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(54) A shower cabin of easy installation and uninstallation and a method for assembling a shower cabin

(57) The invention relates to a shower cabin comprising a base (1), a guide profile (2) installed on the base, one or more movable doors (3), a left back screen (4) and a right back screen (5). According to the invention the back screens are interconnected by several adjustable clips (30). These may include a left and a right fixture element (6,7), a retaining ring (8) and a control element (9), where one end of each fixture element is inserted into a groove (410,510) of one of the back screens. A panel (14) equipped with shower head (13) and/or jet nozzles may be mounted on a fixture element. Both ends of the guide profile may have a basis (18) with an installation slot (19) for interconnection of the base, a side profile (24) of a back screen and the guide profile by means of a connecting pin (20) and a bolt (25).

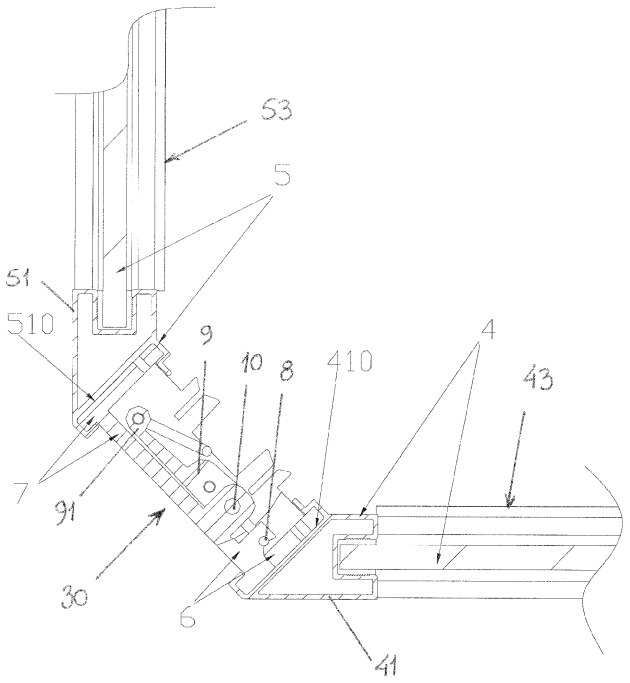

Figure 9

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Description

[0001] The present invention relates to a shower cabin of easy installation and uninstallation comprising a base, a guide profile installed on the base, one or more movable doors, a left back screen and a right back screen.

[0002] Traditional shower cabins have the following defects: 1) Installation and uninstallation are troublesome and time-consuming and take at least half an hour; 2) The left back screen and the right back screen, which are typically made of glass, are adjoined by aluminium profile, which is relatively costly; 3) A panel with a shower head is mounted to the piece interconnecting the left back screen and the right back screen and fixed with bolts and nuts. Since the space between the left back screen and the right back screen is occupied, it is inconvenient to access the bolts and nuts during installation and repair.

[0003] It is the object of the present invention to overcome the limitations of current technology, by providing a shower cabin of easy and fast installation and uninstallation with simple structure and low cost.

[0004] This object is realized through the following technical scheme:

> A shower cabin of easy installation and uninstallation includes several adjustable clips for adjoining the left back screen and the right back screen.

[0005] The said adjustable clips preferably include left fixture element, right fixture element, retaining ring and control element. In an embodiment, one end of the left fixture element is inserted into a groove of the left back screen and one end of the right fixture element is inserted into a groove of the right back screen. A depressed part of the left fixture element joins a convex part of the right fixture element. The control element is installed by means of a pin on a convex lug in the right fixture element and one side of the retaining ring is pivoted to the middle of the control element, while another side of the retaining ring is buttoned to an arm of the left fixture element.

[0006] An auxiliary retaining ring may also be pivoted to the tail of the said control element.

[0007] In a preferred embodiment, the said right fixture element has a groove and the back of the panel equipped with shower head, jet nozzles or the like has a rib inserted into the groove. The back of the panel may be equipped with an elastic buckle, which is hooked to the back of the right fixture element.

[0008] According to another aspect of the invention, both ends of the guide profile have a basis, on which an installation slot is provided and the connecting pin is inserted. A side profile of the left back screen or the right back screen is inserted into the installation slot and the bottom of the profile may have a cover with an open hole, through which the top of the connecting pin is inserted into the profile. The bottom of the connecting pin can be inserted into a notch of the base.

[0009] In a preferred embodiment a bolt is inserted into the guide at the end of the said guide profile. The bolt passes through the basis and its tip is inserted into the bottom of the profile.

[0010] Compared with the current techniques, the invention provides the following advantages: 1) The left back screen and the right back screen are adjoined by adjustable clips instead of aluminium profile, which enables quick and less troublesome installation and uninstallation and costs less due to simple structure, and it takes only about five minutes to install or uninstall; 2) The adjustable clips include left fixture element, right fixture element, retaining ring and control element. The depressed part of the left fixture element joins the convex part of the right fixture element, the control element is installed by the pin on the convex lug in the right fixture element and one side of the retaining ring is pivoted to the middle of the control element, while another side of the retaining ring is buttoned to the arm of the left fixture element. Such structure is simple and easy to use. Moreover, the auxiliary retaining ring being pivoted to the tail of the said control element makes it easy to hook the retaining ring and join the left fixture element and the right fixture element; 3) The right fixture element having a groove and the back of the panel quipped with shower head having a rib inserted into the groove and the back of the panel being equipped with the elastic buckle, which is hooked to the back of the right fixture element, means that there is no need to install with bolt and nut. The user only needs to clamp the panel with the adjustable clips. It is easy to install and uninstall and the structure is new and practical; 4) Both ends of the guide profile have a basis, on which the installation slot is provided and the connecting pin is inserted, the bottom of the connecting pin is inserted into the notch of the base, the side profile of the left back screen or the right back screen is inserted into the installation slot and the bottom of the profile has a cover with an open hole, through which the top of the connecting pin is inserted into the profile. The connecting pin is well fixed when its top is pressed by the left back screen or the right back screen and it takes a short time to install; 5) The bolt is inserted into the guide at the end of the guide profile and the bolt passes through the basis and its tip is inserted into the bottom of the side profile. This prevents people from lifting the back screen, which may cause it to break away from the connecting pin on the basis. Moreover, it prevents accident caused by connection failure, thus improving the safety and reliability.

[0011] In this, some features, such as the groove for receiving the rib on the panel equipped with shower head, are described as being associated with either the right or the left fixture element. As will be readily apparent to the skilled person, such features may, however, also be provided on the opposite fixture element. Similar considerations apply to any references to left and right back screens.

[0012] The left back screen and the right back screen may of course be adjoined by means of adjustable clips without using a basis at each end of the guide profile and

a connecting pin for interconnecting each side profile to the base. Likewise, the side profiles, guide profile and base may be interconnected as described above, without using adjustable clips for adjoining the back screens. Moreover, depending on design, the shower cabin will often include one or more front screens arranged between the door(s) and the back screens.

[0013] In the following, the invention will be described in closer detail with reference to the attached figures, where:

Fig. 1 is a perspective view of a shower cabin according to the invention,
Fig. 2 is a cross-sectional view of shower cabin in Fig. 1,
Fig. 3 is an enlarged view of the detail marked A-A in Fig. 2,
Fig. 4 is a cross-sectional view at the plane marked B-B in Fig. 2,
Fig. 5 an enlarged view of the detail marked C-C in Fig. 4,
Fig. 6 shows the connection between the left back screen and the right back screen,
Fig. 7 is a perspective view of an adjustable clip,
Fig. 8 is an exploded view of the adjustable clip in Fig. 7,
Fig. 9 is a cross-sectional view of the connection between the left back screen and the right back screen,
Fig. 10 is an exploded view showing the connection between the left back screen and the right back screen and the guide profile,
Fig. 11 is a partial enlarged view of Fig. 10,
Fig. 12 is a partial cross-sectional view of the connection of the left back screen and the basis, and
Fig. 13 is a partial cross-sectional view of the connection of the right back screen and the basis.

[0014] As shown in Figs. 1-9, a shower cabin of easy installation and uninstallation includes a base 1, a lower guide profile 2 installed on the base 1, two front movable glass doors 3, two front glass screens 32, a left back glass screen 4 and a right back glass screen 5. The guide profile serves as a track for wheels or projections 31 on the doors.

