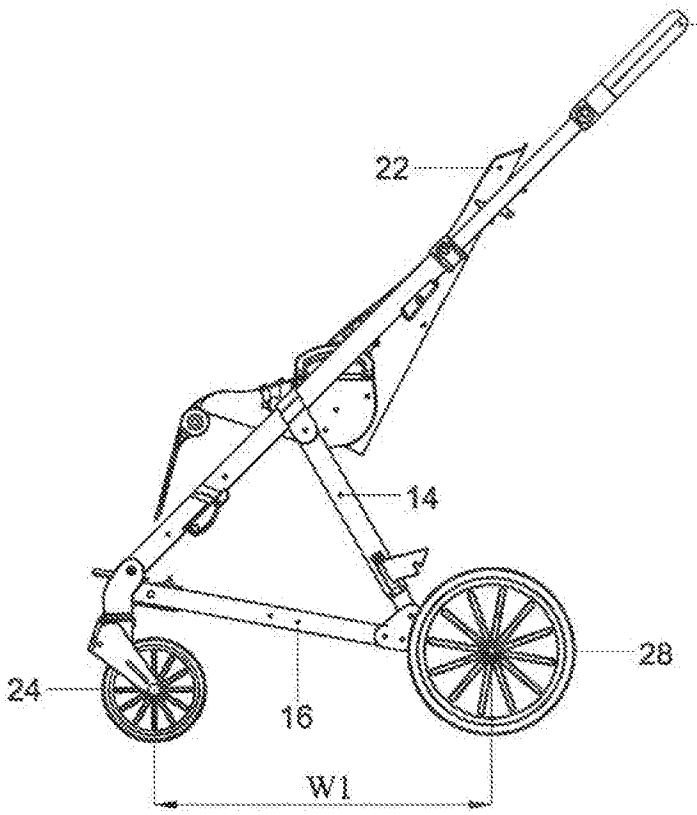


Fig. 8

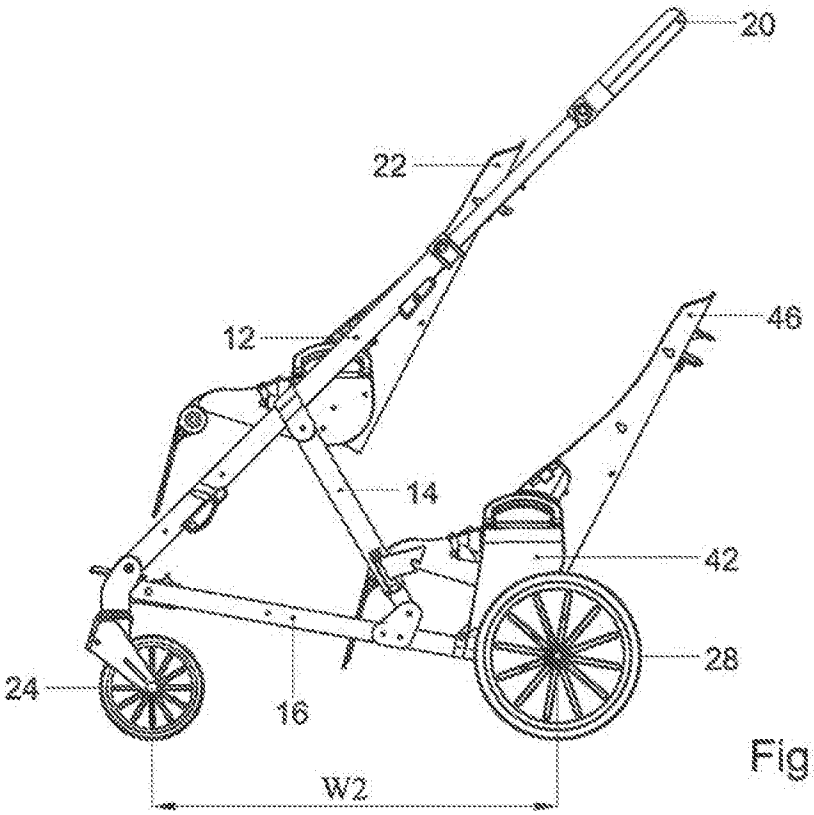


Fig. 9

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

X	US 2007/045972 A1 (THOMPSON JULIE T [US] THOMPSON JULIE TABOR [US]) 1 March 2007 (2007-03-01)	1,10
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

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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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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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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DE-U1-202018 104 948
GB-A- 2 516 906

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EP 3 708 461 B1

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.

