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(54) **Quick-release toilet cover hinge**

(57) A quick-release toilet cover hinge includes a fixing bolt (2), a locking base (3), and a lid (4). To assemble, the toilet cover hinge is coupled to a toilet cover. The fixing bolt (2) is inserted into and engaged with a calabash-shaped engaging hole (331), and a stopping block (42) is to press against the bolt head (21), which locks the toilet seat to the fixing bolt (2). To disassemble, the users place their fingers into arched notches (32) of the locking base (3) to pull the lid (4) up and to disassemble the toilet cover for replacement or cleaning; the fixing bolt (2) does not need to be unscrewed from the toilet bowl to remove the toilet seat. To reassemble, the locking base (3) directly engages with the fixing bolt (2), which provides for a quick and convenient assembly and disassembly of the toilet seat.

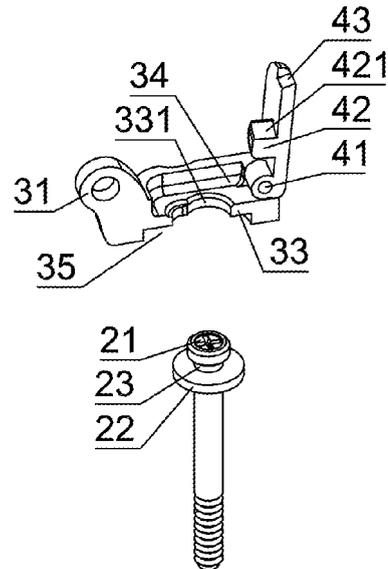


Fig. 5-A

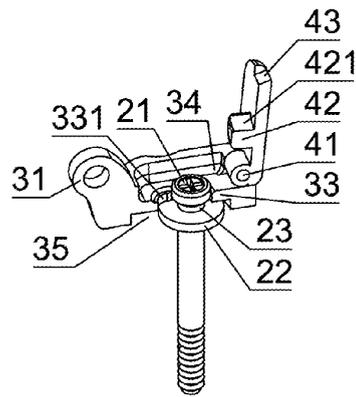


Fig. 5-B

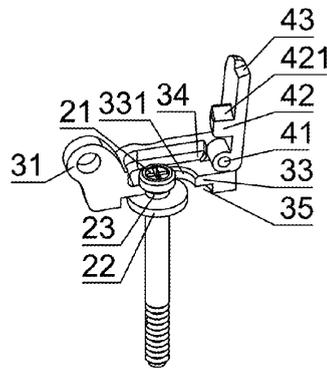


Fig. 5-C

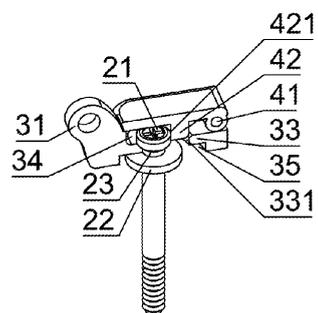


Fig. 5-D

Description

BACKGROUND OF THE INVENTION

1. Field of the Invention

[0001] The present invention relates to a quick-release structure of a toilet cover hinge, and more particularly to one having a fixing bolt secured to the rearmost of a toilet seat. The fixing bolt has a neck for engaging with the smaller opening of a calabash-shaped engaging hole, a bolt head located in an accommodating trough and a stopper located in a sliding trough. A lid is adapted to cover a locking base, with a stopping block having a front surface to hold against the side of the bolt head to achieve a quick and easy assembly and disassembly.

2. Description of the Prior Art

[0002] A conventional toilet cover hinge contains an engaging board 5. The engaging board 5 has one end pivotally connected to a connecting shaft C1 of a toilet cover C and another end having engaging slots 51 for insertion of the bolt heads of two bolts. The bolts are inserted into bolt holes and secured to a toilet seat with nuts. The conventional toilet cover hinge has the following shortcomings:

1. Because the engaging board and the toilet cover are not connected fixedly, the user has to hold them steadily with both hands and then find out the right position. The engaging board and the toilet cover may block the user's sight to align the bolts and the bolt holes, which takes much time to assemble. Perhaps, the user has to bend down for better sight. This is not convenient in use.

