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(54) **DRAIN VALVE PUSH BUTTON DEVICE**

DRUCKKNOPFVORRICHTUNG FÜR ABLAUFVENTIL

DISPOSITIF DE BOUTON-POUSOIR POUR SOUPAPE DE VIDANGE

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(73) Proprietor: **Xiamen R&T Plumbing Technology
Co., Ltd.
Xiamen, Fujian 361028 (CN)**

(72) Inventors:
• **HONG, Qicheng
XIAMEN, Fujian 361028 (CN)**

• **ZHANG, Rongyu
XIAMEN, Fujian 361028 (CN)**
• **WANG, Xingdong
XIAMEN, Fujian 361028 (CN)**

(74) Representative: **Iannone, Carlo Luigi et al
Barzanò & Zanardo Milano S.p.A.
Via Borgonuovo, 10
20121 Milano (IT)**

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Description

Related Application

[0001] The application is based on the Chinese Patent Application No. 201810698892.5, filed on June 29, 2018, with the title of "Drain Valve Button Bracket With Directed Key" and claims its priority.

Field of the Invention

[0002] The application relates to a drain valve button bracket with a directed key, named push button herein-after.

Background of the Invention

[0003] A button bracket of the existing drain valve has a structure capable of locking a water tank cover, which is in threaded connection with the drain valve through a button main body to clamp and fix the water tank cover. A push button capable of axially sliding is arranged in the button main body, the directions of the existing push button and the button main body are fixed on the circumferential direction. Therefore, when the button main body is rotated, the push button also rotates with the button main body. After being locked, the position of the push button is not fixed. On one hand, the degree of freedom of design of the push button is small and is not suitable for the situation in which the push button needs to be directed. On the other hand, it fails to apply to some situations in which the push button needs to be directed, for example, when characters are designed on the push button, if the directions of the characters cannot be fixed after being assembled, it is inconvenient to be viewed in the case of reversal.

[0004] US2001/0042265A1, on which the preamble of claim 1 is based, discloses a flush valve, adapted to be mounted in the tank of a toilet and including a selector assembly and a flush valve. The selector assembly is accessible from outside the toilet and provides for initiation of the flushing operation and an alternative choice between a larger flush water volume and a smaller flush water volume. A support structure provides for both axial and radial movement of the selector assembly relative to the flush valve in order to facilitate mounting and aligning of the flush valve assembly. A slide mechanism provides for variation of at least the smaller flush water volume.

[0005] CN201106202Y discloses a drain valve which comprises a valve seat. A water opening is arranged at the lower end of the valve seat. A valve spool which can slide up and down corresponding to the valve seat is installed in the valve seat. A control device which controls the valve spool to be up and down is connected on the valve spool. A water-seal component is installed at the lower end of the valve spool.

[0006] CN107044158 discloses a stool flushing con-

troller and a control method thereof; the stool flushing controller comprises a hollow housing with a top opening; the housing lower portion is provided with an ejection execution assembly capable of sliding up and down on the housing; the housing upper portion is provided with a push assembly capable of sliding up and down on the housing; a motor driving member is arranged between the push assembly and the ejection execution assembly; the housing upper portion is detachably provided with a mount ring A used for mounting and limiting the push assembly; the push assembly is provided with an infrared control assembly; the infrared control assembly controls the motor driving member to rotate through infrared induction, thus driving the ejection execution assembly to telescope with respect to the housing.

[0007] CN2744747Y discloses a height-adjustable two-press type drainage valve button set. A supporter is arranged on the drainage valve; a slide block is inserted in the chute of the support; a container is fixed on the center hole of the slide block; two adapting pieces and a back-moving spring are arranged on the container. The lower parts of the two adapting pieces are connected with the upper end of a connecting bar, whose lower end matches the controlling switch; the upper parts of the two adapting pieces are arranged to overlap each other and form a central screw hole.

Summary of the Invention

[0008] In order to solve the above problems, the application provides a drain valve button bracket with a directed push button, a push button component can be move relative to a push button main body on the axial direction and the circumferential direction, when the push button main body is rotated to lock a water tank cover, the push button component does not rotate with the rotation of the push button main body, so that the direction of the push button is fixed, the position of the push button is unified, the application range is wide, and the structure is simple.

[0009] In order to achieve the above objective, the technical solution adopted by the present application is as follows:

A drain valve button bracket with a directed push button, including:

a bracket, arranged on a drain valve in a circumferential limiting manner, that is in a manner limiting rotation in the circumferential direction;

a push button main body, having an accommodating cavity and in threaded connection with the bracket;

a push button component, slidably arranged in the accommodating cavity and capable of rotating relative to the push button main body;

a connecting sleeve, an upper part of which is arranged in the push button main body in an axially

movable manner, rotating along with the push button main body and rotatably connected with the push button component;

a compression bar, arranged on the bracket in the circumferential limiting manner, in circumferential limiting fit with the push button component and in threaded connection with the connecting sleeve; and

when the push button component is operated, the connecting sleeve drives the compression bar to move along the axial direction to drive the drain valve to open to drain water.

[0010] In some embodiments of the application, the push button component includes a push button and a push button seat, which are assembled together, the push button and the push button seat are slidably arranged in the accommodating cavity, the connecting sleeve is rotatably connected with the push button seat, the compression bar is in circumferential limiting fit with the push button seat, and when the push button is pressed and operated, the push button drives the compression bar to move along the axial direction through the push button seat and the connecting sleeve to drive the drain valve to open to drain water.

[0011] Further, the push button seat is provided with an annular groove, one end of the connecting sleeve is provided with a buckle, the buckle is buckled in the annular groove in a circumferential movable manner, and the connecting sleeve is rotatably connected with the push button seat via the cooperation of the buckle and the annular groove.

[0012] Further, the compression bar penetrates through the connecting sleeve to cooperate with the push button seat, and the compression bar forms a threaded connection with the connecting sleeve and is in circumferential limiting fit with the push button seat.

[0013] Further, the push button seat is provided with a non-circular hole, the compression bar is provided with a non-circular cooperation portion corresponding to the non-circular hole of the push button seat, and the compression bar is in circumferential limiting fit with the push button seat through the non-circular hole and the non-circular cooperation portion; and furthermore, the compression bar and/or the push button seat are provided with a guiding inclined plane for facilitating the insertion of the compression bar into the non-circular hole.

[0014] In some embodiments of the application, a threaded pipe in threaded connection with the bracket is arranged at the bottom of the push button main body, and a lower part of the connecting sleeve is sleeved in the threaded pipe and forms circumferential limiting with the threaded pipe.

[0015] In some embodiments of the application, the bracket is provided with a nut, the nut is in threaded connection with the push button main body, the compression bar is arranged on the nut in the circumferential limiting

manner, and the pitches of the threads on the nut, the push button main body, the compression bar and the connecting sleeve are equal.

[0016] Further, a sliding slot is formed in the top of the bracket, a sliding plate is slidably installed in the sliding slot along a first direction, the nut is slidably installed on the sliding plate along a second direction, and the first direction is perpendicular to the second direction.

[0017] Further, the bracket includes two connecting arms, the two connecting arms are installed on both sides of the drain valve in a height adjustable manner, a pressing plate is arranged at the bottom of the compression bar, the pressing plate cooperates with a lifting rod that is rotatably arranged on the drain valve, and when the pressing plate presses one end of the lifting rod, the other end of the lifting rod tilts and lifts a sealing component of the drain valve to open the drain valve.

[0018] In some embodiments of the application, the push button includes a full-row or full-drainage or full-flush push button and a semi-row or semi-drainage or semi-flush push button, the full-flush push button is fixedly installed on the push button seat, the semi-flush push button is movably installed on the push button seat, a stroke of the full-flush push button to drive the push button seat to move when being driven is greater than the stroke of the semi-flush push button to drive the push button seat to move when being driven, and the drain valve button bracket further includes further includes a first elastic member for resetting the push button component.

[0019] In some embodiments of the application, the push button includes a full-flush push button and a semi-flush push button, the push button seat includes a full-flush buckle seat fixedly connected with the full-flush push button, a semi-flush buckle seat fixedly connected with the semi-flush push button, and a rotation stop seat rotatably connected with the connecting sleeve, the compression bar is in circumferential limiting fit with the rotation stop seat, and the full-flush buckle seat and the semi-flush buckle seat are both in axial sliding fit and circumferential limiting fit with the rotation stop seat.

[0020] Further, the drain valve button bracket further includes a carrying tray, the carrying tray is rotatably arranged in the accommodating cavity of the push button main body relative to the push button main body, the full-flush buckle seat and the semi-flush buckle seat are slidably installed on the carrying tray, the drain valve button bracket further includes a second elastic member, a third elastic member and a fourth elastic member for respectively resetting the full-flush buckle seat, the semi-flush buckle seat and the rotation stop seat.

[0021] The present application has at least one of the following beneficial effects:

The drain valve button bracket of the present application includes the bracket, the push button main body, the push button component, the connecting sleeve and the compression bar; the bracket is ar-

ranged on the drain valve in the circumferential limiting manner, the push button main body has the accommodating cavity and is in threaded connection with the bracket, and the push button component is slidably arranged in the accommodating cavity and is capable of rotating relative to the push button main body.

the connecting sleeve is arranged in the push button main body in the axially movable manner, rotates along with the push button main body and is rotatably connected with the push button component.

the compression bar is arranged on the bracket in the circumferential limiting manner, is in circumferential limiting fit with the push button component and is in threaded connection with the connecting sleeve.

when the push button component is operated, the connecting sleeve drives the compression bar to move along the axial direction to drive the drain valve to drain water, so that the push button component can perform relative movement relative to the push button main body on the axial direction and the circumferential direction.

when the push button main body is rotated to form the threaded connection between the push button main body and the bracket to lock the water tank cover, the push button component does not rotate along with the rotation of the push button main body.

[0022] Therefore, the direction of the push button is fixed, the position of the push button is unified, the application range is wide, and the structure is simple.

