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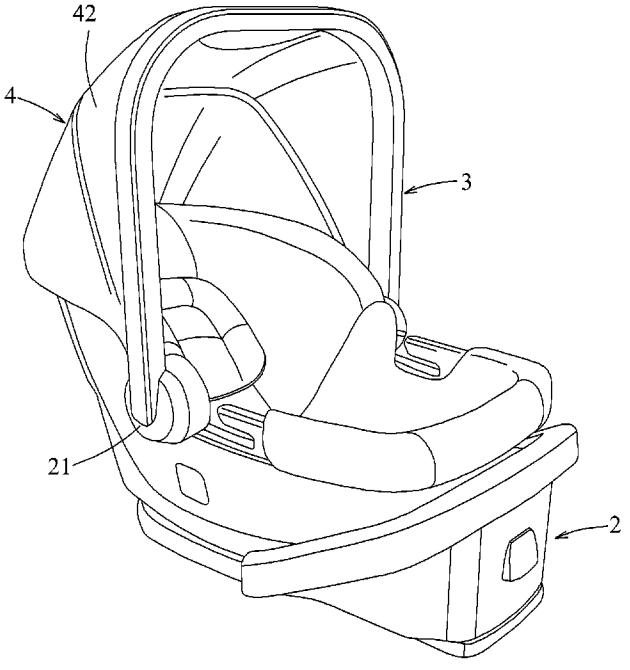
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(54) Titre : SIEGE DE SECURITE POUR ENFANT
(54) Title: INFANT CAR SEAT



(57) Abrégé/Abstract:
An infant car seat includes a seat main body having a handle mount, a canopy unit operable to positionally cover the seat main body, and a handle mounted to the handle mount of the seat main body. The handle is rotatable relative to the handle mount about a mounting axis, and is operably connected to the canopy unit so that rotation of the handle relative to the handle mount drives the canopy unit to move relative to the seat main body.

ABSTRACT OF THE DISCLOSURE

An infant car seat includes a seat main body having a handle mount, a canopy unit operable to positionally cover the seat main body, and a handle mounted to the handle mount of the seat main body. The handle is rotatable relative to the handle mount about a mounting axis, and is operably connected to the canopy unit so that rotation of the handle relative to the handle mount drives the canopy unit to move relative to the seat main body.

(FIG. 1)

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INFANT CAR SEAT

FIELD

The disclosure relates to an infant car seat, and more particularly to an infant car seat with canopy.

BACKGROUND

Infant car seats are used to as safety seats for infants in motor vehicles, and are portable to be carried by hand or placed on strollers. A conventional infant car seat includes a seat unit, a carry handle that is rotatably mounted to the seat unit and that is used by an adult to carry the infant car seat, and a canopy that is also rotatably mounted to the seat unit via a pivoting bow, which can be placed in any number of positions, and that is permitted to provide shade for an infant reclining in the seat unit. Because the carry handle and the canopy usually rotate about the same axis and function independently from one another, they may interfere with one another as they rotate relative to the seat unit. In addition, it becomes difficult to return the canopy back to its usable positions once the canopy rotates beyond its functional limits.

SUMMARY

Therefore, an object of the disclosure is to provide an infant car seat that can alleviate at least one of the drawbacks of the prior art.

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According to the disclosure, the infant car seat includes a seat main body that has a handle mount, a canopy unit that is operable to positionally cover the seat main body, and a handle that is mounted to the handle mount of the seat main body. The handle is rotatable relative to the handle mount about a mounting axis, and is operably connected to the canopy unit so that rotation of the handle relative to the handle mount drives the canopy unit to move relative to the seat main body.

BRIEF DESCRIPTION OF THE DRAWINGS

Other features and advantages of the disclosure will become apparent in the following detailed description of the embodiment with reference to the accompanying drawings, of which:

FIG. 1 is a perspective view of an embodiment of an infant car seat according to the disclosure;

FIG. 2 is a side view of a canopy bow of a canopy unit of the embodiment;

FIG. 3 is a fragmentary front sectional view of the embodiment;

FIG. 4 is a fragmentary side sectional view of the embodiment;

FIG. 5 is a fragmentary front view of the embodiment;

FIG. 6 is a side view of the embodiment, illustrating ranges of rotatable movement of a handle and the canopy bow of the canopy unit relative to a main body;

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FIG. 7 is a fragmentary front view of a ring portion of the canopy bow of the embodiment;

FIG. 8 is a fragmentary side view of a handle mount of a seat main body of the embodiment;

Part (A) of FIG. 9 is an enlarged, fragmentary sectional view of the embodiment;

Part (B) of FIG. 9 is a fragmentary front view of the embodiment;

FIG. 10 is a perspective view of the handle of the embodiment;

FIG. 11 is an enlarged, fragmentary cutaway perspective view of the handle of the embodiment;

FIG. 12 is a view similar to FIG. 11, illustrating a modification to the handle of the embodiment; and

FIG. 13 is a perspective view, illustrating a modification to the canopy unit of the embodiment.

DETAILED DESCRIPTION

Before the disclosure is described in greater detail, it should be noted that where considered appropriate, reference numerals or terminal portions of reference numerals have been repeated among the figures to indicate corresponding or analogous elements, which may optionally have similar characteristics.

Referring to FIGS. 1, 3 and 8, an infant car seat according to the disclosure includes a seat main body 2, a handle 3, and a canopy unit 4. The seat main body 2 is for placing an infant thereon, and has two handle

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mounts 21 respectively disposed on two opposite sides of the seat main body 2 (only one is visible in FIG. 1). Referring specifically to FIG. 8, each of the handle mounts 21 is formed with a limiting groove 211 that extends about a mounting axis (A), and has two wall segments 212 that respectively define opposite ends of the limiting grooves 211. In one embodiment, each handle mount 21 may have only one wall segment 212 that defines one end of the limiting groove 211 thereof, and the other end of the limiting groove 211 is configured as an open end.