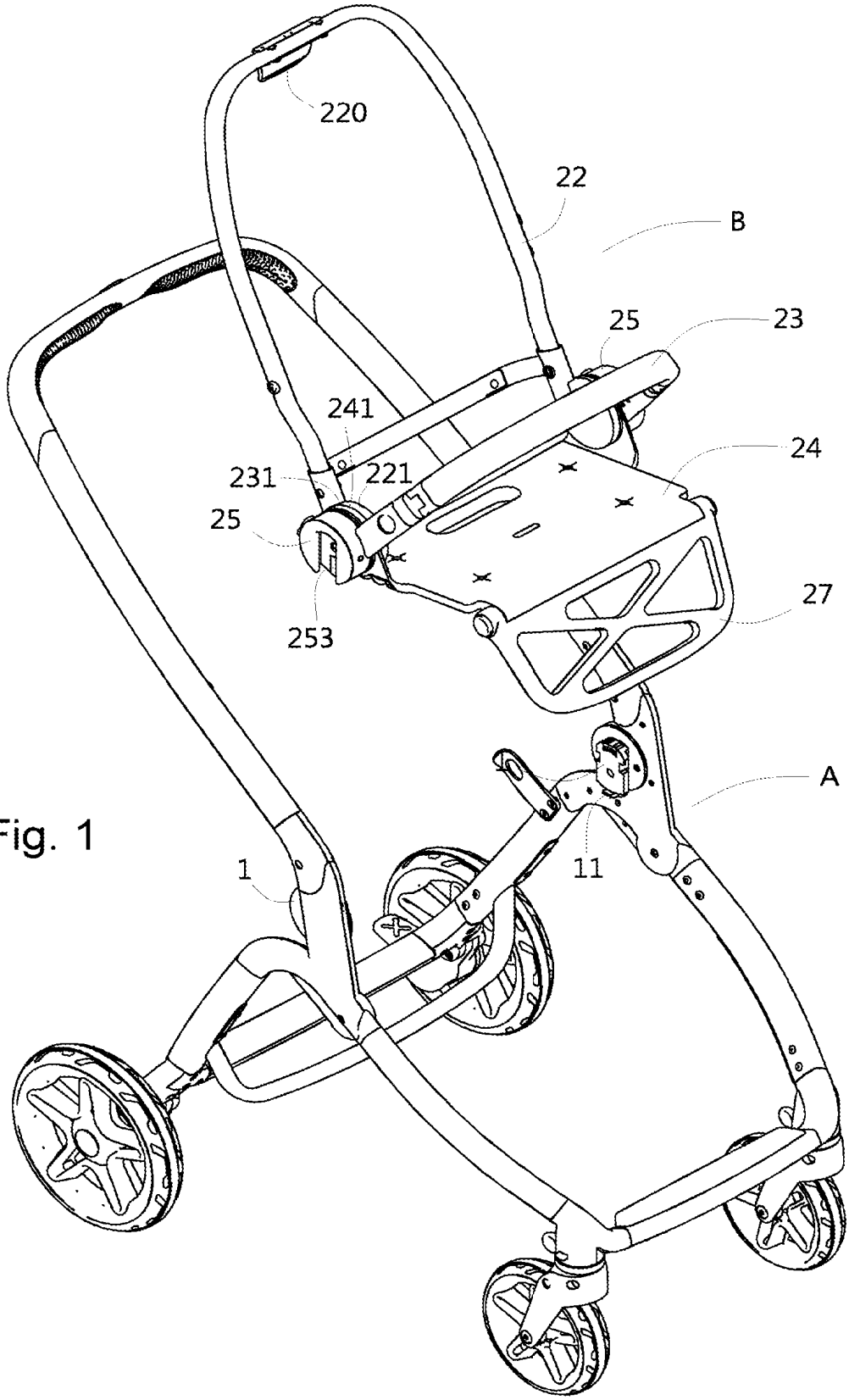


Fig. 1

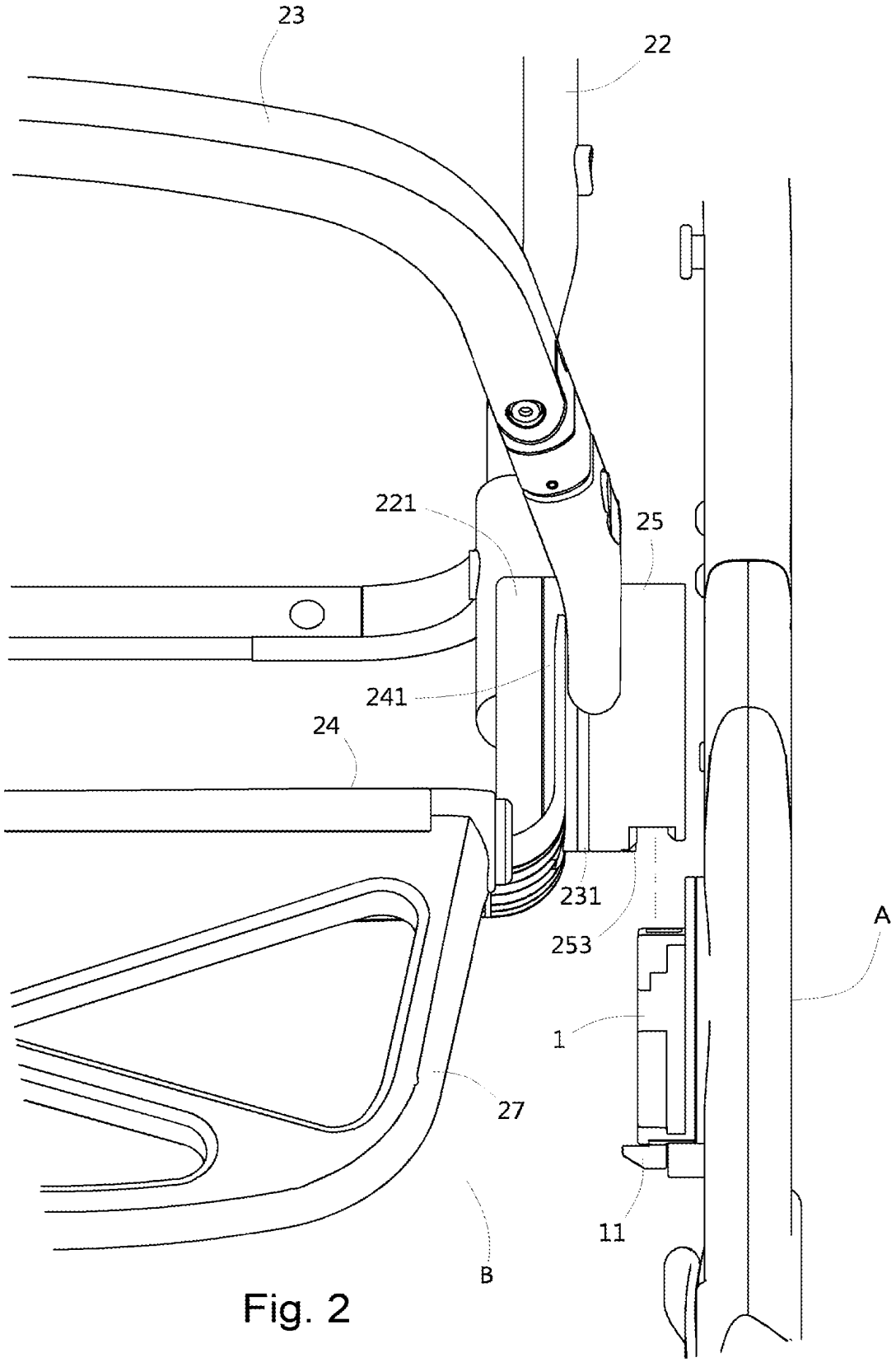


Fig. 2

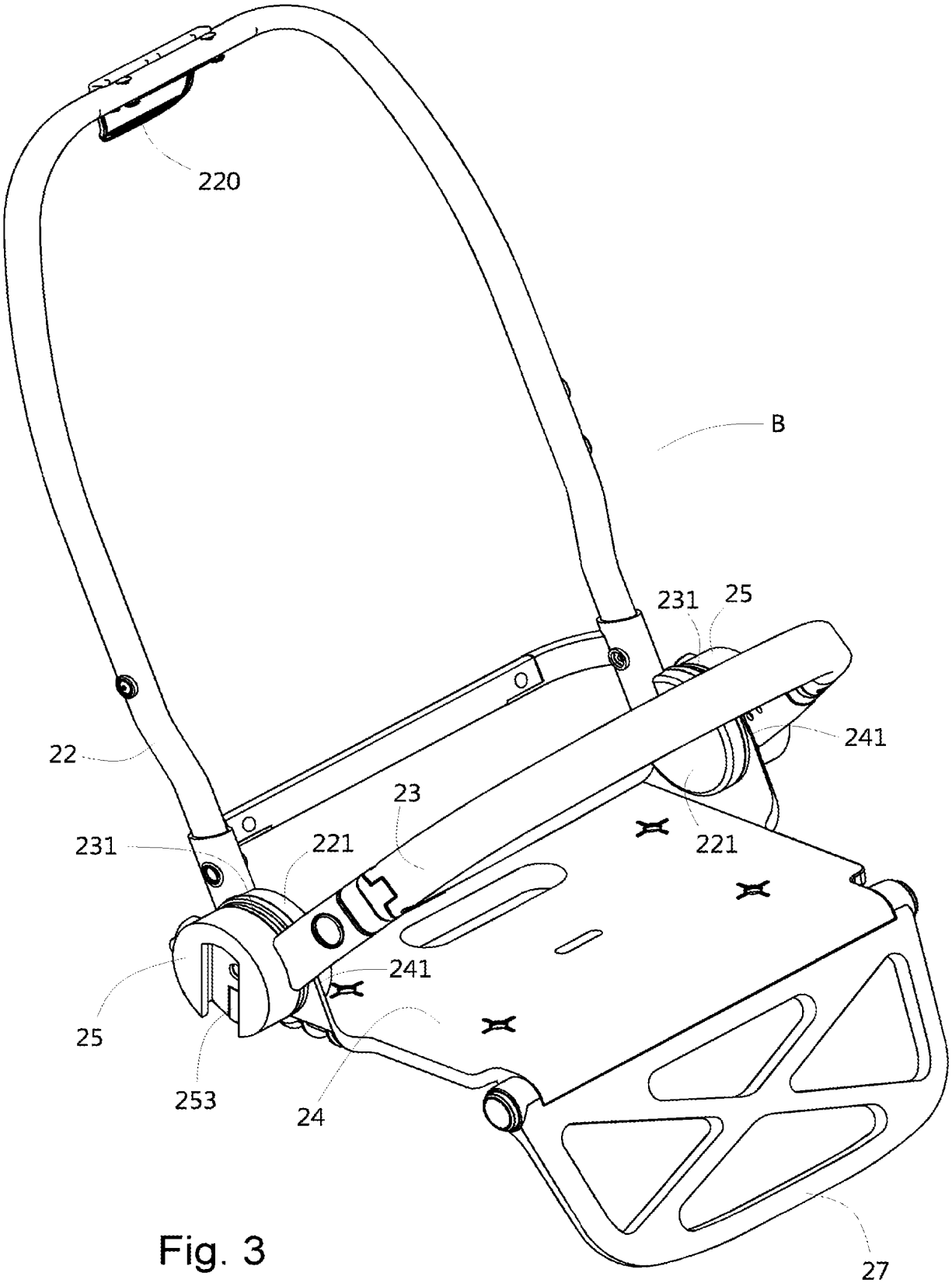


Fig. 3

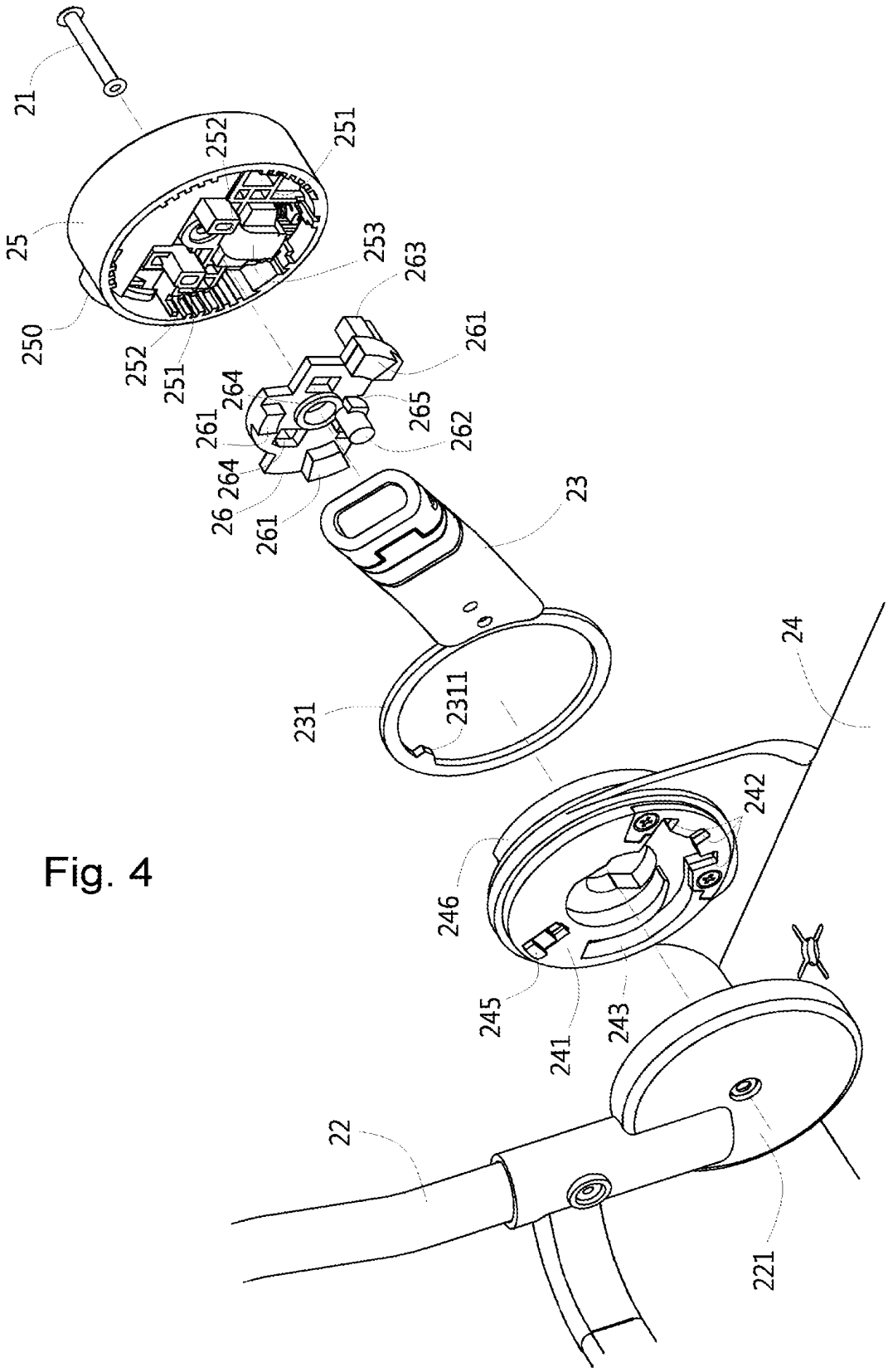

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Fig. 4

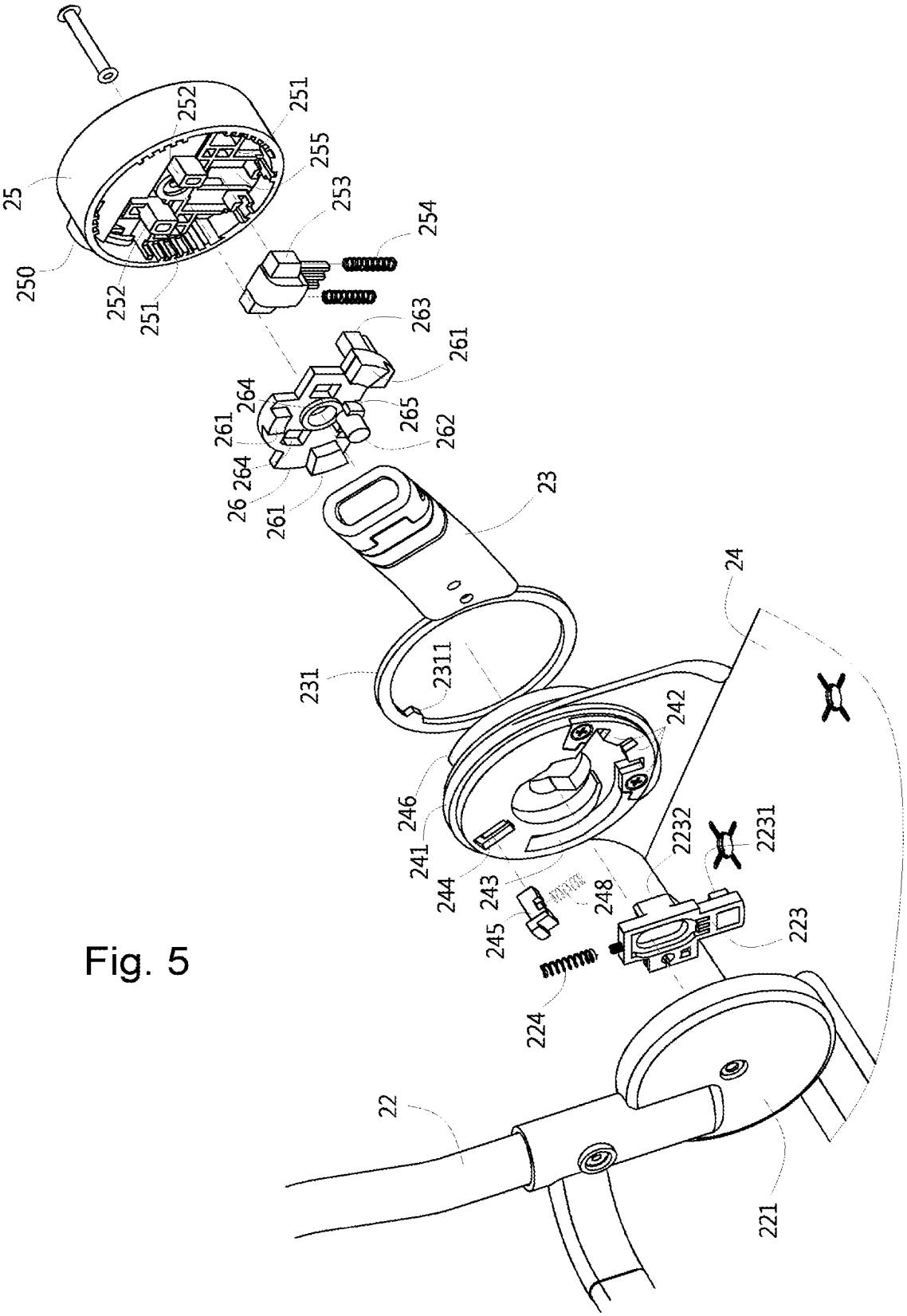

