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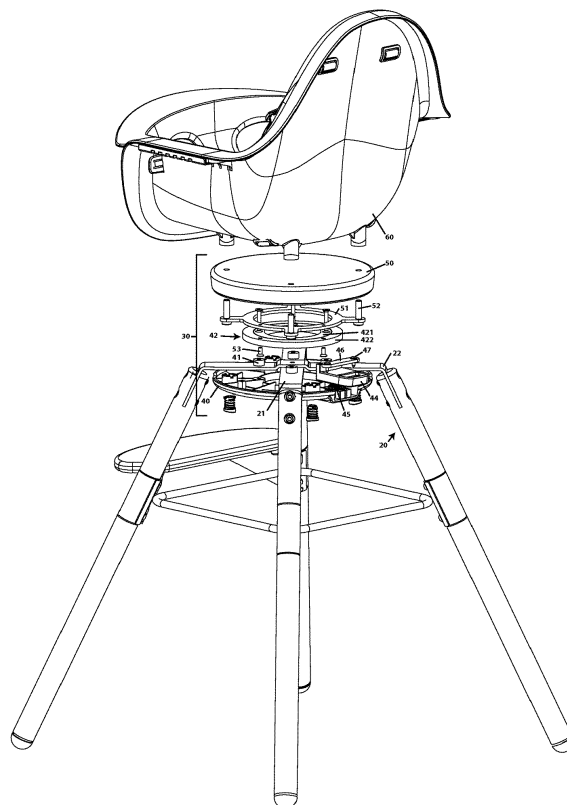
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(54) **HIGH CHAIR WITH SWIVEL FUNCTION WHICH CAN LOCK A SEAT INTO MULTIPLE POSITIONS**

(57) A high chair (10) with a horizontal swivel function which can lock the seat (60) into 3 positions; straight towards a table, 90° clockwise or 90° counterclockwise relative to the table. The swivel seat (60) permits the user/parent to place or feed the child into the seat (60) without moving, lifting or (re)positioning the complete high chair (10). The swivel device (30) is assembled between the high chair base (20) and seat shell (60). The bottom and fixed cover lid of the swivel device (30) is connected to the cross-mounted brackets of the base (20). The upper and swiveling cover lid of the swivel device (30) is connected to the seat shell (60) with 4 allen bolts. A swivel lock (30) includes an actuation latch (44) with a handle positioned on the back of the base for actuation from the back side of the high chair (10), which is the opposite side of the footrest. The actuation latch (44) includes a spring-loaded stop member that is engagable with 3 recesses in a guiding track integrated into the upper cover lid. To secure the rotated position of the seat, the spring-loaded stop member engages 1 of the 3 recesses in the guiding track.

FIG. 3



Description

Field of the invention

[0001] The present invention relates to a children's high chair that incorporates a horizontal swivel feature with 3 lockable positions for the child's seat.

Background of the invention

[0002] High chairs have seats which are typically elevated above a floor to a level that is convenient for an adult to feed the child from the adult's sitting position. Most high chairs have a fixed seat that is oriented in a forward-facing direction of the high chair. When the high chair is situated on a floor surface, the seat position is forward facing at all times. It is sometimes desirable to re-orient the direction in which the child and high chair seat face. To re-orient the seat so that it faces in a different direction, the entire high chair must be rotated relative to the floor surface. Repositioning the high chair with a child in it is heavy and can cause dangerous situations. Swiveling the seat of the high chair on a fixed base is much more convenient and safe.

Summary of the invention:

[0003] This invention provides a high chair that will integrate a swivel function.

[0004] This invention provides a swivel lock mechanism for a children's high chair that will provide 3 seat positions; straight towards a table, 90° clockwise or 90° counterclockwise relative to the table.

[0005] It is an advantage of this invention that the actuation latch can be actuated from the back side of the high chair because this side is always pointing away from the table, therefore easy to remember, find, reach and use.

[0006] It is an advantage of this invention that the actuation latch unlocks the fixed positions by pulling backwards before rotating the seat shell.

[0007] It is a feature of this invention that the actuation latch has a stop member that is engagable with recesses in a guiding track integrated in the upper cover lid of the swivel mechanism.

[0008] It is an advantage of this invention that the actuation latch automatically locks into 1 of the 3 fixed positions by engaging the spring-loaded stop member into one of the recesses in the guiding track.

[0009] It is an advantage of this invention that the sound of the automatic spring-loaded engagement of the swivel lock indicates that the seat shell is safely locked into 1 of the 3 seat positions.

[0010] It is an advantage of this invention that the spring-loaded actuation latch prevents the seat from becoming a free rotating seat.

[0011] These features and advantages are accomplished according to the invention by providing a high

chair that has a swivel function that permits the seat shell to be positioned to the convenience of the user. The high chair includes a swivel device which is assembled between the high chair base and seat shell and that provides the seat shell to swivel relative to the base in both directions. A swivel lock includes an actuation latch with a handle positioned on the rear of the base for actuation from the rear side of the high chair, which is the opposite side of the footrest. The actuation latch includes a spring-loaded stop member that is engagable with 3 recesses in a guiding track integrated into the upper cover lid. To secure the rotated position of the seat, the spring-loaded stop member engages 1 of the 3 recesses in the guiding track.

Brief description of the drawings

[0012] The foregoing and other objects, features, and advantages of the invention will be apparent from the following more particular description of a preferential form of an embodiments of the invention, as illustrated in the accompanying drawings, given as a non-restrictive example.

[0013] It will be appreciated that for simplicity and clarity of illustration, elements shown in the drawings/figures have not necessarily been drawn to scale, nor are these elements necessarily to scale relative to each other. For example, the dimensions of some of the elements may be exaggerated relative to other elements for clarity. Further, where considered appropriate, reference numerals may be repeated among the figures to indicate corresponding or analogous elements. So, in the drawings, the same reference numerals may identify the same elements of structure in each of the several figures where appropriate.

[0014] In the figures, the thickness of certain lines, layers, components, elements or features may be exaggerated for clarity. Broken lines illustrate optional features or operations unless specified otherwise.