2. It is not easy to clear the area where the toilet cover is connected to the hinge, except that the toilet cover is disassembled. The user has to bend down to unscrew the nuts when disassembly is required, which is laborious to clean and easy to be contaminated. After cleaning, it is necessary to screw the nuts again so as to secure the toilet cover.

[0003] Accordingly, the inventor of the present invention has devoted himself based on his many years of practical experiences to the development of a quick-release structure of a toilet cover hinge for a quick and easy assembly and disassembly.

SUMMARY OF THE INVENTION

[0004] According to the present invention, there is provided a quick-release structure of a toilet cover hinge, comprising of:

a fixing bolt, comprising a bolt head, a stopper un-

derneath the bolt head, and a neck between the bolt head and the stopper;

a locking base, comprising a locking ring at a front end thereof, a pair of arched notches at the respective sides thereof, a partition having a calabash-shaped engaging hole at a central portion thereof for partitioning an upper accommodating trough and a lower sliding trough; and

a lid, comprising of a pivot at a lower end thereof and a stopping block at a central section thereof.

BRIEF DESCRIPTION OF THE DRAWINGS

[0005]

Fig. 1 is an exploded view of the prior art;

Fig. 2 is a perspective view of a preferred embodiment of the present invention;

Fig. 2-A is an enlarged view of the preferred embodiment of the present invention;

Fig. 3 is another perspective view of the preferred embodiment of the present invention;

Fig. 3-A is another enlarged view of the preferred embodiment of the present invention;

Fig. 4 is a perspective view of the preferred embodiment of the present invention coupled to a toilet cover;

Fig. 5-A is a perspective view of the preferred embodiment of the present invention in the first operating position;

Fig. 5-B is the perspective view of the preferred embodiment of the present invention in a second operating position;

Fig. 5-C is a perspective view of the preferred embodiment of the present invention in the third operating position;

Fig. 5-D is a perspective view of the preferred embodiment of the present invention in the fourth operating position;

Fig. 6-A is a cross-sectional view of the preferred embodiment of the present invention in the first operating position;

Fig. 6-B is a cross-sectional view of the preferred embodiment of the present invention in the second operating position;

Fig. 6-C is a cross-sectional view of the preferred embodiment of the present invention in the third operating position;

Fig. 6-D is a cross-sectional view of the preferred embodiment of the present invention in the fourth operating position;

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0006] Embodiments of the present invention will now be described, by way of example only, with reference to the accompanying drawings.

[0007] As shown in Figs. 2, 2-A, 3, 3-A and 4, a quick-release structure of a toilet cover hinge according to a preferred embodiment of the present invention comprising of a fixing bolt 2, a locking base 3, and a lid 4.

[0008] The fixing bolt 2 comprises of a bolt head 21, a stopper 22 underneath the bolt head 21, and a neck 23 between the bolt head 21 and the stopper 22.

[0009] The locking base 3 comprises of a locking ring 31 at a front end thereof for connecting with a connecting shaft C1 of a toilet cover C, a pair of arched notches 32 at the respective sides thereof for insertion of a user's fingers, a partition 33 at a central portion for partitioning an upper accommodating trough 34 and a lower sliding trough 35, and a calabash-shaped engaging hole 331.

[0010] The lid 4 comprises of a pivot 41 at a lower end thereof, a stopping block 42 at a central section thereof, and a recess 43 at a front end thereof. The pivot 41 is connected with an axle provided at a rear end of the accommodating trough 34 of the locking base 3. The stopping block 42 has a front surface 421 for holding against the side of the bolt head 21 of the fixing bolt 2 when the lid 4 is coupled to the locking base 3. The recess 43 is designed to correspond to the locking ring 31 of the locking base 3.