Referring to FIGS. 3 and 4, the handle 3 is for carrying the infant car seat, and has two positioning ends 31 that are respectively mounted to and rotatable relative to the handle mounts 21 about the mounting axis (A). Each of the positioning ends 31 of the handle 3 is formed with a plurality of positioning grooves 311 that are disposed about the mounting axis (A). Referring to FIGS. 10 and 11, in one embodiment, the handle 3 consists of two handle halves 301, 302, with an installation groove 32 being formed at a seam between the handle halves 301, 302 and extending along the handle 3. The handle 3 is operably connected to the canopy unit 4, so that rotation of the handle 3 relative to the handle mounts 21 drives the canopy unit 4 to move relative to the seat main body 2.

Referring to FIGS. 2 and 6, the canopy unit 4

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includes a canopy bow 41 that is movable and able to be positioned relative to the handle 3, and a canopy 42 (with reference to Figure 1) that is operable to positionally cover the seat main body 2.

Referring to FIGS. 2 to 5, in one embodiment, the canopy bow 41 is rotatable about the mounting axis (A) and has two ring portions 411 (only one is visible in FIG. 2), each of which surrounds the mounting axis (A), and at least one detent 412 mounted to one of the ring portions 411. Referring specifically to FIG. 7, each of the ring portions 411 has a flexible arc segment 410 that is deformable in a circumferential direction thereof. While the flexible arc segment 410 has a serpentine structure in this embodiment, it can be of any shape in a modification of the embodiment, as long as it has a cross-section smaller than that of the remaining portion of the ring portion 411. Referring specifically to FIG. 4, the detent 412 removably engages a selected one of the positioning grooves 311 of the positioning ends 31 to position the canopy bow 41 relative to the handle 3. As such, the canopy bow 41 can be positioned at different positions relative to the handle 3. As each of the ring portions 411 is deformable in a circumferential direction thereof, the detent 412 is permitted to be disengaged from the selected one of the positioning grooves 311 and to engage another one of the positioning grooves 311 when

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the canopy bow 41 is rotated relative to the handle 3. In other words, in order to rotate the canopy bow 41 relative to the handle 3, a user would have to pull on the flexible arc segment 410 to deform it first, so that the detent 412 is no longer locked in place and can be disengaged and re-engaged with any of the positioning grooves 311. In one embodiment, the canopy bow 41 may have a plurality of detents 412 that are mounted to the ring portions 411 and that respectively and removably engage the corresponding positioning grooves 311 of the positioning ends 31 to position the canopy bow 41 relative to the handle 3.

While the canopy bow 41 is movable and able to be positioned relative to the handle 3 via the deformation of the flexible arc segment 410 and the engagement between the positioning grooves 311 and the detent 412 in this embodiment, different types of positioning mechanisms may be employed in other embodiments, without utilizing the abovementioned elements. For example, in one embodiment, the opposite ends of the canopy bow 41 may be respectively in frictional contact with the positioning ends 31 of the handle 3. By designing either the opposite ends of the canopy bow 41 or the the positioning ends 31 with uneven, rougher surfaces, the frictional contact between the opposite ends of the canopy bow 41 and the positioning ends 31 is capable of positioning the canopy bow 41 relative

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to the handle 3. In another embodiment, the opposite ends of the canopy bow 41 may be respectively and magnetically coupled to the positioning ends 31 of the handle 3 for the canopy bow 41 to be positioned relative to the handle 3. In yet another embodiment, the canopy bow 41 is rotatable about the mounting axis (A), and the infant car seat may further include a latch member that is movably mounted to the seat main body 2 and that is permitted to lock the canopy bow 41 in multiple positions. In other words, the latch member separably engages both of the handle 3 and the canopy bow 41 to position the canopy bow 41 relative to the handle 3.

Furthermore, referring specifically to FIG. 9, each of the ring portions 411 of the canopy bow 41 further has a limiting protrusion 413. The limiting protrusion 413 is permitted to be inserted into the limiting groove 211 of a corresponding one of the handle mounts 21 of the seat main body 2, and is movable along the limiting groove 211 between the wall segments 212, so as to limit the range of rotational movement of the canopy bow 41 relative to the seat main body 2. As such, the canopy bow 41 would not rotate beyond its functional limits, ensuring that the canopy unit 4 would remain in its usable positions.

In some embodiments, the canopy bow 41 is mounted to the handle 3 instead. For example, referring to FIG. 13, in this modification of the embodiment, the canopy

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bow 41 is directly mounted to the handle 3 at a point (B) spaced apart from the handle mounts 21 of the seat main body 1. As a result, whenever the handle 3 rotates relative to the seat main body 2 about the mounting axis (A), the canopy bow 41 simultaneously rotates with the handle 3 about the mounting axis (A) as well.

Referring to FIGS. 11 and 12, the canopy 42 has opposite first and second end portions 421, 422 that are respectively connected to the handle 3 and the canopy bow 41, and a main canopy portion 423 that is connected between the first and second end portions 421, 422. Specifically, the first end portion 421 is retained within the installation groove 32 of the handle 3, and has a thickness greater than that of the main canopy portion 423. As previously mentioned, since the handle 3 consists of the two handle halves 301, 302, the first end portion 421 of the canopy may be preassembled alongside the two handle halves 301, 302 of the handle 3. Referring specifically to FIG. 12, in a modification of the embodiment in which the handle 3 is molded as a single piece, the installation groove 32 has an elongated opening 321 that has a width smaller than the thickness of the first end portion 421 of the canopy 42, and an installation opening (not shown) that is in spatial communication with the elongated opening 321 and that permits the first end portion 421 of the canopy 42 to slide therethrough to be retained within

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the installation groove 32 after the assembly of the handle 3. Furthermore, there are other means for connecting the first end portion 421 of the canopy 42 to the handle 3, such as utilizing snaps, buttons or straps.

Referring to Figure 13, in one embodiment, the canopy bow 41 may be configured such that, when the distal portion of the canopy bow 41 is located above the seat main body 2, the handle 3 is located out of the path of the rotational movement of the canopy bow, so that the handle 3 and the canopy bow 41 are configured not to interfere with each other. As such, the distal portion of the canopy bow 41 is operable to be located ahead of the handle 3 or behind the handle 3 to provide various types of shade.