[0015] The left back glass screen 4 and the right back glass screen 5 are adjoined by several adjustable clips 30 instead of an aluminium profile. This enables quick installation and uninstallation and costs less due to simple structure. The said adjustable clips include left fixture element 6, right fixture element 7, retaining ring 8 and control element 9. One end of the left fixture element 6 is inserted into a groove 410 of the left back glass screen 4 and one end of the right fixture element 7 is inserted into a groove 510 of the right back glass screen 5. As may be seen the grooves 410 and 510 are formed in side profiles 41 and 51, respectively, each of said side profiles also having a groove housing an edge of the respective glass sheet 42, 52.

[0016] A depressed part 61 of the left fixture element 6 joins a convex part 71 of the right fixture element 7 and the control element 9 is installed by means of a pin 10 on a convex lug 11 in the right fixture element 7. One side of the retaining ring 8 is pivoted to the middle of the control element 9, while another side of the retaining ring 8 can be swung in behind or hooked on an arm 62 of the left fixture element 6. When the tail 91 of control element is pressed against the right fixture element 7, the retaining ring 8 is pressed against the arm 62 and into a groove on its back side as may be seen in Figs. 3, 7 and 9. The retaining ring 8 is thus buttoned to the arm 62 in a reliable manner.

[0017] An auxiliary retaining ring 12 is also pivoted to the tail 91 of the said control element 9. The auxiliary retaining ring 12 makes it easy for a finger to hook the retaining ring 8.

[0018] The said right fixture element 7 has a groove 16 and the back of the panel 14 equipped with shower head 13 has a rib 15 inserted into the groove 16. Furthermore, the back of the panel 14 is equipped with an elastic buckle 17, which is hooked to the back of the right fixture element 7. As may be seen in Fig. 4, more than one adjustable clip 30 is used and the panel 14 may be connected to two or more of them.

[0019] In this the panel is shown and described as being equipped with a traditional shower head 13, but it is to be understood that the panel might also, either as a supplement or as an alternative to the shower head, be equipped with jet nozzles. Moreover, other functionalities may also be provided in the panel, for example in the form of steam nozzles, light sources, loudspeakers etc.

[0020] As shown in Figs. 10-13, both ends of the lower guide profile 2 has a basis 18, on which an installation slot 19 is provided and a connecting pin 20 is inserted. The bottom of the connecting pin 20 is inserted into the notch 23 of the base 1 and the side profile 24 of the left back glass screen 4 or the right back glass screen 5 is inserted into the installation slot 19. The bottom of the side profile 24 has a cover 21 with an open hole 22, through which the top of the connecting pin 20 is inserted into the side profile 24. The connecting pin 20 is well fixed, when its top is pressed by the left back glass screen 4 or the right back glass screen 5 and it takes a short time to install.

[0021] A bolt 25 is inserted into the guide 26 at the end of the lower guide profile 2 and the bolt 25 passes through the basis 18 so that its tip is inserted into the bottom of the side profile 24. The principle of work is as follows: the bolt 25 links and fixes the lower guide profile 2, the basis 18 and the side profile 24, which prevents people from lifting the left back glass screen 4 or the right back glass screen 5 and making them break away from the connecting pin 20 on the basis 18 and avoids accident caused by connection failure, thus improving the safety and reliability.

[0022] In this embodiment the side profile 24 has

groove 33 for receiving the edge of the front glass screen 32.

[0023] The top and bottom edges of the back screens 4,5 may also be provided with profiles 42,43,52,53 and a guide profile 27 may also be provided at the top of the cabin.

[0024] Aspects of the invention includes:

1. A shower cabin of easy installation and uninstallation includes the base 1, the lower guide profile 2 installed on the base, the front movable glass doors 3, the left back glass screen 4 and the right back glass screen 5 which are adjoined by several adjustable clips.

2. The said shower cabin of easy installation and uninstallation as indicated in the first aspect has the following features: The said adjustable clips include left fixture element 6, right fixture element 7, retaining ring 8 and control element 9. One end of the left fixture element 6 is inserted into the groove 410 of the left back glass screen 4; one end of the right fixture element 7 is inserted into the groove 510 of the right back glass screen 5; the depressed part 61 of the left fixture element 6 joins the convex part 71 of the right fixture element 7; the control element 9 is installed by the pin 10 on the convex lug 11 in the right fixture element 7; one side of the retaining ring 8 is pivoted to the middle of the control element 9, while another side of the retaining ring 8 is buttoned to the arm 62 of the left fixture element 6.

3. The said shower cabin of easy installation and uninstallation as indicated in the second aspect has the following feature: The auxiliary retaining ring 12 is also pivoted to the tail 91 of the said control element 9.

4. The said shower cabin of easy installation and uninstallation as indicated in the second or third aspect has the following features:

The said right fixture element 7 has the groove 16; the back of the panel 14 equipped with shower head 13 has the rib 15 inserted into the groove 16; the back of the panel 14 is equipped with the elastic buckle 17 which is hooked to the back of the right fixture element 7.

5. The said shower cabin of easy installation and uninstallation as indicated in the first, second or third aspect has the following features: Either end of the lower guide profile 2 has a basis 18, on which the installation slot 19 is equipped and the inserted pole 20 is inserted; the bottom of the inserted pole 20 is inserted into the notch 23 of the base 1; the side profile 24 of the left back glass screen 4 or the right back glass screen 5 is inserted into the installation slot 19; the bottom of the side profile 24 has a cover 21 with an open hole 22, through which the top of the inserted pole 20 is inserted into the side profile 24.

6. The said shower cabin of easy installation and uninstallation as indicated in the fifth aspect has the following features: The bolt 25 is inserted into the guide 26 at the end of the lower guide profile 2; the bolt 25 passes through the basis 18 and its tip is inserted into the bottom of the side profile 24.

[0025] What is described above is a good implementation mode of the invention, but it is not the only mode. Any change, decoration, replacement, combination or simplification in compliance with the accompanying claims is deemed as equivalent replacement and is within the scope of protection. As an example it is to be understood that even though the back screens are here described as being made from glass, other materials, such as methyl methacrylat (Plexiglass/Perspex®) or other plastics, ceramics or composites, may also be employed.

Claims

1. A shower cabin comprising a base (1), a guide profile (2) installed on the base, one or more movable doors (3), a left back screen (4) and a right back screen (5), **characterized in that** the left back screen and the right back screen are interconnected by several adjustable clips (30).

2. A shower cabin according to claim 1, **characterized in that** each adjustable clip (30) includes a left fixture element (6), a right fixture element (7), a retaining ring (8) and a control element (9).

3. A shower cabin according to claim 1 or 2, **characterized in that** one end of the left fixture element (6) is adapted to be inserted into a groove (410) of the left back screen (4) and that one end of the right fixture element (7) is adapted to be inserted into a groove (510) of the right back screen (5).

4. A shower cabin according to claim 2 or 3, **characterized in that** a depressed part (61) of one fixture element (6) fits a convex part (71) of the other fixture element (7).

5. A shower cabin according to any of claims 2-4, **characterized in that** the control element (9) is attached to a lug (11) in one of the fixture elements (7) by means of a pin (10) and that one side of the retaining ring (8) is attached to the middle of the control element (9) in a pivoting manner, while another side of the retaining ring (8) is adapted for engagement with an arm (62) of the opposite fixture element (6).

6. A shower cabin according to any of claims 2-5, **characterized in that** the one fixture element (7) has a groove (16), that the back of a panel (14) equipped

with shower head (13) has a rib (15) inserted into the groove (16) and that the back of the panel (14) is preferably equipped with an elastic buckle (17), which is hooked to the back of the right fixture element (7).

7. A shower cabin according to any of the preceding claims, **characterized in that** both ends of the guide profile (2) have a basis (18), on which an installation slot (19) is provided and a connecting pin (20) is inserted, that the bottom of the connecting pin (20) is inserted into a notch (23) of the base (1) and that a side profile (24) of a back screen (4, 5) is inserted into the installation slot (19), the bottom of the side profile (24) preferably having a cover (21) with an open hole (22), through which the top of the connecting pin (20) is inserted into the side profile (24).

8. A shower cabin according to claim 7, **characterized in that** a bolt (25) interconnects the basis (18) and the bottom of the profile (24), the tip of the bolt being inserted into the bottom of the side profile (24) and the head of the bolt being located in the guide (26) at the end of the guide profile (2).

9. A shower cabin according to any of the preceding claims, **characterized in that** at least one door (3) or screen (4,5,32) is made from glass.

10. A method for assembling a shower cabin comprising a base (1), a guide profile (2) installed on the base, one or more movable doors (3), a left back screen (4) and a right back screen (5), **characterized in that** the left back screen and the right back screen are adjoined by means of several adjustable clips (30).

11. A method according to claim 10, **characterized in that** one end of a left fixture element (6) of each adjustable clip (30) is inserted into a groove (410) of the left back screen (4), that one end of a right fixture element (7) is inserted into a groove (510) of the right back screen (5).