Brief Description of the Drawings

[0023] The drawings described herein are used for providing a further understanding of the present application and constitute a part of the present application. The illustrative embodiments of the present application and the descriptions thereof are used for explaining the present application and do not constitute undue limitation to the present application. In the drawings:

Fig. 1 is a schematic diagram of a three-dimensional assembly structure of a drain valve button bracket with a directed push button according to a first embodiment of the present application;

Fig.2 is a first schematic diagram of a partial section structure of the drain valve button bracket with the directed push button according to the first embodiment of the present application;

Fig.3 is a second schematic diagram of the partial section structure of the drain valve button bracket

with the directed push button according to the first embodiment of the present application;

Fig.4 is a schematic diagram of an exploded structure of the drain valve button bracket with the directed push button according to the first embodiment of the present application;

Fig.5 is a schematic diagram of an overlooking structure of a push button seat of the drain valve button bracket with the directed push button according to the first embodiment of the present application;

Fig.6 is a schematic diagram of a three-dimensional assembly structure of a drain valve button bracket with a directed push button according to a second embodiment of the present application;

Fig.7 is a first schematic diagram of a partial section structure of the drain valve button bracket with the directed push button according to the second embodiment of the present application;

Fig.8 is a second schematic diagram of the partial section structure of the drain valve button bracket with the directed push button according to the second embodiment of the present application;

Fig.9 is a schematic diagram of an exploded structure of the drain valve button bracket with the directed push button according to the second embodiment of the present application;

Reference signs:

[0024]

10-drain valve; 11-bracket; 12-nut; 121-first internal thread; 13-sliding slot; 14-sliding plate; 15-connecting arm; 16-lifting rod;

20-push button main body; 21-accommodating cavity; 22-threaded pipe; 221-first external thread; 23-limiting rib;

30-push button component; 31-push button; 311-full-flush push button; 312-semi-flush push button; 32-push button seat; 321-annular groove; 322-non-circular hole (straight hole); 323-guiding inclined plane; 33-first elastic member; 34-full-flush buckle seat; 341-second elastic member; 35-semi-flush buckle seat; 351-third elastic member; 36-rotation stop seat; 361-fourth elastic member;

40-connecting sleeve; 41-buckle; 42-second internal thread; 44-limiting groove; 45-flange

50-compression bar; 51-second external thread; 52-

non-circular cooperation portion (straight clamping strip); 53-guiding inclined plane; 54-pressing plate; 60-carrying tray.

Detailed Description of the Embodiments

[0025] In order that the technical problems to be solved in the present application, the technical solutions and the beneficial effects are clearer and more understandable, the present application is further described in detail below with reference to the drawings and embodiments. It would be understood that the specific embodiments described herein are merely used for explaining the present application, rather than limiting the present application.

First embodiment:

[0026] As shown in Fig 1 to Fig.5, a drain valve button bracket with a directed push button in the present embodiment includes a bracket 11, a push button main body 20, a push button component, a connecting sleeve 40 and a compression bar 50. The bracket is arranged on a drain valve 10 in a circumferential limiting manner, that is, the bracket 11 does not rotate on the drain valve 10 on the circumferential direction. The push button main body 20 has an accommodating cavity 21 and is in threaded connection with the bracket 11; the push button component is slidably arranged in the accommodating cavity 21 and is capable of rotating relative to the push button main body 20. The connecting sleeve 40 is arranged in the push button main body 20 in an axially movable manner, rotates along with the push button main body 20 and is rotatably connected with the push button component. The compression bar 50 is arranged on the bracket 11 in the circumferential limiting manner, is in circumferential limiting fit with the push button component and is in threaded connection with the connecting sleeve 40; and when the push button component is operated, the connecting sleeve 40 drives the compression bar 50 to move along the axial direction to drive the drain valve 10 to drain water.

[0027] In the present embodiment, the push button component includes a push button 31 and a push button seat 32, which are assembled together, the push button 31 and the push button seat 32 are slidably arranged in the accommodating cavity 21, the connecting sleeve 40 is rotatably connected with the push button seat 32, the compression bar 50 is in circumferential limiting fit with the push button seat 32, and when the push button 31 is pressed, the push button 31 drives the compression bar 50 to move along the axial direction through the push button seat 32 and the connecting sleeve 40 to drive the drain valve 10 to drain water. As shown in a rotatable connection mode of the connecting sleeve 40 and the push button seat 32, in the present embodiment, an annular groove 321 is formed in an outer wall of the push button seat 32, one end of the connecting sleeve 40 is provided with a buckle 41, the buckle 41 is buckled in the

annular groove 321 in a circumferential movable manner, and the connecting sleeve 40 is rotatably connected with the push button seat 32 via the cooperation of the buckle 41 and the annular groove 321. The compression bar 50 is in circumferential limiting fit with the push button seat 32, in the present embodiment, the compression bar 50 penetrates through the connecting sleeve 40 to cooperate with the push button seat 32, and the compression bar 50 is in circumferential limiting fit with the push button seat 32 before forming the threaded connection with the connecting sleeve 40. Therefore, the push button 31 is directed easily, the effect of the directed push button is better, and the construct is simpler.

[0028] The connecting sleeve 40 is provided with a limiting groove 44, the push button main body 20 is provided with a limiting rib 23, and the limiting groove 44 and the limiting rib 23 are in limiting fit with each other, so that the connecting sleeve 40 and the push button main body 20 synchronously rotate.

[0029] As shown in Fig.5, the push button seat 32 is provided with a non-circular hole 322, the compression bar 50 is provided with a non-circular cooperation portion 52 corresponding to the non-circular hole 322 of the push button seat 32, and the compression bar 50 is in circumferential limiting fit with the push button seat 32 through the non-circular hole 322 and the non-circular cooperation portion 52.

[0030] Specifically, in one embodiment, the non-circular hole 322 is a straight hole, and the non-circular cooperation portion 52 is a straight clamping strip, so that the structure is simple, the assembly is convenient, the circumferential limiting of the compression bar 50 on the push button seat 32 can also be achieved by using other non-circular structure, and is not limited thereto.

[0031] In order to conveniently insert the compression bar 50 into the non-circular hole 32, the compression bar 50 is provided with a guiding inclined plane 53 for facilitating the insertion of the compression bar 50 into the non-circular hole 322, and a guiding inclined plane 323 for facilitating the insertion of the compression bar 50 into the non-circular hole 322 is also arranged on the inner wall of the non-circular hole 322 of the push button seat 32, the guiding inclined plane 53 on the compression bar 50 and the guiding inclined plane 323 on the push button seat 32 cooperate with each other for guiding. Alternatively, only the guiding inclined plane 53 is arranged on the compression bar 50, or, only the guiding inclined plane 323 is arranged on the push button seat 32, the function of facilitating the insertion of the compression bar 50 into the non-circular hole 322 would also be achieved.

[0032] As shown in Fig.2 and Fig.3, in the embodiment, a threaded pipe 22 is arranged at the bottom of the push button main body 20, and the connecting sleeve 40 is sleeved in the threaded pipe 22 and forms circumferential limiting with the threaded pipe 22. The bracket 11 is provided with a nut 12, the nut 12 is in threaded connection with the push button main body 20, the compression bar

50 is arranged on the nut 12 in the circumferential limiting manner, and the pitches of the threads on the nut 12, the push button main body 20, the compression bar 50 and the connecting sleeve 40 are equal, so that the threaded connection between the push button main body 20 and the nut 12 generates no mutual interference with the threaded connection between the compression bar 50 and the connecting sleeve 40. Specifically, the threaded pipe 22 is provided with a first external thread 221, the nut 12 is provided with a first internal thread 121, the compression bar 50 is provided with a second external thread 51, the connecting sleeve 40 is provided with a second internal thread 42, and the pitches of the first external thread 221, the first internal thread 121, the second external thread 51 and the second internal thread 42 are all equal.

[0033] In addition, a sliding slot 13 is formed in the top of the bracket 11, a sliding plate 14 is slidably installed in the sliding slot 13 along a first direction, the nut 12 is slidably installed on the sliding plate 14 along a second direction, and the first direction is perpendicular to the second direction. In this way, the position of the nut 12 on the bracket 11 is adjustable within a certain range to adapt to the position of the push button main body 20. Accordingly, the requirements of size matching can be significantly reduced, the assembly is convenient, and the suitability is better. The bracket 11 includes two connecting arms 15, the two connecting arms 15 are installed on both sides of the drain valve 10 in a height adjustable manner. A pressing plate 54 is arranged at the bottom of the compression bar 50, the pressing plate 54 cooperates with a lifting rod 16 that is rotatably arranged on the drain valve 10. When the pressing plate 54 presses one end of the lifting rod 16, the other end of the lifting rod 16 tilts and lifts a sealing component of the drain valve 10 to open the drain valve.

[0034] As shown in Fig.2 and Fig.4, in the embodiment, the push button 31 includes a full-flush push button 311 and a semi-flush push button 312, the full-flush push button 311 is fixedly installed on the push button seat 32, the semi-flush push button 312 is movably installed on the push button seat 32. A stroke of the full-flush push button 311 for driving the push button seat 32 to move when being driven is greater than the stroke of the semi-flush push button 312 for driving the push button seat 32 to move when being driven, the drain valve button bracket further includes a first elastic member 33 for resetting the push button component, and the first elastic member 33 comprises pressure spring. In the embodiment, the full-flush push button 311 and the semi-flush push button 312 are both installed on the push button seat 32. When the full-flush push button 311 is pressed, the movement stroke of the push button seat 32 is longer, and the push button seat 32 drives the compression bar 50 to move along the axial direction via the connecting sleeve 40 to drive a sealing component of the drain valve 10 to move upward for a relatively longer stroke to achieve full drainage; and when the semi-flush push button 312 is pressed,

the movement stroke of the push button seat 32 is shorter, the push button seat 32 drives the compression bar 50 to move along the axial direction via the connecting sleeve 40 to drive the sealing component of the drain valve 10 to move upward for a relatively shorter stroke to achieve semi-drainage.

[0035] The assembly process in the present embodiment is as follows:

Firstly, the connecting arms 15 of the bracket 11 are inserted on the valve body of the drain valve 10, the sliding plate 14 is inserted into the sliding slot 13 in the top of the bracket 11, then the nut 12 is installed on the sliding plate 14, then the compression bar 50 is installed on the nut 12, the compression bar 50 is slidable relative to the nut 12 on the axial direction and forms limiting fit with the nut 12 on the circumferential direction. Since the sliding plate 14 only slides in the sliding slot 13 and cannot rotate along the circumferential direction, and the nut 12 can only slide on the sliding plate 14 and cannot rotate along the circumferential direction, the bracket 11 performs circumferential limiting on the compression bar 50. Accordingly, the assembly process of the compression bar 50, the nut 12, the sliding plate 14 and the bracket 11 is completed.