In addition, while the canopy bow 41 of the canopy unit 4 is present in this embodiment, the canopy bow 41 may be omitted in other embodiments without hindering the functionality of the infant car seat (see Figure 1). In this configuration of the embodiment, the first and second end portions 421, 422 of the canopy 42 of the canopy unit 4 are respectively connected the handle 3 and the seat main body 2 instead. The second end portion 422 may be connected to the seat main body 2 via means similar to the connection method of the first end portion 421 to the handle 3, such as utilizing snaps, buttons or straps.

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Overall, the positioning mechanism established among the seat main body 2, the canopy unit 4 and the handle 3 ensures that rotation of the handle 3 relative to the handle mount 21 drives simultaneous rotation of the canopy 4 relative to the seat main body 2 as well, so that the handle 3 and the canopy unit 4 do not interfere with one another during use, and that only intentional procedure performed on the canopy unit 4 would cause the canopy unit 4 to rotate relative to the handle. In addition, if the canopy unit 4 has a canopy bow 41, the inclusion of the limiting protrusion 413 paired with the limiting groove 211 of the corresponding one of the handle mounts 21 prevents the canopy bow 41 from rotating beyond its functional limits, thereby maintaining its usability.

In the description above, for the purposes of explanation, numerous specific details have been set forth in order to provide a thorough understanding of the embodiment. It will be apparent, however, to one skilled in the art, that one or more other embodiments may be practiced without some of these specific details. It should also be appreciated that reference throughout this specification to "one embodiment," "an embodiment," an embodiment with an indication of an ordinal number and so forth means that a particular feature, structure, or characteristic may be included in the practice of the disclosure. It should be further

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appreciated that in the description, various features are sometimes grouped together in a single embodiment, figure, or description thereof for the purpose of streamlining the disclosure and aiding in the understanding of various inventive aspects, and that one or more features or specific details from one embodiment may be practiced together with one or more features or specific details from another embodiment, where appropriate, in the practice of the disclosure.

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What is claimed is:

1. An infant car seat comprising:

a seat main body having a handle mount;

a canopy unit operable to positionally cover said seat main body; and

a handle mounted to said handle mount of said seat main body and rotatable relative to said handle mount about a mounting axis, said handle being operably connected to said canopy unit so that rotation of said handle relative to said handle mount drives said canopy unit to move relative to said seat main body.

2. The infant car seat as claimed in claim 1, wherein said canopy unit includes a canopy bow that is movable relative to said handle and that is able to be positioned relative to said handle.

3. The infant car seat as claimed in claim 2, wherein said handle has a plurality of positioning grooves that are disposed about the mounting axis, said canopy bow being rotatable about the mounting axis and having at least one detent, said at least one detent removably engaging a selected one of said positioning grooves of said handle to position said canopy bow relative to said handle.

4. The infant car seat as claimed in claim 3, wherein

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said canopy bow further has a ring portion that surrounds the mounting axis, said at least one detent being mounted to said ring portion, said ring portion being deformable in a circumferential direction thereof, so that said at least one detent is permitted to be disengaged from the selected one of said positioning grooves and to engage another one of said positioning grooves when said canopy bow is rotated relative to said handle.

5. The infant car seat as claimed in claim 4, wherein said ring portion has a flexible arc segment that has a cross-section smaller than that of the remaining portion of said ring portion.

6. The infant car seat as claimed in claim 5, wherein said flexible arc segment has a serpentine structure.

7. The infant car seat as claimed in claim 2, wherein said canopy bow is in frictional contact with said handle.

8. The infant car seat as claimed in claim 2, further comprising a latch member that is movably mounted to said seat main body, said canopy bow being rotatable about the mounting axis, said latch member separably engaging both of said handle and said canopy bow to

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position said canopy bow relative to said handle.

9. The infant car seat as claimed in claim 2, wherein said canopy bow is magnetically coupled to said handle so as to be positioned relative to said handle.

10. The infant car seat as claimed in claim 1, wherein said seat main body further has a limiting groove that extends about the mounting axis, and a wall segment that defines one of two opposite ends of said limiting groove, said canopy unit including a canopy bow that is rotatable about the mounting axis and that has a limiting protrusion, said limiting protrusion of said canopy bow being movable along said limiting groove so as to limit a range of rotational movement of said canopy bow relative to said seat main body.

11. The infant car seat as claimed in claim 10, wherein said seat main body has two of said wall segments that respectively define said opposite ends of said limiting groove, said limiting protrusion of said canopy bow being movable along said limiting groove between said wall segments.

12. The infant car seat as claimed in claim 1, wherein said canopy unit includes a canopy bow that is rotatably mounted to said handle, and a canopy that has opposite

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first and second end portions respectively connected to said handle and said canopy bow, and a main canopy portion connected between said first and second end portions.

13. The infant car seat as claimed in claim 12, wherein said handle has an installation groove extending therealong, said first end portion of said canopy being retained within said installation groove, and having a thickness greater than that of said main canopy portion, said installation groove having an elongated opening that has a width smaller than the thickness of said first end portion of said canopy.

14. The infant car seat as claimed in claim 13, wherein said handle consists of two handle halves, said installation groove being formed at a seam between said handle halves.

15. The infant car seat as claimed in claim 12, wherein, when a distal portion of said canopy bow is locate above said seat main body, said handle is located out of the path of the rotational movement of said canopy bow so that said handle and said canopy bow are configured not to interfere with each other.

16. The infant car seat as claimed in claim 12, wherein

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What is claimed is:

1. An infant car seat comprising:

a seat main body having a handle mount;

a canopy unit operable to positionally cover said seat main body; and

a handle mounted to said handle mount of said seat main body and rotatable relative to said handle mount about a mounting axis, said handle being operably connected to said canopy unit so that rotation of said handle relative to said handle mount drives said canopy unit to move relative to said seat main body.

2. The infant car seat as claimed in claim 1, wherein said canopy unit includes a canopy bow that is movable relative to said handle and that is able to be positioned relative to said handle.