[0015] It should also be noted that the figures are only intended to facilitate the description of specific embodiments of the invention. In addition, an aspect described in conjunction with a particular embodiment of the present invention is not necessarily limited to that embodiment and can be practiced in any other embodiment of the present invention.

FIG. 1 is a side view of a high chair incorporating the principles of the present invention;

FIG. 2 is a rear perspective view of a high chair, incorporating the principles of the present invention; FIG. 3 is an exploded view of the swivel lock mechanism of a high chair, incorporating the principles of the present invention, viewed from the top;

FIG. 4 is an exploded view of the swivel lock mechanism of a high chair, incorporating the principles of the present invention, from the bottom;

FIG. 5 is an cross sectional top view of the swivel

lock mechanism of a high chair, incorporating the principles of the present invention, when the seat is pointed straight forward;

FIG. 6 is an cross sectional top view of the swivel lock mechanism of a high chair, incorporating the principles of the present invention, when the seat is unlocked and swivels freely between 2 positions.

[0016] Fig. 3 bis, 4 bis, 5 bis and 6 bis each show the swivel lock mechanism as shown in the Figures 3, 4, 5 and 6 respectively, in zoomed-in mode, so as to clearer show the technical details of such mechanism.

Detailed description of embodiments of the invention

[0017] The following is a detailed description of the preferred embodiments of the invention, reference being made to the drawings.

[0018] It will be appreciated that for simplicity and clarity of illustration, where considered appropriate, numerous specific details are set forth in order to provide a thorough understanding of the exemplary embodiments described herein. The present invention now is described more fully hereinafter with reference to the accompanying drawings, in which embodiments of the invention are shown. However, it will be understood by those of ordinary skill in the art that the embodiments described herein may be practiced without these specific details. Indeed, this invention may be embodied in many different forms and should not be construed as limited to the embodiments set forth herein; rather, these embodiments are provided so that this disclosure will be thorough and complete, and will fully convey the scope of the invention to those skilled in the art.

[0019] In other instances, well-known methods, procedures and components have not been described in detail so as not to obscure the embodiments described herein.

[0020] The present application uses the term "swivel" as it is conventionally used and understood by those practiced in the art of mechanics.

[0021] In the claims as set forth hereinafter, the word "comprising" does not exclude other elements or steps, and the indefinite article "a" or "an" does not exclude a plurality.

[0022] The mere fact that certain measures are recited in mutually different dependent claims does not indicate that a combination of these measures can not be used to advantage.

[0023] Referring to the drawings in FIG. 3 and FIG. 4, a child high chair incorporating the principles of the invention can best be seen. The high chair 10 consists of a base 20 and seat shell 60. In between is the swivel lock device 30 which connects base 20 and seat shell 60. The swivel lock device 30 can be divided into a fixed bottom cover lid 40 and a swiveling upper cover lid 50. The fixed bottom cover lid 40 is mounted beneath the cross mounted brackets 21+22 of the base 20. On top of the cross

mounted brackets 21+22, a turntable bearing 42 is mounted with standoff washers 41 between brackets and bearing. The turntable bearing 42 consists of an inner ring 421 and an outer ring 422. The inner ring 421 will be the fixed member and the outer ring 422 will be the rotating member. The inner ring 421 of the bearing 42 is fixed to the bottom cover lid 40 with 4 bolts 43 which go through the assembly holes of the cross mounted brackets 21+22.

[0024] The swiveling upper cover lid 50 is assembled between mounting plate 51 and seat shell 60 with 4 bolts 52. The mounting plate is connected to the outer ring 422 of the turntable bearing 42 with 4 bolts 53.

[0025] The bottom cover lid 40 houses a latch with integrated stop member member 44 which is spring loaded with 2 springs 45 and kept in place by cover plate 46 and 2 screws 47. The upper cover lid 50 has a guiding track with 3 recesses in which the stop member member of the latch 44 is engaging.

[0026] FIG. 5 is an cross sectional top view of the swivel lock mechanism when the seat shell is pointed straight forward. The black hatched section is the guiding track of the swiveling upper cover lid 50. The stop member of the latch 44 is engaged in the right recess of the guiding track.

[0027] FIG. 6 is an cross sectional top view of the swivel lock mechanism when the seat shell is unlocked and swivels freely between 2 positions. The black hatched section is the guiding track of the swiveling upper cover lid 50. The concave shaped stop member of the spring-loaded latch 44 is pushing against the guiding track of the upper cover lid 50. Once a recess is in front of the stop member, the stop member jumps into the recess and locks the upper cover lid 50. To unlock the position the user should pull the latch 44 backwards out of the recess and rotate the seat shell 60 of the high chair. The handle of the latch 44 will stay in pulled out position till the latch engages the next position.

[0028] It will be understood that changes in the details, materials, steps and arrangements of parts which have been described and illustrated to explain the nature of the invention will occur to and may be made by those skilled in the art upon a reading of this disclosure within the principles and scope of the invention. The foregoing description illustrates the preferred embodiment of the invention; however, concepts, as based upon the description, may be employed in other embodiments without departing from the scope of the invention.

Claims

1. A high chair comprising:

- a seat shell (60) sized to support a child;
- a base (20) with supporting brackets at the top;
- a swivel lock mechanism (30), positioned between the seat shell and the base to selectively

