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**(54) TOILET WITH A CISTERN DOUBLE-FLUSH DEVICE**

TOILETTE MIT EINER DOPPELSPÜLVORRICHTUNG FÜR EINE ZISTERNE

TOILETTES AVEC UN DISPOSITIF DE DOUBLE CHASSE DE RÉSERVOIR DE TOILETTES

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## Description

### Object of the invention

**[0001]** The present invention, as expressed in the statement of this specification, relates to a toilet comprising a device for flushing toilet tanks that is of the type allowing to select a partial flush or a full flush of the tank by pressing down on a double pushbutton with two buttons, so that pressure on one of the two buttons of the double pushbutton is transmitted to the flush system through a wire made of steel, similar to that employed in bicycle brakes.

**[0002]** On this premise, the invention improvements focus on characteristic linking means between the bell of the flush system and an outlet fixed at the bottom of the tank.

**[0003]** Other features of the invention are focused on a first upper mechanism associated with the button and a second lower mechanism associated with the overflow, so that both cited mechanisms are connected by the wire, so that by pressing on one of the two buttons of the pushbutton, the overflow rises up releasing the outlet of water from the tank through the outlet and transmitting the movement through both cited mechanisms and the wire that connects them. When actuation on the pushbutton is ceased, the outflow of water from the tank is obturated.

**[0004]** The benefits are initially the enormous versatility afforded by the new mounting design to the outlet of the tank.

### Background of the invention

**[0005]** Currently, there are plenty of devices for flushing toilet tanks generally comprising a pushbutton, a flush system and an outlet fixed at the bottom of the tank, such that when actuating the pushbutton, the overflow pipe of the flush system is raised up releasing the outlet of water from the tank and when ceasing to exert pressure on such pushbutton, the initial position is recovered thus obturating again the outlet of the tank by means of an obturating rubber fixed to the overflow pipe that seals the outlet located within the outlet.

**[0006]** For example, patent of invention number ES2136547 of the same applicant of the present invention refers to a partial or full, double flush device, without the user having to interrupt the flush. To this end, the pushbutton incorporates a first button associated with a top float for partial flush and a second button associated with a bottom float for full flush.

**[0007]** These devices for flushing toilet tanks are excessively complex in its operation, some of them being imprecise and expensive.

**[0008]** The document DE20 2006 016050U1 discloses a drain valve for a cistern, comprising a housing, which is provided with a valve seat defining an outlet opening, an overflow pipe, the lower end of which is provided with a seal which cooperates with the valve seat, an upper

float, which is adjustable in height relative to the overflow pipe, a lower float, and a trigger device for selectively triggering a partial flush or complete flush, the lower float being provided with a stop on which the overflow pipe is placed in a raised position, associated with a complete flush, via a projection provided on the overflow pipe, it being possible to fix the upper float on the overflow pipe by means of a height adjustment element, said upper float being dimensioned in such a way that when it is immersed, after brief raising of the overflow pipe from the closed position thereof, the buoyancy of said upper float automatically raises the overflow pipe selectively into a position associated with a partial flush or complete flush, the upper float maintaining a set position relative to the overflow pipe both during a partial flush and during a complete flush, in that the lower float is pivotably mounted on the housing, and suspended, in a chamber formed in the housing, via a bracket pivotably mounted on the housing, said chamber comprising at least one upper inlet opening and at least one lower discharge opening, the discharge opening being provided with an adjustment element for altering the opening size, and a guide rib for guiding the bracket being integrally formed on the outside of the overflow pipe and extending in the axial direction of the overflow pipe.

**[0009]** The document EP 0 796 954 discloses a device for operating discharge valves for water storage cisterns of sanitary installations comprising an element movable axially inside guide means under the thrusting action of a bellows attached to said guide means and made to expand by a predetermined quantity of compressed air introduced therein via control means of the operating device, wherein said bellows comprises rigid means movable therewith and designed to cooperate with a first seat and a second seat of a lever rotating about a fixed fulcrum designed to cooperate with elements of said rod so as to cause respectively starting or controlled stoppage of discharging.

### Description of the invention

**[0010]** In order to achieve the objectives and to avoid the drawbacks referred to in the preceding paragraphs, the invention provides a toilet comprising a device for flushing toilet tanks according with claim 1. In the claims 2 to 12 there are disclosed several embodiments of the invention in accordance with the independent claim 1.

**[0011]** In an embodiment, the intermediate coupling base comprises a separate body that connects at its bottom part with the outlet of the tank.

**[0012]** In a second embodiment, the intermediate coupling base and corresponding outlet comprise a single one-piece element.

**[0013]** The first mechanism associated with the pushbutton is characterized in that it comprises a top tilting trigger with angular structure, one of whose branches articulates at its free end on an anterior axis integral to a housing of the pushbutton assembly, while at the joining

area of the two branches of the cited trigger, it connects articulately with a terminal lug integral to one end of the wire, the free end of the other matching branch of the top tilting trigger connecting to a vertical rod of the pushbutton, the downward movement of which makes the top tilting trigger rotate against the resistance of a recovery spring that is part of a second mechanism associated with the overflow pipe.

**[0014]** The second mechanism associated with the overflow pipe of the flush system is characterized in that it comprises a bottom tilting trigger which articulates into an intermediate part attached to the top of the bell, such trigger having an angular structure consisting of a vertical branch that incorporates the recovery spring and a double horizontal bent branch that is in contact with the underside of a ring seat of the overflow pipe, a terminal lug integral to one end of the wire connecting at the free end of the vertical branch of the bottom tilting trigger.

**[0015]** The connection articulated in the anterior axis of the top tilting trigger is characterized in that it comprises an open extension mountable and detachable by virtue of a movement perpendicular to the direction of the anterior axis.

**[0016]** Another feature of the invention is that the bottom tilting trigger has lateral appendages as means of articulation of such bottom tilting trigger, such lateral appendages coupling to the intermediate part, while they are in the area of confluence of the two branches of the above-mentioned bottom tilting trigger.

**[0017]** The recovery spring of the bottom tilting trigger is characterized in that it comprises at least one elastic fin, in the active position of which it comes into contact at its free end against an inner part of the bell, so that in this active position of the at least one elastic fin, it tends to position the assembly of the overflow pipe and both first and second mechanisms towards its initial resting position corresponding to the obturation of the outlet of water from the tank.

**[0018]** The end sections of the flexible tube that protects the wire are anchored, in a split top extension fixed to the housing of the pushbutton and in a split bottom extension fixed to the intermediate part attached to the bell of the flush system. This split structure of such extensions facilitates mounting and positioning of the flexible tube.

**[0019]** Another feature of the invention is that the end sections of the flexible tube where the wire is guided, incorporate some retaining protuberances that are embedded in slots established in such split extensions.

**[0020]** Another feature of the invention is that the inside of the neck of the fixed housing of the pushbutton comprises a first pair of opposing grooves that go through the entire length of said neck and a second pair of opposing grooves that only affect a lower section of said neck, some end protrusions integral to the vertical rod in the mounted position of the assembly of the pushbutton being fit in the second pair of opposing grooves, while, during its assembly, the end protrusions of the vertical

rod go through the first couple of opposing grooves, the latter substantially facilitating assembly and disassembly of the vertical rod associated with the two buttons of the pushbutton without having to assemble and disassemble other elements.

**[0021]** In another embodiment of the present invention, at least one of the battlemented protuberances of the lower part of the bell comprises at least one hole in the bottom of the same for the draining of water from the inside of the device. Thus, these holes prevent the effect of 'inverted glass' generated inside the bell since when said bell is raised for the draining of water by the outlet, the water inside the bell would be retained in the interior of the same by the above-mentioned effect which would hinder the descent of the device. Air enters inside the bell through the above-mentioned holes which ensures water outflow and ensures at the same time the correct descent of the bell and therefore a correct closure of the device.

**[0022]** Next, in order to facilitate a better understanding of this specification and being an integral part of the same, the figures attached represent the object of the invention with an illustrative and not limiting character.