3. The infant car seat as claimed in claim 2, wherein said handle has a plurality of positioning grooves that are disposed about the mounting axis, said canopy bow being rotatable about the mounting axis and having at least one detent, said at least one detent removably engaging a selected one of said positioning grooves of said handle to position said canopy bow relative to said handle.

4. The infant car seat as claimed in claim 3, wherein

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said canopy bow further has a ring portion that surrounds the mounting axis, said at least one detent being mounted to said ring portion, said ring portion being deformable in a circumferential direction thereof, so that said at least one detent is permitted to be disengaged from the selected one of said positioning grooves and to engage another one of said positioning grooves when said canopy bow is rotated relative to said handle.

5. The infant car seat as claimed in claim 4, wherein said ring portion has a flexible arc segment that has a cross-section smaller than that of the remaining portion of said ring portion.

6. The infant car seat as claimed in claim 5, wherein said flexible arc segment has a serpentine structure.

7. The infant car seat as claimed in claim 2, wherein said canopy bow is in frictional contact with said handle.

8. The infant car seat as claimed in claim 2, further comprising a latch member that is movably mounted to said seat main body, said canopy bow being rotatable about the mounting axis, said latch member separably engaging both of said handle and said canopy bow to

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position said canopy bow relative to said handle.

9. The infant car seat as claimed in claim 2, wherein said canopy bow is magnetically coupled to said handle so as to be positioned relative to said handle.

10. The infant car seat as claimed in claim 1, wherein said seat main body further has a limiting groove that extends about the mounting axis, and a wall segment that defines one of two opposite ends of said limiting groove, said canopy unit including a canopy bow that is rotatable about the mounting axis and that has a limiting protrusion, said limiting protrusion of said canopy bow being movable along said limiting groove so as to limit a range of rotational movement of said canopy bow relative to said seat main body.

11. The infant car seat as claimed in claim 10, wherein said seat main body has two of said wall segments that respectively define said opposite ends of said limiting groove, said limiting protrusion of said canopy bow being movable along said limiting groove between said wall segments.

12. The infant car seat as claimed in claim 1, wherein said canopy unit includes a canopy bow that is rotatably mounted to said handle, and a canopy that has opposite

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first and second end portions respectively connected to said handle and said canopy bow, and a main canopy portion connected between said first and second end portions.

13. The infant car seat as claimed in claim 12, wherein said handle has an installation groove extending therealong, said first end portion of said canopy being retained within said installation groove, and having a thickness greater than that of said main canopy portion, said installation groove having an elongated opening that has a width smaller than the thickness of said first end portion of said canopy.

14. The infant car seat as claimed in claim 13, wherein said handle consists of two handle halves, said installation groove being formed at a seam between said handle halves.

15. The infant car seat as claimed in claim 12, wherein, when a distal portion of said canopy bow is locate above said seat main body, said handle is located out of the path of the rotational movement of said canopy bow so that said handle and said canopy bow are configured not to interfere with each other.

16. The infant car seat as claimed in claim 12, wherein

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said canopy bow is directly mounted to said handle at a point spaced apart from said handle mount of said seat main body.

17. The infant car seat as claimed in claim 1, wherein said canopy unit includes a canopy that has opposite first and second end portions respectively connected to said handle and said seat main body, and a main canopy portion connected between said first and second end portions.

18. The infant car seat as claimed in claim 17, wherein said handle has an installation groove extending therealong, said first end portion of said canopy being retained within said installation groove, and having a thickness greater than that of said main canopy portion, said installation groove having an elongated opening that has a width smaller than the thickness of said first end portion of said canopy.

19. The infant car seat as claimed in claim 18, wherein said handle consists of two handle halves, said installation groove being formed at a seam between said handle halves.

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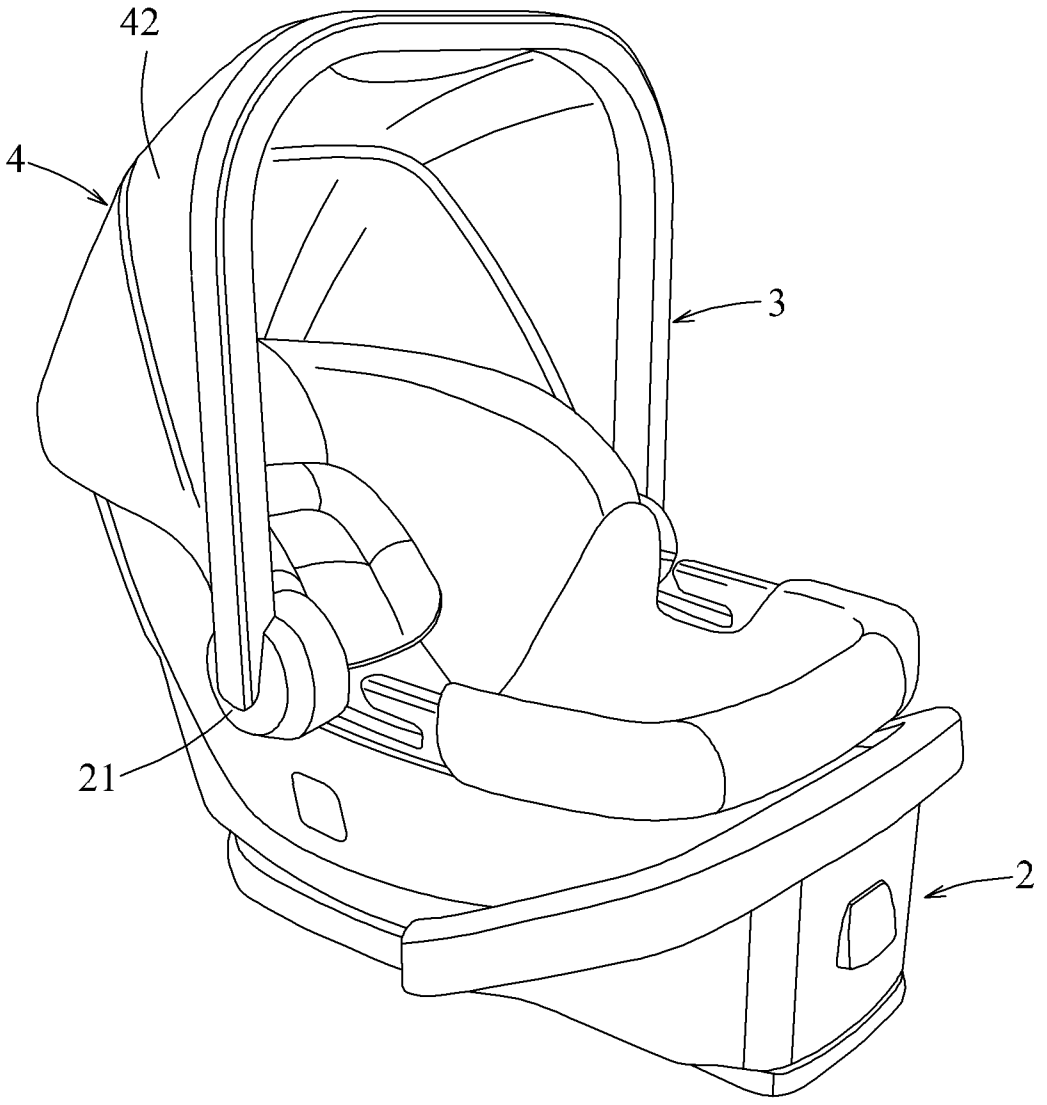