- control the rotation of the seat shell relative to the base,
- said swivel lock mechanism
- comprising a bottom non-moving cover lid (40), an upper moving cover lid (50), and a horizontally oriented turntable bearing (42), connecting said base and said seat shell, and further comprising a spring loaded actuation latch (44), located in the bottom non-moving cover lid of the swivel lock mechanism fixed to said base, to be selectively engagable with the upper moving cover lid of the swivel lock mechanism fixed to said seat shell;
 - preventing movement of the seat shell in a locked position when the actuation latch is engaged within the said upper moving cover lid and
 - allowing pivotally movement of the seat shell between 2 locked positions when the actuation latch is disengaged from the said upper moving cover lid.
2. The high chair of claim 1 wherein:
- said upper moving cover lid affixed to said seat shell has an integrated guiding track with 3 recesses;
 - said actuation latch has a stop member selectively engagable with 1 of 3 said recesses in said guiding track;
 - said stop member being engaged with one of 3 said recesses when said actuation latch is in said locked position;
 - said stop member being disengaged from a recess in said guiding track when said actuator latch is in said unlocked position to control the rotation of said seat shell.
3. The high chair of claim 1 or 2 wherein said actuation latch includes an actuator handle projecting out of said bottom cover lid for sliding manipulation of said actuation latch.
4. The high chair of claim 3 wherein said stop member and said actuator handle are on opposing sides of said actuator latch such that an extension of said actuator handle out the said bottom cover lid will cause said actuator latch to slide out of said locked position.
5. The high chair of claim 4 wherein said actuator latch includes an actuator handle, located at the rear side of said base of which the foot rest is the front side, extension of said actuation handle will unlock said upper moving cover lid affixed to said seat shell and allow said seat shell to rotate freely between 2 locked
- positions.
6. The high chair of claim 5 wherein said actuator latch will be in an extended position while said seat shell is moving between 2 locked positions.
7. The high chair of claim 2 wherein said guiding track is an extruded half circular edge with recesses, at the begin, middle and end of the half circle, with the opposite form of said stop member in which said stop member of said actuator latch engages automatically and stops said seat shell from moving in a locked position, when said guiding track is interrupted by said recess.
8. The high chair of claim 7 wherein said actuator latch is spring-loaded toward said locked position and said stop member will jump into said recess.
9. The high chair of claim 2 wherein said seat shell is pointing straight forward to a table or front side of said base when said stop member is engaged in the middle recess and said seat shell is pointing to left or right of said base when said stop member is engaged in a recess at the begin or end of said half circular guiding track.
10. The high chair of claim 9 wherein said seat shell is unable to rotate past said begin or end of said half circular guiding track and wherein said seat shell is enabled to rotate over 180° from begin to end of said guiding track.
11. The high chair of claim 10 wherein said bottom cover lid has two stop members interfering with a protruding pin of said upper cover lid when said seat shell is in its utmost positions.