[0011] Referring to the Figs. 2 and Figs. 5-A-D, the rear end of the locking base 3 is pivotally connected with the lid 4. The locking ring 31 of the locking base 3 is connected to the connecting shaft C1. The locking base 3 is above the fixing bolt 2, as shown in Fig. 5-A. The bolt head 21 is inserted through the larger opening of the calabash-shaped engaging hole 331. The bolt head 21 is located in the accommodating trough 34, while the stopper 22 is located in the sliding trough 35, as shown in Fig. 5-B. The fixing bolt 2 is moved transversely, with the neck 23 engaging with the smaller opening of the calabash-shaped engaging hole 331, as shown in Fig. 5-C. The lid 4 is pushed to cover the locking base 3, with the stopping block 42 inserting into the accommodating trough 34 and the front surface 421 holding against the side of the bolt head 21. The recess 43 engages with the edge of the locking ring 31, as shown in Fig. 5-D. The fixing bolt 2 is inserted into the toilet's bolt hole and secured, with the stopper 22 tightly attached to the toilet. This provides for a quick and definite engagement.

[0012] Referring to Fig. 2 and Figs. 6-A-D, when it is necessary to replace or clean the toilet cover C, the operating procedures are reverse to the aforesaid and will be described hereinafter. The user places their fingers into the notches 32 and pulls the lid 4 upwards. The neck 23 of the fixing bolt 2 is retreated from the smaller opening to the larger opening of the calabash-shaped engaging hole 331. The locking base 3 is moved upwards to disengage from the bolt head 21, therefore, the toilet cover C is disassembled for replacement or cleaning. After replacement or cleaning, the toilet cover is reassembled with the aforesaid procedures, as shown in Figs. 6-A-D. This provides for a quick and definite disassembly and re-assembly of the toilet seat without having to remove the fixing bolt. Alternatively, the fixing bolt would need to be uninstalled and reinstalled to remove and replace the toilet seat.

Claims

1. A quick-release structure of a toilet cover hinge, comprising of:
 - a fixing bolt comprising of a bolt head, a stopper underneath the bolt head, a neck between the bolt head and the stopper;
 - a locking base, comprising of a locking ring at a front end thereof, a pair of arched notches at the respective sides thereof, a partition having a calabash-shaped engaging hole at the central portion thereof for partitioning an upper accommodating trough and a lower sliding trough; and
 - a lid, comprising a pivot at a lower end thereof and a stopping block at a central section thereof.
2. The quick-release structure of a toilet cover hinge as claimed in Claim 1, wherein the lid further has a recess at a front end thereof, corresponding to the locking ring of the locking base.