FIG. 1

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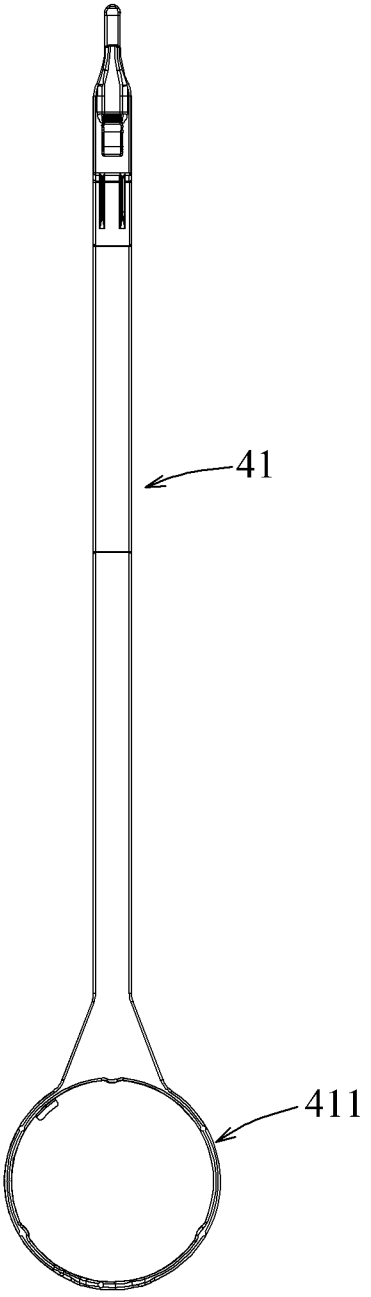


FIG. 2

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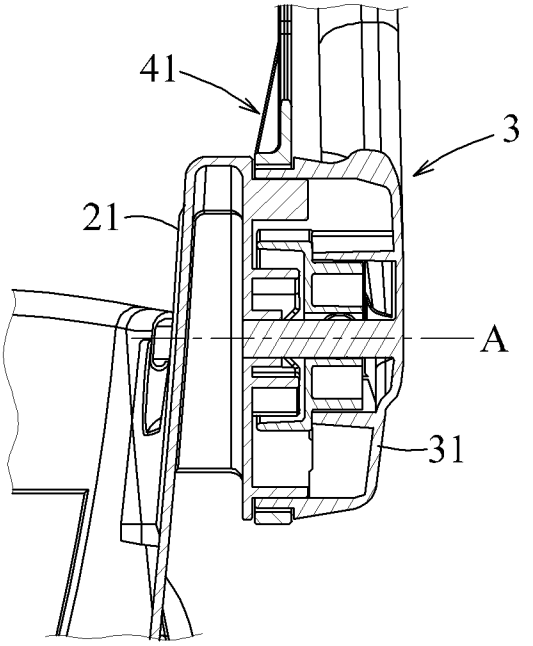


FIG. 3

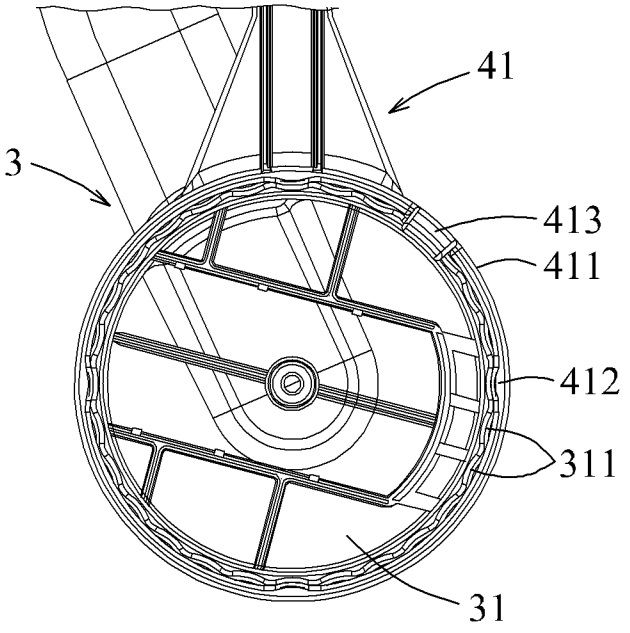


FIG. 4

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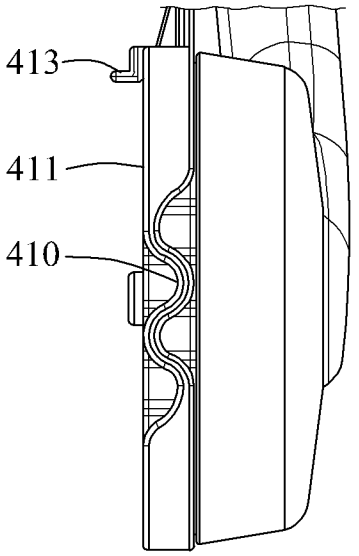