FIG. 1

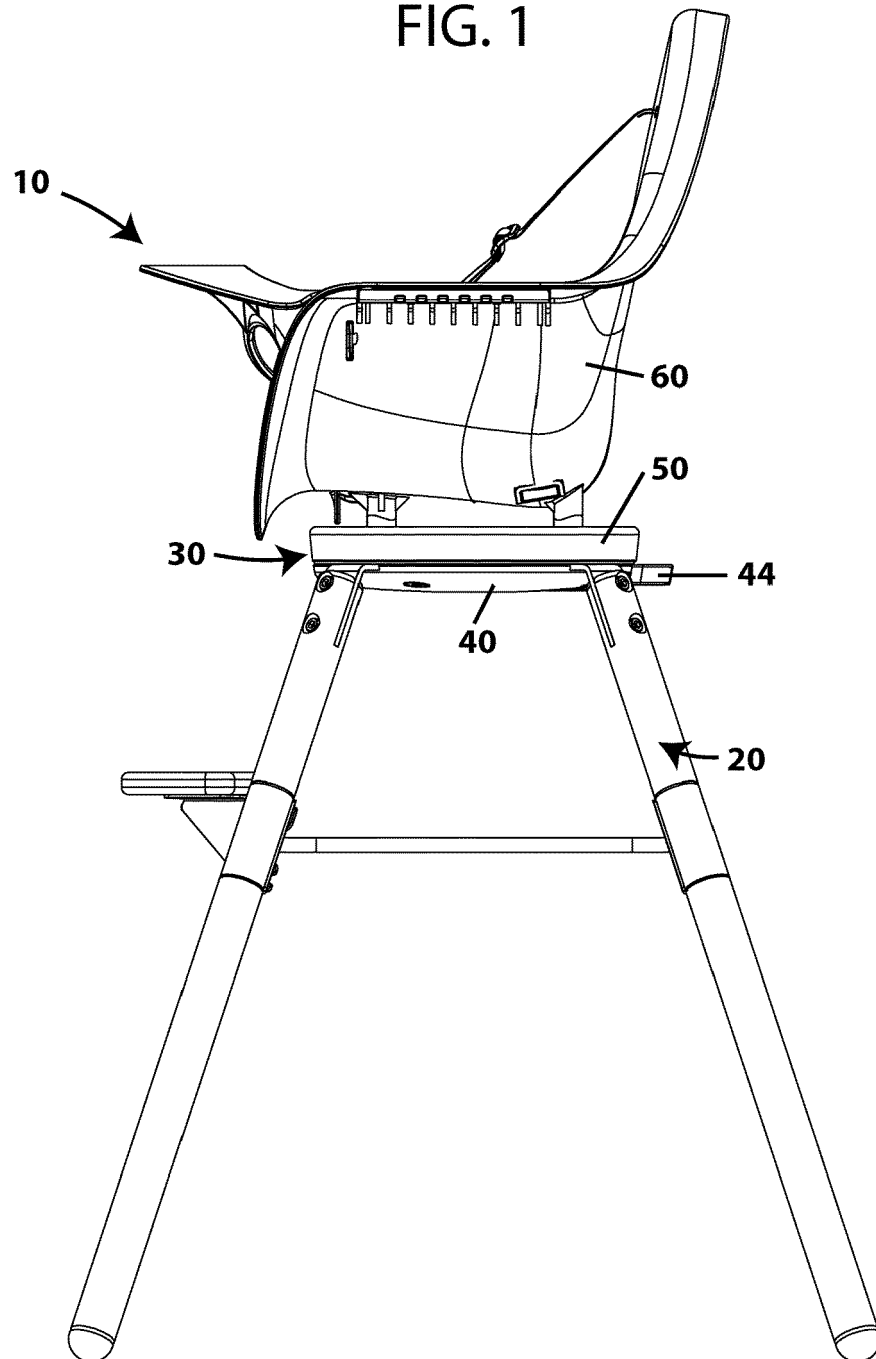


FIG. 2

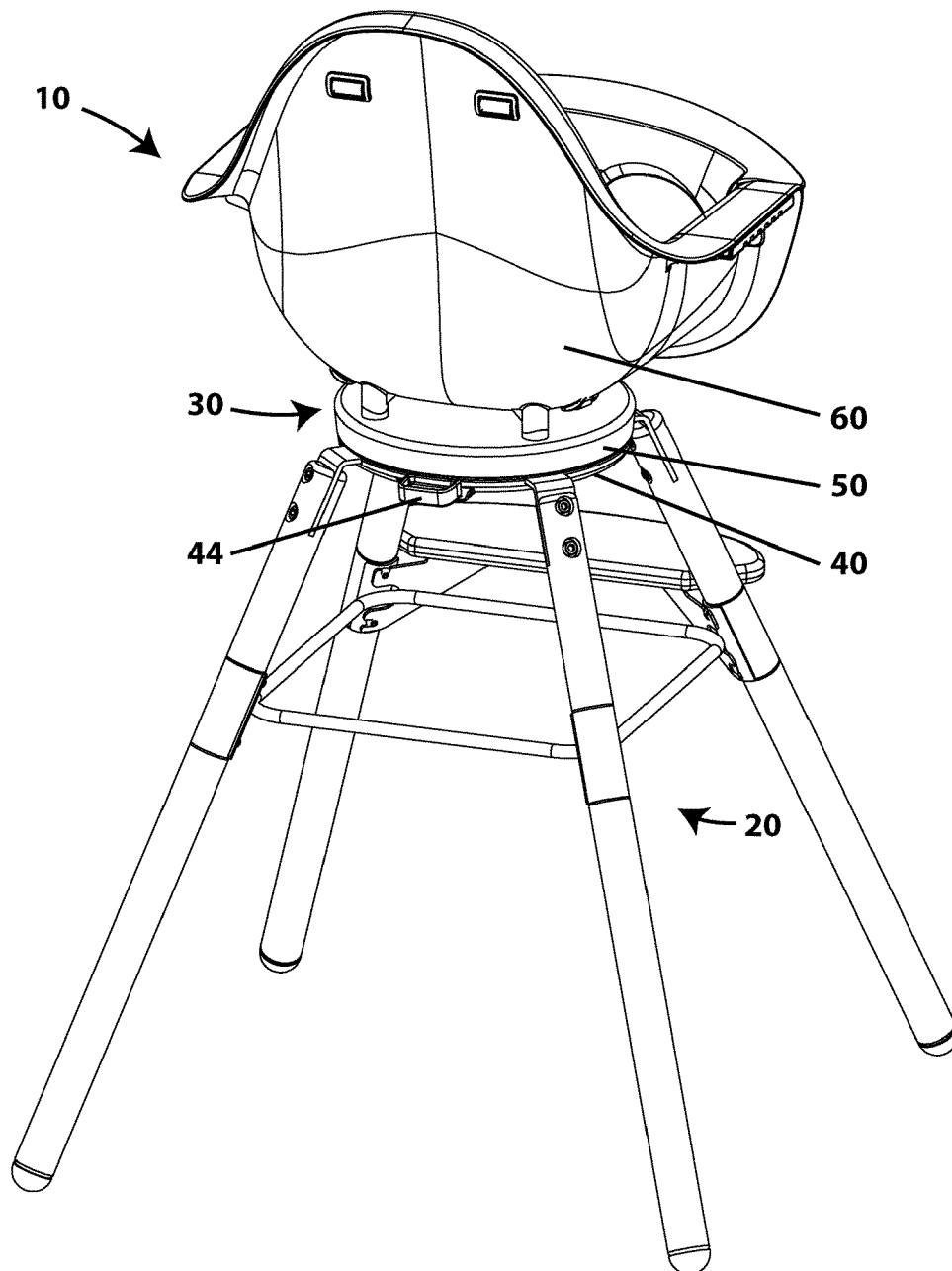


FIG. 3

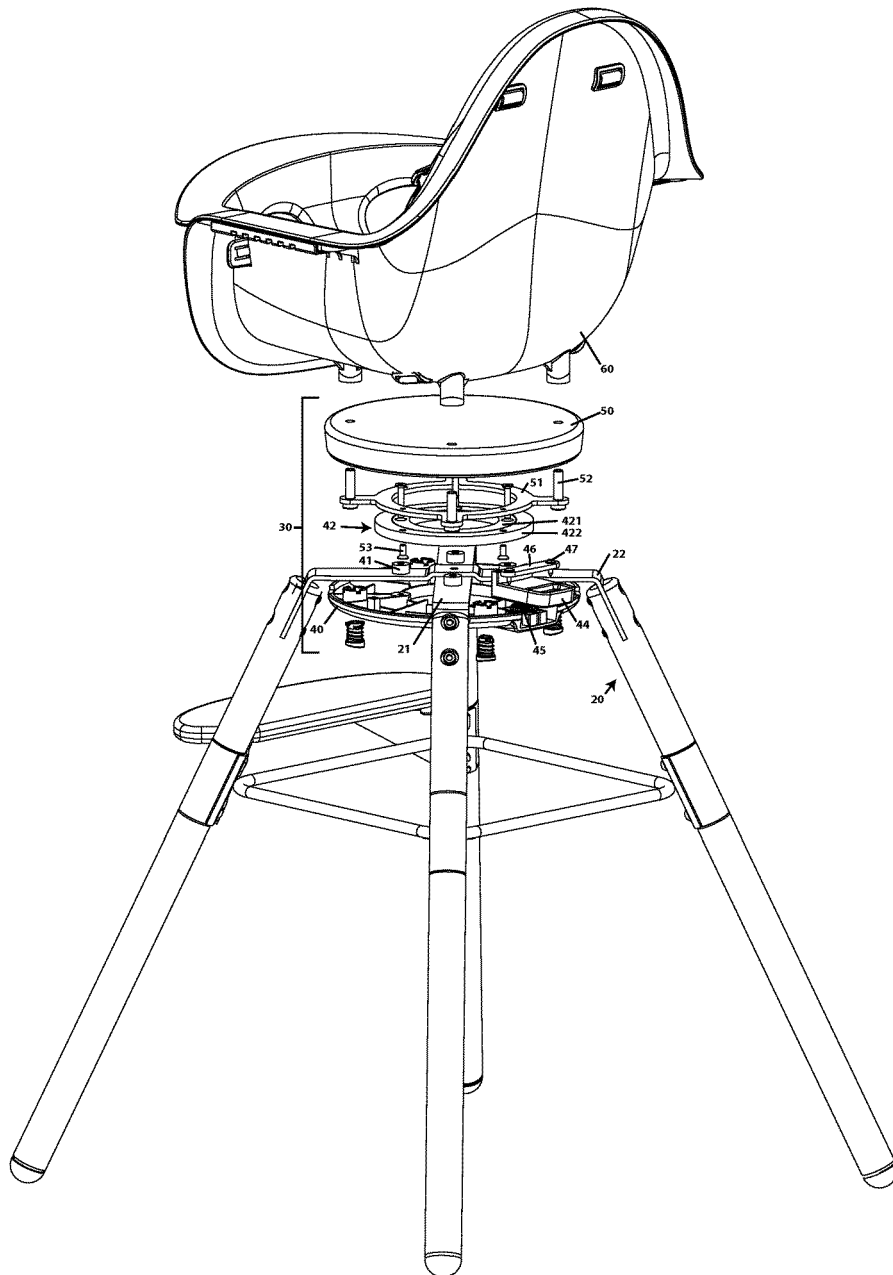


FIG. 3bis

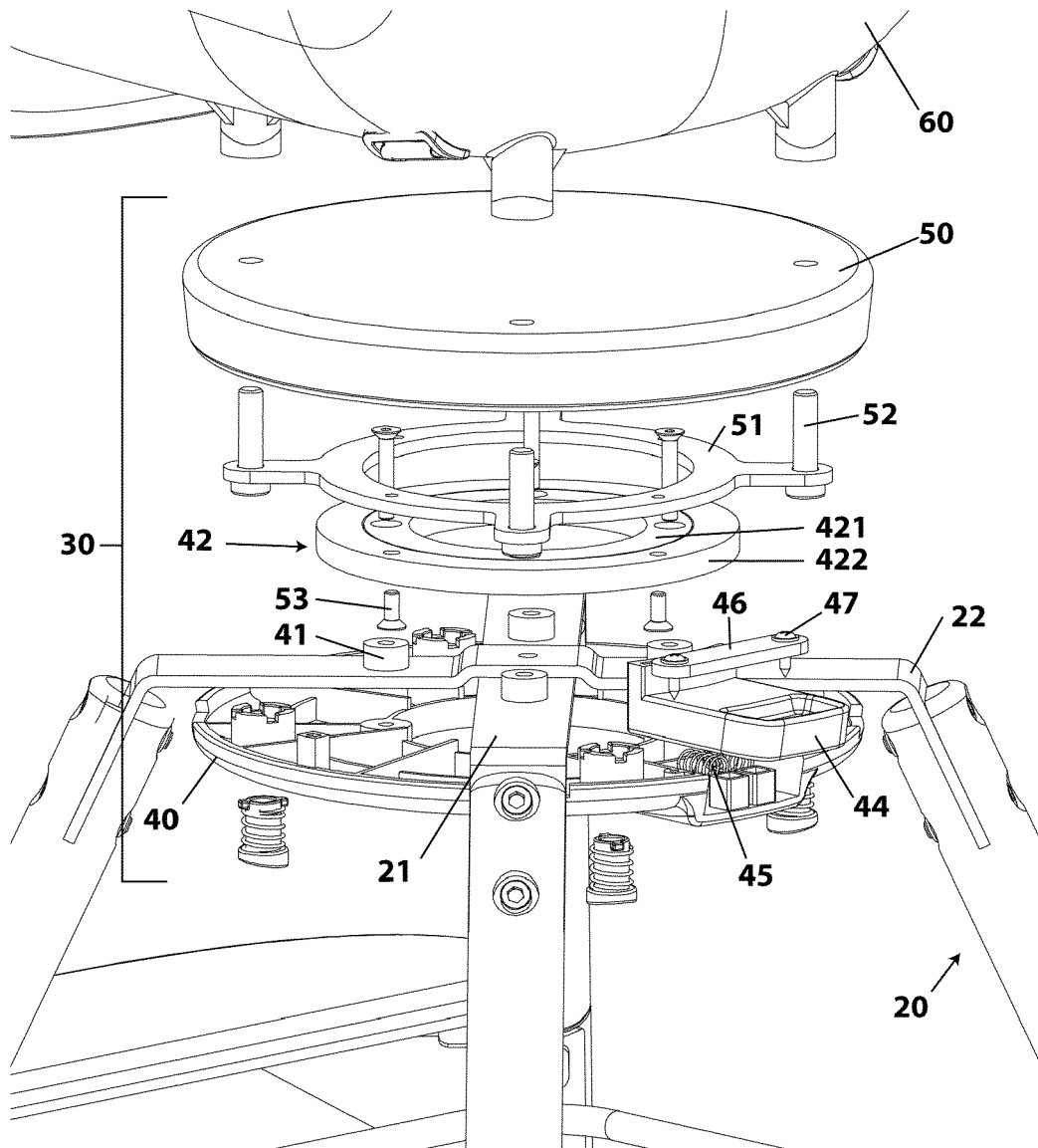


FIG. 4