Secondly, the full-flush push button 311 and the semi-flush push button 312 are installed on the push button seat 32, after the first elastic member 33 is sleeved on the push button seat 32, the push button seat 32 is installed in the accommodating cavity 21 of the push button main body 20, then the connecting sleeve 40 is sleeved in the threaded pipe 22 upward from the bottom end of the threaded pipe 22, the buckle 41 on the top end of the connecting sleeve 40 abuts against the annular groove 321 on the push button seat 32. Under the action of the first elastic member 33, the push button seat 32 pulls the connecting sleeve 40 upward, so that a flange 45 arranged at the bottom end of the connecting sleeve 40 abuts against a bottom end face of the threaded pipe 22, and accordingly the assembly process of the push button main body 20, the push button component and the connecting sleeve is completed.

[0036] Finally, the push button main body 20 is placed on a mounting hole of a water tank cover of a toilet (not shown in the figures), the connecting arms 15 can slide up and down to adjust the height of the bracket 11, the threaded pipe of the push button main body 20 is aligned and contact with the nut 12. At this time, under the guiding of the guiding inclined plane 53 and the guiding inclined plane 323, the straight clamping strip 52 of the compression bar 50 automatically aligns and is inserted into the straight hole 322 of the push button seat 32, the push button main body 20 is threadedly connected with the nut 12 by rotating the push button main body 20, while

the push button main body 20 is in threaded connection with the nut 12, the connecting sleeve 40 is also in threaded connection with the compression bar 50, until the push button main body 20 and the nut 12 lock the water tank cover, and accordingly the assembly of the button bracket is completed.

[0037] It should be noted that, the threaded connection between the connecting sleeve 40 and the compression bar 50 does not need to be performed with the threaded connection between the push button main body 20 and the nut 12, and the threaded connection between the connecting sleeve 40 and the compression bar 50 would be performed before or after the threaded connection between the push button main body 20 and the nut 12.

Second embodiment:

[0038] As shown in Fig.6 to Fig.9, the main difference between the second embodiment and the first embodiment lies in that: the push button 31 includes a full-flush push button 311 and a semi-flush push button 312, the push button seat 32 includes a full-flush buckle seat 34 fixedly connected with the full-flush push button 311, a semi-flush buckle seat 35 fixedly connected with the semi-flush push button 312, and a rotation stop seat 36 rotatably connected with the connecting sleeve 40, the compression bar 50 is in circumferential limiting fit with the rotation stop seat 36, and the full-flush buckle seat 34 and the semi-flush buckle seat 35 are both in axial sliding fit and circumferential limiting fit with the rotation stop seat 36. In the first embodiment, since the full-flush push button 311 is fixed to the push button seat 32, when the semi-flush push button 312 is pressed, the full-flush push button 311 is driven to move together. The full-flush push button 311 and the semi-flush push button 312 would move independent of each other in the second embodiment, the rotation stop seat 36 could be driven to rotate by pressing the full-flush push button 311 or the semi-flush push button 312, then the rotation stop seat 36 drives the connecting sleeve 40 to move, and the connecting sleeve 40 drives the compression bar 50 to move so as to activate the drain valve. Since the semi-flush push button 312 is not driven when the full-flush push button 311 is pressed, or, the full-flush push button 311 is not driven when the semi-flush push button 312 is pressed, full-drainage and semi-drainage can be distinguished more easily, and the operation is more visual.

[0039] In addition, the present embodiment further includes a carrying tray 60, the carrying tray 60 is rotatably arranged in the accommodating cavity 21 of the push button main body 20 relative to the push button main body 20, the full-flush buckle seat 34 and the semi-flush buckle seat 35 are slidably installed on the carrying tray 60, the drain valve button bracket further includes a second elastic member 341, a third elastic member 351 and a fourth elastic member 361 for respectively resetting the full-flush buckle seat 34, the semi-flush buckle seat 35 and the rotation stop seat 36, and the second elastic

member 341, the third elastic member 351 and the fourth elastic member 361 comprise pressure springs.

[0040] Furthermore, the push button main body 20 is separately connected with the threaded pipe 22, and the threaded pipe 22 is connected to the bottom of the push button main body 20. The annular groove 321 of the push button seat 32 is formed in the rotation stop seat 36, and the buckle 41 of the connecting sleeve 40 cooperates with the annular groove 321 in the rotation stop seat 36. The limiting groove 44 is formed in the connecting sleeve 40, the limiting rib 23 is arranged on the inner wall of the threaded pipe 22, and the limiting groove 44 and the limiting rib 23 are in limiting fit with each other, so that the connecting sleeve 40 and the threaded pipe 22 synchronously rotate.

[0041] The application also provides a toilet, which comprises a drain valve and the drain valve button bracket, and the bracket is arranged on the drain valve in a circumferential limiting manner.

[0042] The above description shows and describes preferred embodiments of the present application, as described above, it should be understood that the present application is not limited to the form disclosed herein, should not be construed as exclusion to other embodiments, can be applied to various other combinations, modifications and environments, and can be modified by the teachings or the techniques or knowledge of related art within the scope of the appended claims.

Claims

1. A drain valve button bracket with a directed push button, comprising:

a bracket (11), for being arranged on a drain valve (10) in a circumferential limiting manner, that is in a manner limiting rotation in the circumferential direction;

a push button main body (20), having an accommodating cavity (21) and in threaded connection with the bracket;

a push button component, slidably arranged in the accommodating cavity (21) and rotatable relative to the push button main body (20);

a compression bar (50), arranged on the bracket in the circumferential limiting manner, in circumferential limiting fit with the push button component;

characterized by further comprising a connecting sleeve (40), an upper part of which is arranged in the push button main body (20) in an axially movable manner, capable of rotating with the push button main body (20) and rotatably connected with the push button component; and in that the compression bar (50), is in threaded connection with the connecting sleeve (40); and

- in that the connecting sleeve (40) is configured to drive the compression bar (50) to move along the axial direction so as to be capable of driving the drain valve (10) to open to drain water, when the push button component is operated.
2. The drain valve button bracket with the directed push button according to claim 1, wherein the push button component comprises a push button (31) and a push button seat (32), which are assembled together, and the push button (31) and the push button seat (32) are slidably arranged in the accommodating cavity (21), the connecting sleeve (40) is rotatably connected with the push button seat (32), the compression bar (50) is in circumferential limiting fit with the push button seat (32), and when the push button (31) is pressed and operated, the push button (31) drives the compression bar (50) to move along the axial direction thereof via the push button seat (32) and the connecting sleeve (40) so as to drive the drain valve (10) to drain water.
 3. The drain valve button bracket with the directed push button according to claim 2, wherein the push button seat (32) is provided with an annular groove (321), one end of the connecting sleeve (40) is provided with a buckle (41), the buckle (41) is buckled in the annular groove (321) in a circumferential movable manner, and the connecting sleeve (40) is rotatably connected with the push button seat (32) via the cooperation of the buckle (41) and the annular groove (321).
 4. The drain valve button bracket with the directed push button according to claim 2 or 3, wherein the compression bar (50) penetrates through the connecting sleeve (40) to cooperate with the push button seat (32), and the compression bar (50) forms a threaded connection with the connecting sleeve (40) and is in circumferential limiting fit with the push button seat (32).
 5. The drain valve button bracket with the directed push button according to claim 2 or 3, wherein the push button seat (32) is provided with a non-circular hole (322), the compression bar (50) is provided with a non-circular cooperation portion (52) corresponding to the non-circular hole (322) of the push button seat (32), and the compression bar (50) is in circumferential limiting fit with the push button seat (32) through the non-circular hole (322) and the non-circular cooperation portion (52); and at least one of the compression bar (50) and the push button seat (32) is provided with a guiding inclined plane (53) for facilitating the insertion of the compression bar (50) into the non-circular hole (322).
 6. The drain valve button bracket with the directed push button according to claim 1, wherein a threaded pipe (22) in threaded connection with the bracket is arranged at the bottom of the push button main body (20), and a lower part of the connecting sleeve (40) is sleeved in the threaded pipe (22) and forms circumferential limiting with the threaded pipe (22).
 7. The drain valve button bracket with the directed push button according to claim 1, wherein the bracket (11) is provided with a nut (12), the nut (12) is in threaded connection with the push button main body (20), the compression bar (50) is arranged on the nut (12) in the circumferential limiting manner, and the pitches of the threads on the nut (12), the push button main body (20), the compression bar (50) and the connecting sleeve (40) are equal.
 8. The drain valve button bracket with the directed push button according to claim 7, wherein a sliding slot (13) is formed in the top of the bracket (11), a sliding plate (14) is slidably installed in the sliding slot (13) along a first direction, the nut (12) is slidably installed on the sliding plate (14) along a second direction, and the first direction is perpendicular to the second direction.
 9. The drain valve button bracket with the directed push button according to claim 2 or 3, wherein the push button (31) comprises a full-flush push button (311) and a semi-flush push button (312), the full-flush push button (311) is fixedly installed on the push button seat (32), the semi-flush push button (312) is movably installed on the push button seat (32), a stroke of the full-flush push button (311) for driving the push button seat (32) to move when being driven is greater than the stroke of the semi-flush push button (312) for driving the push button seat (32) to move when being driven, and the drain valve button bracket further comprises a first elastic member (33) for resetting the push button component.
 10. The drain valve button bracket with the directed push button according to claim 2 or 3, wherein the push button (31) comprises a full-flush push button (311) and a semi-flush push button (312), the push button seat (32) comprises a full-flush buckle seat (34) fixedly connected with the full-flush push button (311), a semi-flush buckle seat (35) fixedly connected with the semi-flush push button (312), and a rotation stop seat (36) rotatably connected with the connecting sleeve (40), the compression bar (50) is in circumferential limiting fit with the rotation stop seat (36), and the full-flush buckle seat (34) and the semi-flush buckle seat (35) are both in axial sliding fit and circumferential limiting fit with the rotation stop seat (36).
 11. The drain valve button bracket with the directed push

button according to claim 10, further comprising a carrying tray (60), wherein the carrying tray (60) is arranged in the accommodating cavity (21) of the push button main body (20) and rotatable relative to the push button main body (20), the full-flush buckle seat (34) and the semi-flush buckle seat (35) are slidably installed on the carrying tray (60), the drain valve button bracket further comprises a second elastic member (341), a third elastic member (351) and a fourth elastic member (361) for respectively resetting the full-flush buckle seat (34), the semi-flush buckle seat (35) and the rotation stop seat (36).