FIG. 5

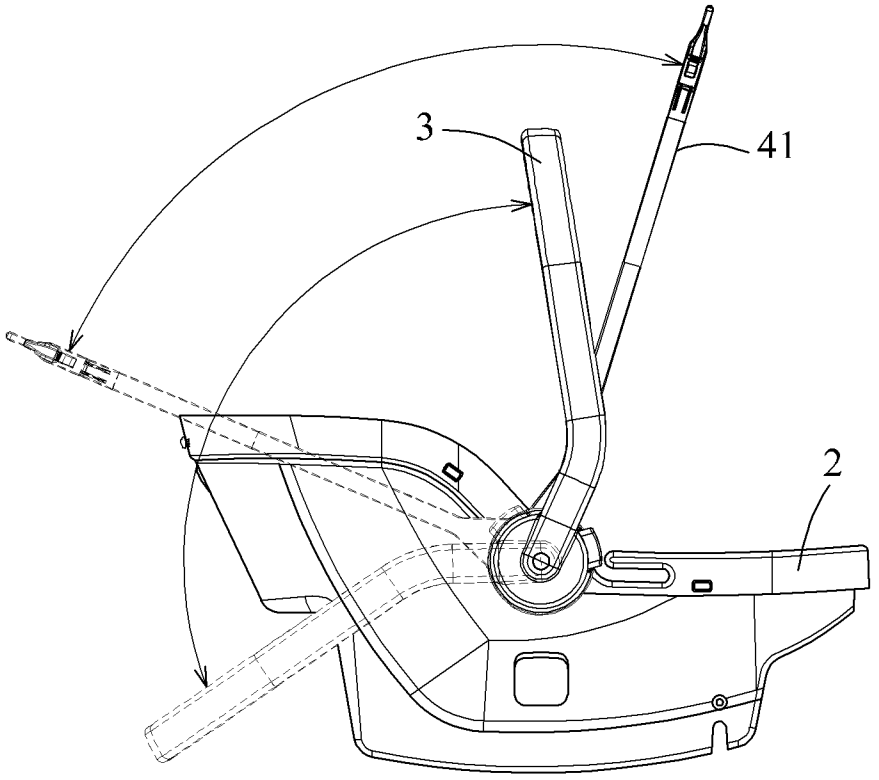


FIG. 6

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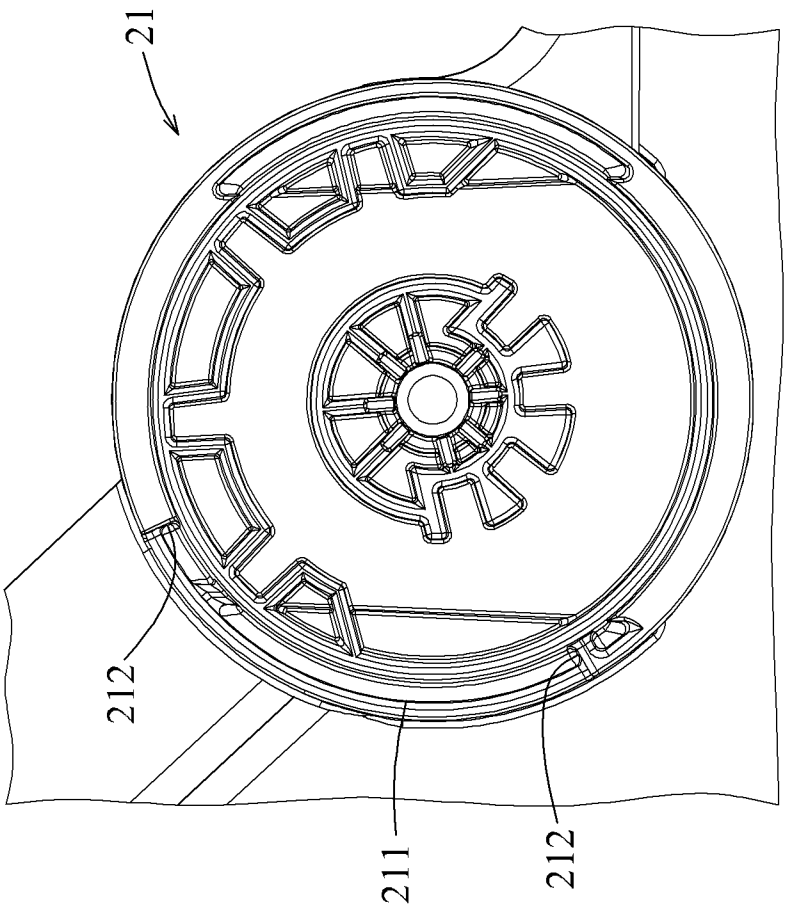