12. A method according to claim 10 or 11, **characterized in that** a retaining ring (8) connected to one fixture element (7) is buttoned to an arm (62) of the opposite fixture element (6) so that a depressed part (61) of one fixture element (6) is caused to join a convex part (71) of the other fixture element (7).

13. A metod according to any of claims 10-12, **characterized in that** a panel (14) equipped with shower head (13) is mounted by inserting a rib (15) on the back of the panel into a groove (16) on a fixture element (7), and preferably also hooking an elastic buckle (17) on the back of the panel (14) to the back of the fixture element (7).

14. A method according to any of claims 10-13, **characterized in that** a connecting pin (20) is inserted into a base (18) at the end of the guide profile (2), so that the bottom of the connecting pin (20) is inserted into the notch (23) of the base (1), and that a side profile (24) of the corresponding back screen (4,5) is inserted into an installation slot (19) in the base (18), preferably so that the top of the connecting pin (20) is inserted into the side profile (24) through an open hole (22) in a cover (21) at the bottom of the profile (24).

15. A methods according to any of claims 10-14, **characterized in that** a bolt (25) is inserted into a guide (26) at the end of the guide profile (2), so that the bolt (25) passes through the base (18) and its tip is inserted into the bottom of the profile (24).

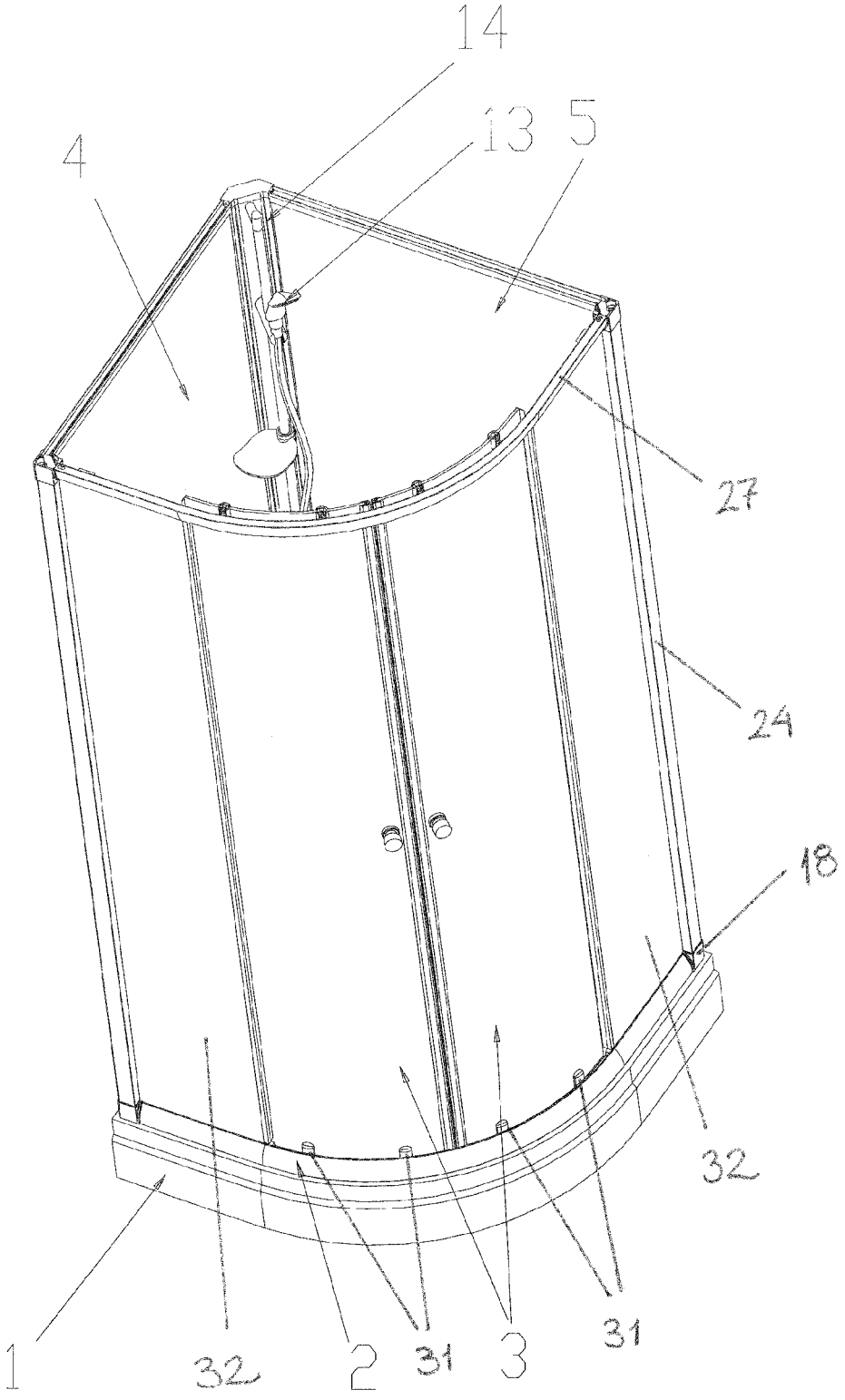

Figure 1

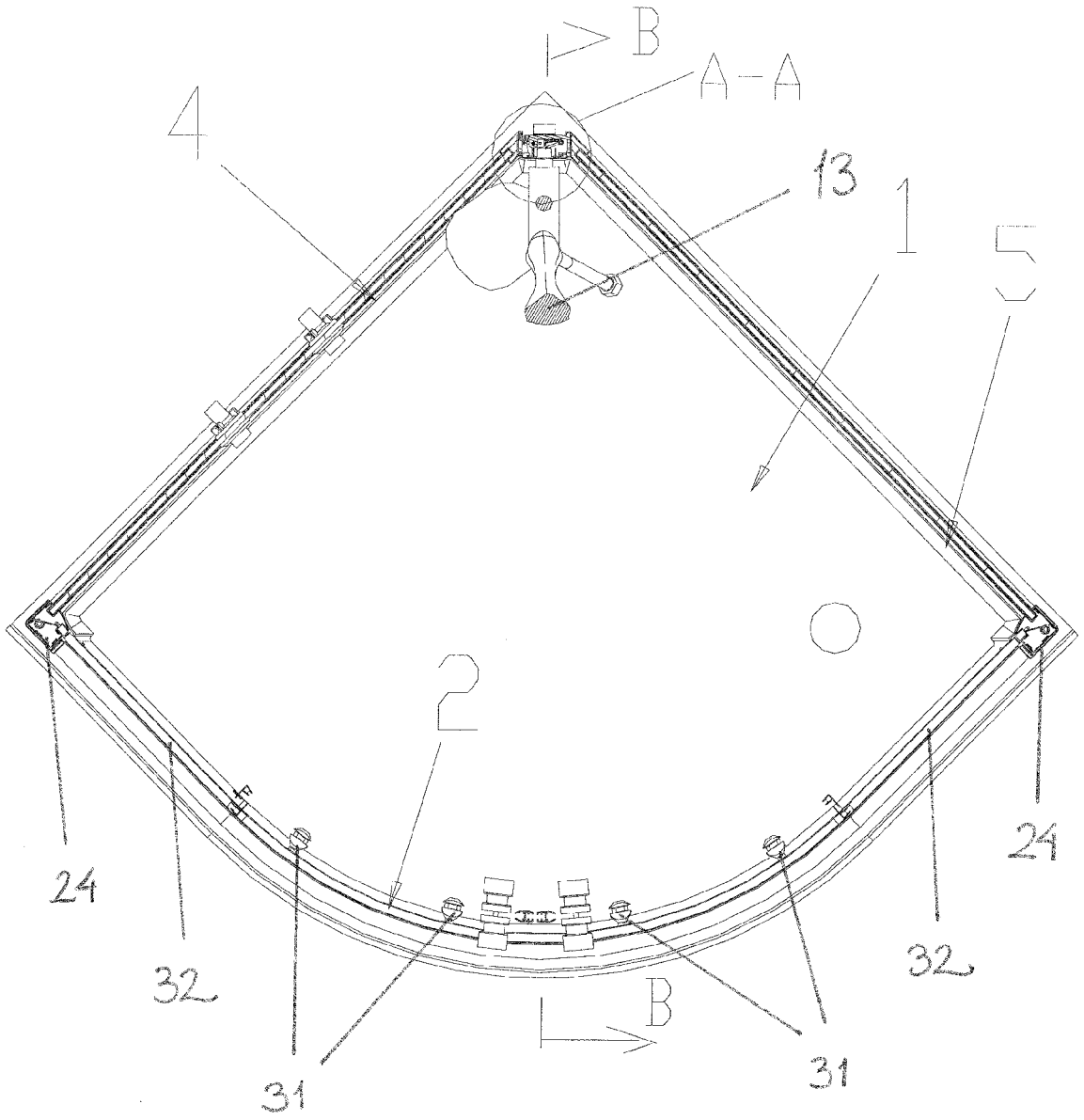

Figure 2

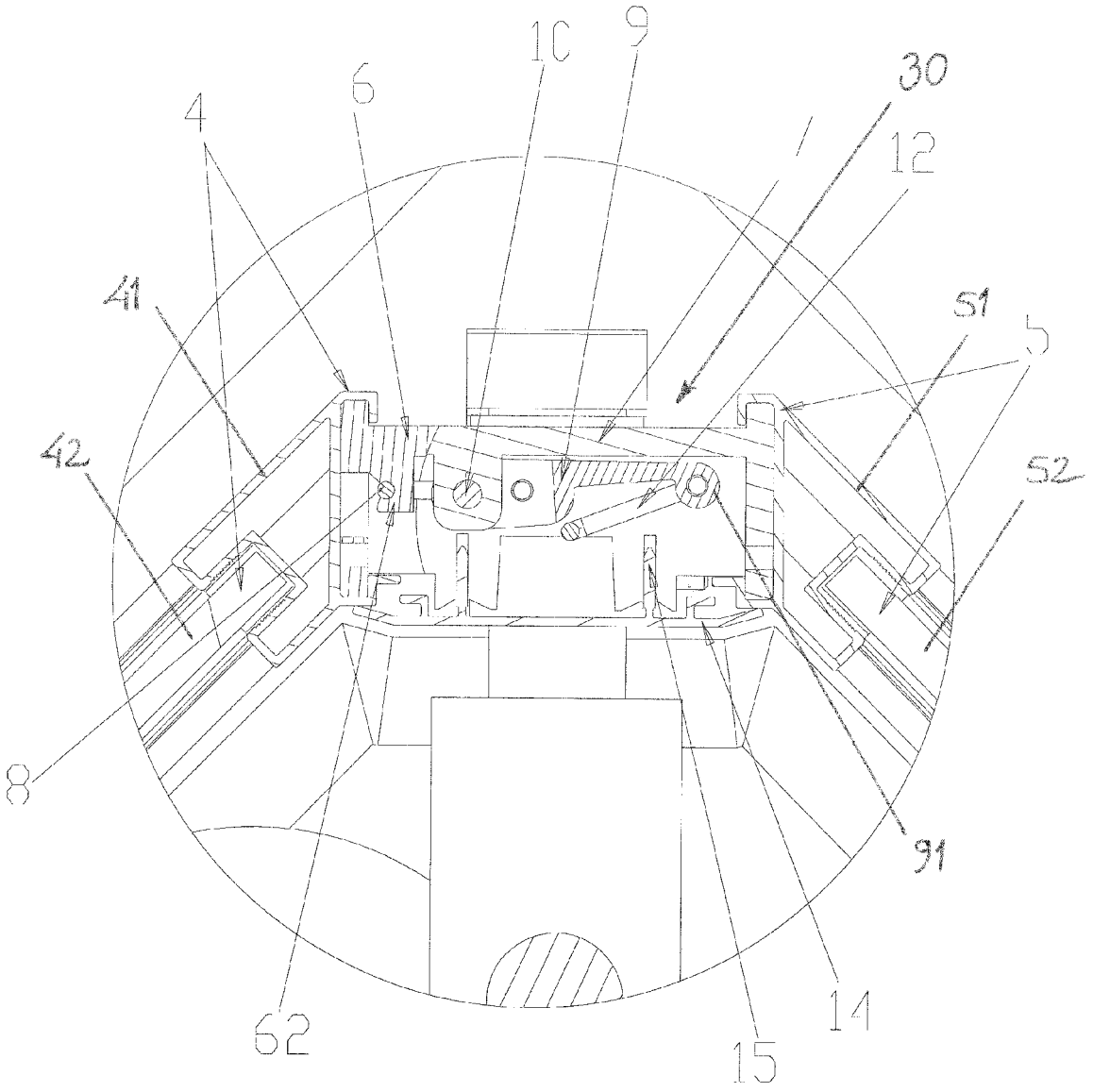

Figure 3

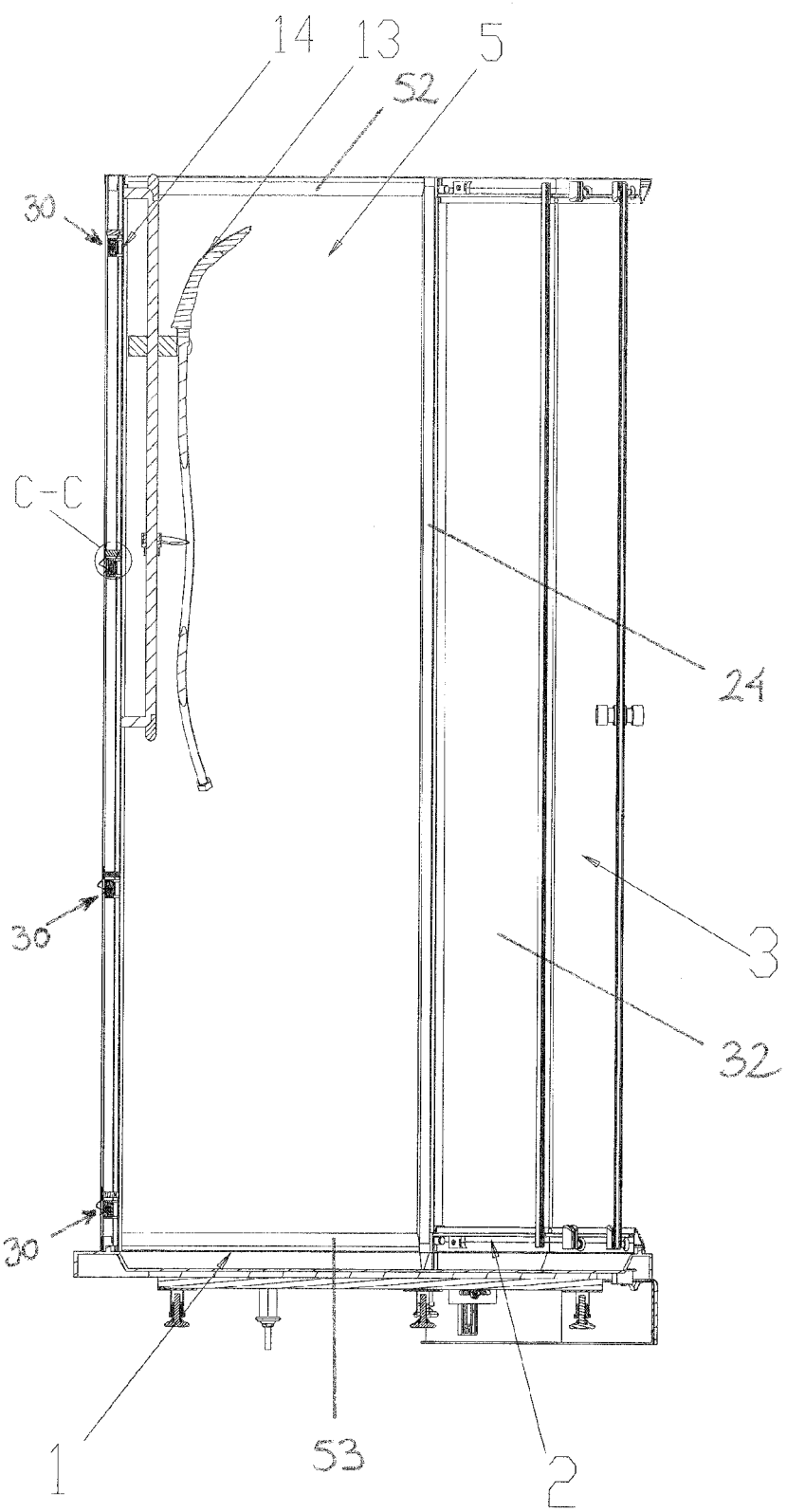

Figure 4

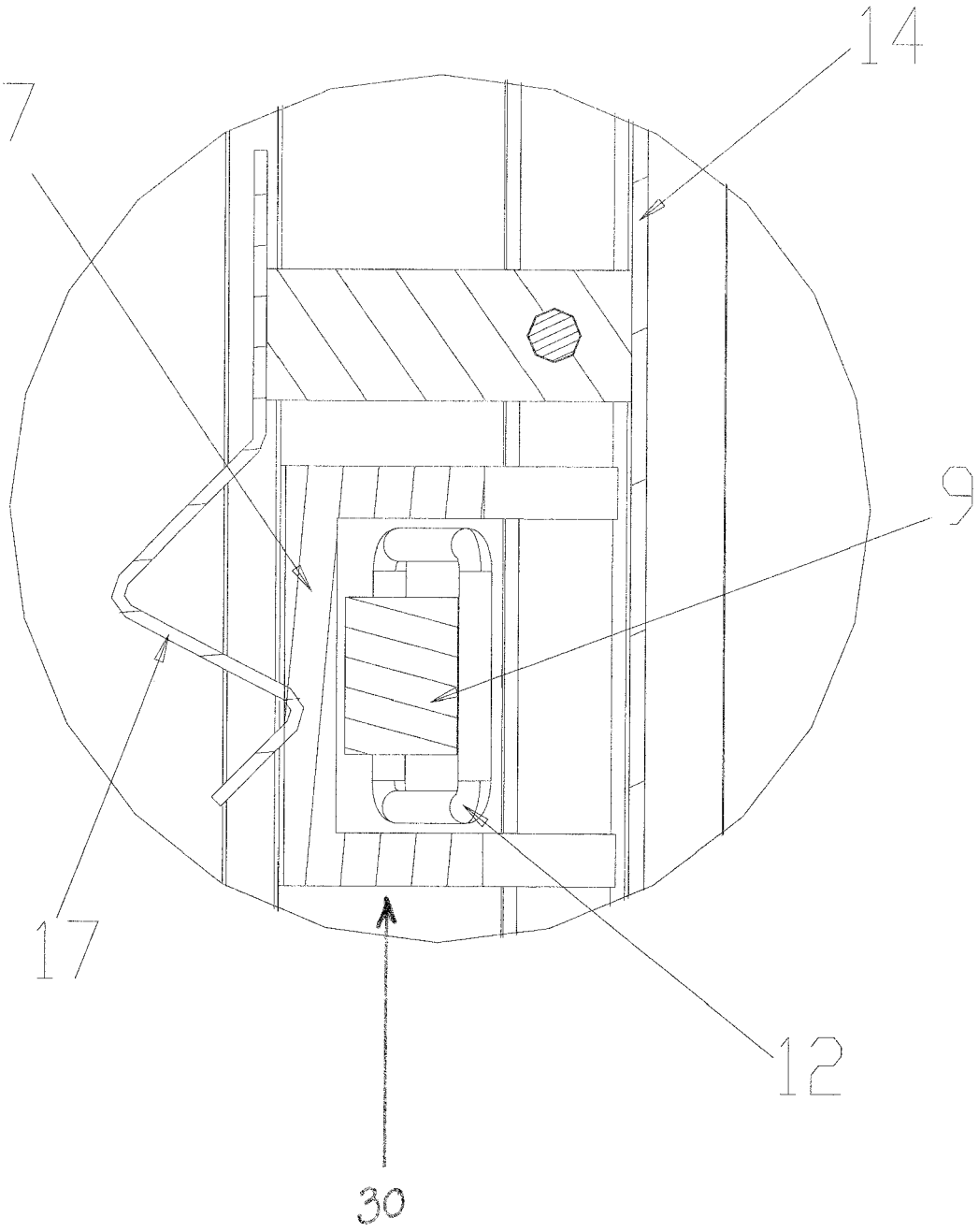

Figure 5

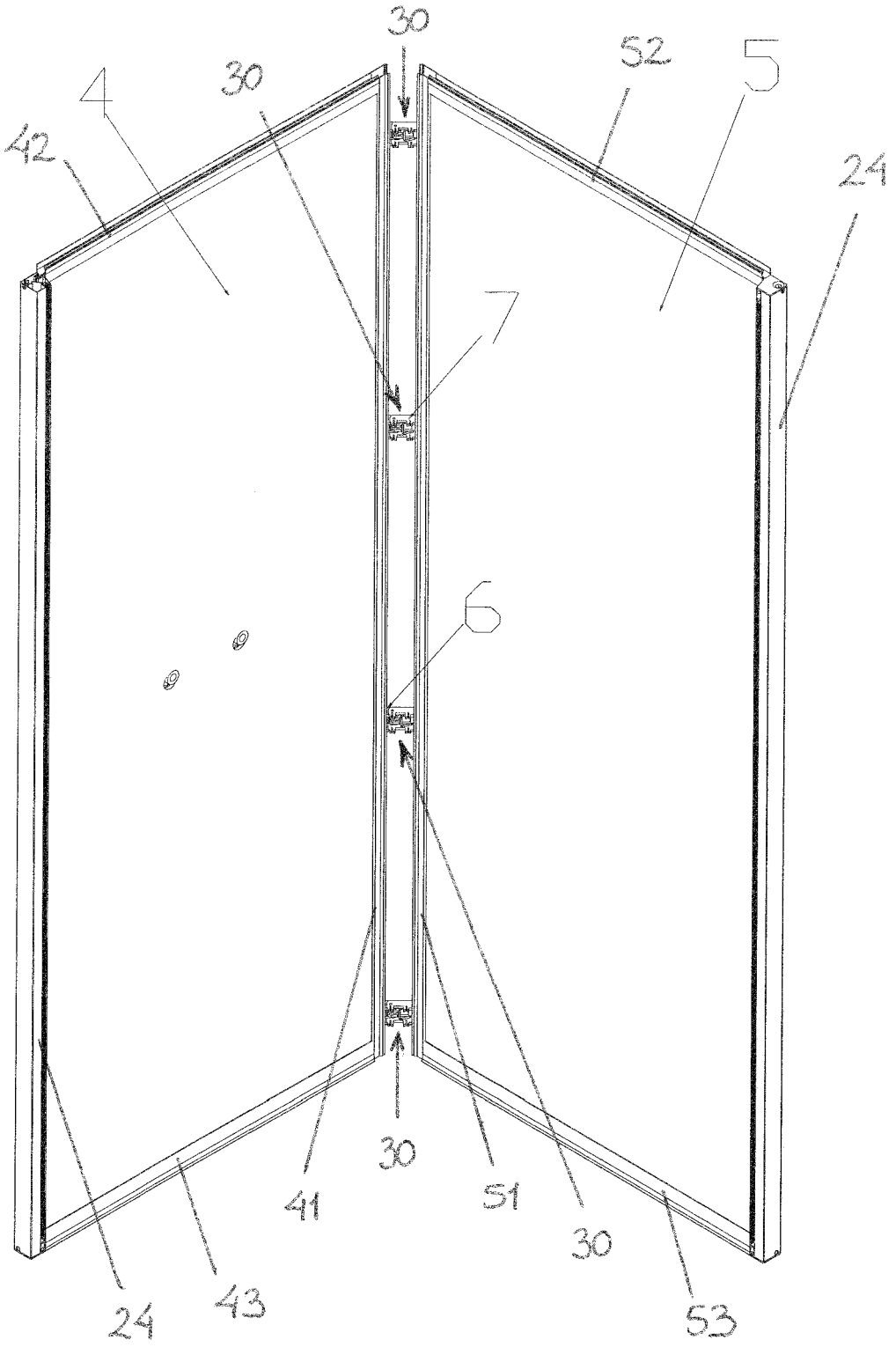

Figure 6