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Fig. 5

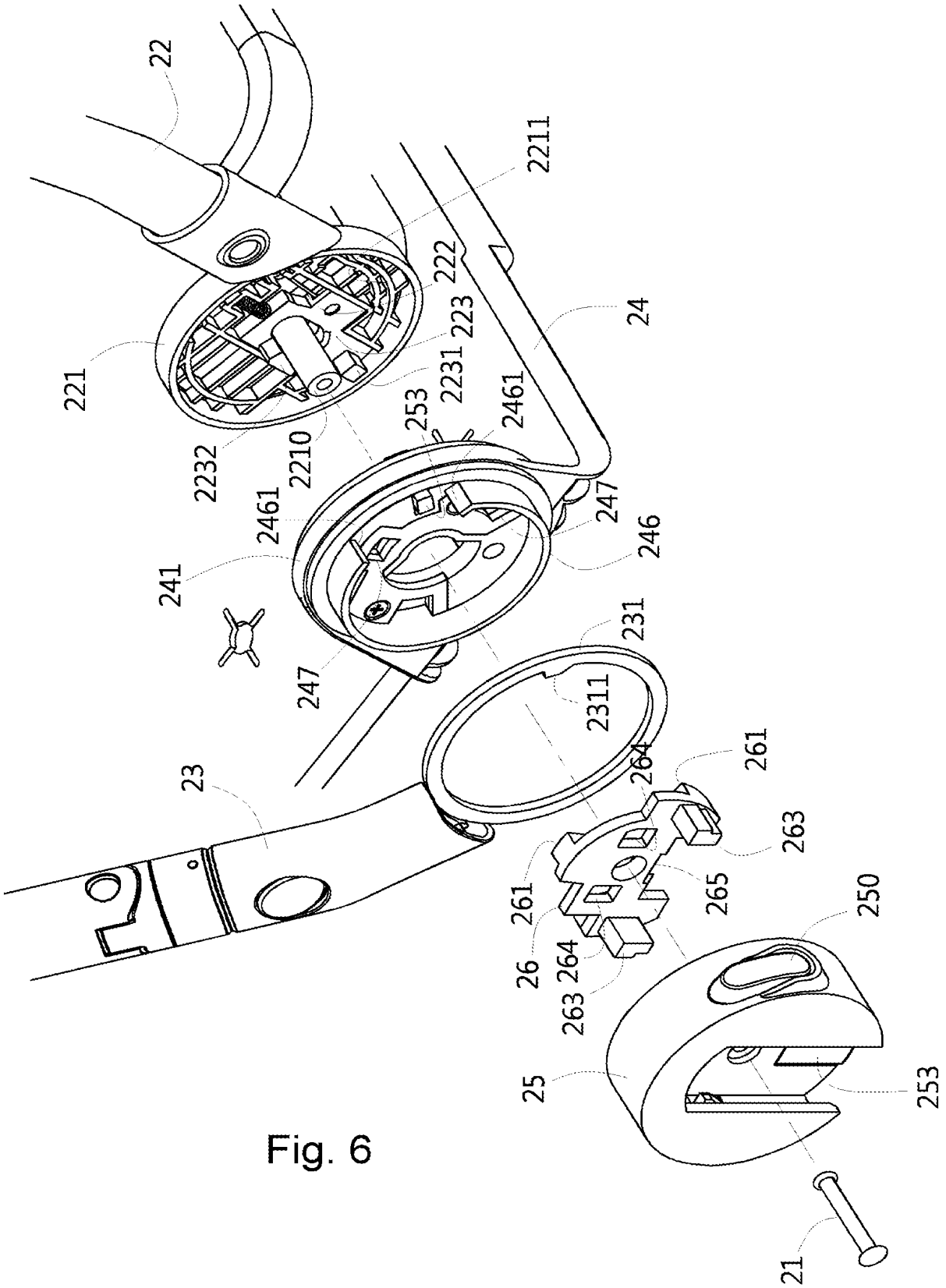

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Fig. 6

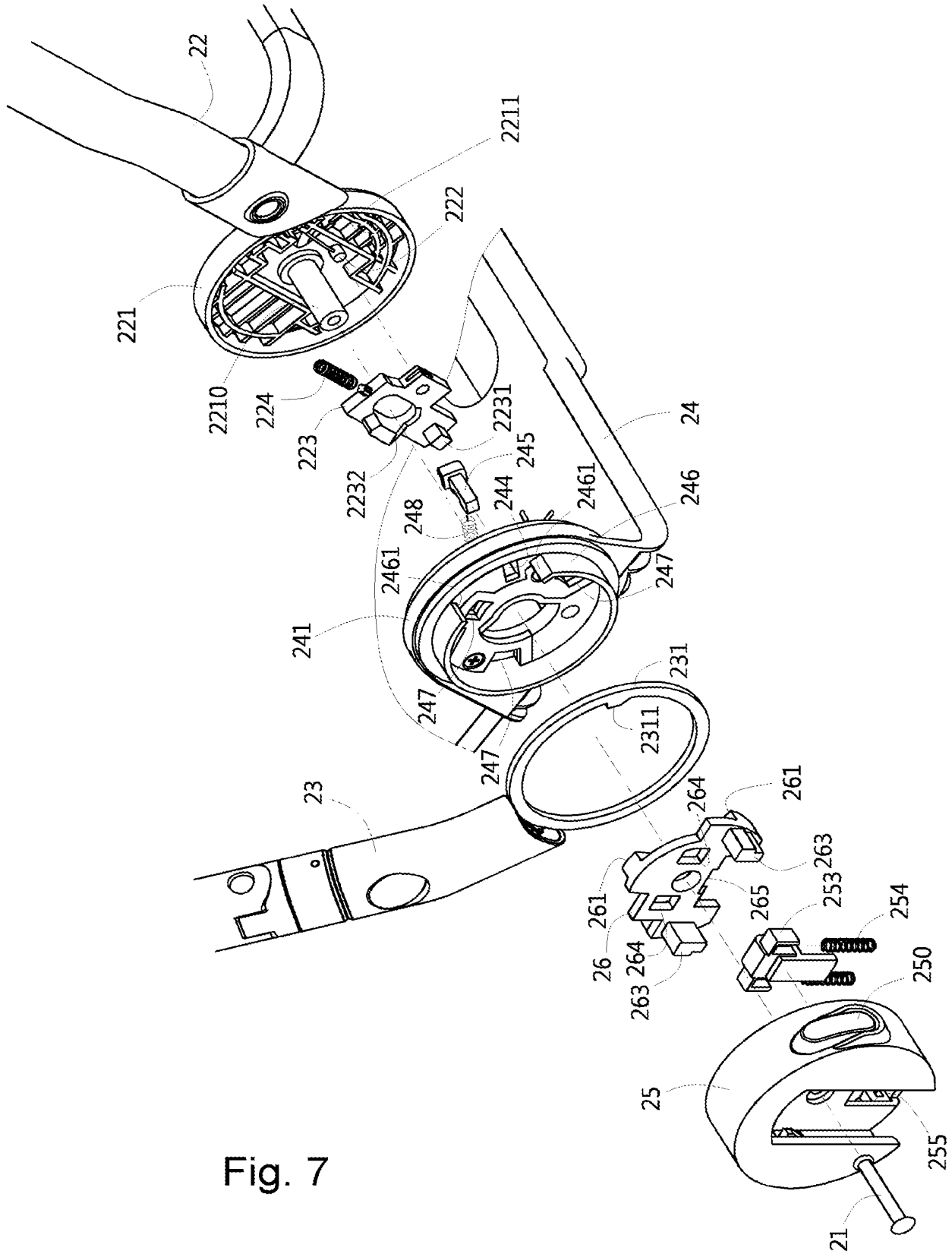

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Fig. 7

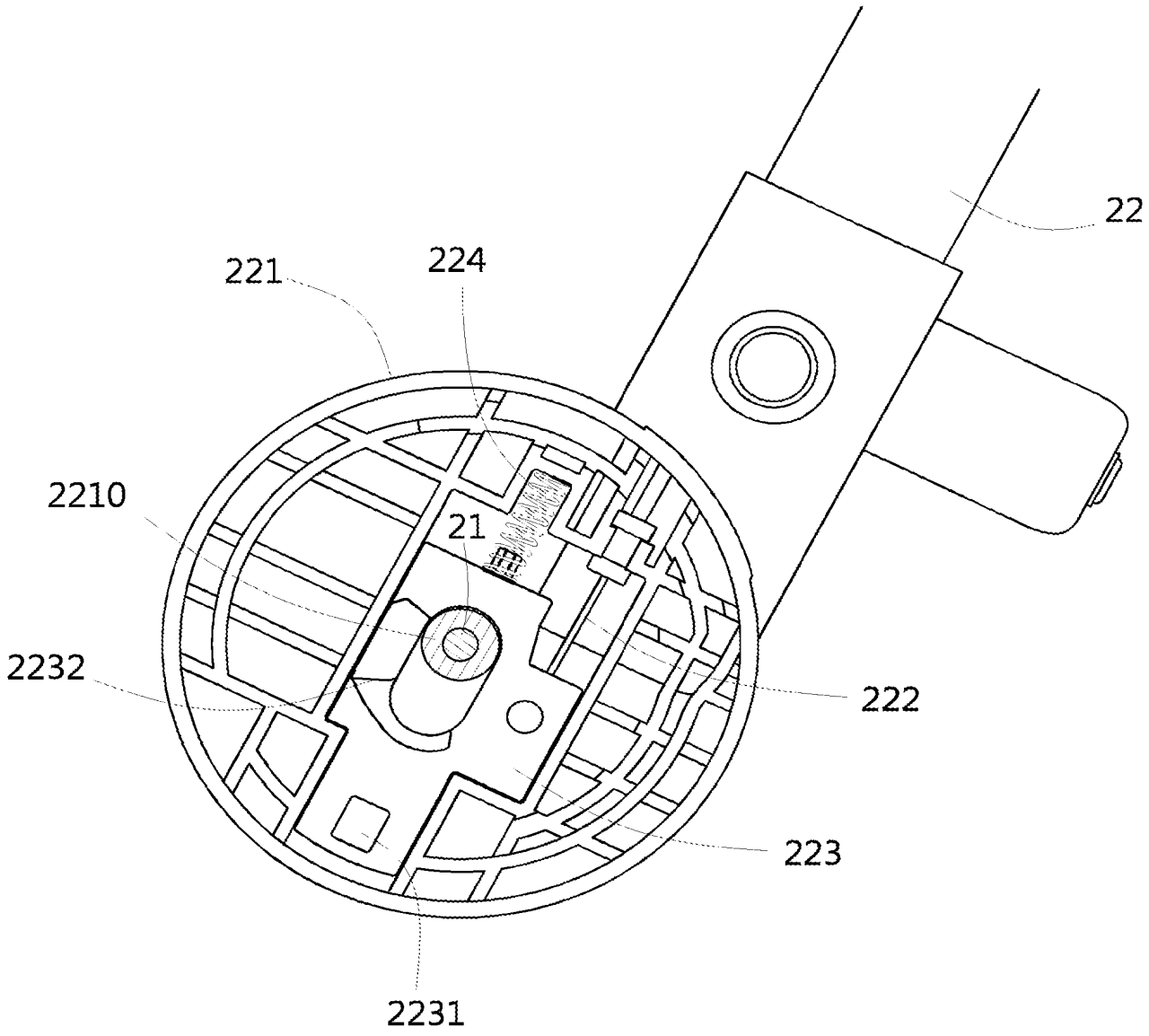


Fig. 8