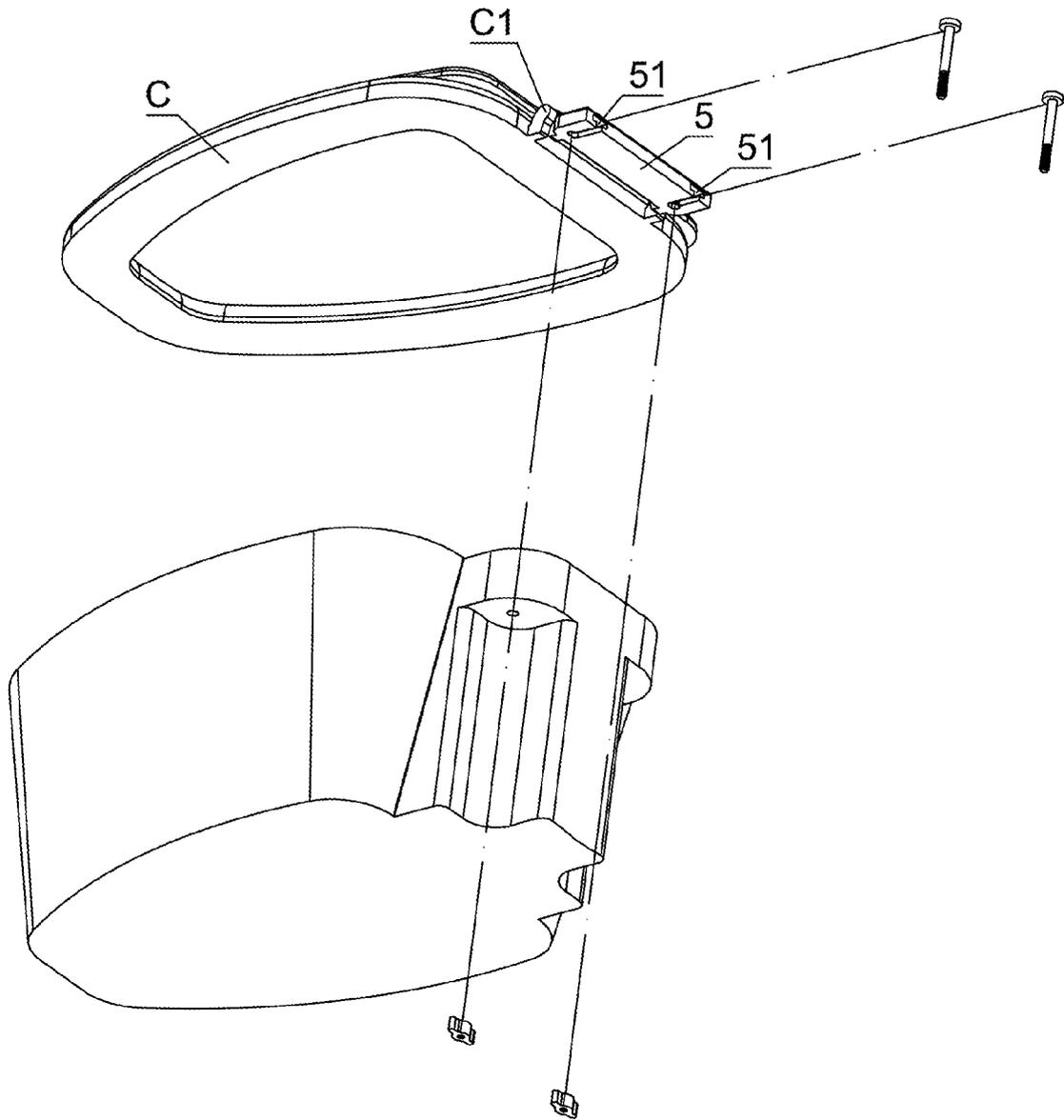


Fig. 1

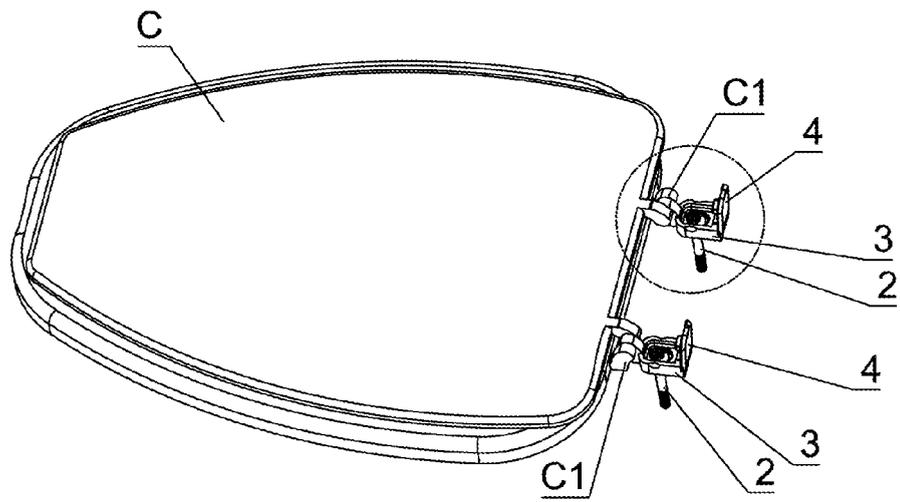


Fig. 2

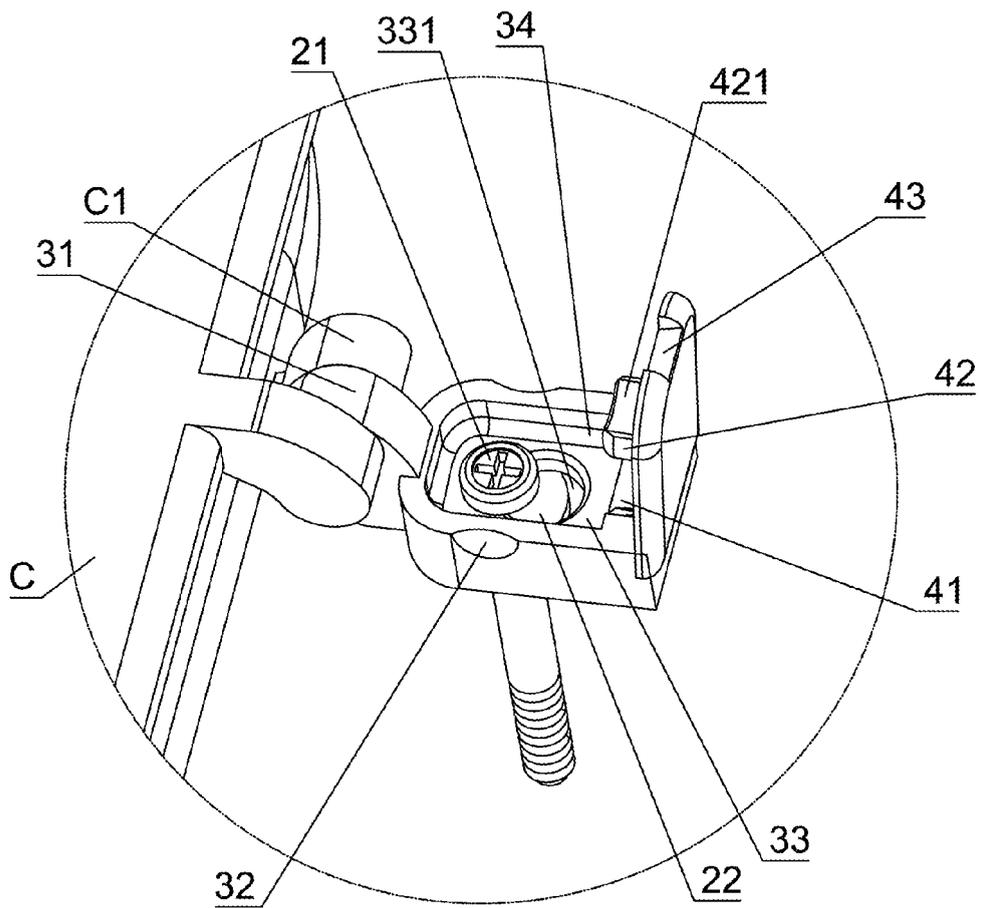


Fig. 2-A

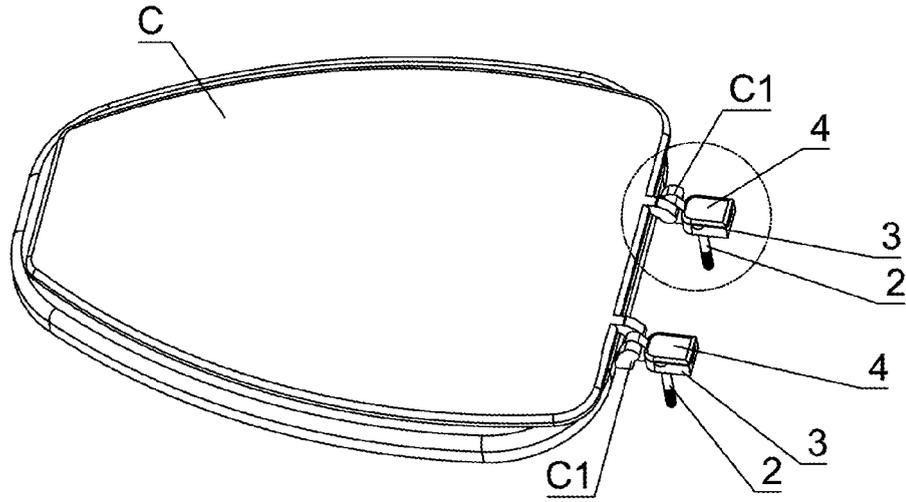


Fig. 3

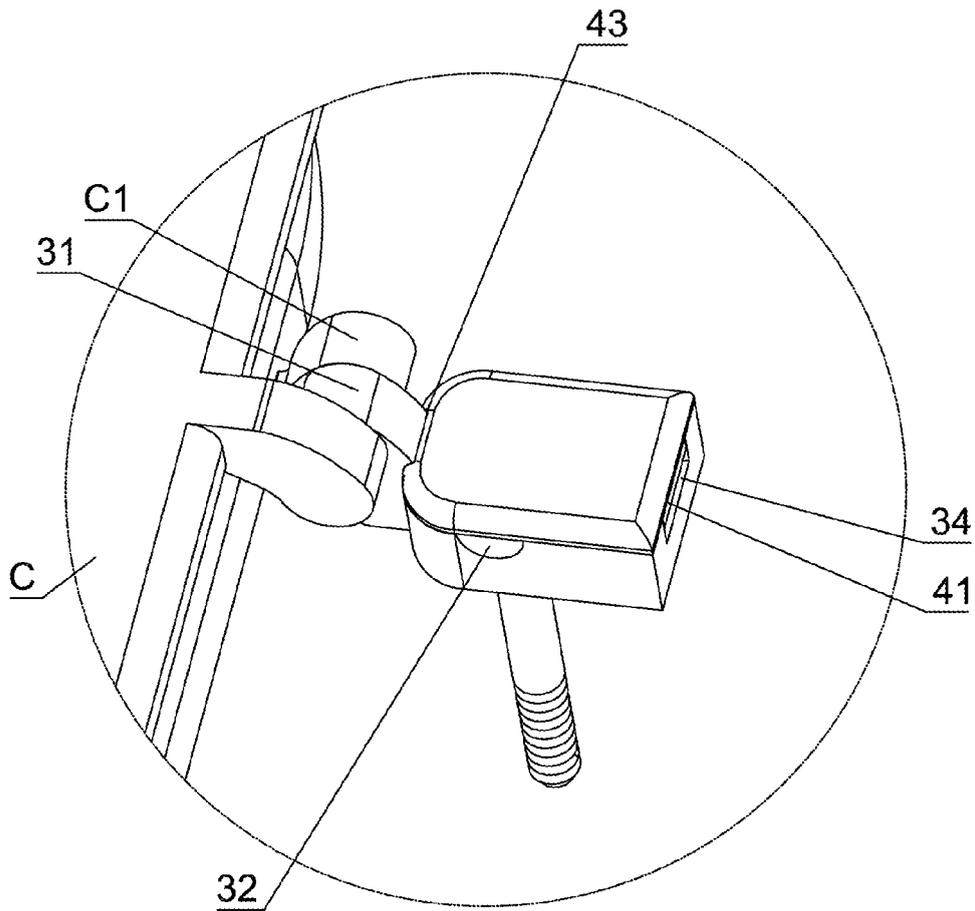


Fig. 3-A

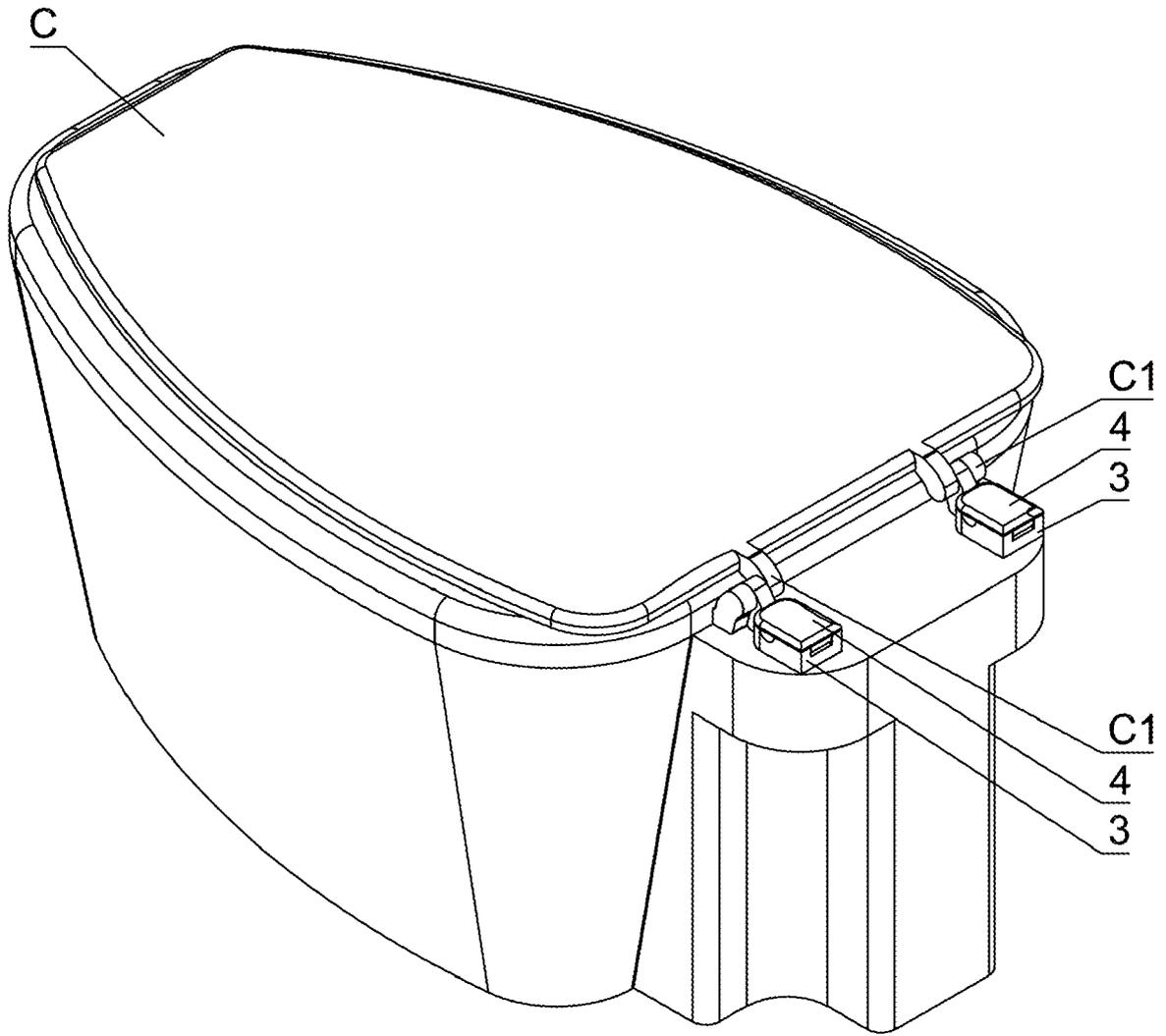


Fig. 4