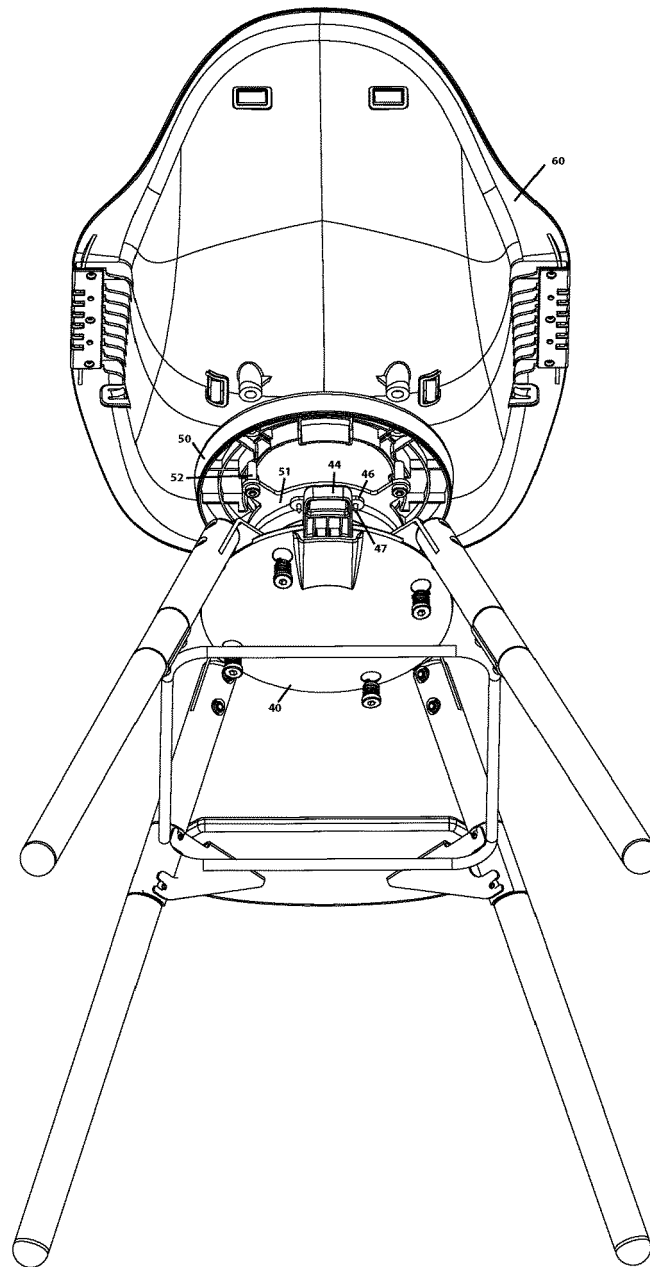


FIG. 4bis

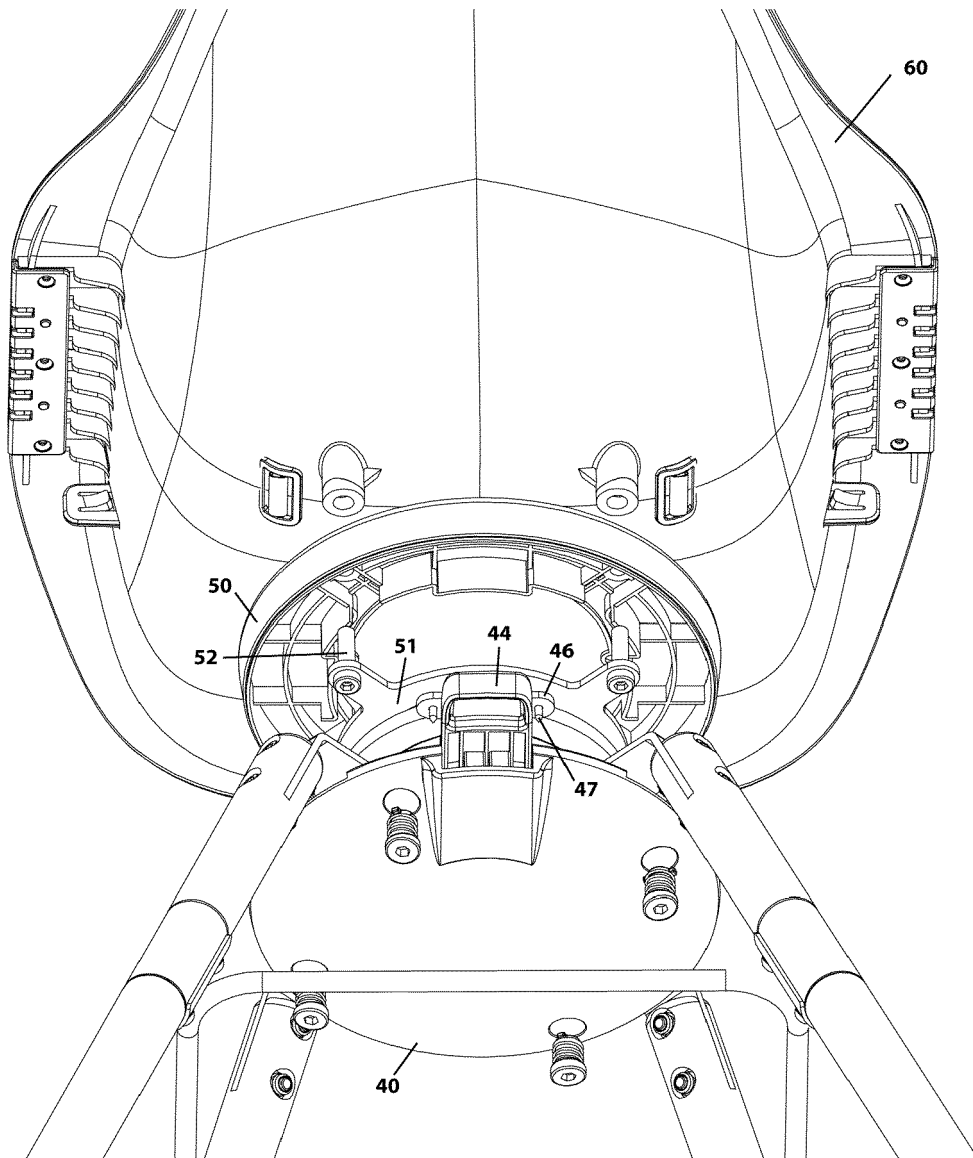


FIG. 5

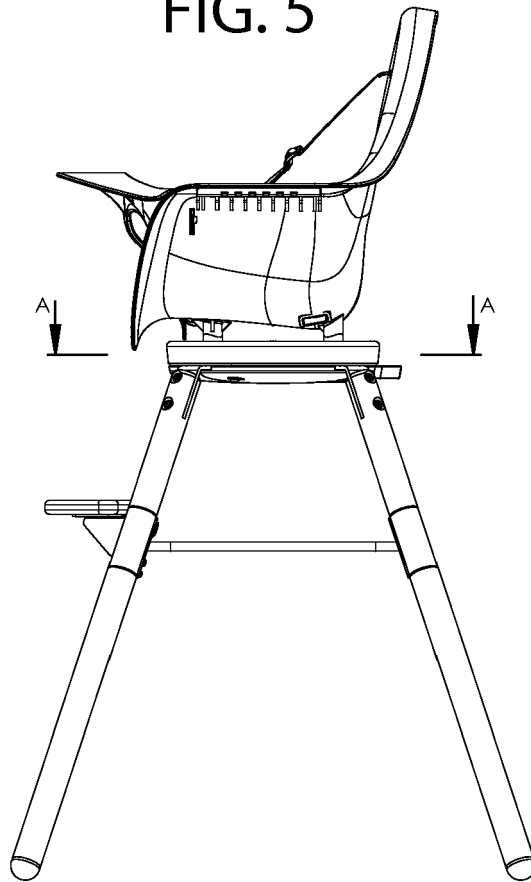


FIG. 5A

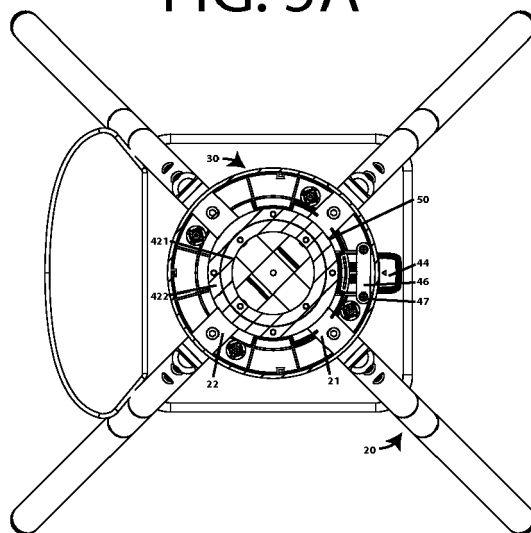


FIG. 5bis

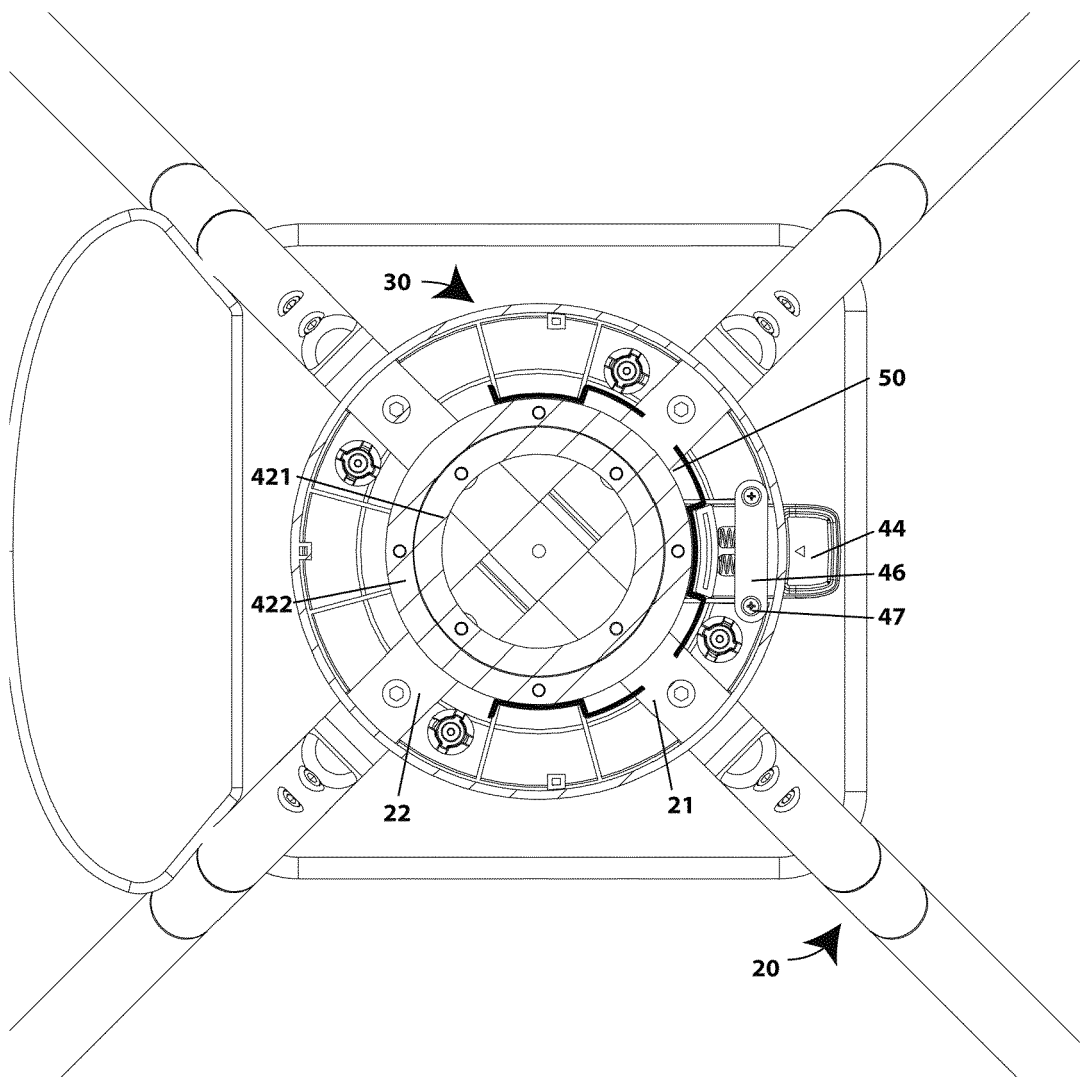