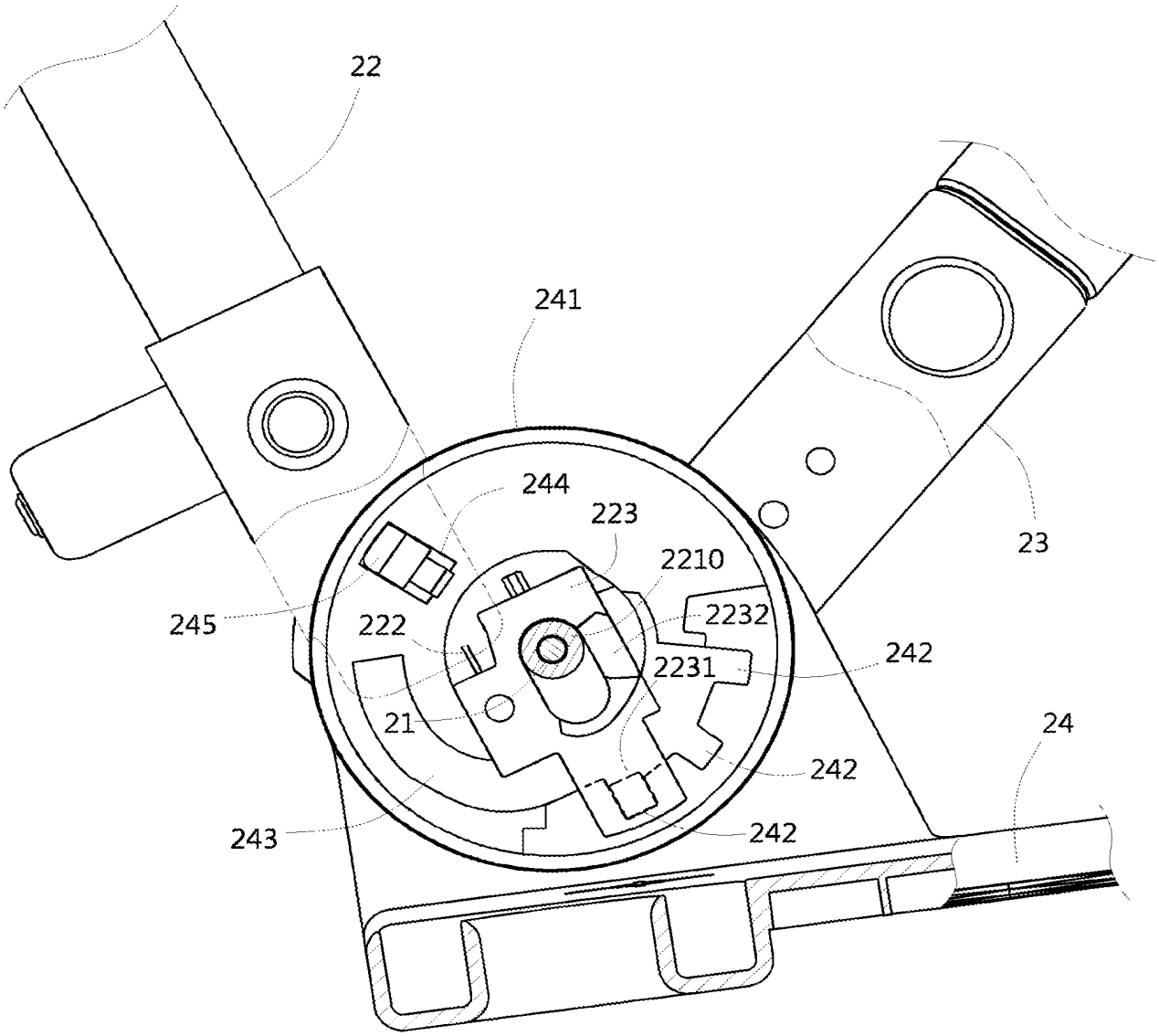


Fig. 9

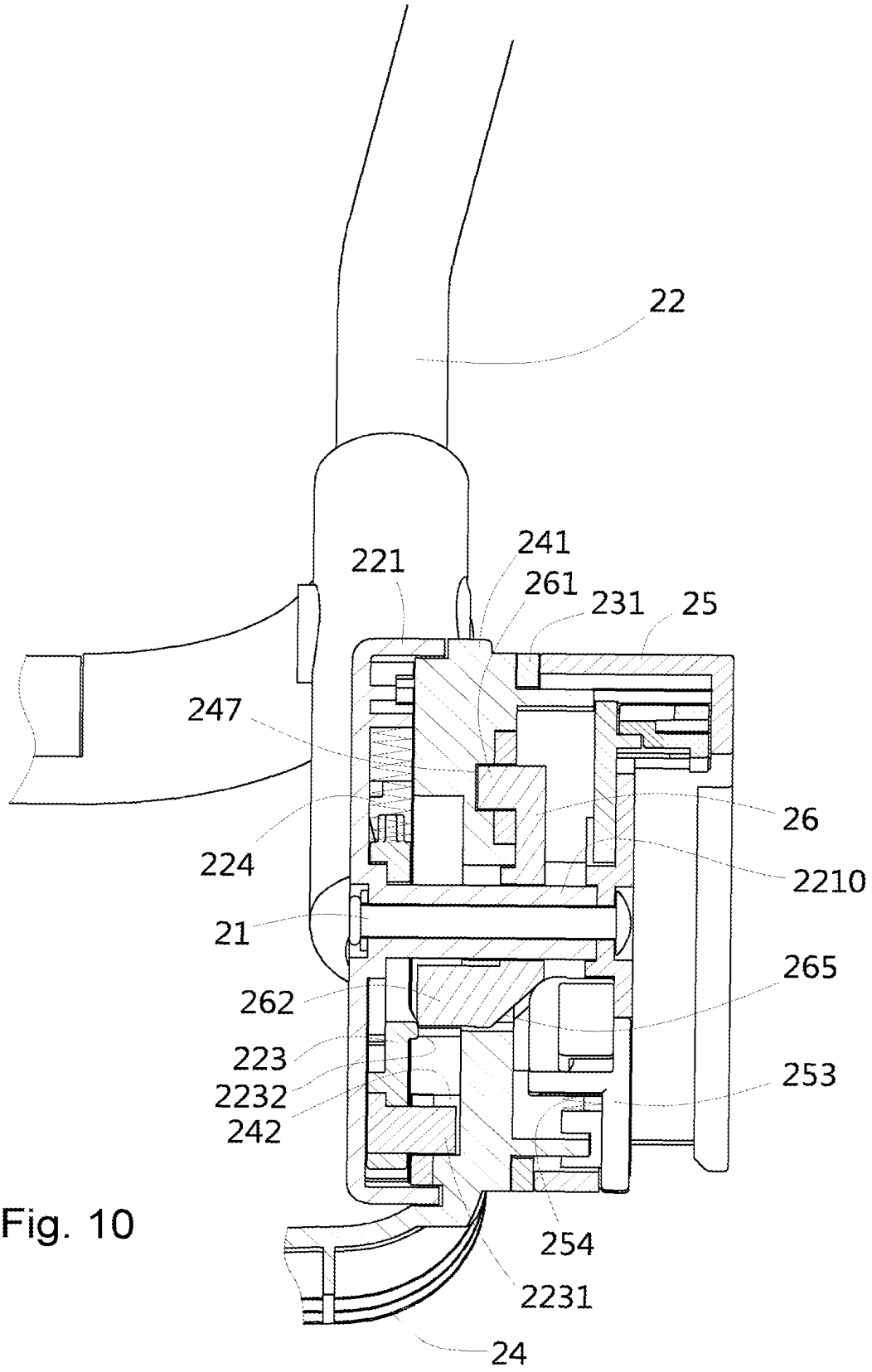

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Fig. 10

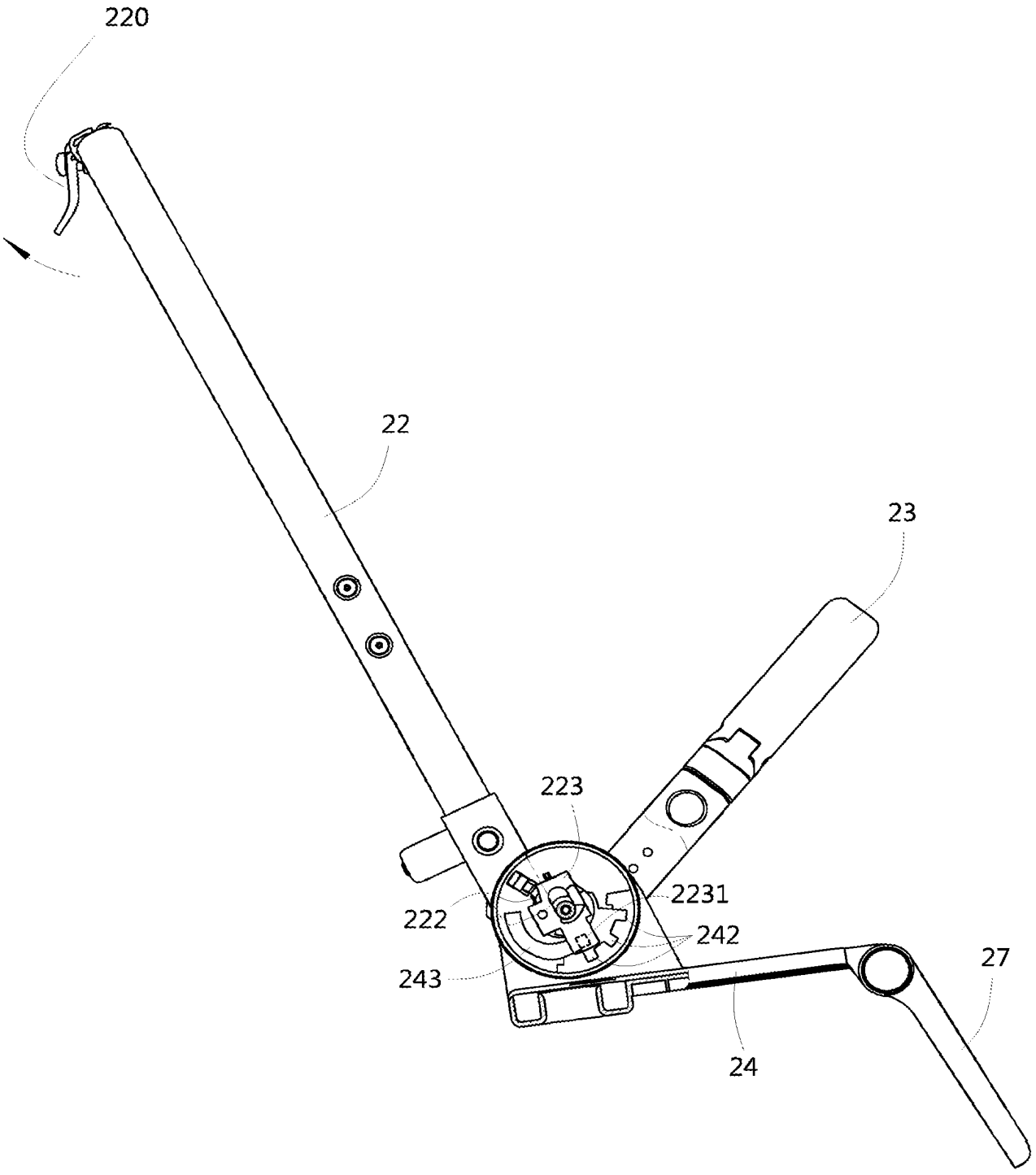


Fig. 11

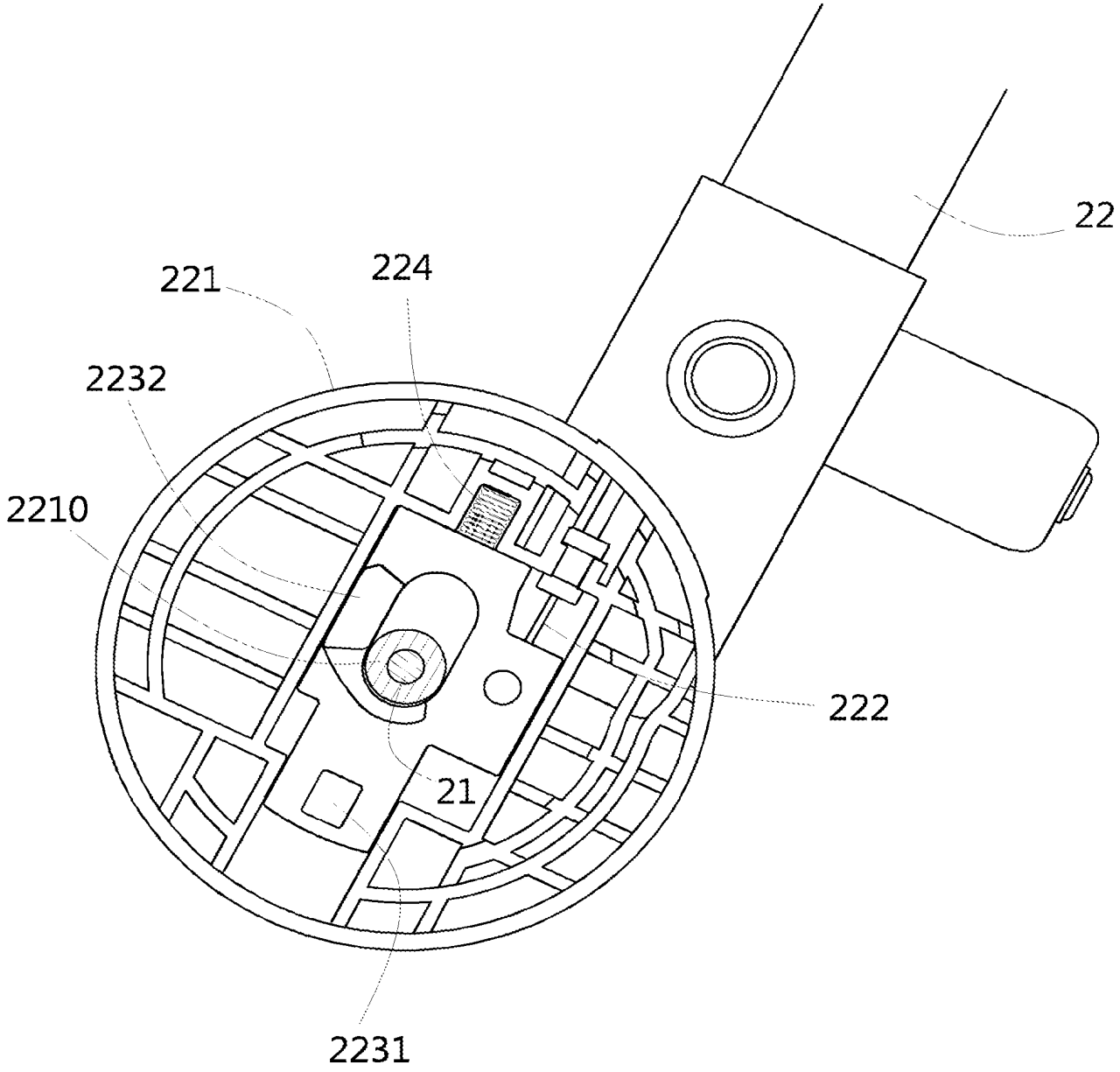


Fig. 12

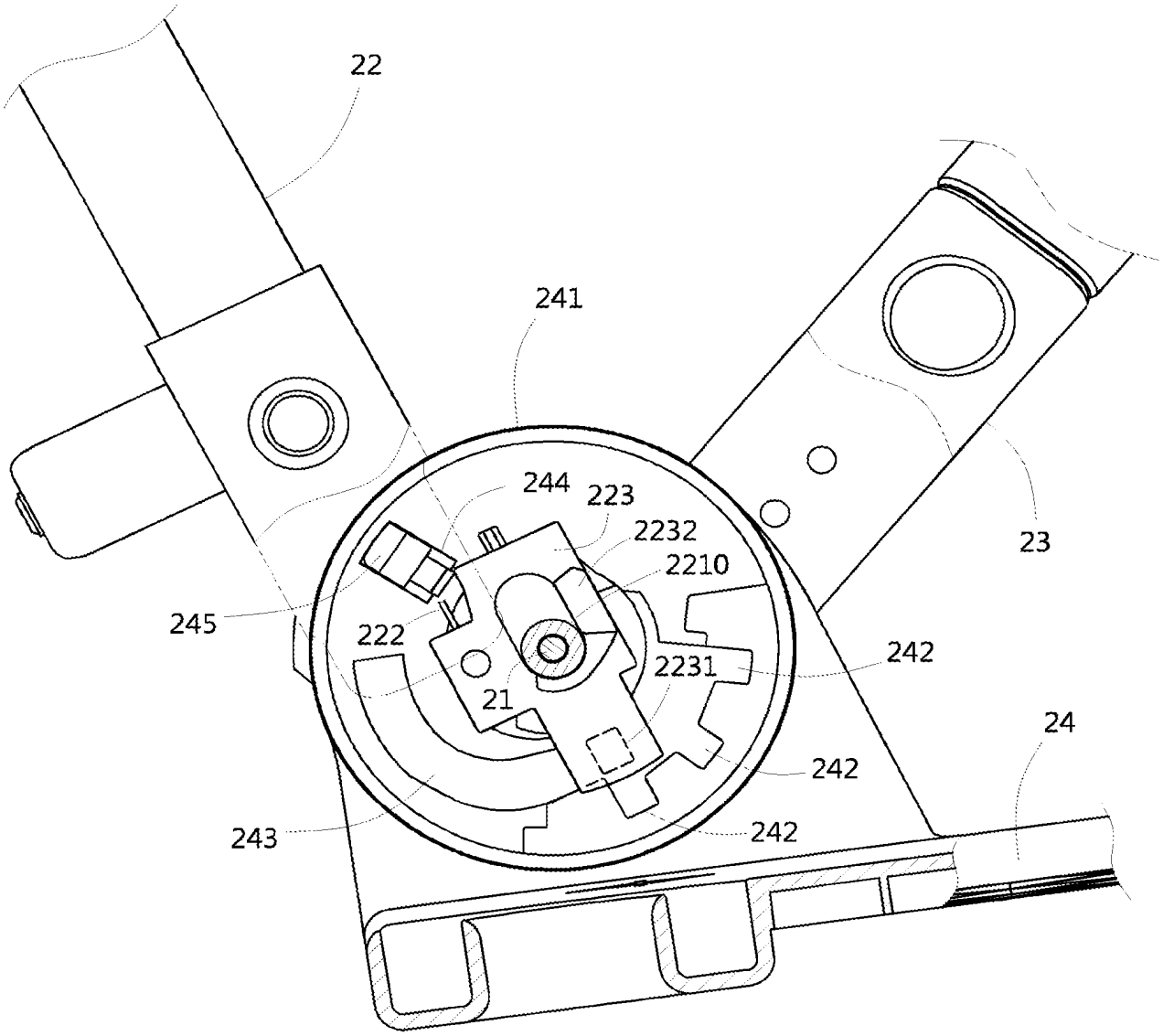


Fig. 13