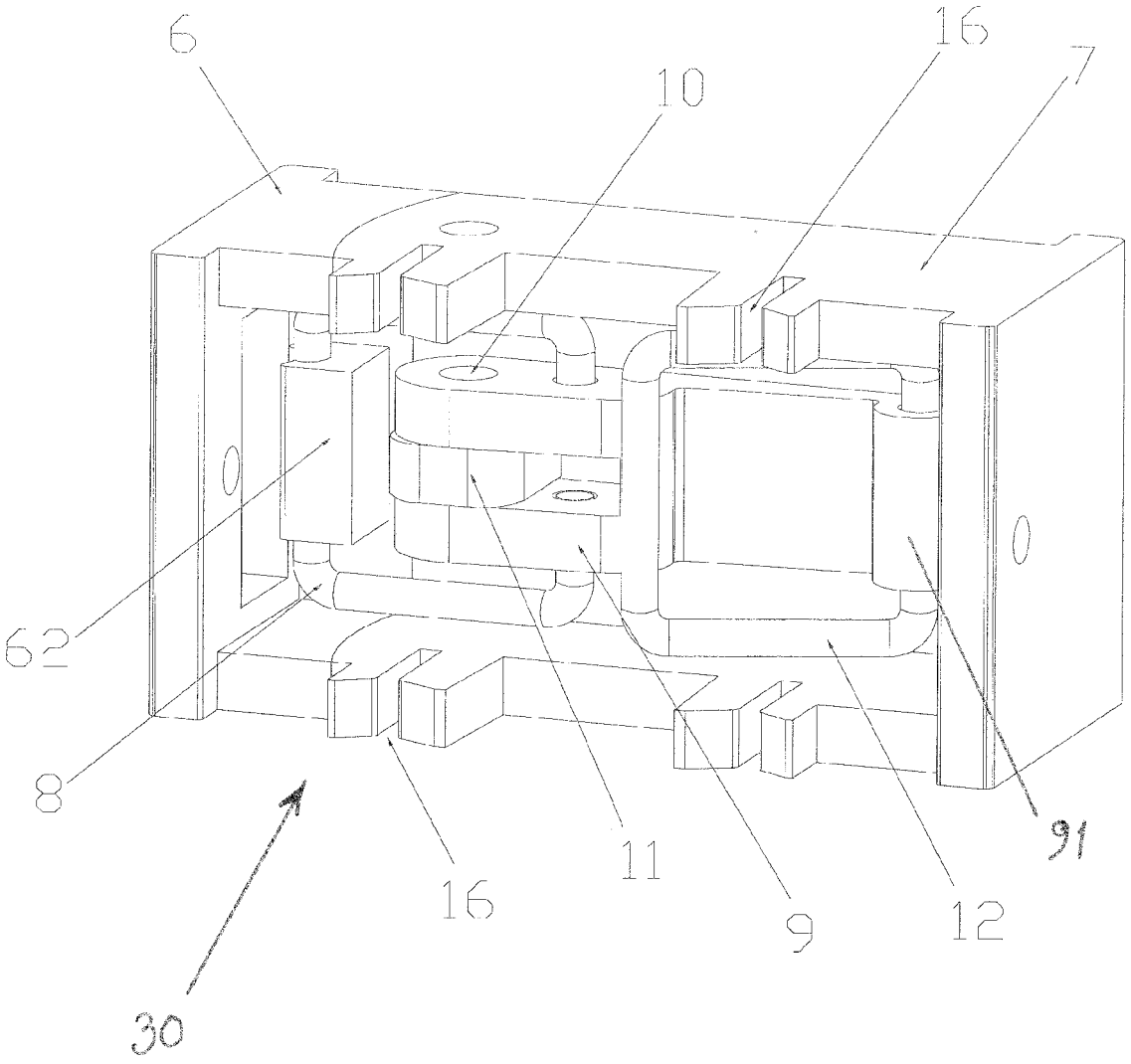

Figure 7

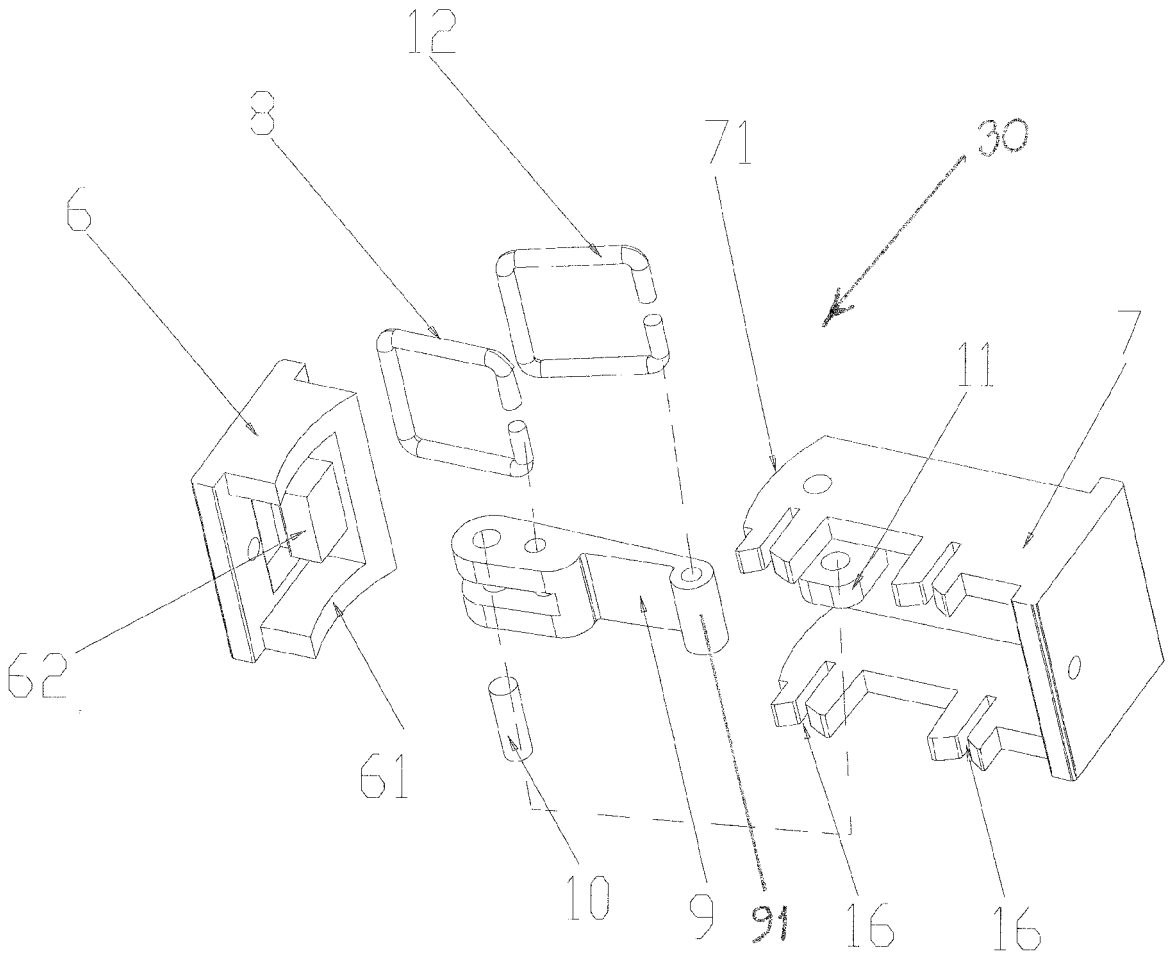

Figure 8

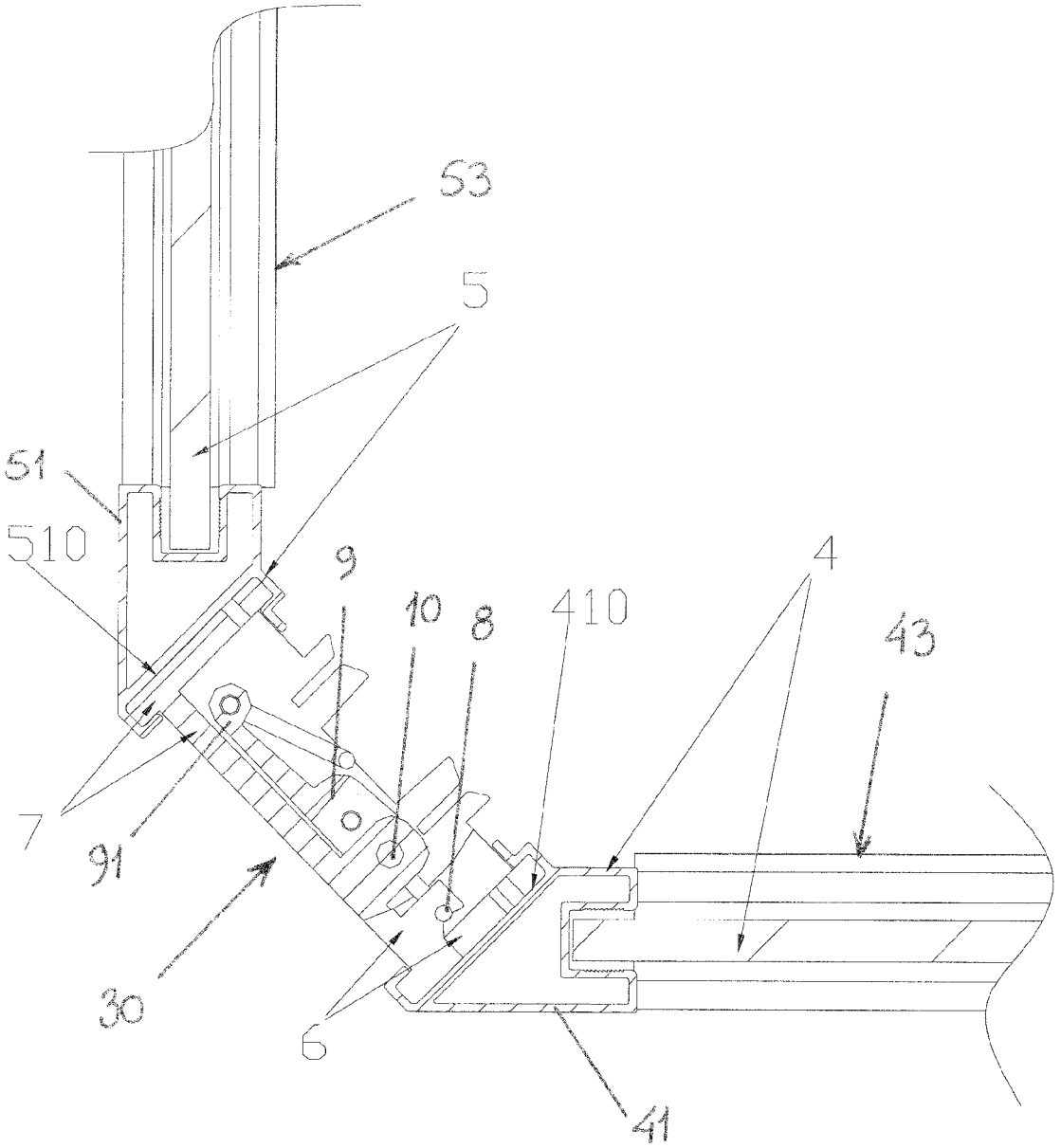

Figure 9

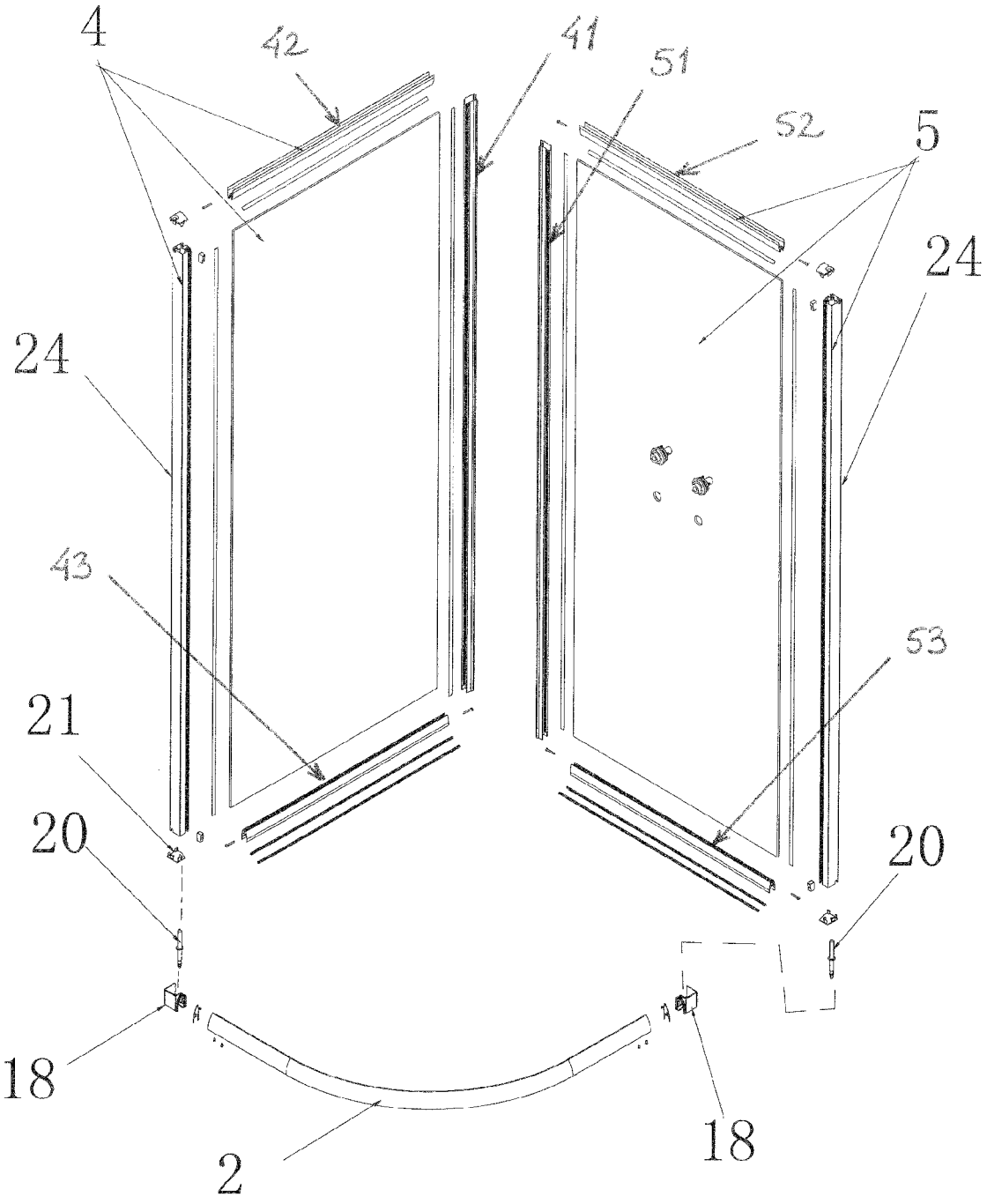

Figure 10

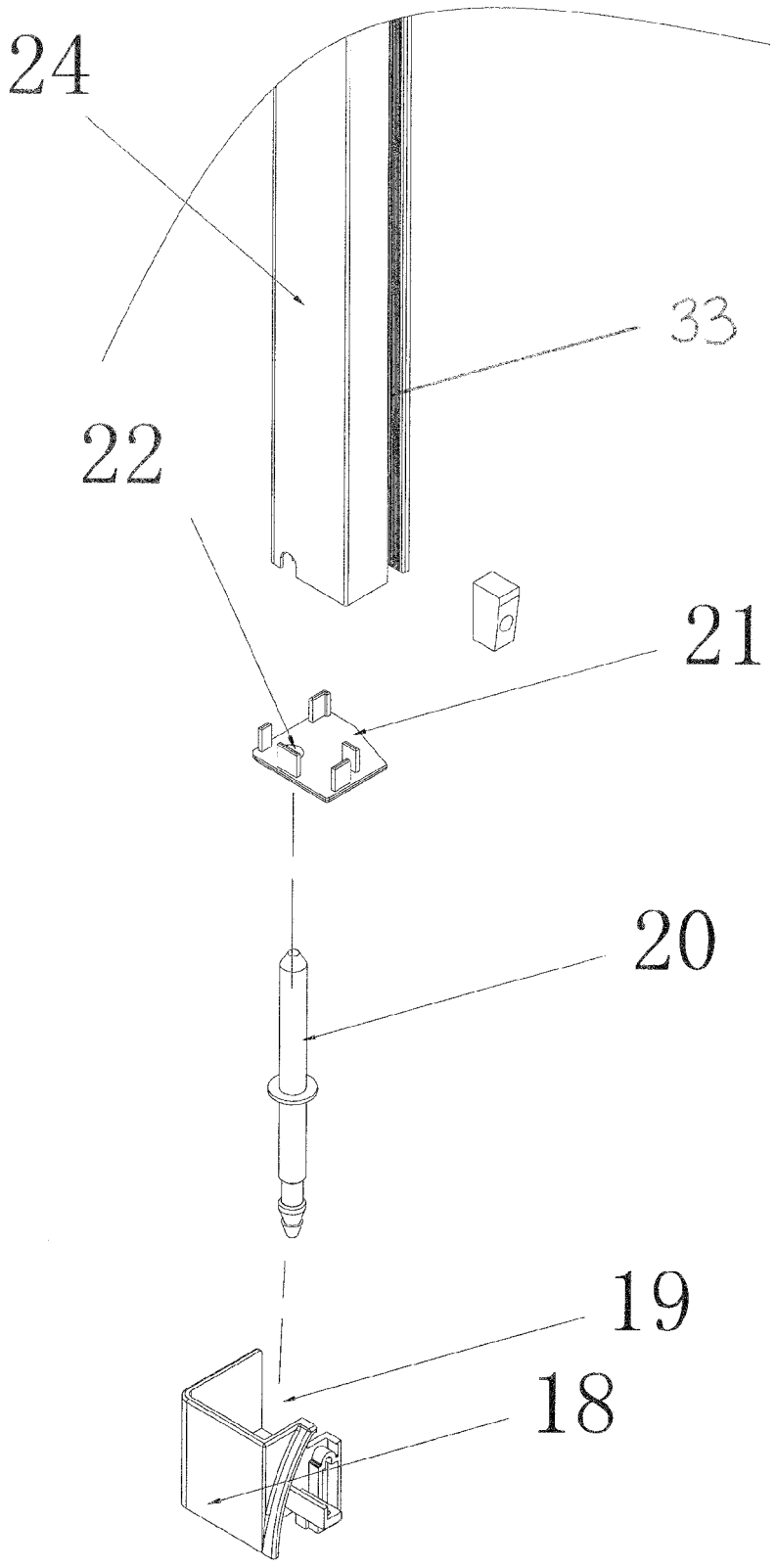

Figure 11

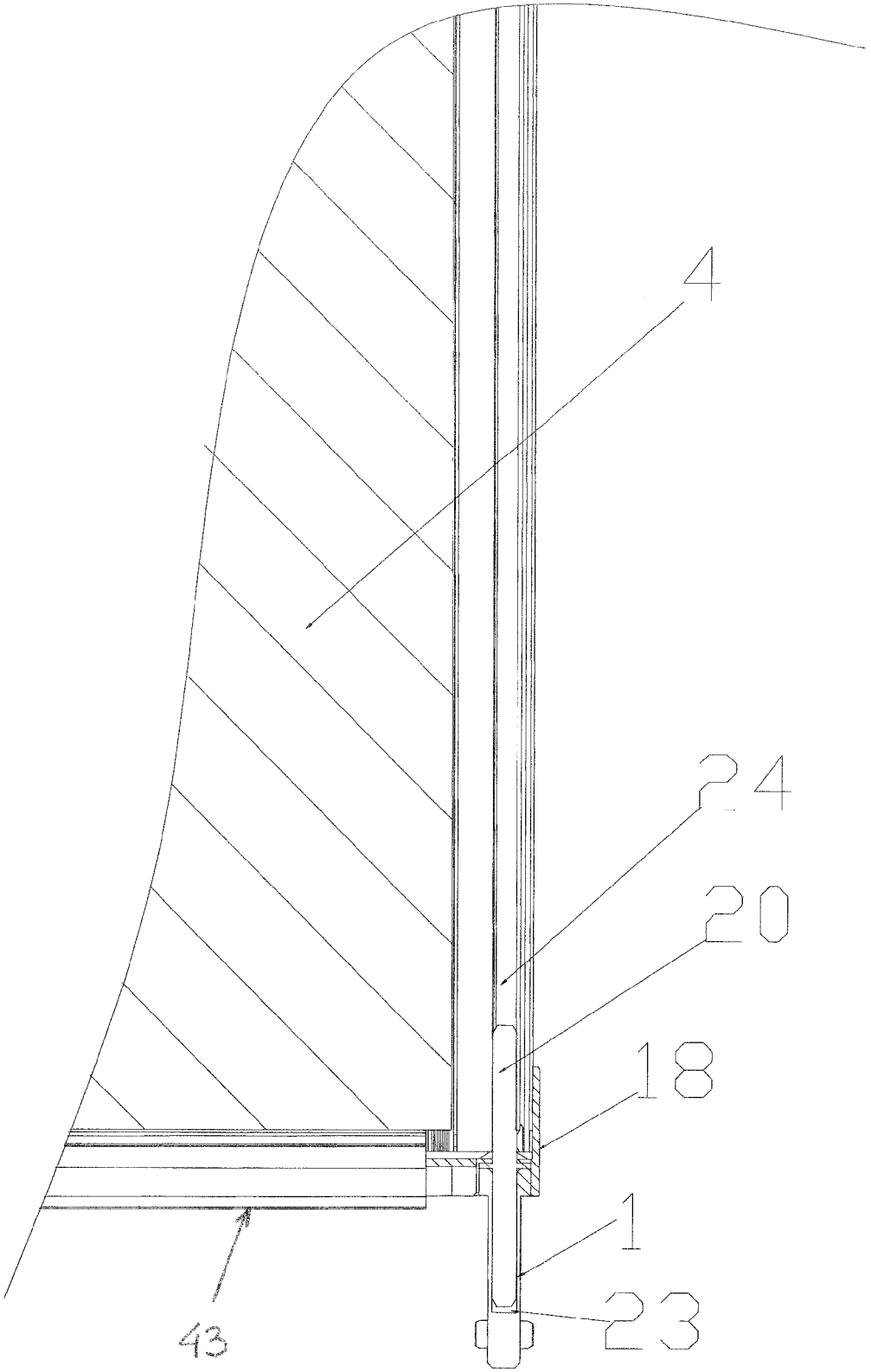

Figure 12

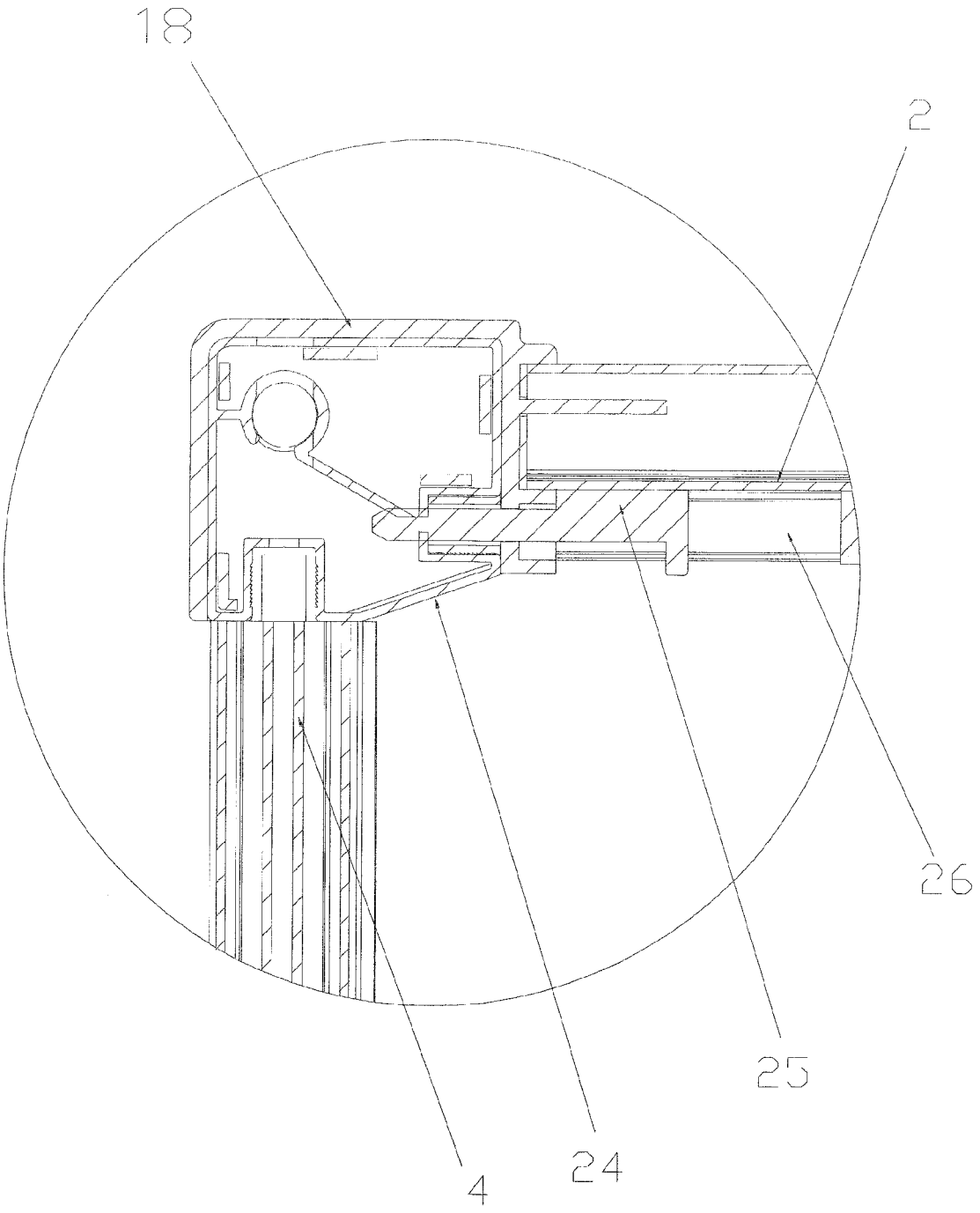

Figure 13