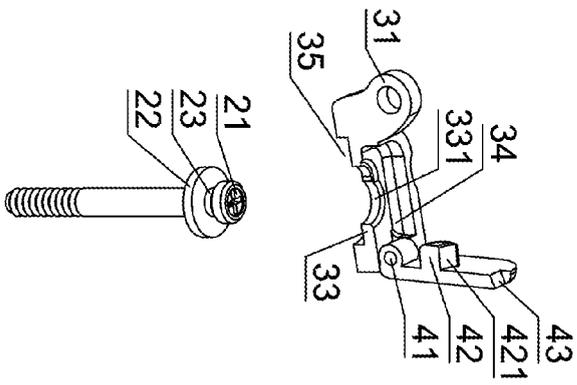


Fig. 5-A

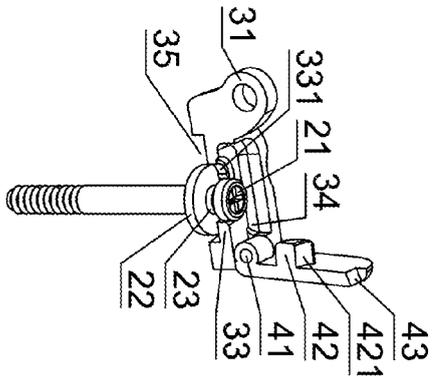


Fig. 5-B

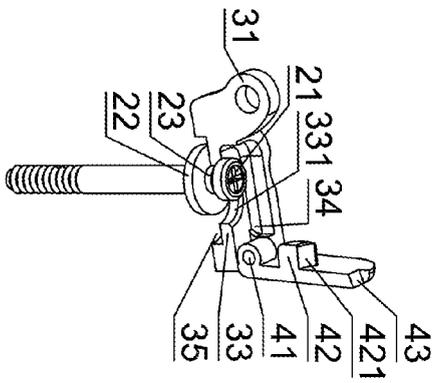


Fig. 5-C

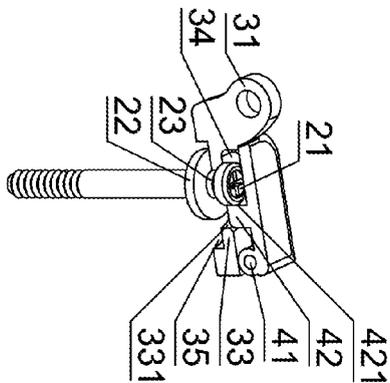


Fig. 5-D

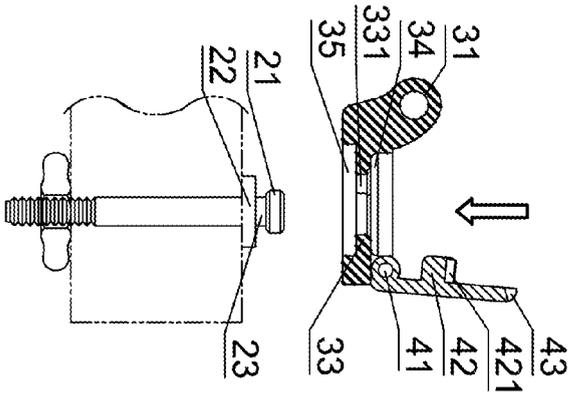


Fig. 6-A

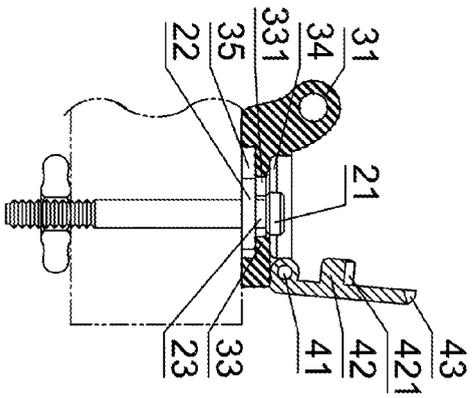