12. A toilet, comprising a drain valve (10) and the drain valve button bracket according to claim 1, wherein the bracket is arranged on the drain valve in a circumferential limiting manner.

13. The toilet according to claim 12, wherein the bracket (11) comprises two connecting arms (15), the two connecting arms (15) are installed on both sides of the drain valve (10) in a height adjustable manner, a pressing plate (54) is arranged at the bottom of the compression bar (50), the pressing plate (54) cooperates with a lifting rod (16) that is rotatably arranged on the drain valve (10), and the other end of the lifting rod (16) is configured to tilt and lift a sealing component of the drain valve (10) to open the drain valve, when the pressing plate (54) presses one end of the lifting rod (16).

Patentansprüche

1. Ablassventilknopfhalterung mit einem gerichtetem Druckknopf, bestehend aus:

einem Bügel (11), der dazu bestimmt ist, auf einem Ablassventil (10) in einer den Umfang begrenzenden Weise angeordnet zu werden, d.h. in einer die Drehung in der Umfangsrichtung begrenzenden Weise;

einem Druckknopfhauptkörper (20), der einen Aufnahmehohlraum (21) aufweist und mit der Halterung in Schraubverbindung steht;

einer Druckknopfkomponente, die verschiebbar im Aufnahmehohlraum (21) angeordnet und relativ zu dem Druckknopfhauptkörper (20) drehbar ist;

einer Druckstange (50), die an der Halterung in Umfangsbegrenzung angeordnet ist, in Umfangsbegrenzungspassung mit dem Druckknopfteil;

dadurch gekennzeichnet, dass sie ferner eine Verbindungsmuffe (40) umfasst, von der ein oberer Teil axial beweglich in dem Druckknopfhauptkörper (20) angeordnet ist, sich mit dem Druckknopfhauptkörper (20) drehen kann und

drehbar mit dem Druckknopfteil verbunden ist; und dass die Druckstange (50) mit der Verbindungsmuffe (40) in Schraubverbindung steht; und

dass die Verbindungsmuffe (40) so konfiguriert ist, dass sie die Druckstange (50) antreibt, um sich entlang der axialen Richtung zu bewegen, so dass sie in der Lage ist, das Ablassventil (10) anzutreiben, um es zu öffnen, um Wasser abzulassen, wenn der Druckknopfteil betätigt wird.

2. Ablassventilknopfhalterung mit gerichtetem Druckknopf nach Anspruch 1, wobei das Druckknopfteil einen Druckknopf (31) und einen Druckknopfsitz (32) umfasst, die zusammengebaut sind, und der Druckknopf (31) und der Druckknopfsitz (32) verschiebbar in dem Aufnahmehohlraum (21) angeordnet sind, die Verbindungsmuffe (40) drehbar mit dem Druckknopfsitz (32) verbunden ist, die Druckstange (50) in Umfangsbegrenzungspassung mit dem Druckknopfsitz (32) ist, und wenn der Druckknopf (31) gedrückt und betätigt wird, treibt der Druckknopf (31) die Druckstange (50) an, um sich entlang seiner axialen Richtung über den Druckknopfsitz (32) und die Verbindungsmuffe (40) zu bewegen, um das Ablassventil (10) anzutreiben, um Wasser abzulassen.

3. Ablassventilknopfhalterung mit dem gerichtetem Druckknopf nach Anspruch 2, wobei der Druckknopfsitz (32) mit einer Ringnut (321) versehen ist, ein Ende der Verbindungsmuffe (40) mit einer Schnalle (41) versehen ist, die Schnalle (41) in der Ringnut (321) umfangsbeweglich eingehängt ist und die Verbindungsmuffe (40) über das Zusammenwirken von Schnalle (41) und Ringnut (321) mit dem Druckknopfsitz (32) drehbar verbunden ist.

4. Ablassventilknopfhalterung mit gerichtetem Druckknopf nach Anspruch 2 oder 3, wobei die Druckstange (50) die Verbindungsmuffe (40) durchdringt, um mit dem Druckknopfsitz (32) zusammenzuwirken, und die Druckstange (50) mit der Verbindungsmuffe (40) eine Schraubverbindung bildet und mit dem Druckknopfsitz (32) in Umfangsbegrenzungspassung steht.

5. Ablassventilknopfhalterung mit gerichtetem Druckknopf nach Anspruch 2 oder 3, wobei der Druckknopfsitz (32) mit einem nicht kreisförmigen Loch (322) versehen ist, die Druckstange (50) mit einem nicht kreisförmigen Zusammenwirkungsabschnitt (52) versehen ist, der mit dem nicht kreisförmigen Loch (322) des Druckknopfsitzes (32) korrespondiert, und die Druckstange (50) durch das nicht kreisförmige Loch (322) und den nicht kreisförmigen Zusammenwirkungsabschnitt (52) in Umfangsbegrenzungspassung mit dem Druckknopfsitz (32) ist; und mindestens eines von der Druckstange (50) und dem

Druckknopfsitz (32) mit einer schrägen Führungsebene (53) versehen ist, um das Einführen der Druckstange (50) in das nicht kreisförmige Loch (322) zu erleichtern.

6. Ablassventilknopfhalterung mit gerichtetem Druckknopf nach Anspruch 1, wobei am Boden des Druckknopfhauptkörpers (20) ein mit der Halterung in Schraubverbindung stehendes Gewinderohr (22) angeordnet ist und ein unterer Teil der Verbindungsmuffe (40) in das Gewinderohr (22) eingeschoben ist und mit dem Gewinderohr (22) eine Umfangsbegrenzung bildet.
7. Ablassventilknopfhalterung mit gerichtetem Druckknopf nach Anspruch 1, wobei die Halterung (11) mit einer Mutter (12) versehen ist, die Mutter (12) mit dem Druckknopfhauptkörper (20) in Gewindeverbindung steht, die Druckstange (50) auf der Mutter (12) umlaufend begrenzend angeordnet ist und die Steigungen der Gewinde an der Mutter (12), dem Druckknopfhauptkörper (20), der Druckstange (50) und der Verbindungsmuffe (40) gleich sind.
8. Ablassventilknopfhalterung mit gerichtetem Druckknopf nach Anspruch 7, wobei ein Gleitschlitz (13) in der Oberseite der Halterung (11) ausgebildet ist, eine Gleitplatte (14) gleitend in dem Gleitschlitz (13) entlang einer ersten Richtung installiert ist, die Mutter (12) gleitend auf der Gleitplatte (14) entlang einer zweiten Richtung installiert ist und die erste Richtung senkrecht zur zweiten Richtung ist.
9. Ablassventilknopfhalterung mit gerichtetem Druckknopf nach Anspruch 2 oder 3, wobei der Druckknopf (31) eine Vollspüldrucktaste (311) und eine Halbspül Drucktaste (312) umfasst, die Vollspül Drucktaste (311) fest auf dem Knopfsitz (32) installiert ist, die Halbspül Drucktaste (312) beweglich auf dem Knopfsitz (32) installiert ist, ein Hub der Vollspül Drucktaste (311) zum Antreiben des Druckknopfsitzes (32), um sich zu bewegen, wenn er angetrieben wird, größer ist als der Hub der Halbspül Drucktaste (312) zum Antreiben des Druckknopfsitzes (32), um sich zu bewegen, wenn er angetrieben wird, und die Ablassventilknopfhalterung ferner ein erstes elastisches Element (33) zum Rückstellen des Druckknopfteils umfasst.
10. Ablassventilknopfhalterung mit gerichtetem Druckknopf nach Anspruch 2 oder 3, wobei der Druckknopf (31) eine vollbündige Drucktaste (311) und eine halbbündige Drucktaste (312) aufweist, der Druckknopfsitz (32) einen mit der vollbündigen Drucktaste (311) fest verbundenen vollbündigen Schnallensitz (34), einen mit der halbbündigen Drucktaste (312) fest verbundenen halbbündigen Schnallensitz (35) und einem Drehstoppsitz (36), der drehbar mit der

Verbindungsmuffe (40) verbunden ist, wobei die Druckstange (50) in Umfangsbegrenzungspassung mit dem Drehstoppsitz (36) ist und der vollbündige Schnallensitz (34) und der halbbündige Schnallensitz (35) beide in axialer Gleitpassung und Umfangsbegrenzungspassung mit dem Drehstoppsitz (36) sind.

11. Ablassventilknopfhalterung mit gerichtetem Druckknopf nach Anspruch 10, ferner eine Trageschale (60) umfassend, wobei die Trageschale (60) in dem Aufnahmehohlraum (21) des Druckknopfhauptkörpers (20) angeordnet und relativ zum Druckknopfhauptkörper (20) drehbar ist, der vollbündige Schnallensitz (34) und der halbbündige Schnallensitz (35) verschiebbar auf der Tragschale (60) installiert sind, wobei die Ablassventilknopfhalterung ferner ein zweites elastisches Element (341), ein drittes elastisches Element (351) und ein viertes elastisches Element (361) zum jeweiligen Zurückstellen des vollbündigen Schnallensitzes (34), des halbbündigen Schnallensitzes (35) und des Drehstoppsitzes (36) umfasst.

12. Toilette, umfassend ein Ablassventil (10) und den Ablassventilknopfhalterung nach Anspruch 1, wobei die Halterung umlaufend begrenzend auf dem Ablassventil angeordnet ist.

13. Toilette nach Anspruch 12, wobei die Halterung (11) zwei Verbindungsarme (15) aufweist, die beiden Verbindungsarme (15) beidseitig des Ablassventils (10) höhenverstellbar angebracht sind, eine Andruckplatte (54) am unteren Ende der Druckstange (50) angeordnet ist, die Druckplatte (54) mit einer Hebestange (16) zusammenwirkt, die drehbar an dem Ablassventil (10) angeordnet ist, und das andere Ende der Hebestange (16) so konfiguriert ist, dass es eine Dichtungskomponente des Ablassventils (10) kippt und anhebt, um das Ablassventil zu öffnen, wenn die Druckplatte (54) auf ein Ende der Hebestange (16) drückt.