## Brief description of the drawings

### [0023]

Figure 1.- It shows a sectioned elevational view of the device for flushing toilet tanks, object of the invention. Basically, it comprises a pushbutton, a flush system with two floats for selecting a partial or full flush by means of one of the two buttons included in the pushbutton and an intermediate coupling base and outlet assembly, fixed at the bottom of the tank, the flush system being connected to the intermediate coupling base. The pushbutton is linked to the flush system through a wire.

Figure 2.- It shows an exploded view of a first embodiment of the flush system and intermediate coupling base and outlet assembly in relation to the anchoring means therebetween.

Figure 3.- It shows a view of a one-part body that makes up the outlet and intermediate coupling base assembly.

Figure 4. It shows an elevational view of an exemplary flush system not covered by the appended claims.

Figure 5.- It shows a sectioned perspective view of the pushbutton, highlighting a first upper mechanism linked to a second lower mechanism of the flush system through the wire.

Figure 6.- It shows a sectioned perspective view of the top of the flush system assembly, highlighting the second lower mechanism linked to the top of an overflow pipe that is part of the above-mentioned flush system, on the bottom of which an obturating rubber is fixed.

Figure 7.- It shows a top plant view of a housing of the pushbutton. Two pairs of opposing grooves are highlighted.

Figure 8.- It shows a sectional view according to the A-A section of the previous figure.

Figure 9.- It shows a sectional view according to the B-B section of figure 7.

### Preferred embodiment of the invention

**[0024]** Considering the numbering adopted on the figures, the device for flushing toilet tanks comprises in principle a pushbutton 1 with a first button 2 for a partial flush and a second button 3 for a full flush of the tank, a flush system 4 and an outlet 5-5'-5" fixed in the bottom 6 of the tank, the system flush 4 being connected to an intermediate coupling base 43-43'-43" associated to the outlet 5-5'-5" through a bell 7 that is part of the above-mentioned flush system 4. The flush system 4 includes in addition to the above-mentioned bell 7, an overflow pipe 8, in the lower section of which an obturating rubber 9 is fixed that rests on the closing position on a ring lip 10 of the outlet 5-5'-5", said lip delimiting an outlet of the water outflow from the tank into the toilet when such outlet is released by pressing on one of the two buttons of the pushbutton 1.

**[0025]** The overflow pipe 8 is associated in turn with a top float 11 for the partial flush and with another bottom float 12 for the full flush. As it is evident, both floats 11-12 are housed within the bell 7, more specifically within the bottom part 7', which together with another top part 7" make up the bell 7.

**[0026]** The elevation of the overflow pipe 8 when actuating one of the buttons of the pushbutton 1 is transmitted through a wire 13 protected by a flexible tube 14, a first mechanism 15 that links one end of the wire 13 to the pushbutton 1 and a second mechanism 16 linking the other matching end of the wire 13 to the upper section of the above-mentioned overflow pipe 8.

**[0027]** In an embodiment, the bell 7 has a battlemented lower structure arranged in the top part thereof 7', formed by anchoring extensions 21, alternating with intermediate gaps 33, wherein battlemented protuberances or tongues 17 of the bottom part are coupled 7". At least one of the battlemented protuberances or tongues 17 has at least one hole 52 on its bottom for the entry of air inside the bell 7 which ensures the emptying of the same during the flushing operation of the device object of the invention. When the bell 7 is closed on the coupling intermediate base 43-43', the at least one hole 52 is on the bottom line of the complementary battlements or latches 19 such that when rising the bell 7 it will always allow the entry of air into the above-mentioned bell 7.

**[0028]** Said bottom part 7" comprises gaps or recesses 18 where some battlements or latches 19 are adjusted, the latter alternating in turn with recesses 20 of an intermediate coupling base 43-43', said battlements or latches 19 being complementary to the anchoring extensions

21 of the top part 7' of the bell 7; the recesses 20 and the battlements or latches 19 being arranged in the upper section of the intermediate coupling base 43-43'. Said anchoring extensions 21 are provided with inner ribs 23 engaged to external protrusions 22 incorporated in the battlements or latches 19 of the intermediate coupling bases 43-43'.

**[0029]** With this configuration described above, the flush system 4 couples in the battlements of the intermediate coupling base 43-43' associated to the respective outlet 5-5' that is attached to the flush system 4 by the clipping action of the two anchoring extensions 21 on the upper edges of said battlements or latches 19, for which they have the above-mentioned external tabs 21, on which the inner ribs 23 of such anchoring extensions 21 are engaged. In this way the bottom part 7" of the bell 7 is retained by the interaction of the top part 7' and the coupling base 43-43'.

**[0030]** Above and in proximity to the anchoring extensions 21, the bell 7 comprises inverted "U"-shaped cuts 44 that delimit actuating portions 45 to tilt the cited anchoring extensions 21, in such a way that pressing on such actuation portions 45 manages to disengage the flush system assembly 4 with respect to the intermediate coupling base 43-43' thus achieving only axial disconnection.

**[0031]** The first mechanism 15 associated with the pushbutton 1, comprises a top tilting trigger 26 with angular structure, one branch of which articulates at its free end on an anterior axis 27 integral to a support 28 of the pushbutton assembly 1, while at the joining area of both branches of such top tilting trigger 26 it articulately connects with a terminal lug 29 integral to one end of the wire 13. The connection articulated in the anterior axis 27 comprises an open extension 42 to facilitate its extraction perpendicular to the direction of such anterior axis 27, also allowing a good lever arm without affecting the anchorage of the wire 13.

**[0032]** On the other hand, the free end of the other matching branch of the top tilting trigger 26 is in contact with a vertical rod 34 of the pushbutton 1, so that when actuating on the same, the vertical rod 34 descends against the resistance of a spring 35, such vertical rod 34 pushing by its bottom end to the above-mentioned top tilting trigger 26 by pulling the wire 13 and actuating the second mechanism 16 associated with the overflow pipe 8 thus raising it upwards to cause the emptying of the tank.

**[0033]** The pushbutton 1 comprises a fixed housing 47 provided with a neck 48, said neck 48 inwardly incorporating a first pair of opposing grooves 49 going throughout the length of said neck 48 and a second pair of opposing grooves 50 only affecting a lower section of said neck 48; end protrusions 51 integral to the vertical rod 34 in the mounted position of the pushbutton assembly 1 fitting in the second pair of opposing grooves 50, while during its assembly the end protrusions 51 go through the first pair of opposing grooves 49.

**[0034]** Therefore, the first pair of opposing grooves 49 go through the interior of the neck 48 in its entirety, such that facing on them the end protrusions 51 of the vertical rod 34, said vertical rod 34 is introduced, by the top, during its assembly, until it emerges by the lower end of the neck 48, overcoming the resistance of the spring 35, thereby achieving that the cited end protrusions 51 of the vertical rod 34 exceed said lower end of the neck 48, in order to then rotate 90° said vertical rod 34 and thus be able to introduce such end protrusions 51 in the second pair of smaller length opposing grooves 50, that go internally only through a small portion of the neck 48, such as described above.

**[0035]** The action of the spring 35 of the pushbutton moves back the vertical rod 34 to its working position, this time guided in the second pair of smaller length opposing grooves 50, hiding the end protrusions 51 and leaving the pushbutton mounted without any possibility of disconnection between its different moving parts, such that in this way the assembly functions of the mechanism are simplified, by providing the user with the assembly fully prepared for its connection to the wire system.

**[0036]** In turn, on the support 28 of the pushbutton 1 a split top extension 30 is connected, wherein an end section of the flexible tube 14 is fixed provided with retaining protuberances 31 that are embedded in small slots 32 of such split extension 30, thus facilitating the attachment and assembly of the flexible tube 14.

**[0037]** The opposing end section of the flexible tube 14 has other retaining protuberances 31' that are embedded in other slots 32' located in another split bottom extension 30' connected to the top of the bell 7 of the flush system 4.