FIG. 8

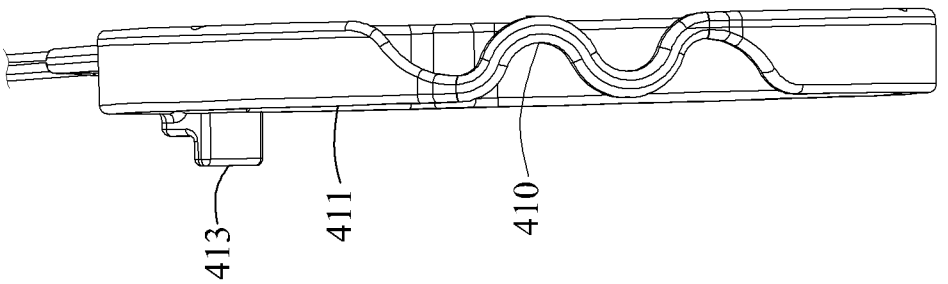
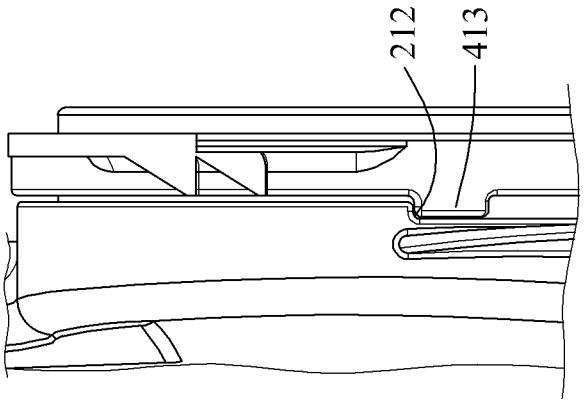
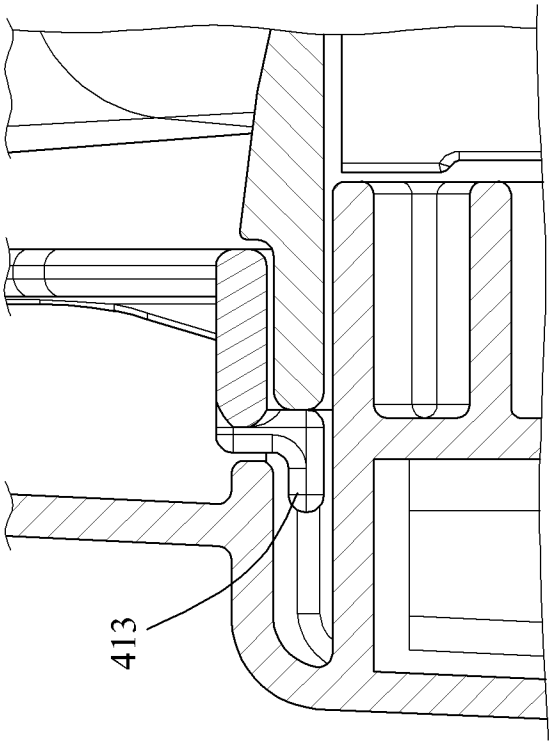


FIG. 7

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(B)



(A)

FIG. 9

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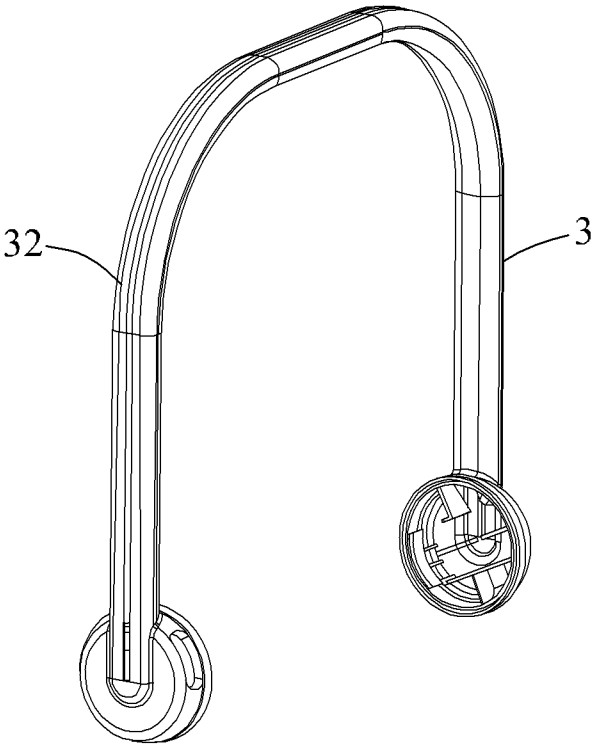


FIG. 10

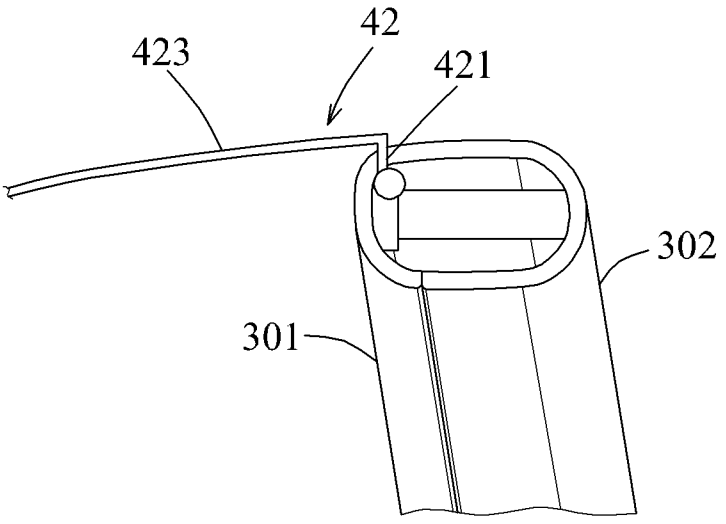


FIG. 11

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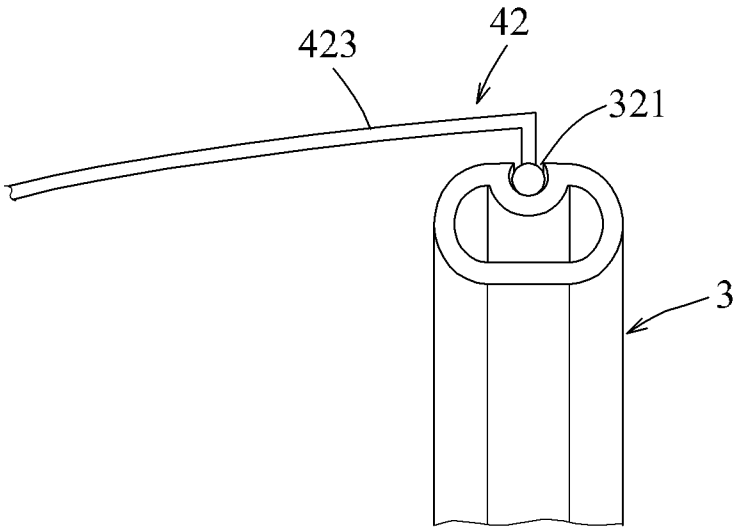