Revendications

1. Support de bouton de soupape de vidange avec un bouton-poussoir dirigé, comprenant :

un support (11), destiné à être disposé sur une soupape de vidange (10) de manière limitative circonférencielle, c'est-à-dire de manière rotationnelle limitative dans la direction circonférencielle ;
un corps principal de bouton-poussoir (20), ayant une cavité de réception (21) et en raccord fileté avec le support ;
un composant de bouton-poussoir, disposé de

- manière coulissante dans la cavité de réception (21) et pouvant tourner par rapport au corps principal de bouton-poussoir (20) ;
 une barre de compression (50), disposée sur le support de manière limitative circonférentielle, en ajustement limitatif circonférentiel avec le composant de bouton-poussoir ;
caractérisé en ce qu'il comprend en outre un manchon de raccordement (40), dont une partie supérieure est disposée dans le corps principal de bouton-poussoir (20) de manière à pouvoir se déplacer axialement, en mesure de tourner avec le corps principal de bouton-poussoir (20) et relié de manière rotative au composant de bouton-poussoir ;
 et **en ce que** la barre de compression (50), est en raccord fileté avec le manchon de raccordement (40) ; et
en ce que le manchon de raccordement (40) est configuré pour entraîner la barre de compression (50) à se déplacer le long de la direction axiale de manière à pouvoir entraîner la soupape de vidange (10) pour qu'elle s'ouvre pour évacuer l'eau, lorsque l'on actionne le bouton-poussoir.
2. Support de bouton de soupape de vidange avec le bouton-poussoir dirigé selon la revendication 1, où le composant de bouton-poussoir comprend un bouton-poussoir (31) et un siège de bouton-poussoir (32), qui sont assemblés ensemble, et le bouton-poussoir (31) et le siège de bouton-poussoir (32) sont disposés de manière coulissante dans la cavité de réception (21), le manchon de raccordement (40) est relié de manière rotative au siège de bouton-poussoir (32), la barre de compression (50) est en ajustement limitatif circonférentiel avec le siège de bouton-poussoir (32), et lorsque le bouton-poussoir (31) est pressé et actionné, le bouton-poussoir (31) entraîne la barre de compression (50) pour qu'elle se déplace le long de sa direction axiale par le siège de bouton-poussoir (32) et le manchon de raccordement (40) de manière à entraîner la soupape de vidange (10) pour évacuer l'eau.
 3. Support de bouton de soupape de vidange avec le bouton-poussoir dirigé selon la revendication 2, où le siège de bouton-poussoir (32) est muni d'une rainure annulaire (321), une extrémité du manchon de raccordement (40) est munie d'une boucle (41), la boucle (41) est bouclée dans la rainure annulaire (321) de manière mobile circonférentielle, et le manchon de raccordement (40) est relié de manière rotative au siège de bouton-poussoir (32) par la coopération de la boucle (41) et de la rainure annulaire (321).
 4. Support de bouton de soupape de vidange avec le bouton-poussoir dirigé selon la revendication 2 ou 3, où la barre de compression (50) pénètre à travers le manchon de raccordement (40) pour coopérer avec le siège de bouton-poussoir (32), et la barre de compression (50) forme un raccord fileté avec le manchon de raccordement (40) et est en ajustement limitatif circonférentiel avec le siège de bouton-poussoir (32).
 5. Support de bouton de soupape de vidange avec le bouton-poussoir dirigé selon la revendication 2 ou 3, où le siège de bouton-poussoir (32) est pourvu d'un trou non circulaire (322), la barre de compression (50) est pourvue d'une partie de coopération non circulaire (52) correspondant au trou non circulaire (322) du siège de bouton-poussoir (32), et la barre de compression (50) est en ajustement limitatif circonférentiel avec le siège de bouton-poussoir (32) à travers le trou non circulaire (322) et la partie de coopération non circulaire (52) ; et au moins l'un entre la barre de compression (50) et le siège de bouton-poussoir (32) est pourvu d'un plan incliné de guidage (53) pour faciliter l'insertion de la barre de compression (50) dans le trou non circulaire (322).
 6. Support de bouton de soupape de vidange avec le bouton-poussoir dirigé selon la revendication 1, où un tube fileté (22) en raccord fileté avec le support est disposé au fond du corps principal du bouton-poussoir (20), et une partie inférieure du manchon de raccordement (40) est emmanchée dans le tube fileté (22) et forme une limitation circonférentielle avec le tube fileté (22).
 7. Support de bouton de soupape de vidange avec le bouton-poussoir dirigé selon la revendication 1, où le support (11) est muni d'un écrou (12), l'écrou (12) est en raccord fileté avec le corps principal de bouton-poussoir (20), la barre de compression (50) est disposée sur l'écrou (12) de manière limitative circonférentielle, et les pas des filetages sur l'écrou (12), le corps principal de bouton-poussoir (20), la barre de compression (50) et le manchon de raccordement (40) sont identiques.
 8. Support de bouton de soupape de vidange avec le bouton-poussoir dirigé selon la revendication 7, où une fente coulissante (13) est formée dans le haut du support (11), une plaque coulissante (14) est installée de manière coulissante dans la fente coulissante (13) le long d'une première direction, l'écrou (12) est installé de manière coulissante sur la plaque coulissante (14) le long d'une seconde direction, et la première direction est perpendiculaire à la seconde direction.
 9. Support de bouton de soupape de vidange avec le bouton-poussoir dirigé selon la revendication 2 ou 3, où le siège de bouton-poussoir (32) est pourvu d'un trou non circulaire (322), la barre de compression (50) est pourvue d'une partie de coopération non circulaire (52) correspondant au trou non circulaire (322) du siège de bouton-poussoir (32), et la barre de compression (50) est en ajustement limitatif circonférentiel avec le siège de bouton-poussoir (32) à travers le trou non circulaire (322) et la partie de coopération non circulaire (52) ; et au moins l'un entre la barre de compression (50) et le siège de bouton-poussoir (32) est pourvu d'un plan incliné de guidage (53) pour faciliter l'insertion de la barre de compression (50) dans le trou non circulaire (322).

- 3, où le bouton-poussoir (31) comprend un bouton-poussoir pour vidange complète (311) et un bouton-poussoir pour demi vidange (312), le bouton-poussoir pour vidange complète (311) est installé de manière fixe sur le siège de bouton-poussoir (32), le bouton-poussoir pour demi vidange (312) est installé de manière mobile sur le siège de bouton-poussoir (32), une course du bouton-poussoir pour vidange complète (311) pour entraîner le siège de bouton-poussoir (32) à se déplacer lorsqu'il est entraîné est supérieure à la course du bouton-poussoir pour demi vidange (312) pour entraîner le siège de bouton-poussoir (32) à se déplacer lorsqu'il est actionné, et le support de bouton de la soupape de vidange comprend en outre un premier élément élastique (33) pour réinitialiser le composant de bouton-poussoir.
10. Support de bouton de soupape de vidange avec le bouton-poussoir dirigé selon la revendication 2 ou 3, où le bouton-poussoir (31) comprend un bouton-poussoir pour vidange complète (311) et un bouton-poussoir pour demi vidange (312), le siège de bouton-poussoir (32) comprend un siège de boucle pour vidange complète (34) relié de manière fixe au bouton-poussoir pour vidange complète (311), un siège de boucle pour demi vidange (35) relié de manière fixe au bouton-poussoir pour demi vidange (312), et un siège d'arrêt de rotation (36) relié de manière rotative au manchon de raccordement (40), la barre de compression (50) est en ajustement limitatif circonférentiel avec le siège d'arrêt de rotation (36), et le siège de boucle pour vidange complète (34) et le siège de boucle pour demi vidange (35) sont tous deux en ajustement coulissant axial et en ajustement limitatif circonférentiel avec le siège d'arrêt de rotation (36).
11. Support de bouton de soupape de vidange avec le bouton-poussoir dirigé selon la revendication 10, comprenant en outre un plateau de support (60), où le plateau de support (60) est disposé dans la cavité de réception (21) du corps principal de bouton-poussoir (20) et peut tourner par rapport au corps principal de bouton-poussoir (20), le siège de boucle pour vidange complète (34) et le siège de boucle pour demi vidange (35) sont installés de manière coulissante sur le plateau de support (60), le support de bouton de soupape de vidange comprend en outre un deuxième élément élastique (341), un troisième élément élastique (351) et un quatrième élément élastique (361) pour respectivement réinitialiser le siège de boucle pour vidange complète (34), le siège de boucle pour demi vidange (35) et le siège d'arrêt de rotation (36).
12. Toilettes, comprenant une soupape de vidange (10) et le support de bouton de soupape de vidange selon la revendication 1, où le support est disposé sur la
- soupape de vidange de manière limitative circonférentielle.
13. Toilettes selon la revendication 12, où le support (11) comprend deux bras de connexion (15), les deux bras de connexion (15) sont installés des deux côtés de la soupape de vidange (10) de manière réglable en hauteur, une plaque de pression (54) est disposée au bas de la barre de compression (50), la plaque de pression (54) coopère avec une tige de levage (16) qui est disposée de manière rotative sur la soupape de vidange (10), et l'autre extrémité de la tige de levage (16) est configurée pour incliner et soulever un élément d'étanchéité de la soupape de vidange (10) pour ouvrir la soupape de vidange, lorsque la plaque de pression (54) appuie sur une extrémité de la tige de levage (16).