**[0038]** On the other hand, the second mechanism 16 associated with the overflow pipe 8 includes a bottom tilting trigger 36 that articulates at the top of the bell 7 through lateral appendages 37 that are part of such bottom tilting trigger 36. It has in principle an angular structure consisting of a vertical branch 38 and a double horizontal bent branch 39 which is in contact with a ring seat 40 of the overflow pipe 8.

**[0039]** In the free end of the vertical branch 38 of the bottom tilting trigger 36, a terminal lug 29' articulates where the free end of the wire 13 is connected, so that when actuating the pushbutton 1, the wire 13 pulls the bottom tilting trigger 36 making it tilt against the resistance of a recovery spring 41 that is part of such trigger 36, therefore the double horizontal bent branch 39 pushes the overflow pipe 8 upwards to proceed with the flushing of the tank.

**[0040]** When ceasing to press the pushbutton 1, the first mechanism 15 and the second mechanism 16 return to their resting position thanks to the recovery spring 41 formed by a pair of elastic fins 41 that come into contact in the active position against the inner face of a part of the bell 7, position in which such elastic fins are stressed and tend to position the bottom tilting trigger 36 towards its resting position.

**[0041]** This bottom tilting trigger 36 that receives the traction of the wire 13 of the pushbutton 1 and recovery spring 12, have a one-part configuration, thereby avoiding the need to mount separate springs as it occurs in other conventional flush systems.

## Claims

1. A toilet comprising:

a toilet tank (6);  
an outlet (5-5'-5 ") placed in the bottom of the toilet tank (6); and  
a flush system (4) further comprising:

a flushing pushbutton (1) comprising a vertical rod (34) guided on a neck (48) of a fixed housing (47) of the flushing pushbutton (1);  
an overflow pipe (8);  
a wire made of steel (13) that is guided in a flexible tube (14); the wire made of steel (13) comprising a first end connected to a first mechanism (26) and a second end connected to a second mechanism (16); and wherein the first mechanism (26) is further connected with the vertical rod (34) of the flushing pushbutton (1) whereas the second mechanism (26) is further connected with the overflow pipe (8);  
an intermediate coupling base (43-43'-43");  
a bell (7) comprising a top part (7') and a bottom part (7") joined together;

and wherein the intermediate coupling base (43-43') is arranged to be linked with the bell (7) through a surrounding upper section of the intermediate coupling base (43-43') and further arranged to be linked with the outlet (5-5'-5 ") of the toilet tank (6);  
and wherein when the flushing pushbutton (1) is pressed, the overflow pipe (8) rises upwards, causing the flushing of the toilet tank (6) through the outlet (5-5'-5");

### characterized in that

the top part (7') of the bell (7) comprises anchoring extensions (21) alternating with intermediate gaps (33), wherein the anchoring extensions (21) further comprise inner ribs (23);  
the bottom part (7") of the bell (7) comprises tongues (17) and recesses (18);  
and the intermediate coupling base (43-43') comprises latches (19) alternating with recesses (20) in the surrounding upper section of the intermediate coupling base (43-43'), wherein the latches (19) further include external protrusions (22);  
wherein the tongues (17) of the bottom part (7")

- are coupled with the intermediate gaps (33) of the upper part (7') and with the recesses (20) in the upper section of the intermediate coupling base (43-43'); whereas the latches (19) of the intermediate coupling base (43-43') are coupled with the recesses (18) of the bottom part (7"); and  
and wherein the inner ribs (23) of the anchoring extensions (21) are snagged by the external protrusions (22) of the latches (19) of the intermediate coupling base (43-43').
2. The toilet, according to claim 1, wherein above and in proximity to the anchoring extensions (21), the bell (7) comprises inverted U-shaped cuts (44).
  3. The toilet, according to claim 1, wherein the intermediate coupling base (43) comprises an independent body which connects at its bottom with the outlet (5) of the tank (6).
  4. The toilet, according to claim 1, wherein the first mechanism (26) associated with the pushbutton (1) comprises a top bascule trigger (26) with an angular structure including two branches;  
wherein one branch of the top bascule trigger (26) is articulated by its free end in an anterior axis (27) integral with a housing (28) of the assembly of the pushbutton (1); and wherein the joining area of both branches of the top bascule trigger (26) is connected articulately with a terminal lug (29) integral with one end of the wire made of steel (13); and wherein the free end of the other matching branch of the top bascule trigger (26) is in contact with the vertical rod (34) of the pushbutton (1), the downward displacement of which makes the top bascule trigger (26) rotate against the resistance of a recovery spring (41) which forms part of the second mechanism (16) associated with the overflow pipe (8).
  5. The toilet, according to claim 4, wherein the second mechanism (16) associated with the overflow pipe (8) of the flush system (4) comprises a bottom bascule trigger (36) which articulates at the top of the bell (7); and wherein the bottom bascule trigger (36) has an angular structure consisting of a vertical branch (38) that incorporates the recovery spring (41) and a double horizontal bent branch (39) that is in contact with the bottom side of a ring seat (40) of the overflow pipe (8); and wherein a terminal lug (29') which is integral with one end of the wire made of steel (13) is connected at the free end of the vertical branch (38) of the bottom bascule trigger (36).
  6. The toilet, according to claim 5, wherein the connection articulated in the anterior axis (27) of the top bascule trigger (26) comprises an open extension (42) mountable and detachable through a displacement perpendicular to the direction of the anterior axis (27).
  7. The toilet, according to claim 6, wherein the bottom bascule trigger (36) has lateral appendages (37) as a means of articulation of said bottom bascule trigger (36), while the same are in the area of confluence of the two branches (38-39) of the bottom bascule trigger (36).
  8. The toilet, according to claim 5, wherein the recovery spring (41) of the bottom bascule trigger (36) comprises at least one elastic fin, in the active position of which contacts by its free end against an internal part of the bell (7) of the flush system (4).
  9. The toilet, according to claim 5, wherein the end sections of the flexible tube (14) are anchored in a split top extension (30) fixed to the housing (28) of the pushbutton (1) and in a split bottom extension (30') that connects to the bell (7) of the flush system (4).
  10. The toilet, according to claim 9, wherein the end sections of the flexible tube (14) comprise retention embossing (31-31') embedded in notches (32-32') located in the interior of the split top extension (30) fixed to the housing (28) of the pushbutton (1) and in the split bottom extension (30') fixed to an intermediate piece (33) attached to the bell (7) of the flush system (4).
  11. The toilet, according to claim 1, wherein the neck (48) of the fixed housing (47) of the pushbutton (1) comprises a first pair of opposing grooves (49) that run throughout the length of said neck (48) and a second pair of opposing grooves (50) that affect only a lower section of said neck (48), fitting in the second pair of opposing grooves (50) end protrusions (51) integral with the vertical rod (34) in the mounted position of the assembly of the pushbutton (1), while during its assembly the end protrusions (51) run through the first pair of opposing grooves (49).
  12. The toilet, according to any one of the preceding claims, wherein at least one of the tongues (17) of the bottom part (7") of the bell (7) comprises at least one hole (52) in its bottom for the entry of air into the interior of the bell (7).