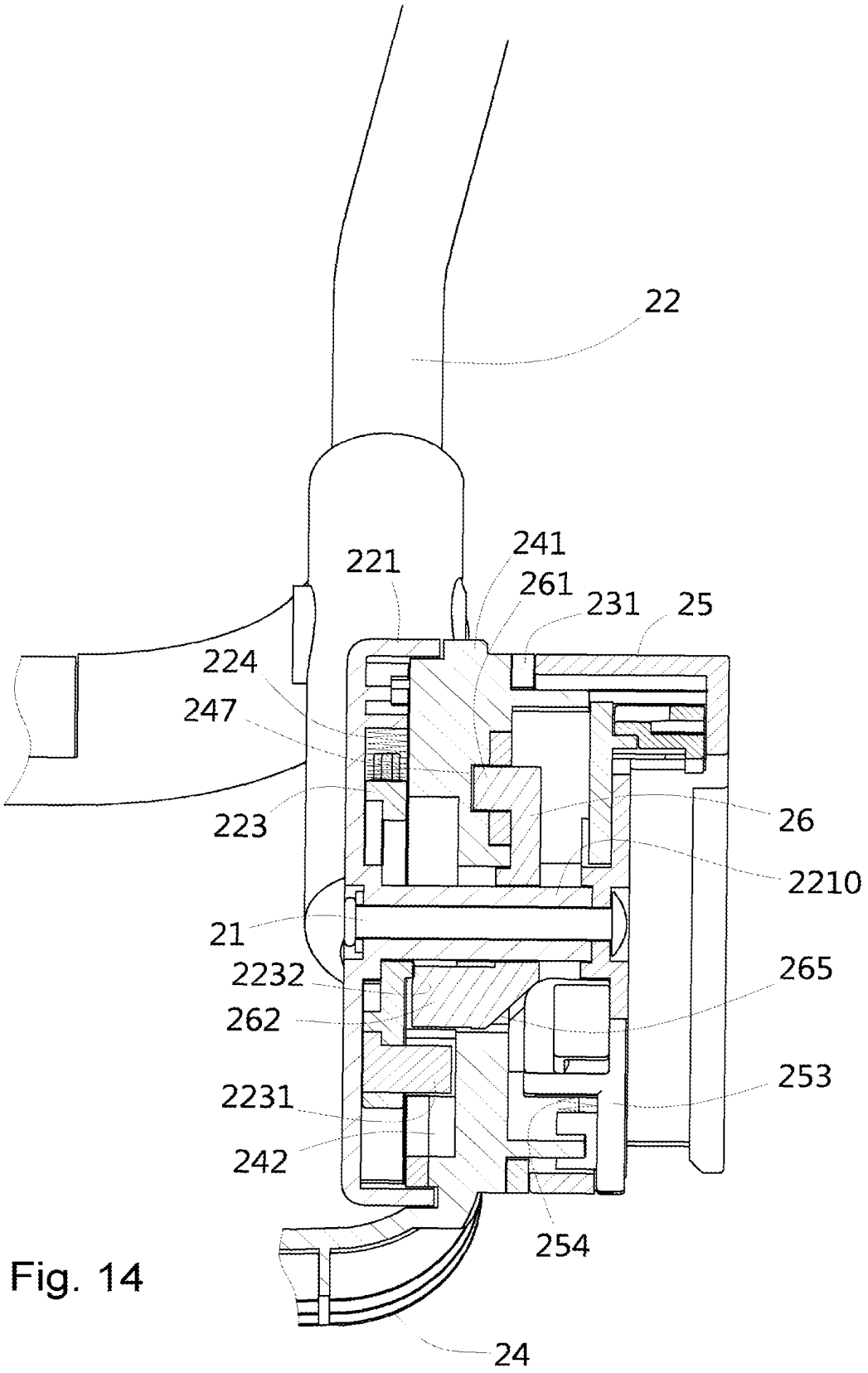

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Fig. 14

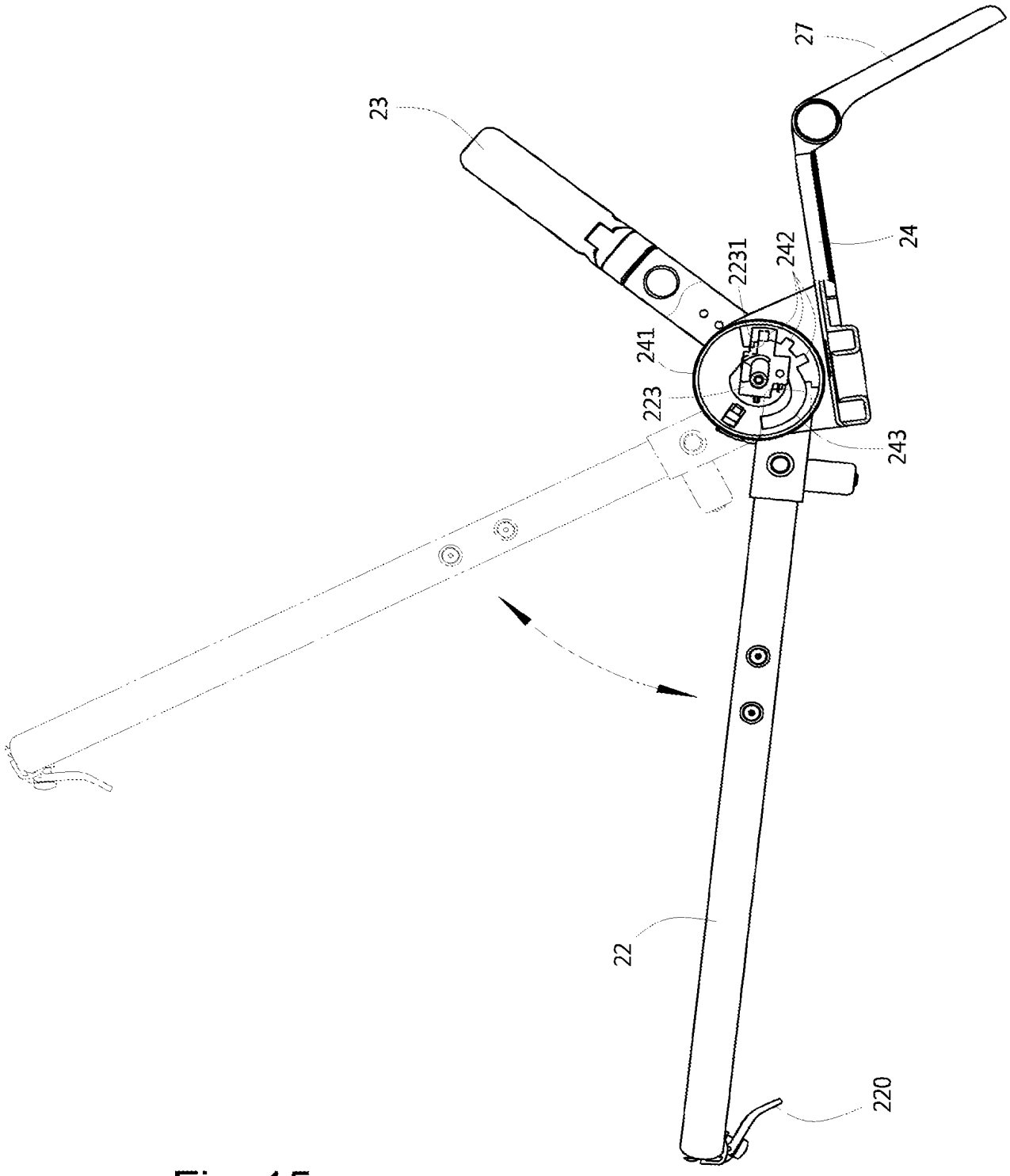


Fig. 15

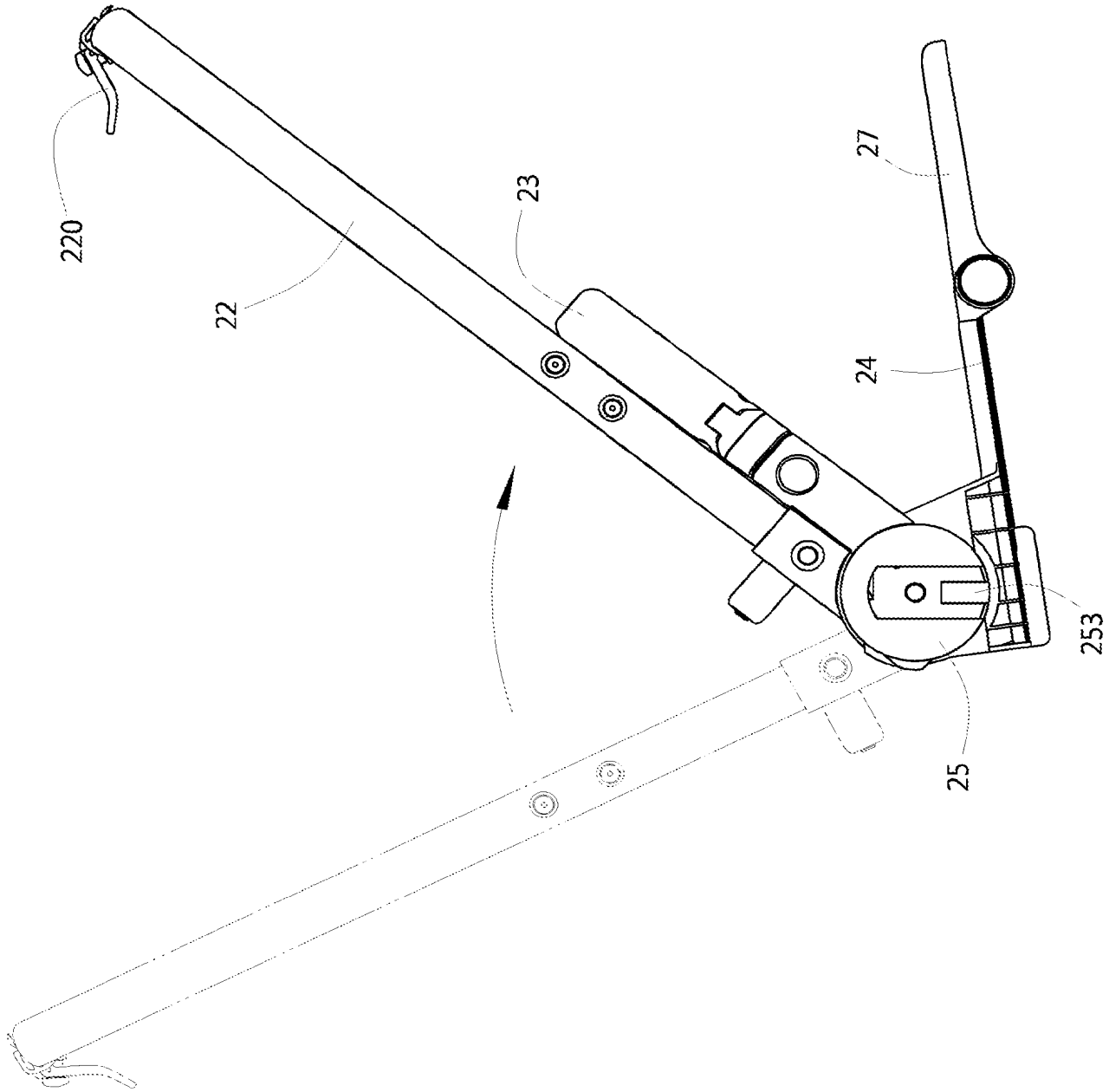


Fig. 16

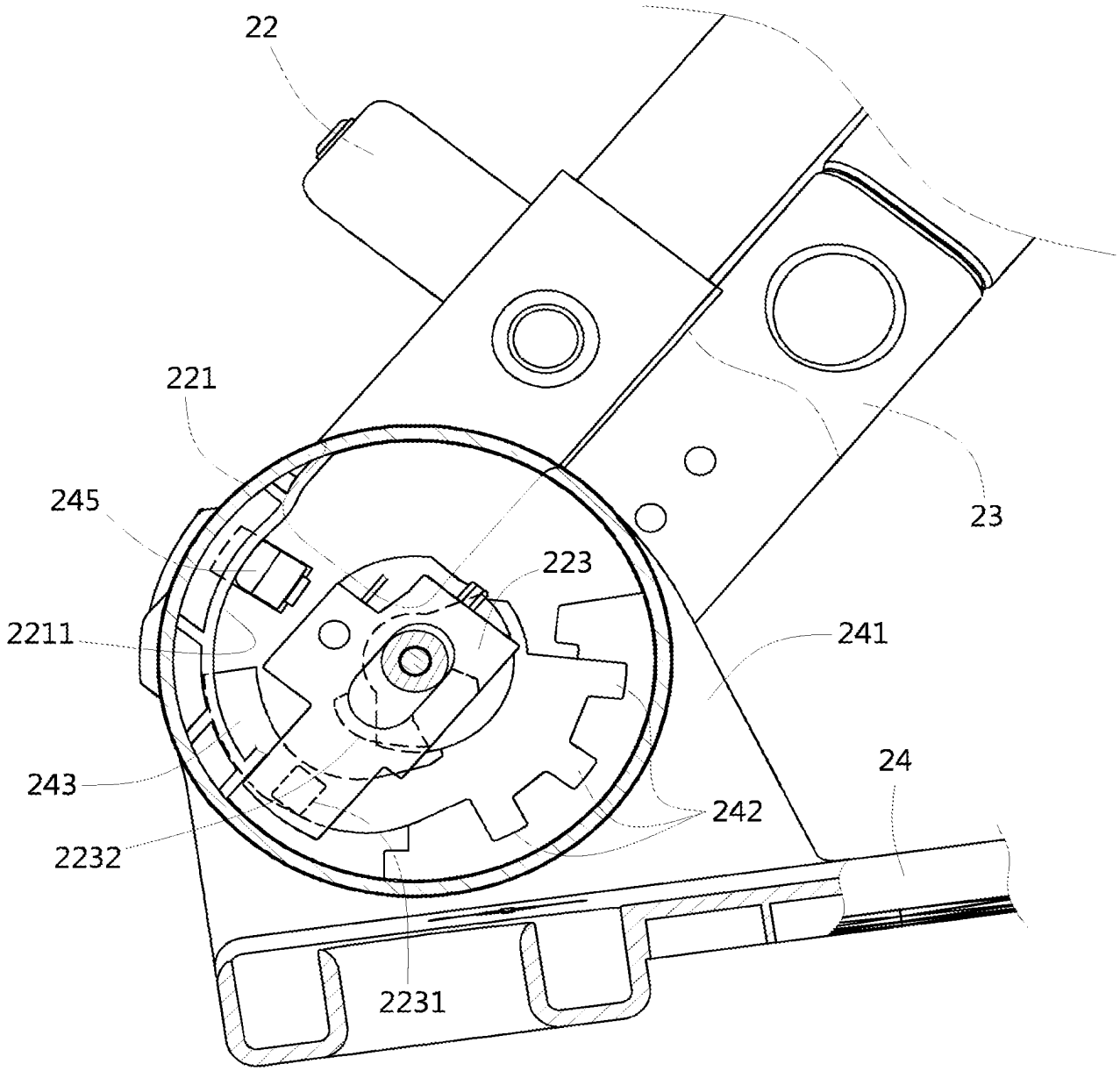


Fig. 17

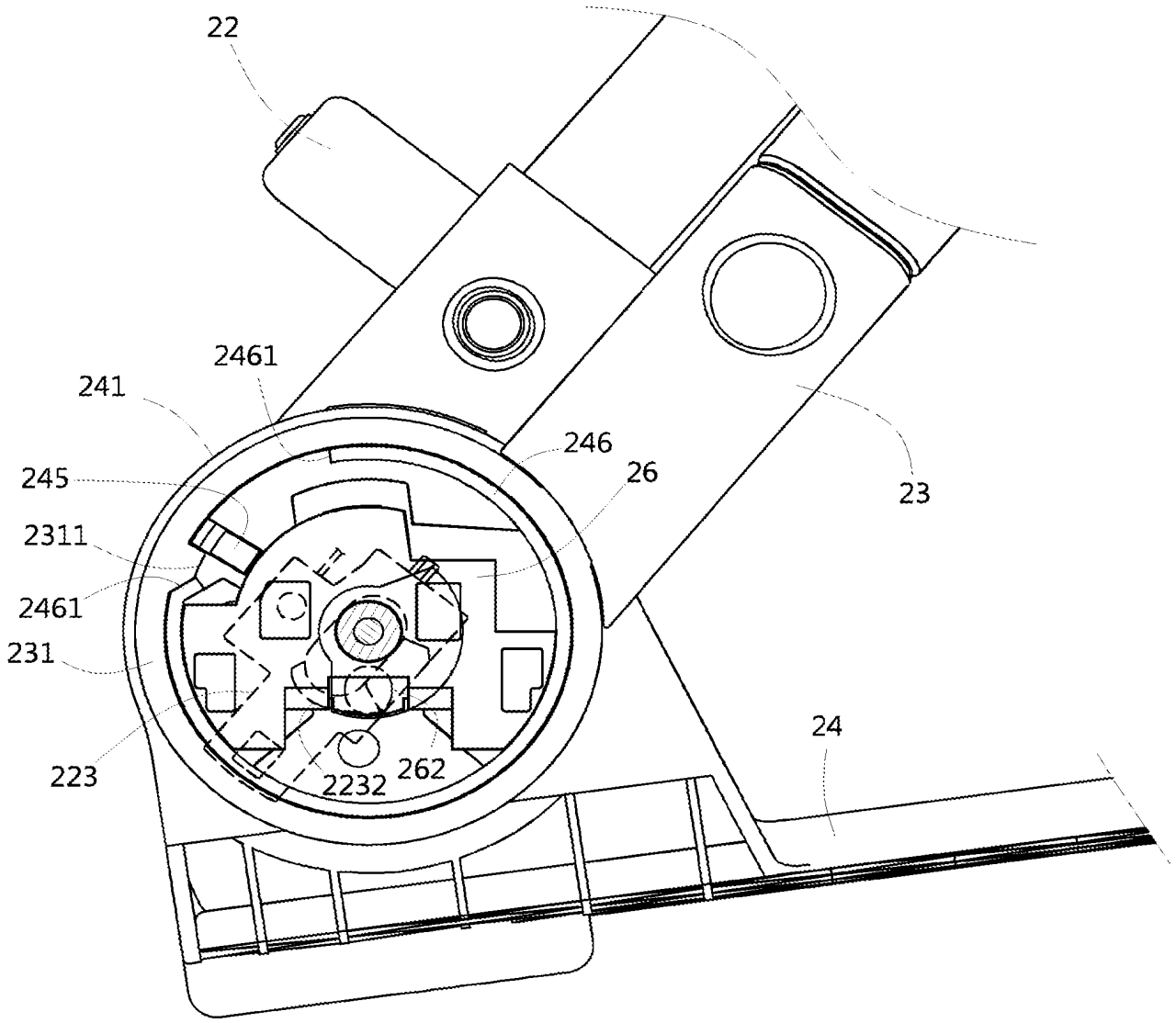


Fig. 18