Fig. 6-B

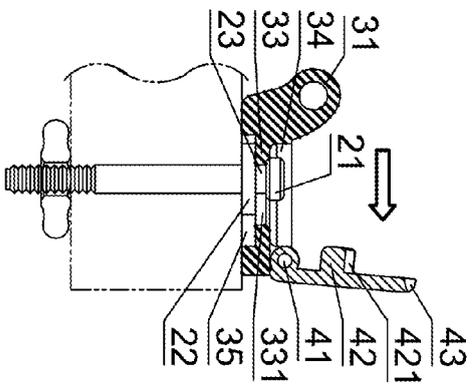


Fig. 6-C

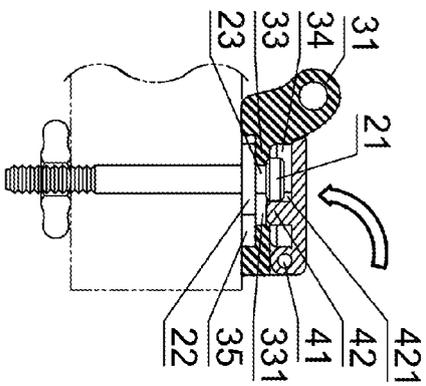


Fig. 6-D



EUROPEAN SEARCH REPORT

Application Number
EP 11 15 0270

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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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			TECHNICAL FIELDS SEARCHED (IPC)
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The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
Munich		16 May 2011	Fajarnés Jessen, A
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone		T : theory or principle underlying the invention	
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P : intermediate document		& : member of the same patent family, corresponding document	

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**ANNEX TO THE EUROPEAN SEARCH REPORT
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