#### Patentansprüche

##### 1. Eine Toilette umfassend:

einen Toilettentank (6);  
einen Auslass (5-5'-5"), der im Boden des Toilettentanks (6) angeordnet ist; und  
ein Spülsystem (4), das weiter umfasst:

einen Spültaster (1) umfassend eine vertikale Stange (34), die an einem Hals (48) eines feststehenden Gehäuses (47) des Spültasters (1) geführt ist;  
 ein Überlaufrohr (8);  
 einen aus Stahl gefertigten Draht (13), der in einem flexiblen Rohr (14) geführt ist; worin der aus Stahl gefertigte Draht (13) ein erstes Ende, das mit einem ersten Mechanismus (26) verbunden ist, und ein zweites Ende, das mit einem zweiten Mechanismus (16) verbunden ist, umfasst; und worin der erste Mechanismus (26) ferner mit der vertikalen Stange (34) des Spültasters (1) verbunden ist, während der zweite Mechanismus (26) ferner mit dem Überlaufrohr (8) verbunden ist;  
 eine Zwischenkupplungsbasis (43-43'-43'');  
 eine Glocke (7), umfassend einen oberen Teil (7') und einen unteren Teil (7''), die miteinander verbunden sind;

und worin die Zwischenkupplungsbasis (43-43') angeordnet ist, um mit der Glocke (7) durch einen umgebenden oberen Abschnitt der Zwischenkupplungsbasis (43-43') verbunden zu werden, und weiter angeordnet ist, um mit dem Auslass (5-5'-5'') des Toilettentanks (6) verbunden zu werden;

und worin, wenn der Spültaster (1) gedrückt wird, das Überlaufrohr (8) nach oben ansteigt, was die Spülung des Toilettentanks (6) durch den Auslass (5-5'-5'') bewirkt;

**dadurch gekennzeichnet, dass**

der obere Teil (7') der Glocke (7) Verankerungsfortsätze (21) umfasst, die sich mit Zwischenspalten (33) abwechseln, worin die Verankerungsfortsätze (21) ferner Innenrippen (23) umfassen;

der untere Teil (7'') der Glocke (7) umfasst Zungen (17) und Aussparungen (18);

und die Zwischenkupplungsbasis (43-43') Riegel (19) umfasst, die sich mit Aussparungen (20) im umgebenden oberen Abschnitt der Zwischenkupplungsbasis (43-43') abwechseln, worin die Riegel (19) weiter äußere Überstände (22) umfassen;

worin die Zungen (17) des unteren Teils (7'') mit den Zwischenspalten (33) des oberen Teils (7') und mit den Aussparungen (20) im oberen Abschnitt der Zwischenkupplungsbasis (43-43') gekoppelt sind; während die Riegel (19) der Zwischenkupplungsbasis (43-43') mit den Aussparungen (18) des unteren Teils (7'') gekoppelt sind; und

und worin die inneren Rippen (23) der Verankerungsfortsätze (21) von den äußeren Überständen

den (22) der Riegel (19) der Zwischenkupplungsbasis (43-43') eingeklemmt werden.

2. Toilette nach Anspruch 1, worin die Glocke (7) oberhalb und in der Nähe der Verankerungsfortsätze (21) umgekehrte u-förmige Einschnitte (44) umfasst.
3. Toilette nach Anspruch 1, worin die Zwischenkupplungsbasis (43) einen unabhängigen Körper umfasst, der an seinem Boden mit dem Auslass (5) des Tanks (6) verbunden ist.
4. Toilette nach Anspruch 1, worin der erste Mechanismus (26), der dem Drucktaster (1) zugeordnet ist, einen oberen Basküle-Auslöser (26) mit einer winkelförmigen Struktur umfasst, die zwei Schenkel umfasst; worin ein Schenkel des oberen Basküle-Auslösers (26) mit seinem freien Ende in einer vorderen Achse (27) gelenkig verbunden ist, die mit einem Gehäuse (28) der Baugruppe des Drucktasters (1) integriert ist; und worin der Verbindungsbereich der beiden Schenkel des oberen Basküle-Auslösers (26) gelenkig mit einem Kabelschuh (29) verbunden ist, die mit dem einen Ende des Drahtes aus Stahl (13) fest verbunden ist und worin das freie Ende des anderen passenden Schenkels des oberen Basküle-Auslösers (26) in Kontakt mit der vertikalen Stange (34) des Drucktasters (1) ist, dessen Abwärtsverschiebung den oberen Basküle-Auslöser (26) gegen den Widerstand einer Rückstellfeder (41) rotieren lässt, die einen Teil des zweiten Mechanismus (16) bildet, der mit dem Überlaufrohr (8) verbunden ist.
5. Toilette nach Anspruch 4, worin der zweite Mechanismus (16), der mit dem Überlaufrohr (8) des Spülsystems (4) verbunden ist, einen unteren Basküle-Auslöser (36) umfasst, der an der Oberseite der Glocke (7) angelenkt ist; und worin der untere Basküle-Auslöser (36) eine winkelförmige Struktur umfasst, bestehend aus einem vertikalen Schenkel (38), der die Rückstellfeder (41) enthält, und einem doppelten horizontalen gebogenen Schenkel (39) besteht, der in Kontakt mit der Unterseite eines Ringsitzes (40) des Überlaufrohrs (8) steht; und worin ein Kabelschuh (29'), der mit einem Ende des aus Stahl hergestellten Drahts (13) einstückig ist, mit dem freien Ende des vertikalen Schenkels (38) des unteren Basküle-Auslösers (36) verbunden ist.
6. Toilette nach Anspruch 5, worin die in der vorderen Achse (27) des oberen Basküle-Auslösers (26) angelenkte Verbindung einen offenen Fortsatz (42) umfasst, der durch eine Verschiebung senkrecht zur Richtung der vorderen Achse (27) montierbar und lösbar ist.
7. Toilette nach Anspruch 6, **dadurch gekennzeichnet, dass** der untere Basküle-Auslöser (36) seitliche

- Fortsätze (37) als Gelenkmittel des unteren Basküle-Auslösers (36) umfasst, worin sich diese im Bereich des Zusammenflusses der beiden Schenkel (38-39) des unteren Basküle-Auslösers (36) befinden.
8. Toilette nach Anspruch 5, worin die Rückstellfeder (41) des unteren Basküle-Auslösers (36) mindestens eine elastische Rippe umfasst, die in der aktiven Position mit ihrem freien Ende an einem inneren Teil der Glocke (7) des Spülsystems (4) anliegt.
9. Toilette nach Anspruch 5, worin die Endabschnitte des flexiblen Schlauches (14) in einem geteilten oberen Fortsatz (30), der am Gehäuse (28) des Drucktasters (1) befestigt ist, und in einem geteilten unteren Fortsatz (30'), der mit der Glocke (7) des Spülsystems (4) verbunden ist, verankert sind.
10. Toilette nach Anspruch 9, worin die Endabschnitte des flexiblen Schlauches (14) Halteprägungen (31-31') umfassen, die in Kerben (32-32') eingebettet sind, die sich im Inneren des geteilten oberen Fortsatzes (30), der am Gehäuse (28) des Drucktasters (1) befestigt ist, und im geteilten unteren Fortsatz (30') befinden, der an einem Zwischenstück (33) befestigt ist, das an der Glocke (7) des Spülsystems (4) angebracht ist.
11. Toilette nach Anspruch 1, worin der Hals (48) des feststehenden Gehäuses (47) des Drucktasters (1) ein erstes Paar gegenüberliegender Nuten (49), die über die gesamte Länge des Halses (48) verlaufen, und ein zweites Paar gegenüberliegender Nuten (50) umfasst, die nur einen unteren Abschnitt des Halses (48) betreffen, worin in das zweite Paar gegenüberliegender Nuten (50) Endüberstände (51) passen, die mit der vertikalen Stange (34) in der montierten Position der Baugruppe des Drucktasters (1) fest verbunden sind, während die Endüberstände (51) während der Montage durch das erste Paar gegenüberliegender Nuten (49) verlaufen.
12. Toilette nach einem der vorstehenden Ansprüche, worin mindestens eine der Zungen (17) des unteren Teils (7'') der Glocke (7) in ihrem Boden mindestens eine Öffnung (52) für den Eintritt von Luft in das Innere der Glocke (7) umfasst.