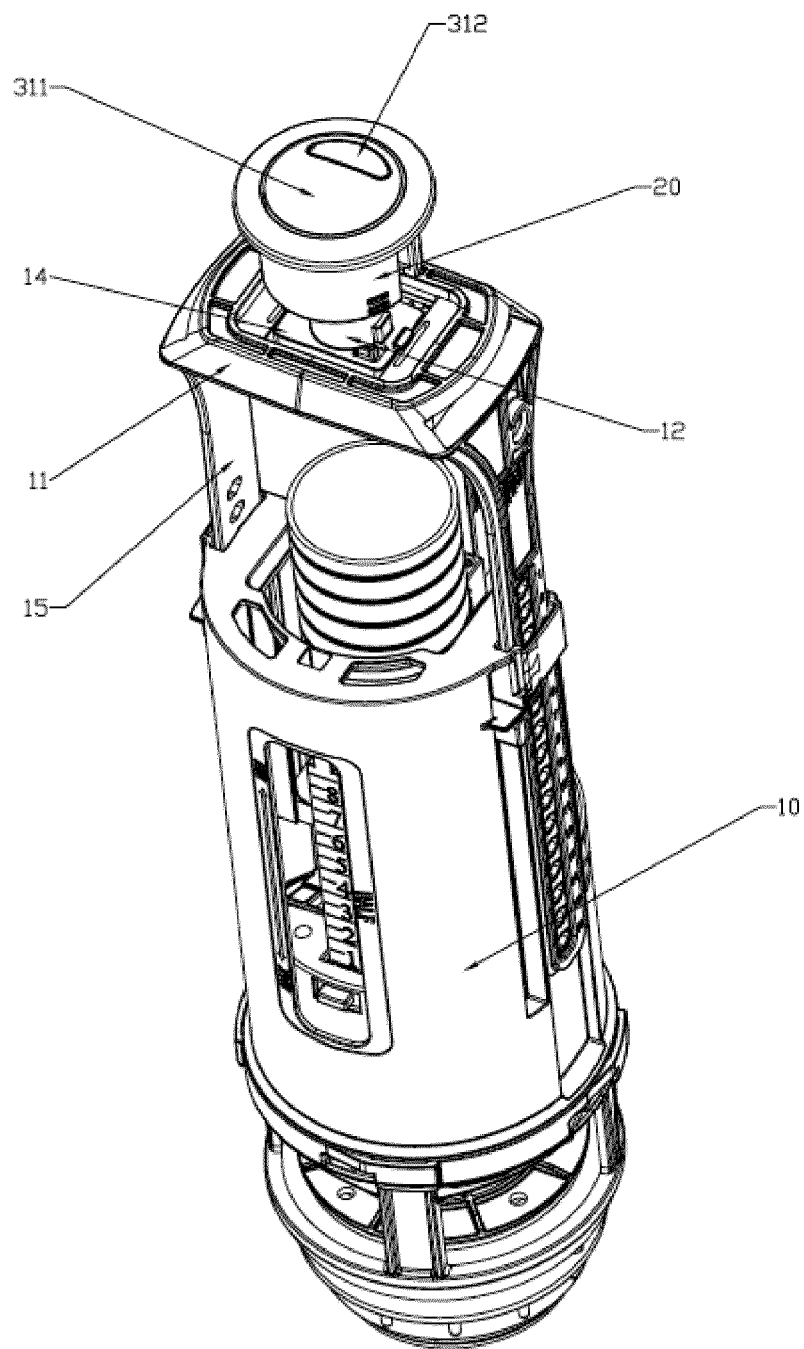


Figure 1

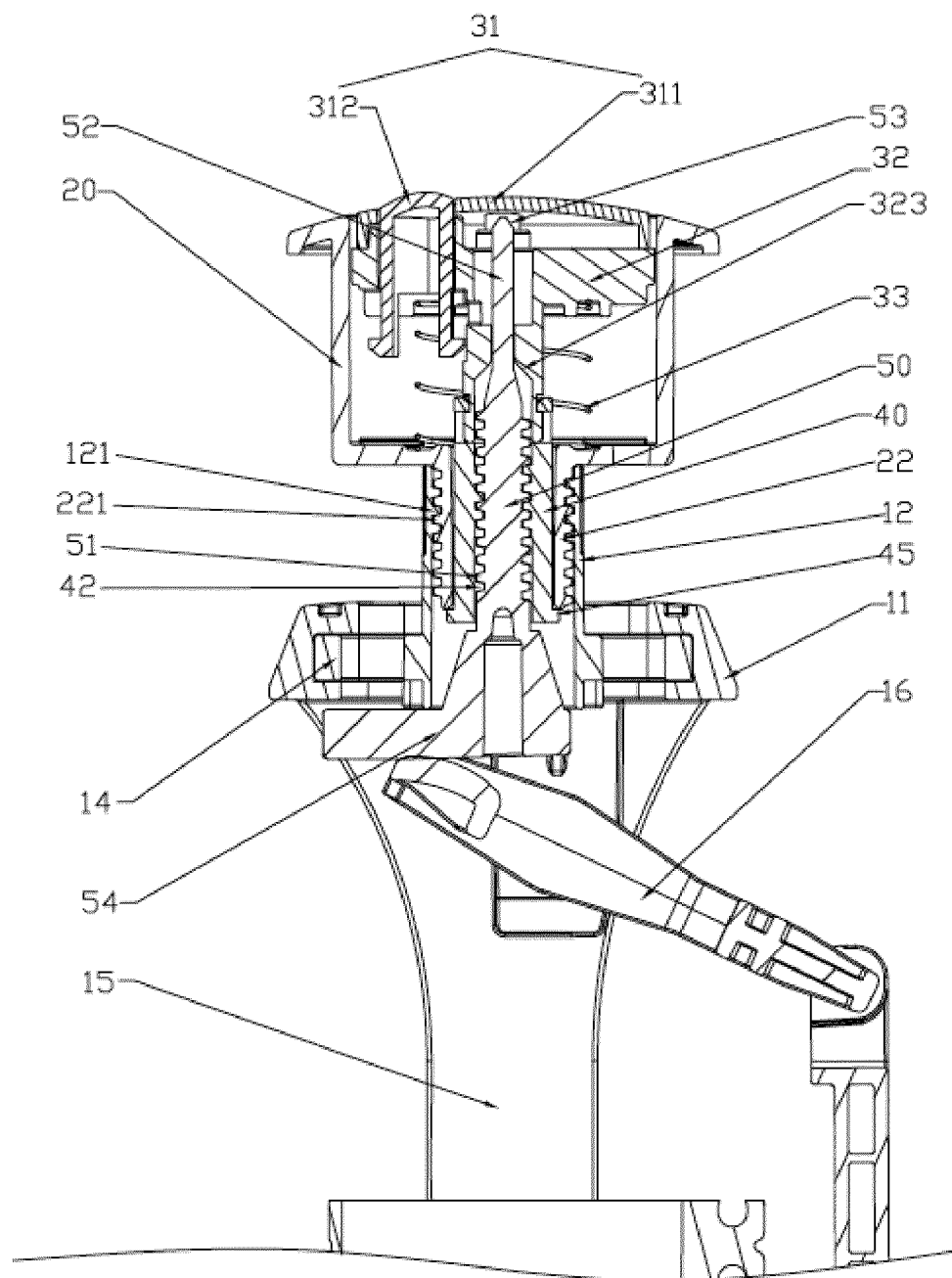


Figure 2

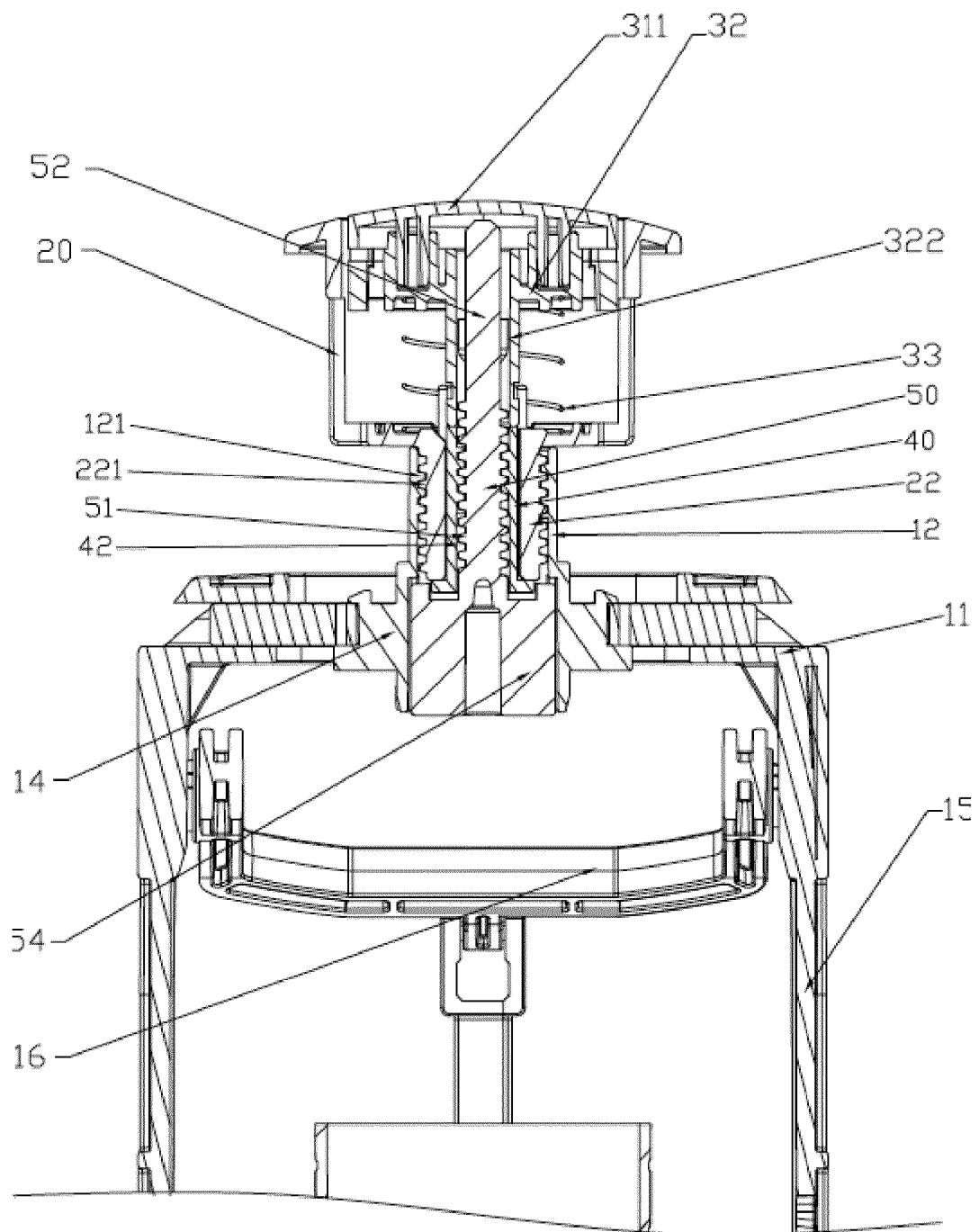


Figure 3

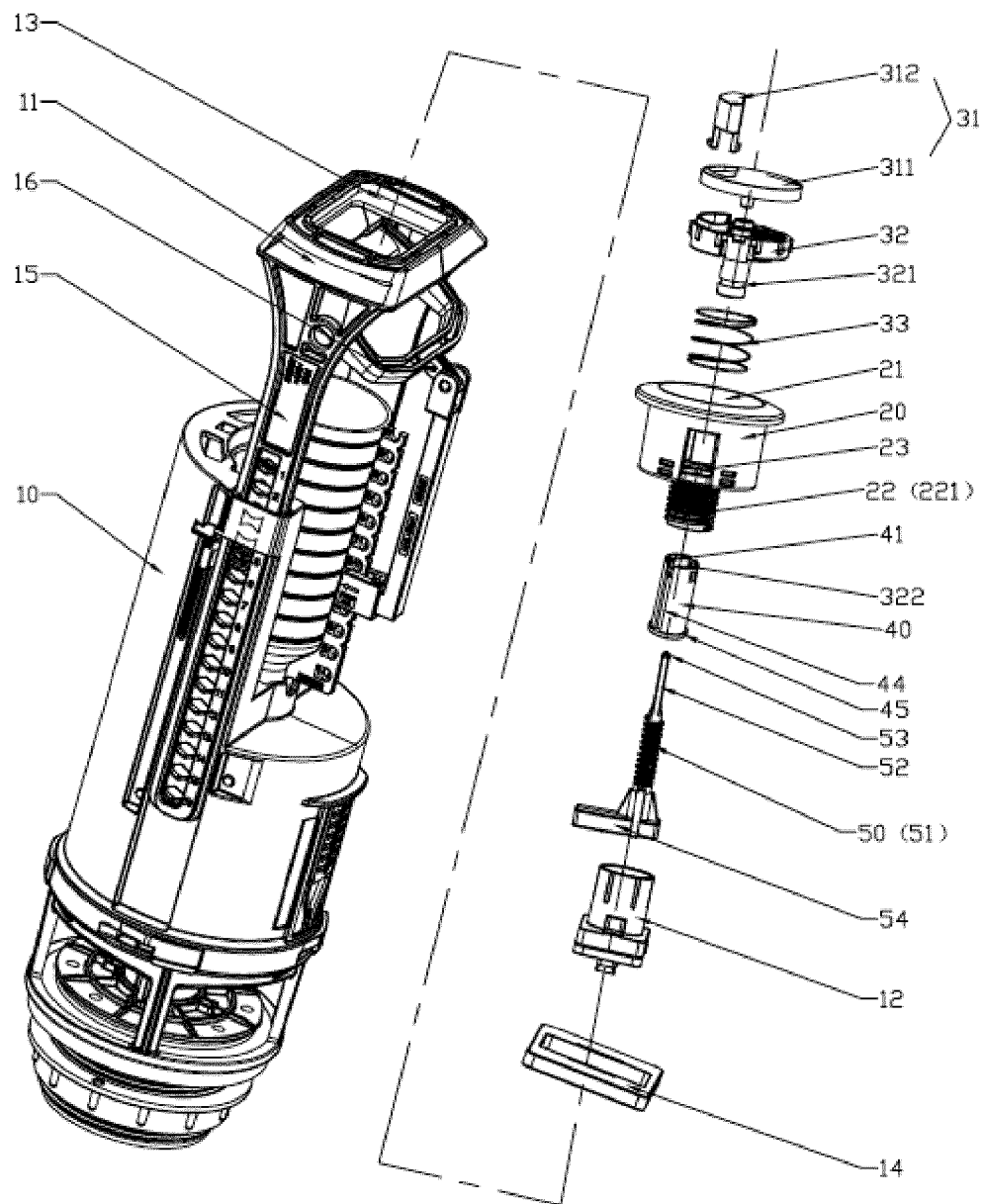