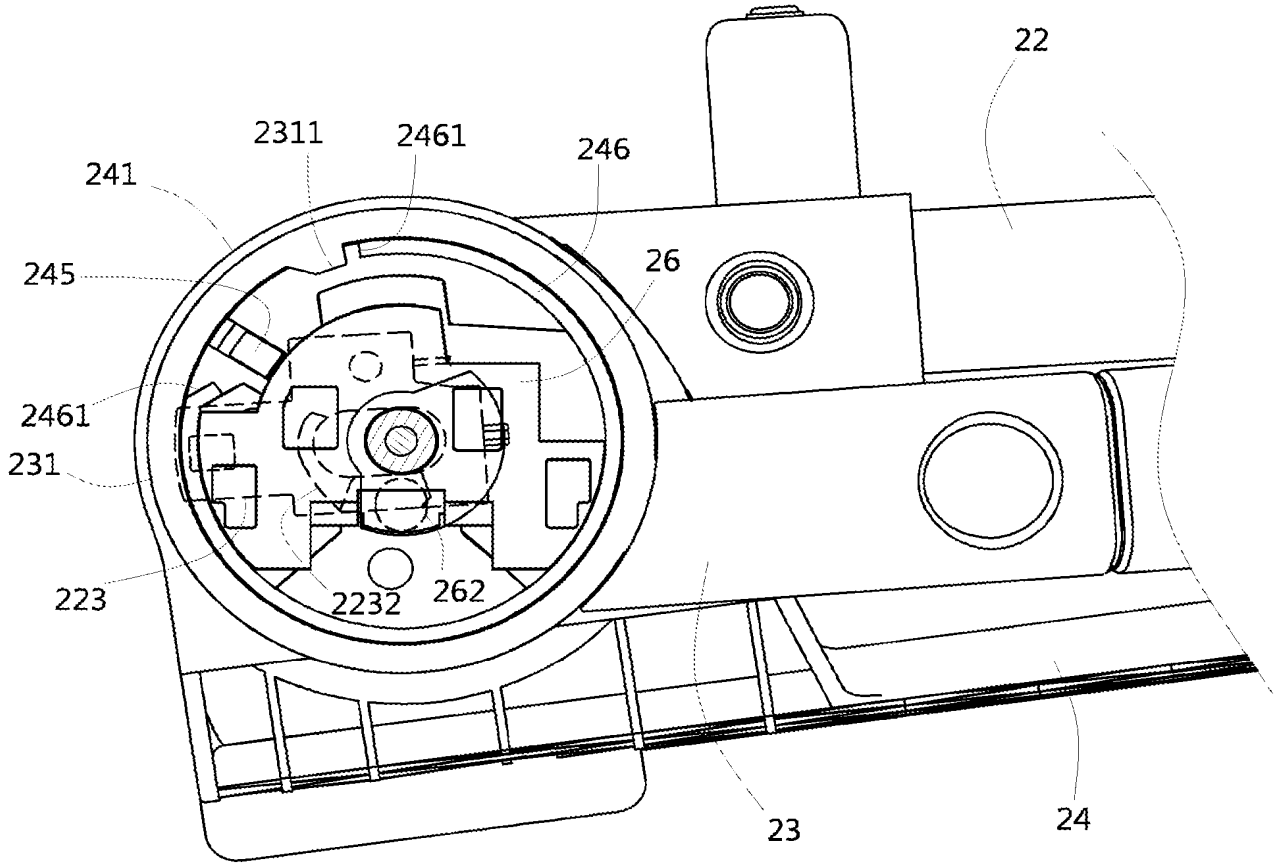


Fig. 19

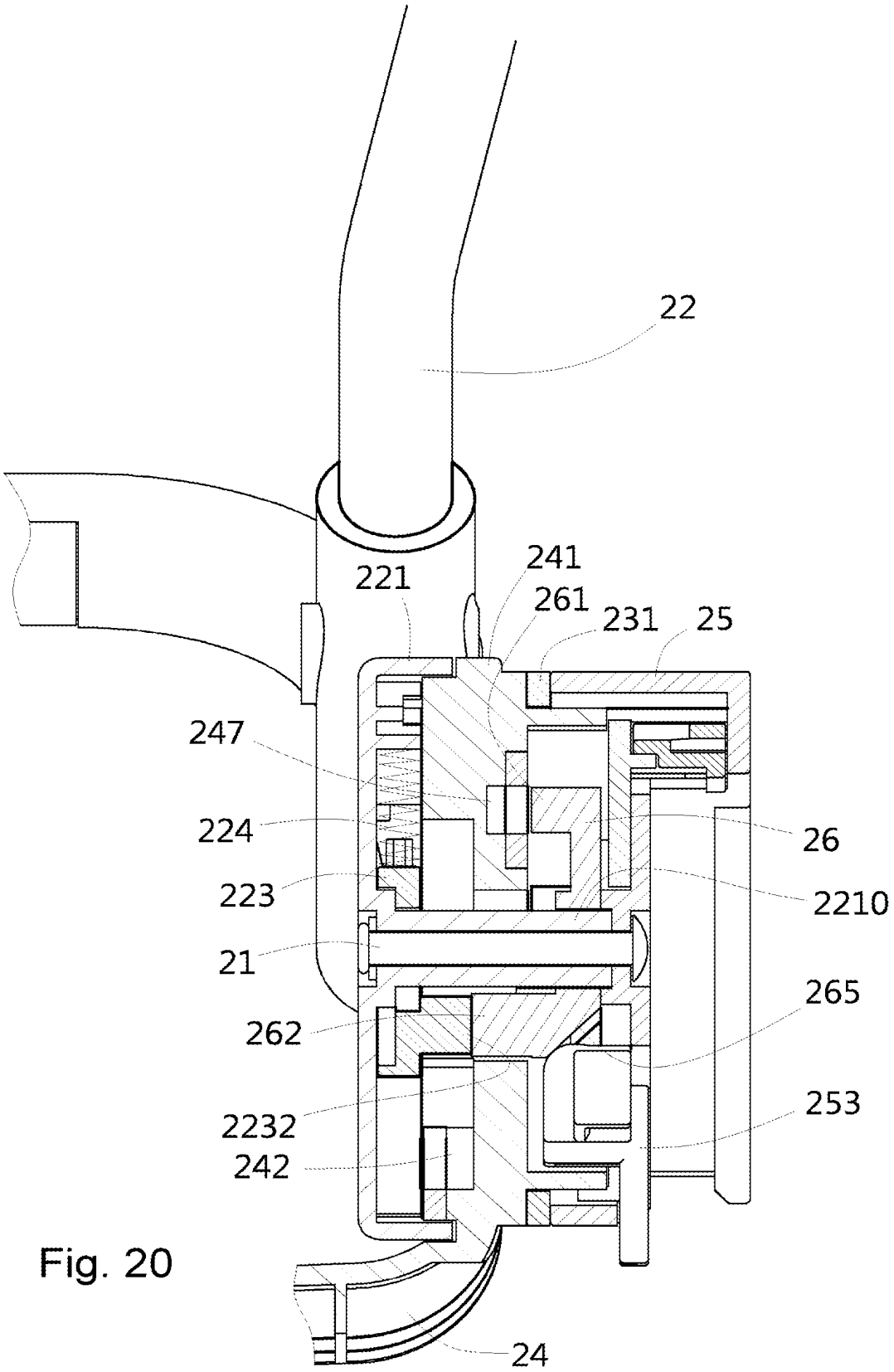

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Fig. 20

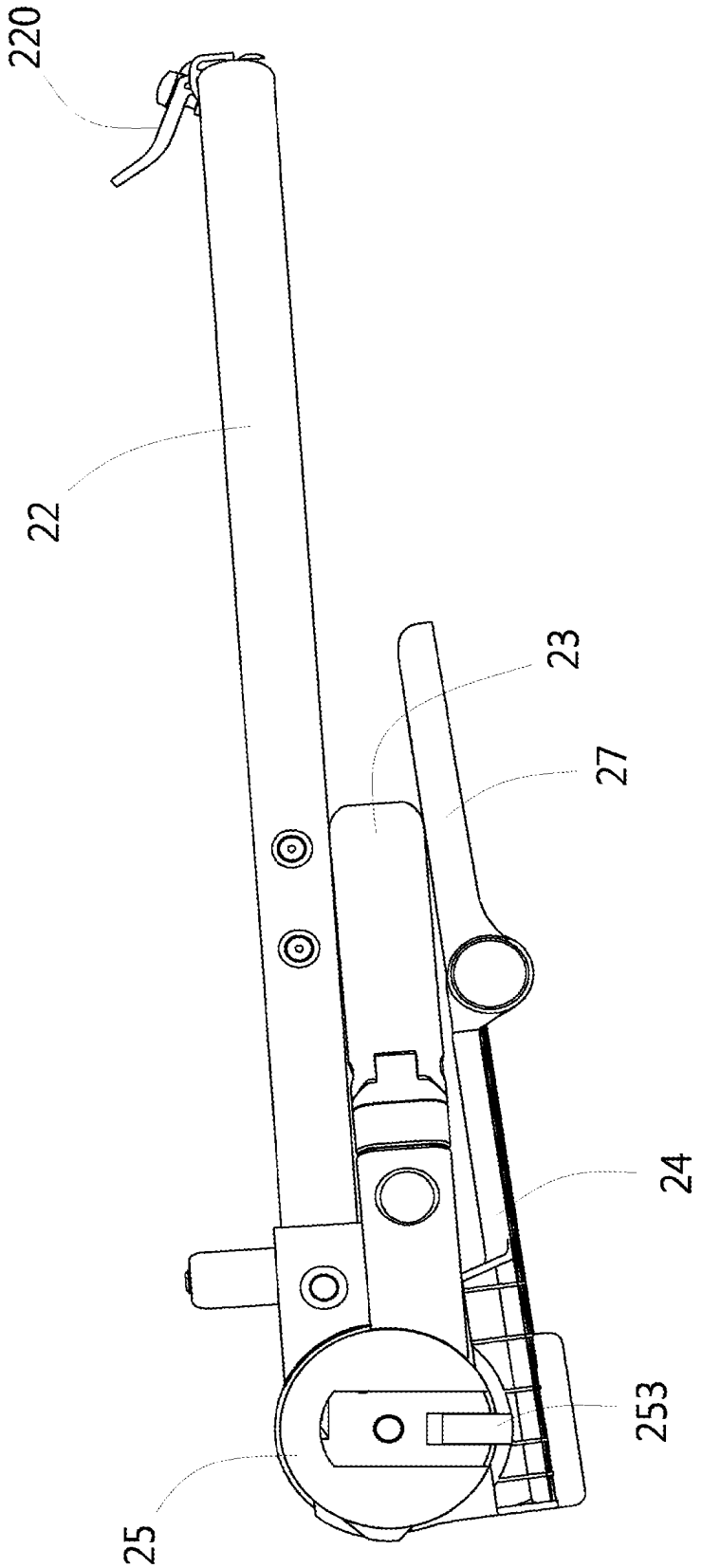


Fig. 21

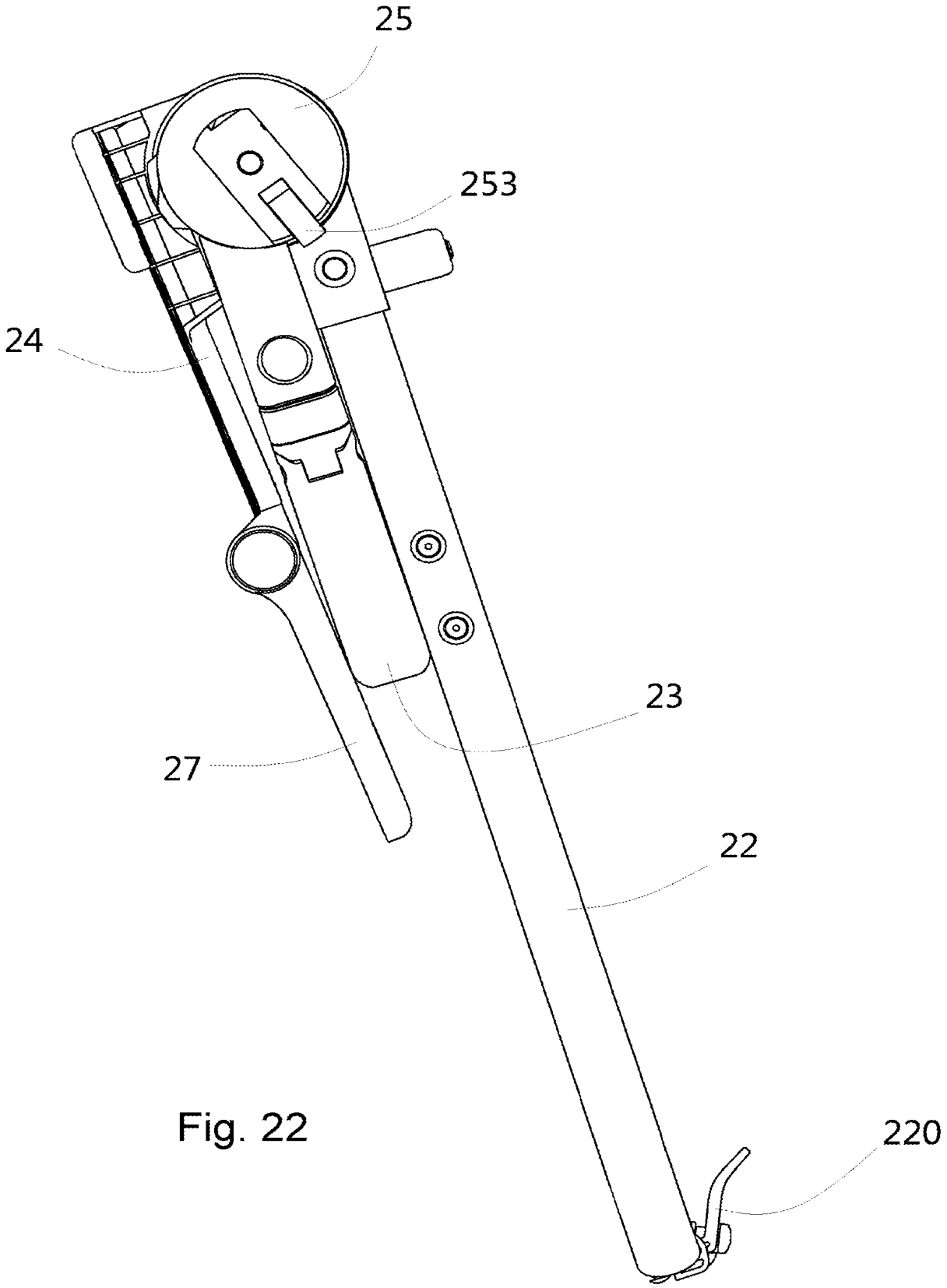


Fig. 22

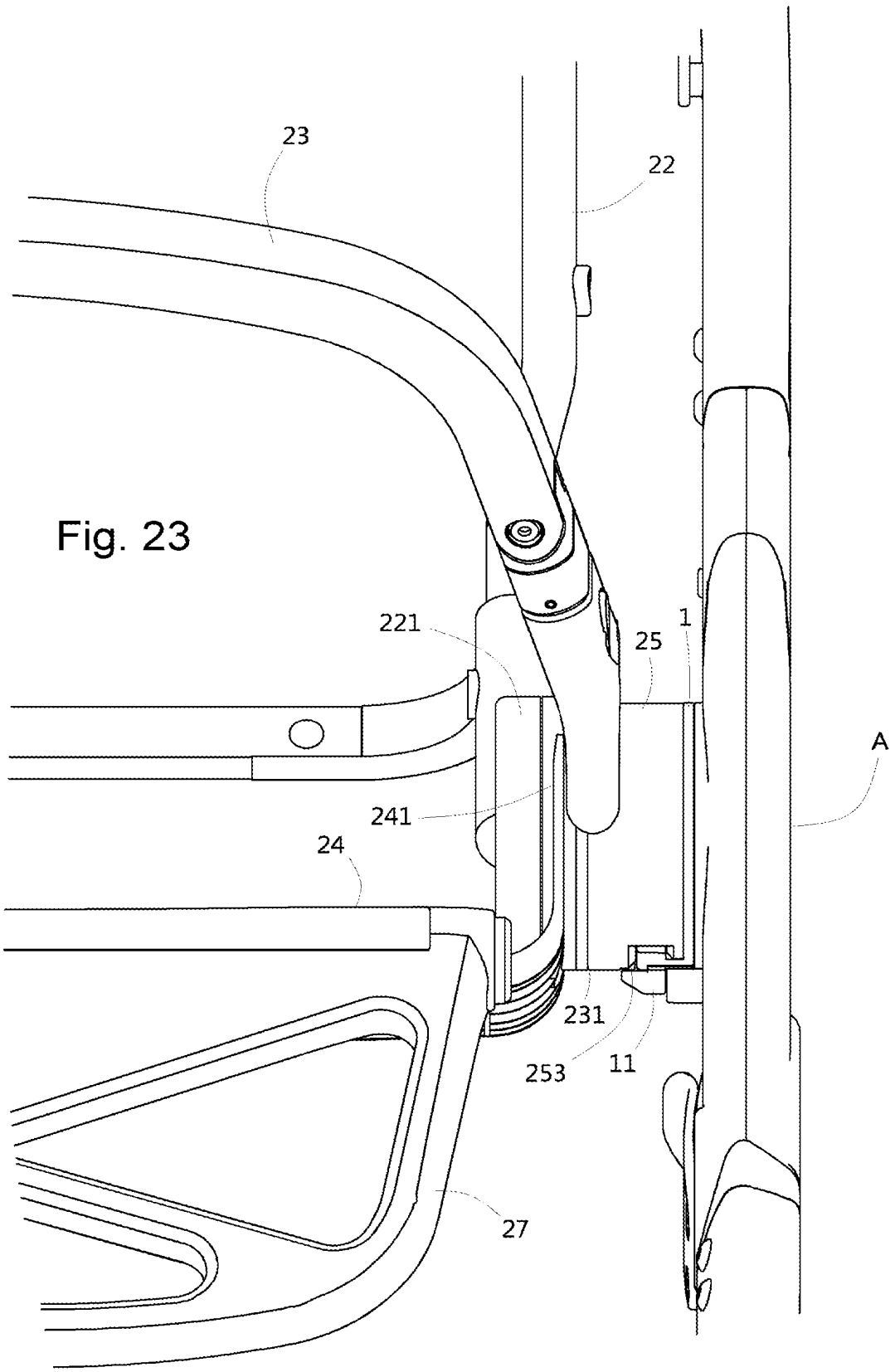