## Revendications

1. Un W.-C. comprenant :

un réservoir de W.-C. (6) ;  
 une sortie (5-5'-5'') située au fond du réservoir de W.-C. (6) ; et  
 un système de chasse d'eau (4) comprenant également :

un bouton poussoir de la chasse d'eau (1) comprenant une tige verticale (34) guidée par un col (48) d'un boîtier fixe (47) du bouton poussoir de la chasse d'eau (1) ;  
 un tube de surverse (8) ;  
 un fil d'acier (13) qui est guidé à l'intérieur d'un tuyau souple (14) ; le fil d'acier (13) comprenant une première extrémité reliée à un premier mécanisme (26) et une seconde extrémité reliée à un second mécanisme (16) ; et où le premier mécanisme (26) est relié ensuite à la tige verticale (34) du bouton poussoir de la chasse d'eau (1) tandis que le second mécanisme (26) est relié ensuite au tube de surverse (8) ;  
 un bâti-support intermédiaire (43-43'-43'') ;  
 une pipe orientable (7) comprenant une partie supérieure (7') et une partie inférieure (7'') reliées entre elles ;

et où le bâti-support intermédiaire (43-43') est disposé de façon à être relié à la pipe orientable (7) au moyen d'une partie supérieure adjacente du bâti-support intermédiaire (43-43') puis disposé de façon à être relié à la sortie (5-5'-5'') du réservoir de toilette (6) ;

et où lorsque l'on appuie sur le bouton poussoir de la chasse d'eau (1), le tube de surverse (8) est poussé vers le haut, provoquant l'écoulement du réservoir de toilette (6) à l'intérieur de la sortie (5-5'-5'') ;

### caractérisé en ce que

la partie supérieure (7') de la pipe orientable (7) comprend des ancrages à extension (21) en alternance avec des écarts intermédiaires (33), où les ancrages à extension (21) comprennent d'autres nervures intérieures (23) ;

la partie inférieure (7'') de la pipe orientable (7) comprend des languettes (17) et des gorges (18) ;

et le bâti-support intermédiaire (43-43') comprend des taquets (19) en alternance avec des gorges (20) sur la partie supérieure adjacente du bâti-support intermédiaire (43-43'), où les taquets (19) incluent également des protubérances externes (22) ;

où les languettes (17) de la partie inférieure (7'') sont synchronisées avec les écarts intermédiaires (33) de la partie supérieure (7') et avec les gorges (20) dans la partie supérieure du bâti-support intermédiaire (43-43') ; tandis que les taquets (19) du bâti-support intermédiaire (43-43') sont synchronisés avec les gorges (18) de la partie inférieure (7'') ; et

et où les nervures intérieures (23) des ancrages à extension sont agrippées par les protubérances externes (22) des taquets (19) du bâti-support intermédiaire (43-43').

2. Le W.-C., selon la revendication 1, où au-dessus et à proximité des ancrages à extension (21), la pipe orientable (7) comprend des coupes en U inversées (44).
3. Le W.-C., selon la revendication 1, où le bâti-support intermédiaire (43) comprend un corps indépendant relié dans la partie inférieure à la sortie (5) du réservoir (6).
4. Le W.-C., selon la revendication 1, où le premier mécanisme (26) associé au bouton poussoir (1) comprend un déclencheur à bascule (26) avec une configuration oblique incluant deux branches ; où une branche de la partie supérieure du déclencheur à bascule (26) est articulée par son extrémité libre dans un axe antérieur (27) intégré à un boîtier (28) d'assemblage du bouton poussoir (1) ; et où le point de jonction des deux branches de la partie supérieure du déclencheur à bascule (26) est relié par articulation à une cosse de câble (29) intégrée à l'une des extrémité du fil d'acier (13) ; et où l'extrémité libre de l'autre branche correspondante de la partie supérieure du déclencheur à bascule (26) est en contact avec la tige verticale (34) du bouton poussoir (1), et dont le déplacement vers le bas permet à la partie supérieure du déclencheur à bascule (26) de pivoter dans le sens opposé du ressort de détente (41) qui fait partie du second mécanisme (16) associé au tube de surverse (8).
5. Le W.-C., selon la revendication 4, où le second mécanisme (16) associé au tube de surverse (8) du système de chasse d'eau (4) comprend un déclencheur à bascule inférieur (36) qui est articulé sur la partie supérieure de la pipe orientable (7) ; et où le déclencheur à bascule inférieur (36) a une configuration oblique consistant en une branche verticale (38) où est monté le ressort de détente (41) et une double branche horizontale recourbée (39) qui est en contact avec la face inférieure d'une bague de siège (40) du tube de surverse (8) ; et où la cosse de câble (29') intégrée à l'une des extrémités du fil d'acier (13) est reliée à l'extrémité libre de la branche verticale (38) du déclencheur à bascule inférieur (36).
6. Le W.-C., selon la revendication 5, où la connexion articulée dans un axe antérieur (27) de la partie supérieure du déclencheur à bascule (26) comprend une extension ouverte (42) montable et amovible au moyen d'un déplacement perpendiculaire au sens de l'axe antérieur (27).
7. Le W.-C., selon la revendication 6, où le déclencheur à bascule inférieur (36) est doté d'appendices latéraux (37) servant d'articulation dudit déclencheur à bascule inférieur (36), tandis que le même est dans l'aire de contact des deux branches (38-39) du déclencheur à bascule inférieur (36).
8. Le W.-C., selon la revendication 5, où le ressort de détente (41) du déclencheur à bascule inférieur (36) comprend au minimum une ailette élastique, en position active et en contact avec son extrémité libre contre la partie interne de la pipe orientable (7) du système de chasse d'eau (4).
9. Le W.-C., selon la revendication 5, où les extrémités des sections du tuyau souple (14) sont fixées dans une extension supérieure divisée (30) fixée au boîtier (28) du bouton poussoir (1) et dans une extension inférieure divisée (30') reliée à la pipe orientable (7) du système de chasse d'eau (4).
10. Le W.-C., selon la revendication 9, où les extrémités des sections du tuyau souple (14) comprennent un dispositif de retenue saillant (31-31') inclus dans des encoches (32-32') situées à l'intérieur d'une extension supérieure divisée (30) fixée au boîtier (28) du bouton poussoir (1) et dans l'extension supérieure divisée (30') fixée à une pièce intermédiaire (33) rattachée à la pipe orientable (7) du système de chasse d'eau (4).
11. Le W.-C., selon la revendication 1, où le col (48) du boîtier fixe (47) du bouton poussoir (1) comprend un premier couple de rainures opposées (49) qui s'étend sur toute la longueur de ce col (48) et un second couple de rainures opposées (50) uniquement en contact avec la section inférieure de ce col (48), raccordant au second couple de rainures opposées (50) les extrémités des protubérances (51) intégrées à la tige verticale (34) montée sur l'assemblage du bouton poussoir (1), et qui pendant l'assemblage des extrémités des protubérances (51) s'étendent sur le premier couple de rainures opposées (49).
12. Le W.-C., selon l'une quelconque des revendications précédentes, où au minimum une des languettes (17) de la partie inférieure (7") de la pipe orientable (7) comprend au minimum un orifice (52) dans sa partie inférieure pour permettre l'entrée de l'air à l'intérieur de la pipe orientable (7).