Figure 4

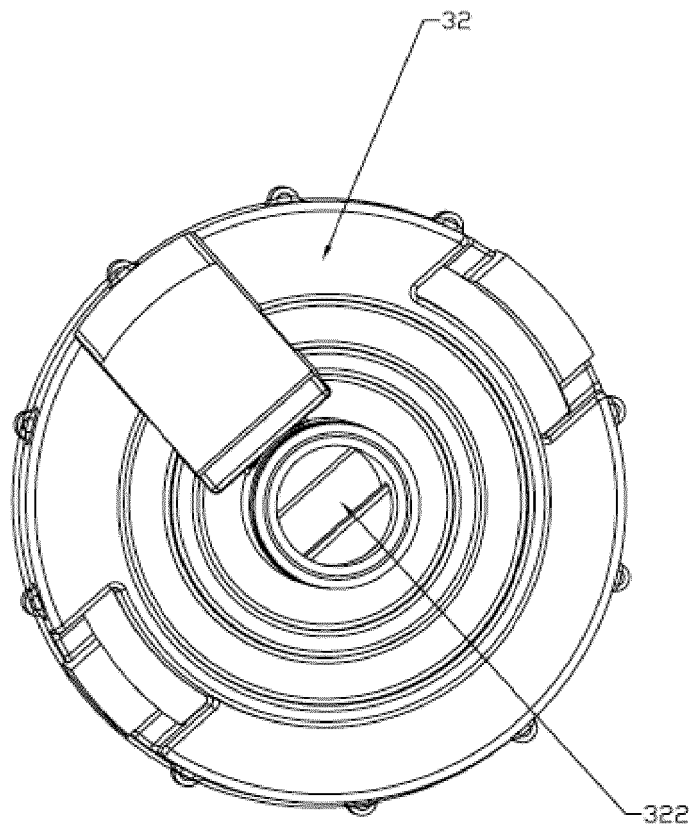


Figure 5

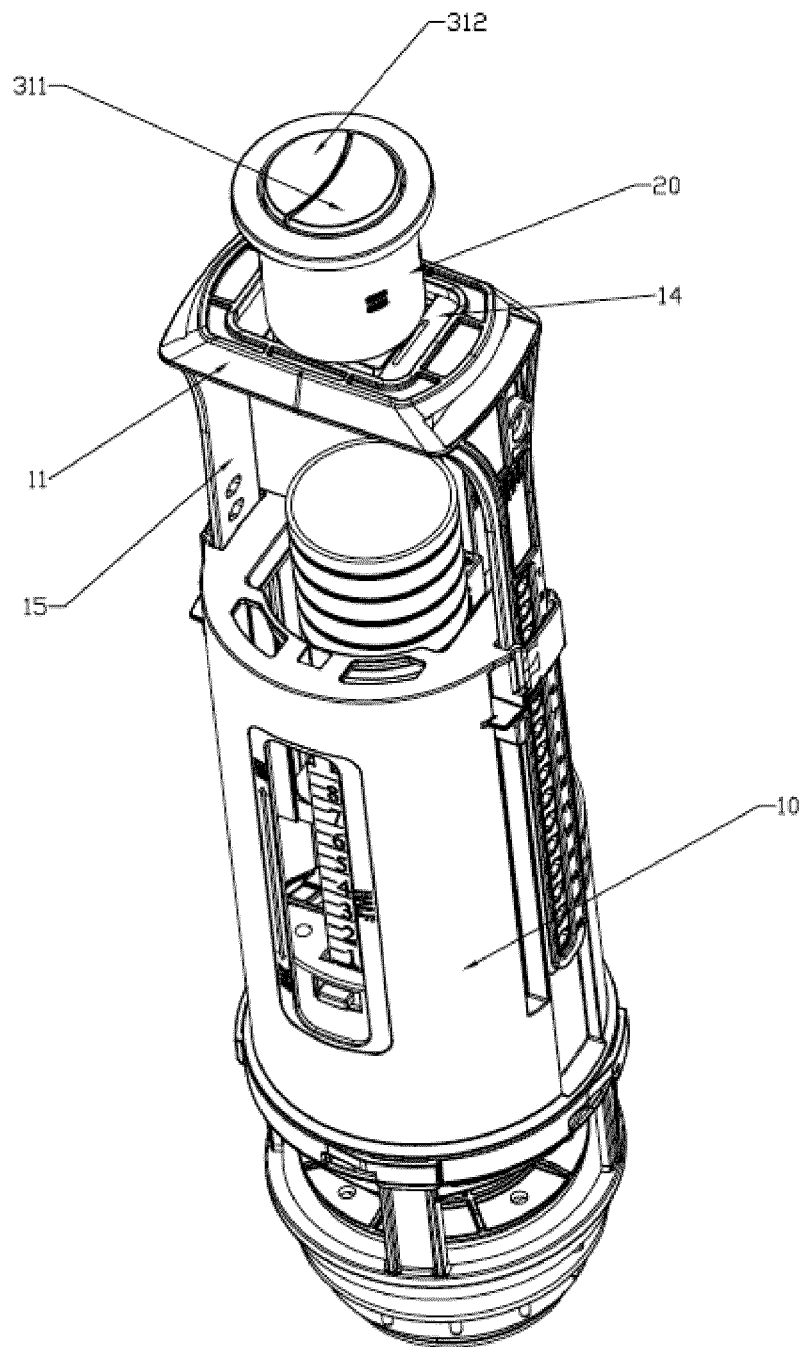


Figure 6

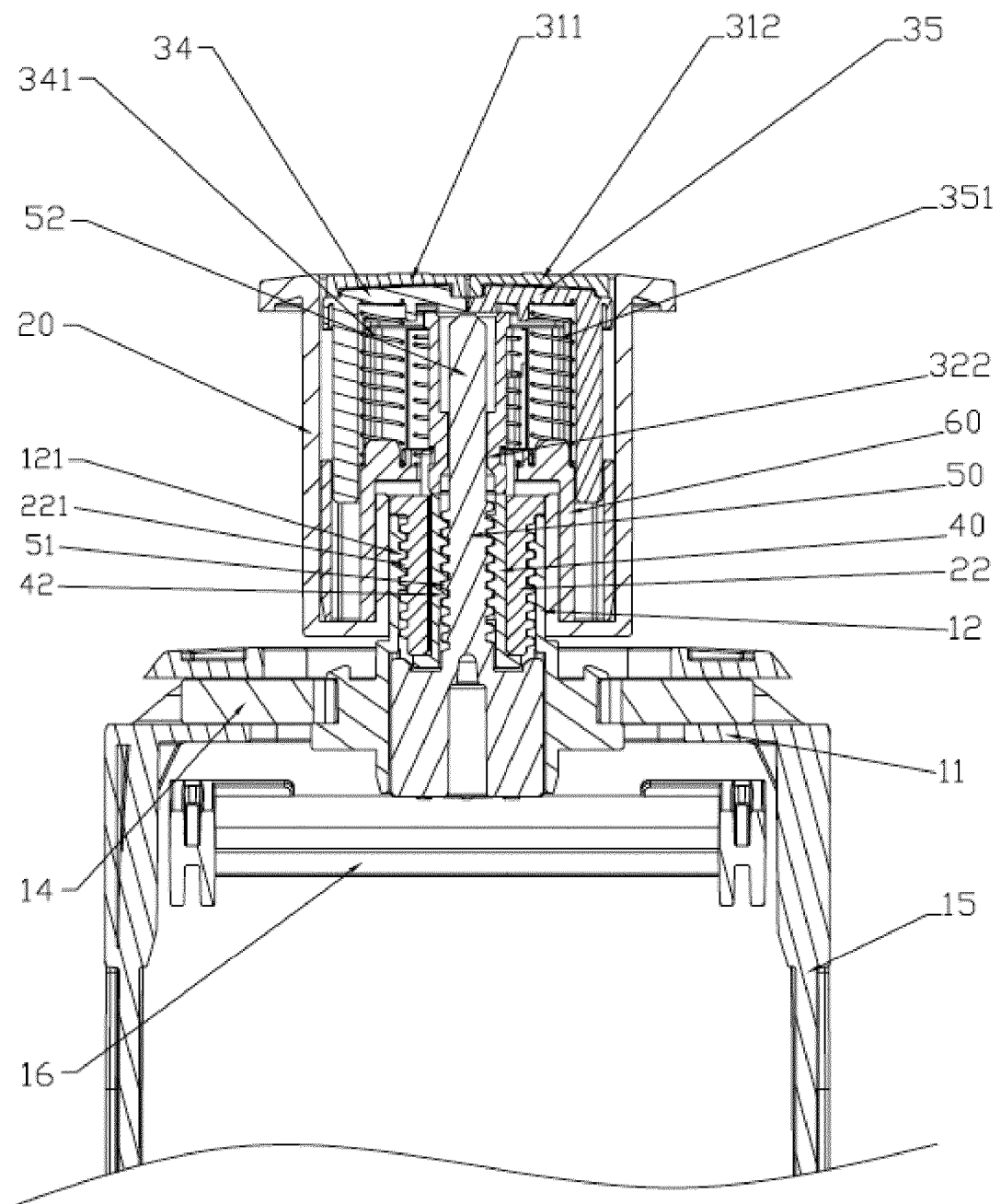


Figure 7