Fig. 23

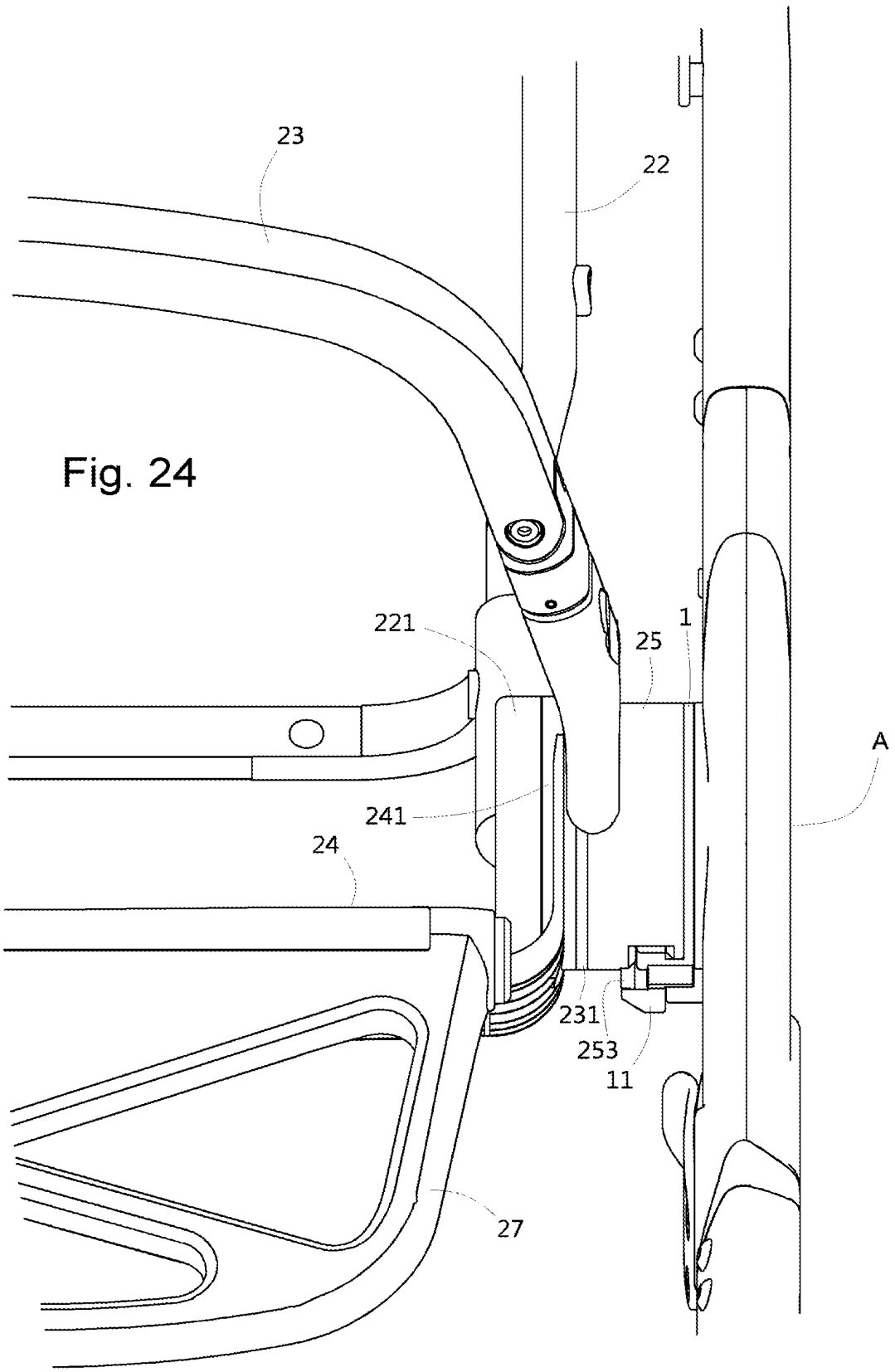


Fig. 24

REFERENCES CITED IN THE DESCRIPTION

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- CN 104828119 A **[0004]**
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- CN 206856772 U **[0006]**

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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代理人 王小东

(51)Int.Cl.
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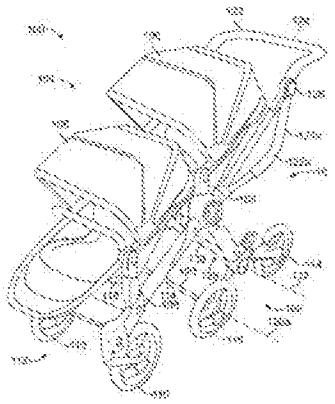
权利要求书2页 说明书10页 附图25页

(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，锁闩件或连接件）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