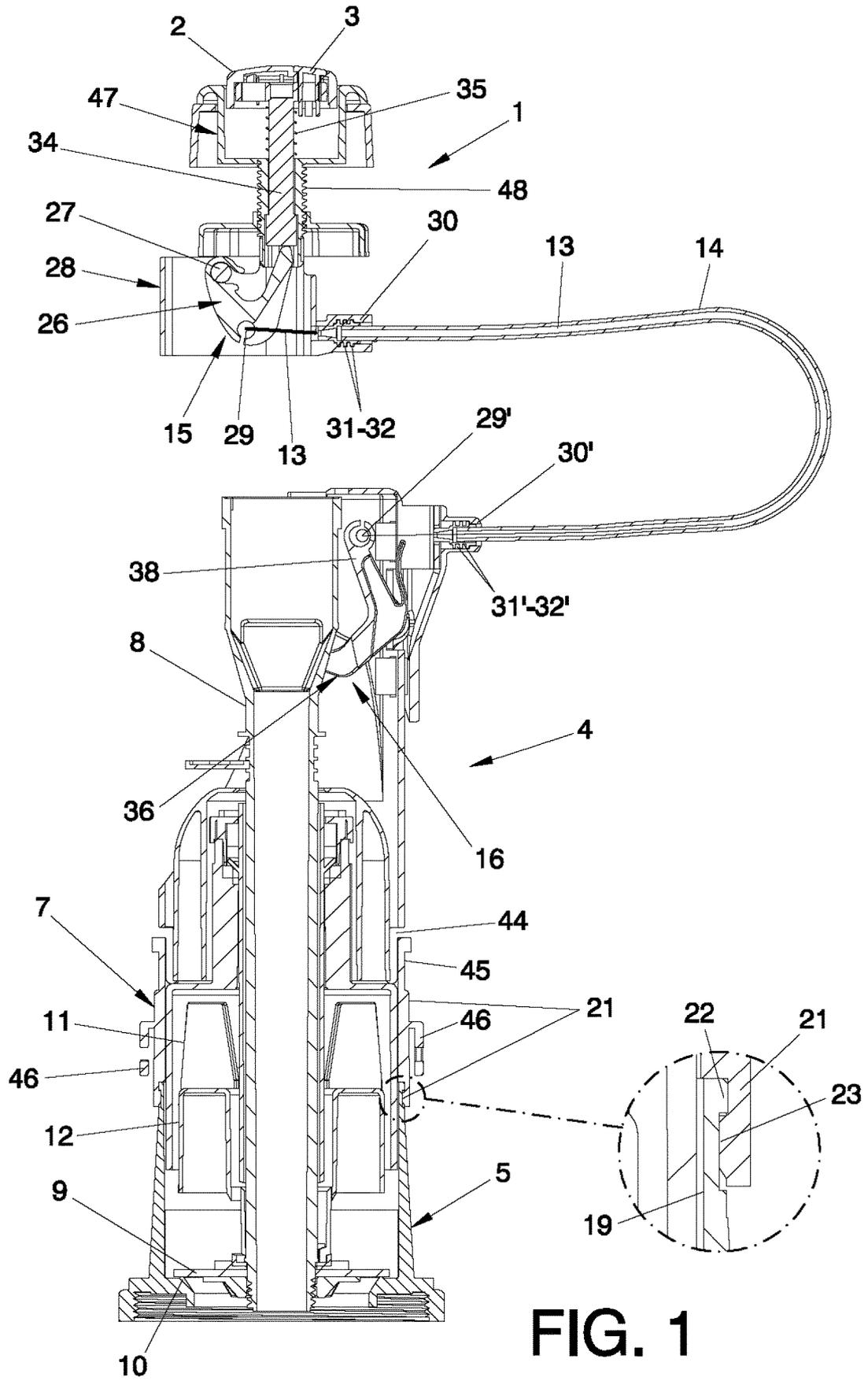


FIG. 1

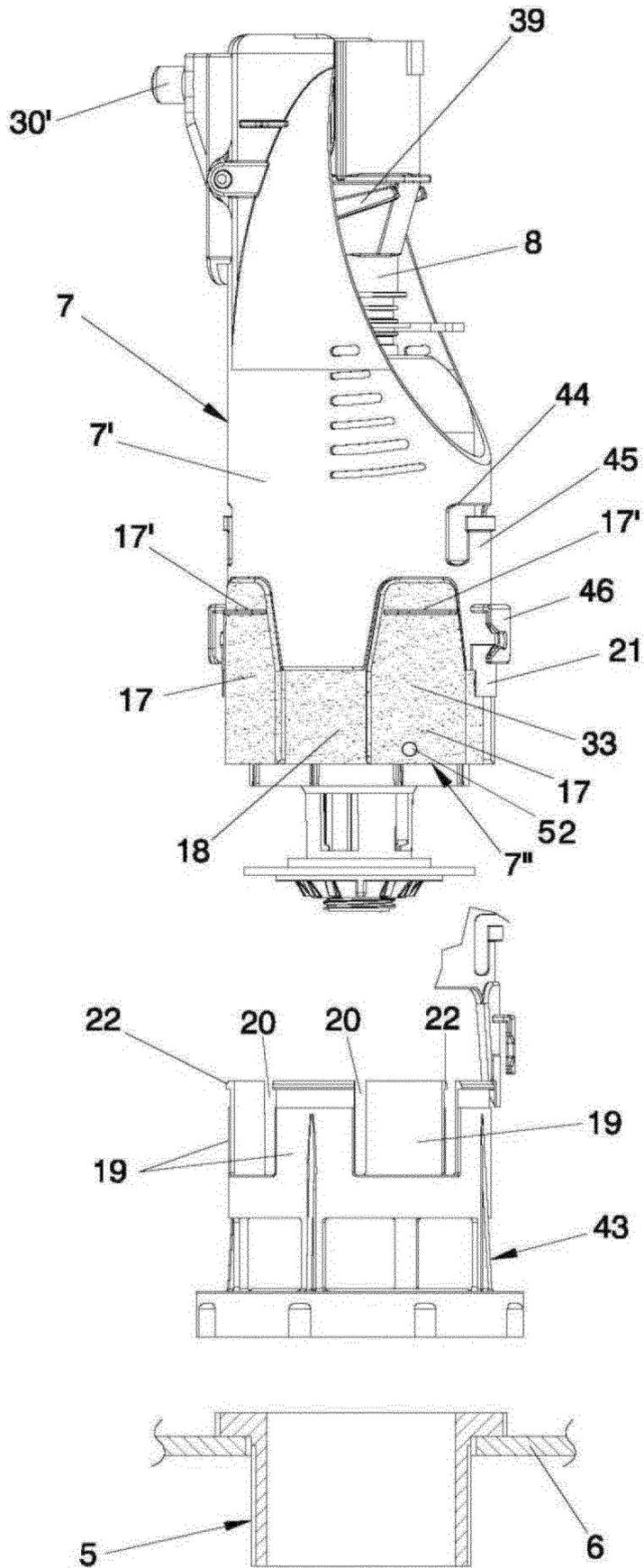