FIG. 6

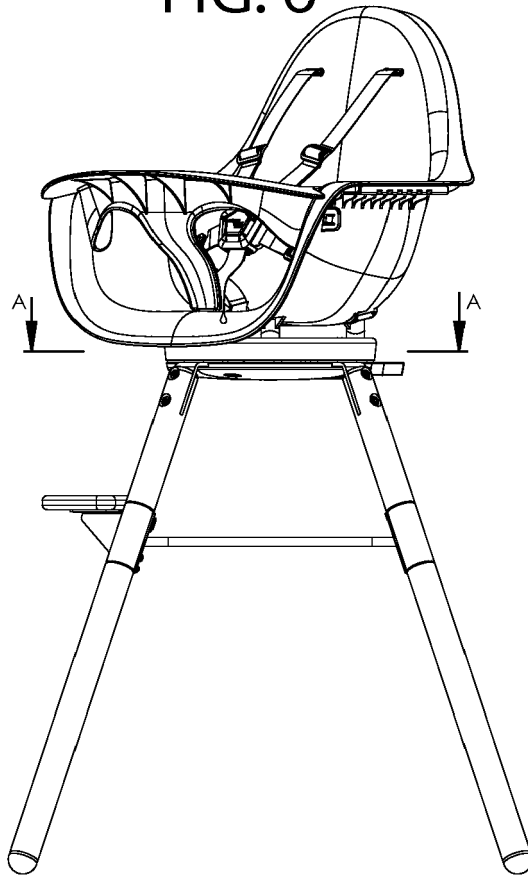


FIG. 6A

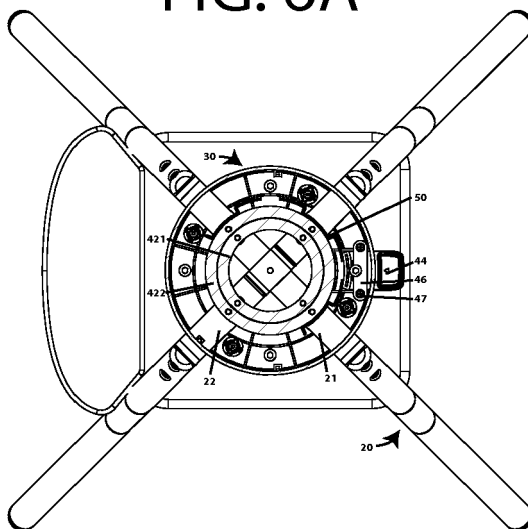
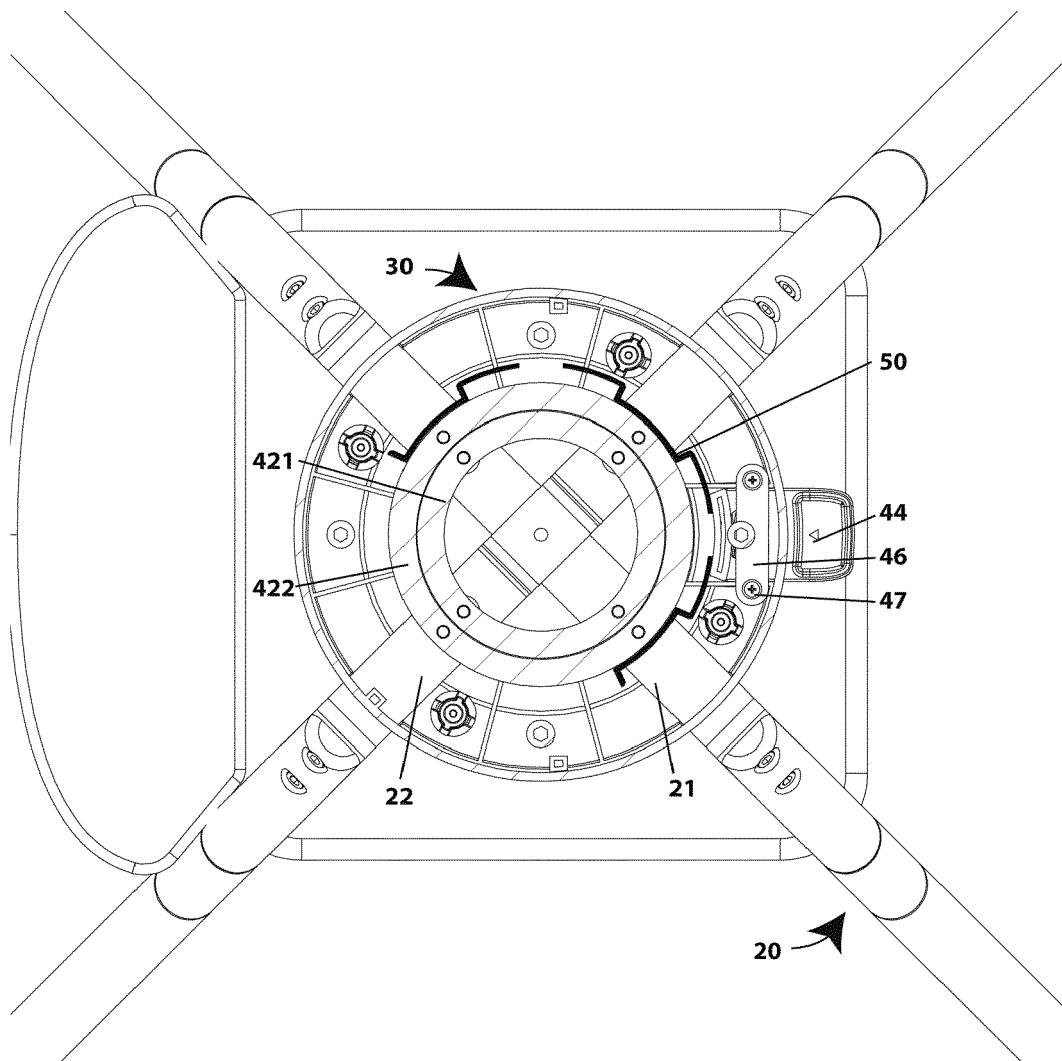


FIG. 6bis





EUROPEAN SEARCH REPORT

Application Number
EP 17 02 0281

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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			A47D A47C
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 16 January 2018	Examiner Kus, Slawomir
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

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**ANNEX TO THE EUROPEAN SEARCH REPORT
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16-01-2018

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