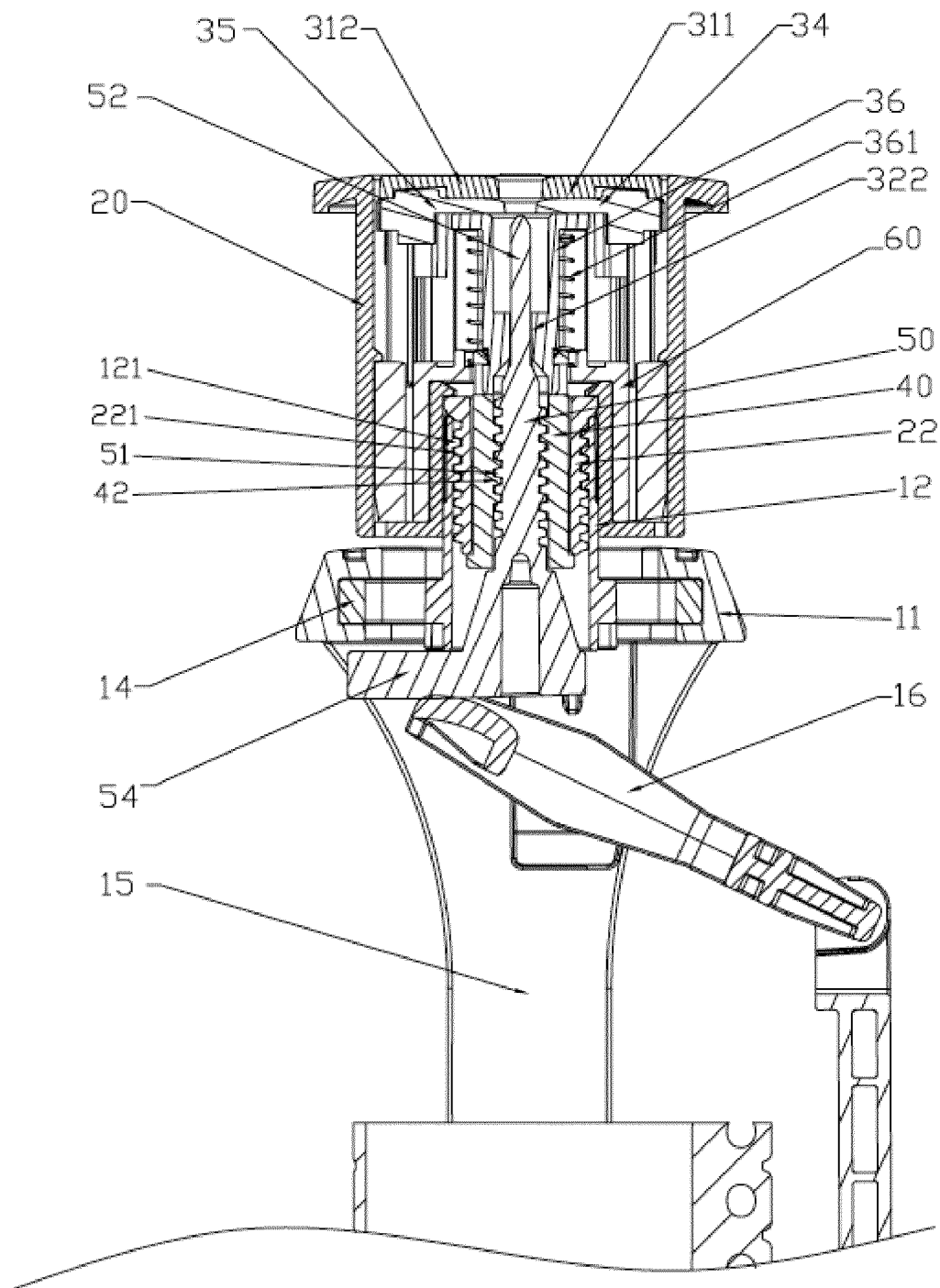


Figure 8

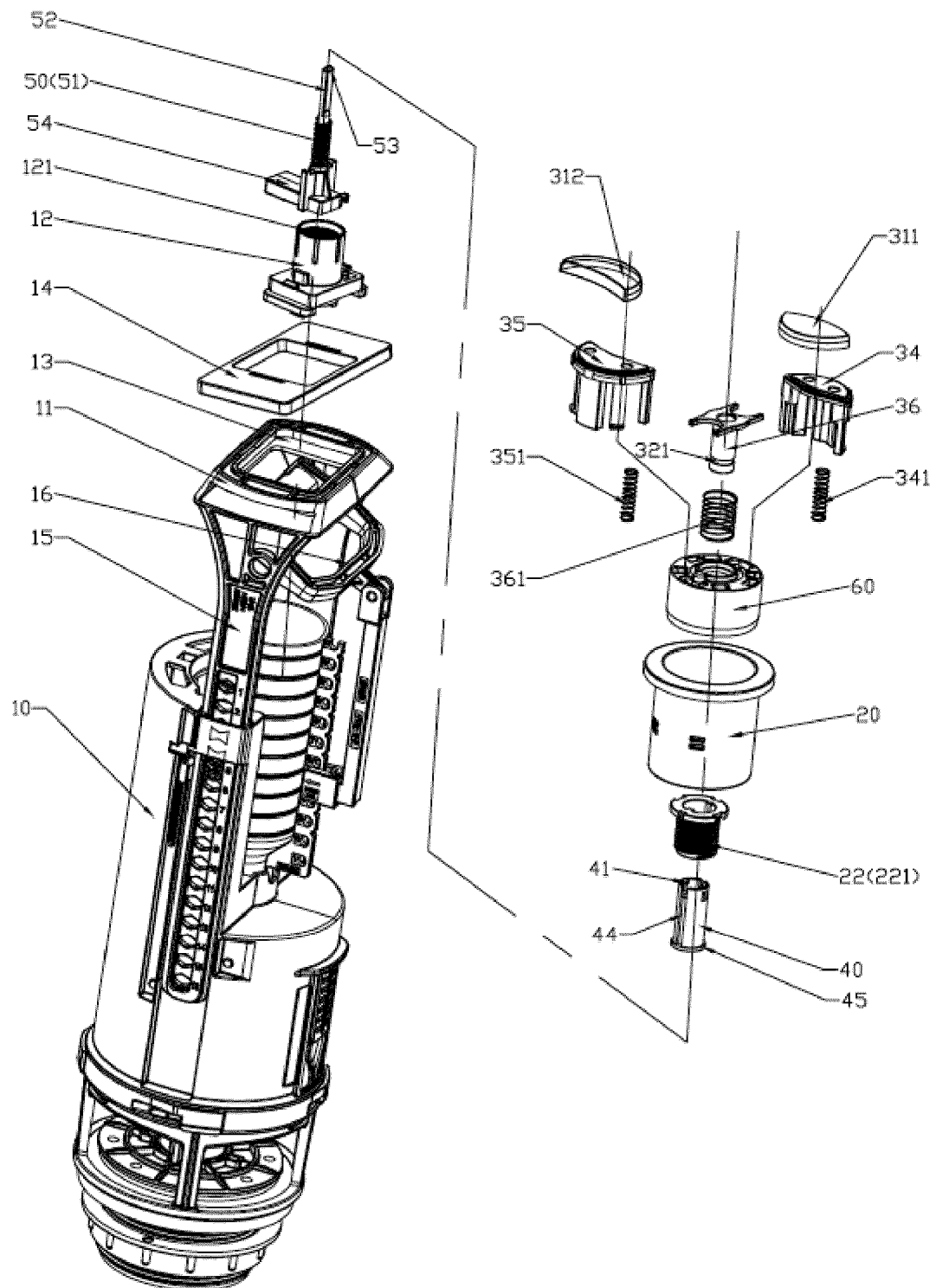


Figure 9

REFERENCES CITED IN THE DESCRIPTION

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