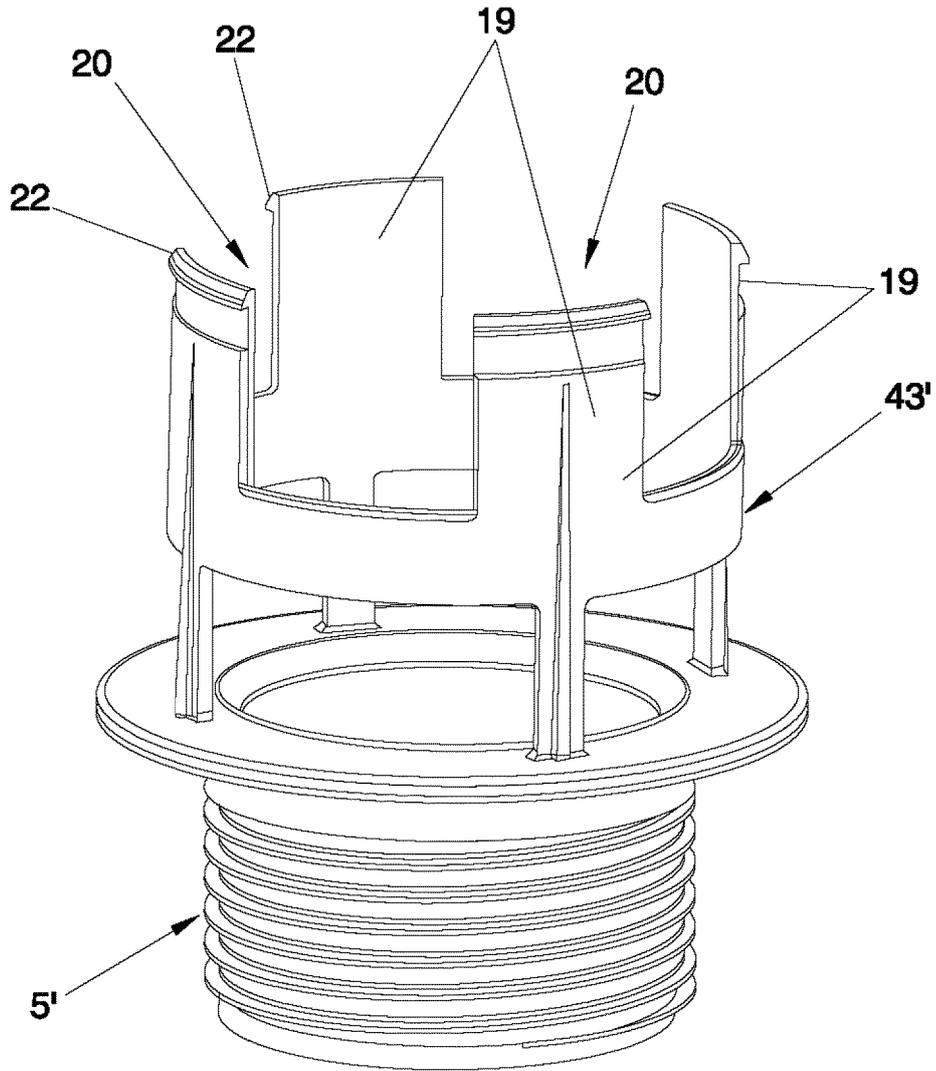
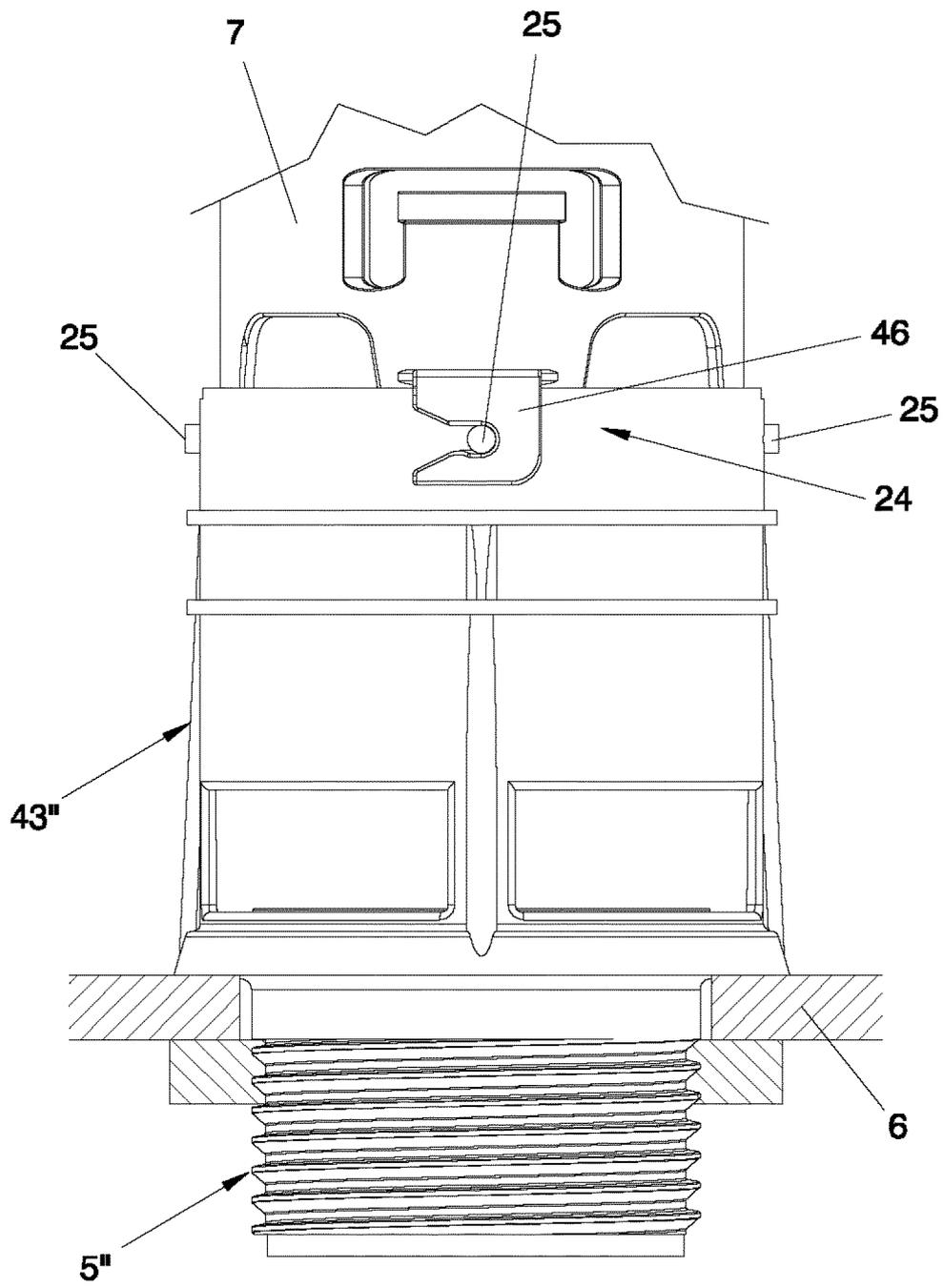