FIG. 12

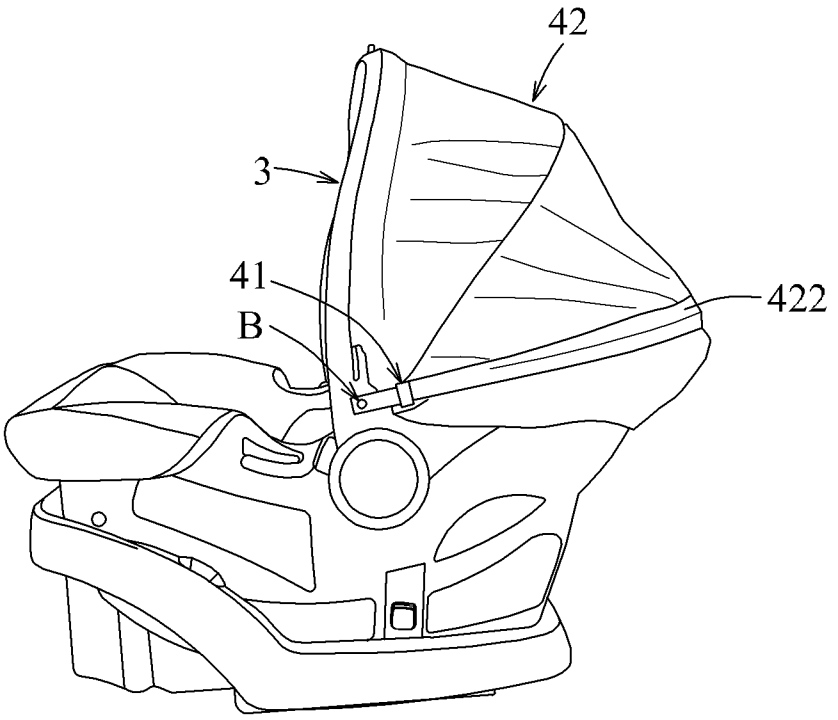
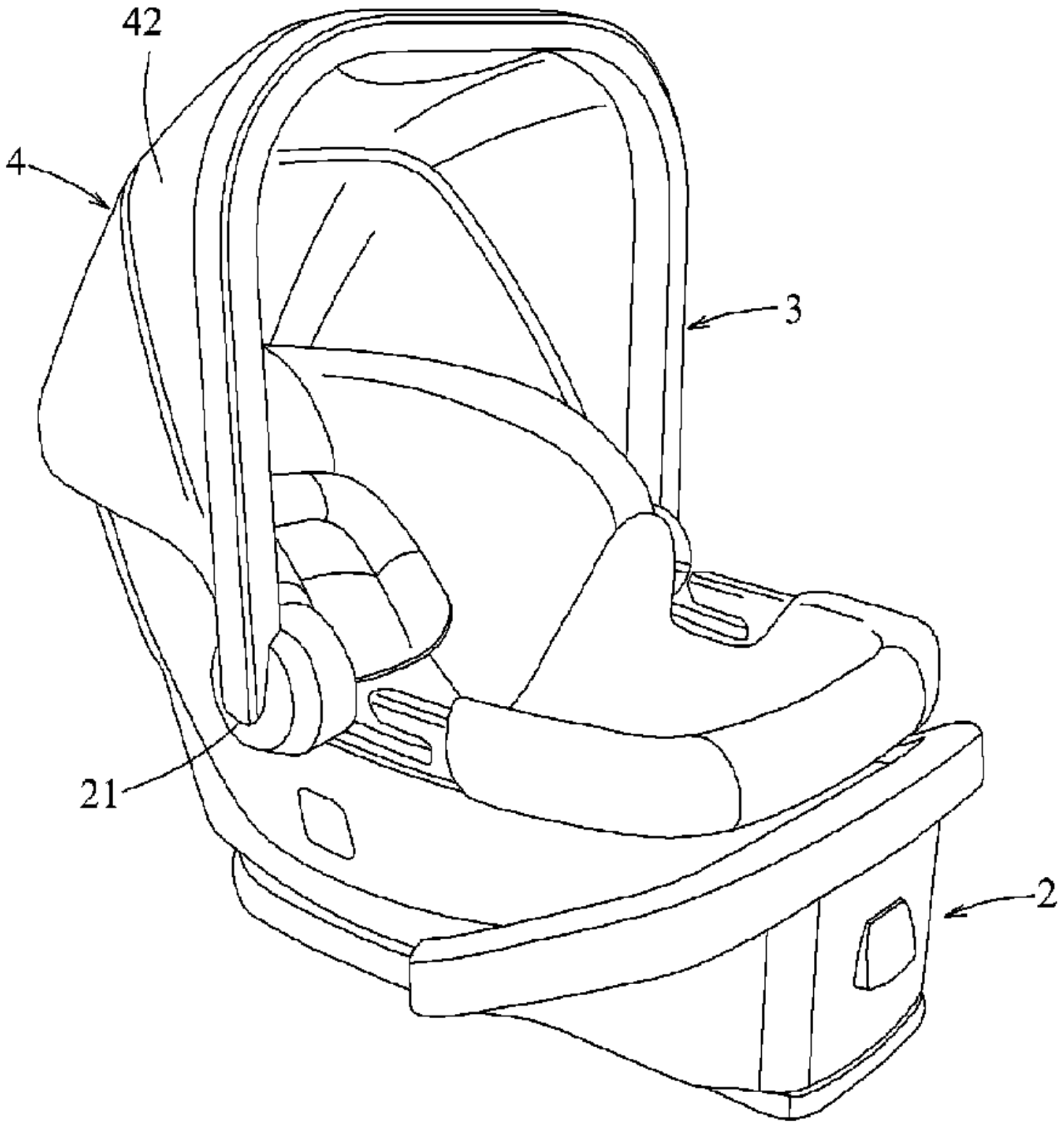


FIG. 13

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