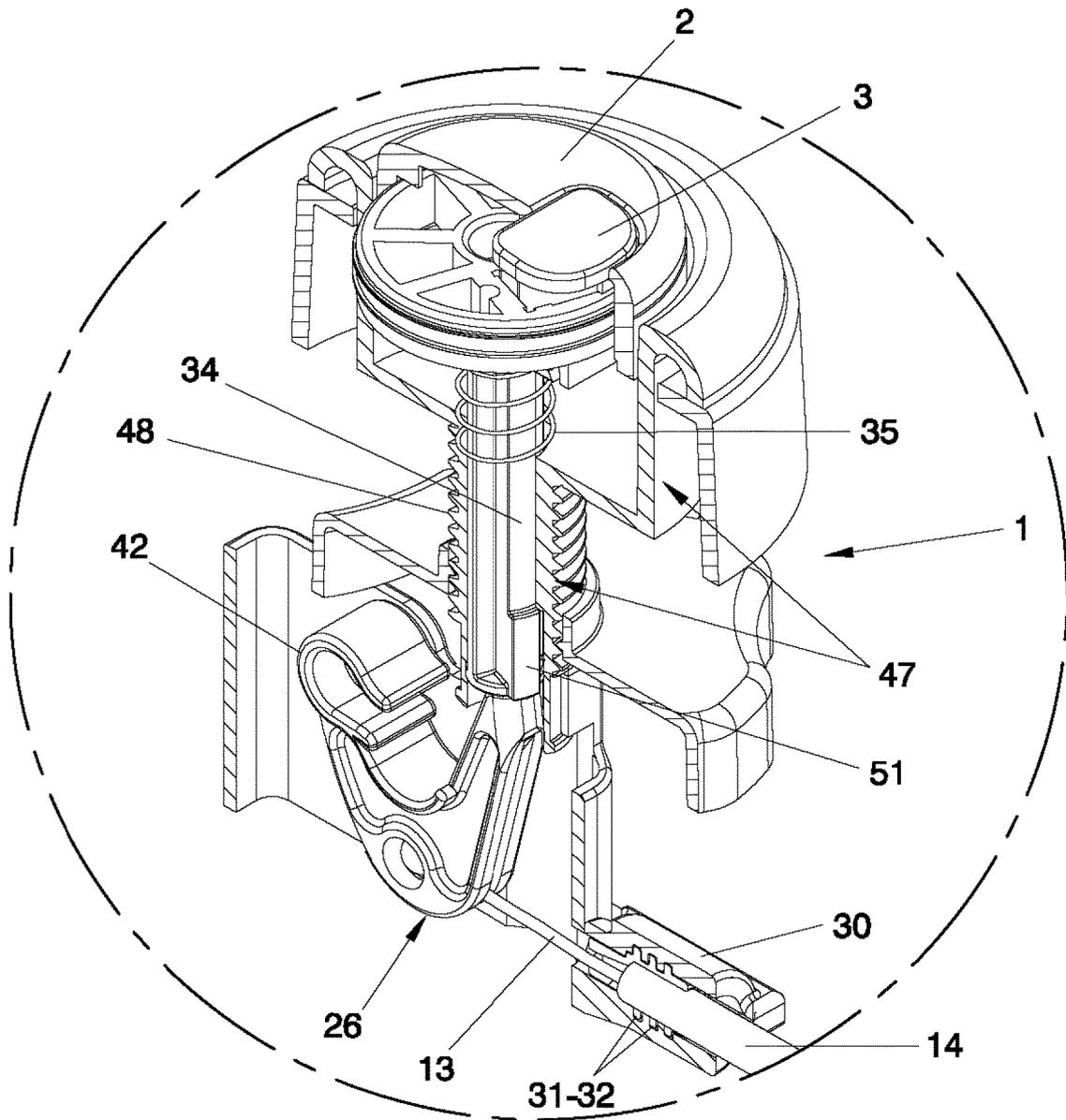
FIG. 2



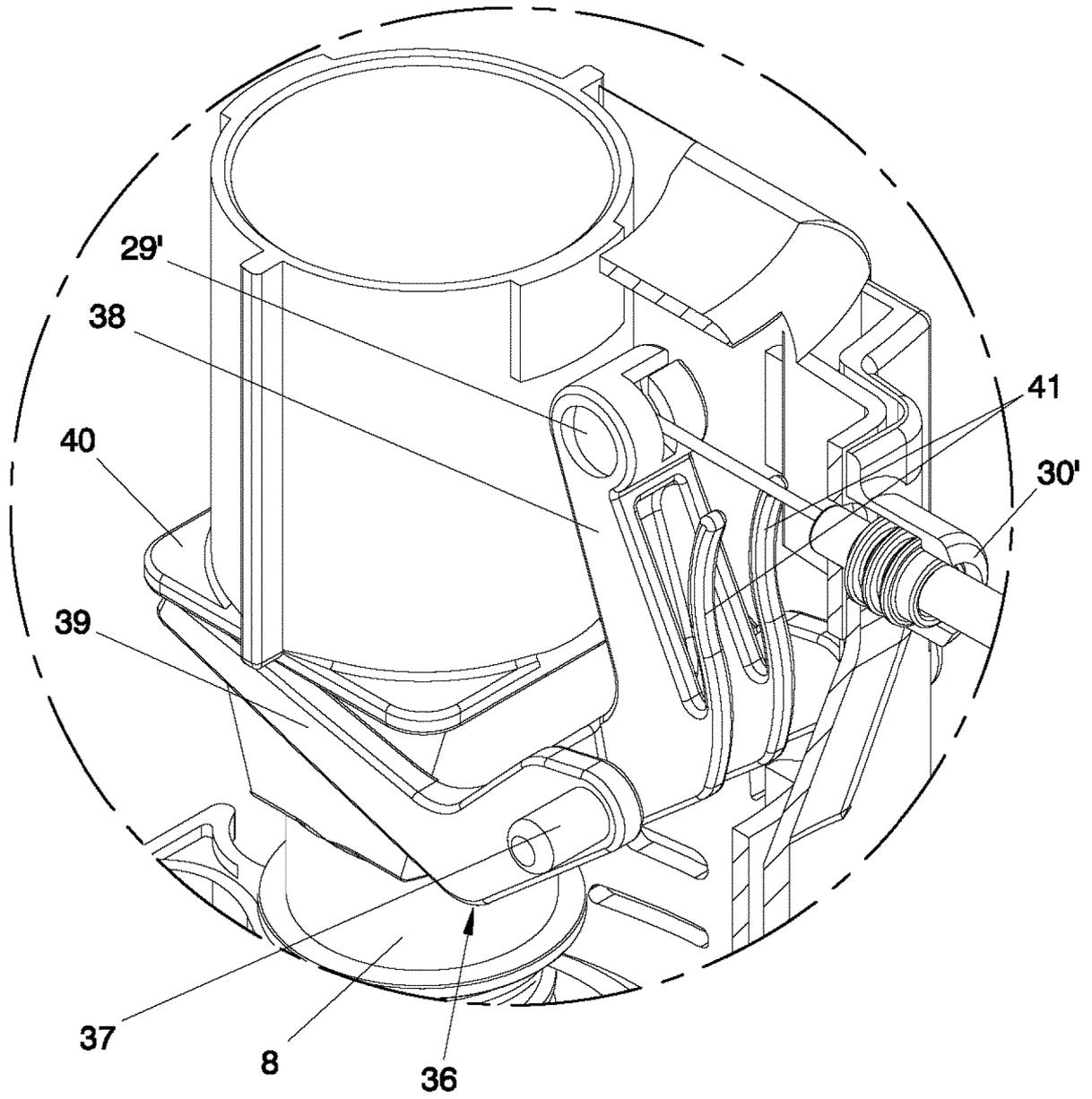
**FIG. 3**



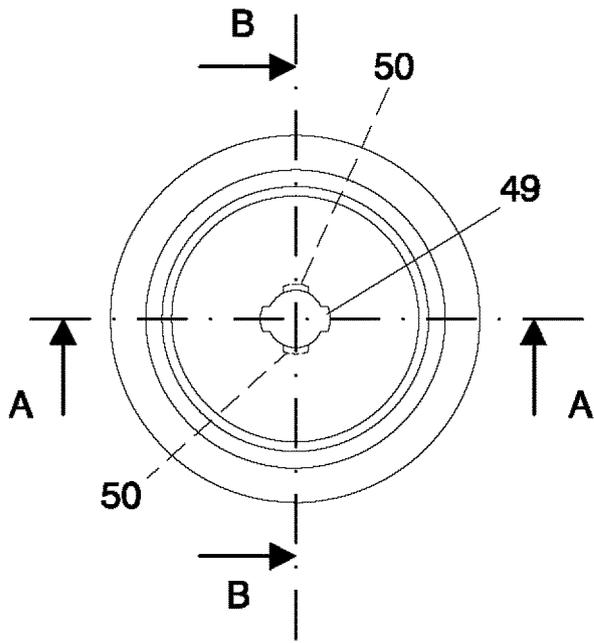
**FIG. 4**



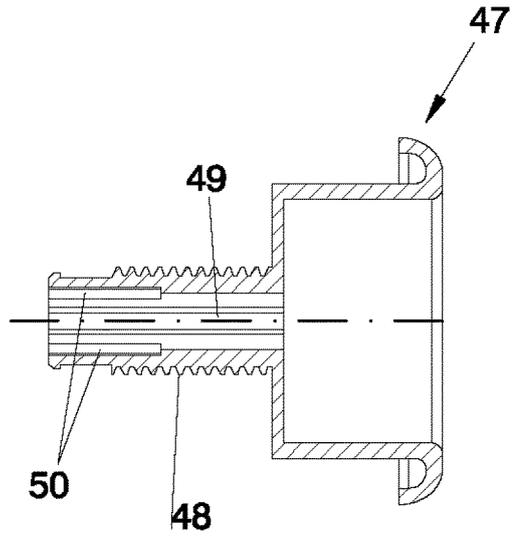
**FIG. 5**



**FIG. 6**

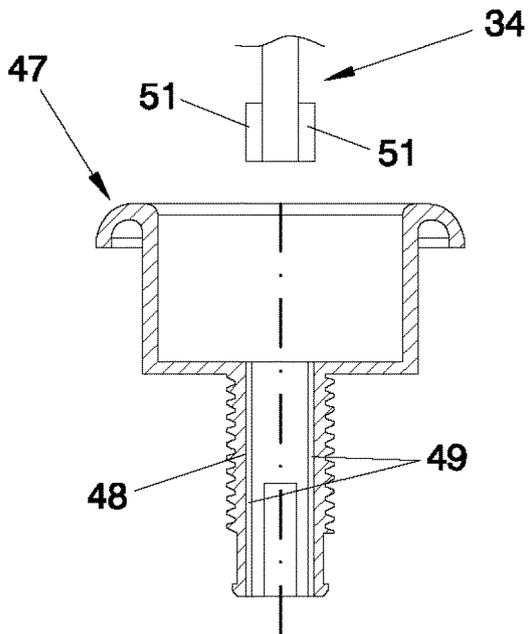


**FIG. 7**



**FIG. 9**

B-B



**FIG. 8**

A-A

**REFERENCES CITED IN THE DESCRIPTION**

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