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(72) Inventor: **Fominaya Agullo, Pablo**  
**46120 Alboraya (ES)**

(74) Representative: **Ungria Lopez, Javier et al**  
**Avda. Ramon y Cajal, 78**  
**28043 Madrid (ES)**

(71) Applicant: **Fominaya Agullo, Pablo**  
**46120 Alboraya (ES)**

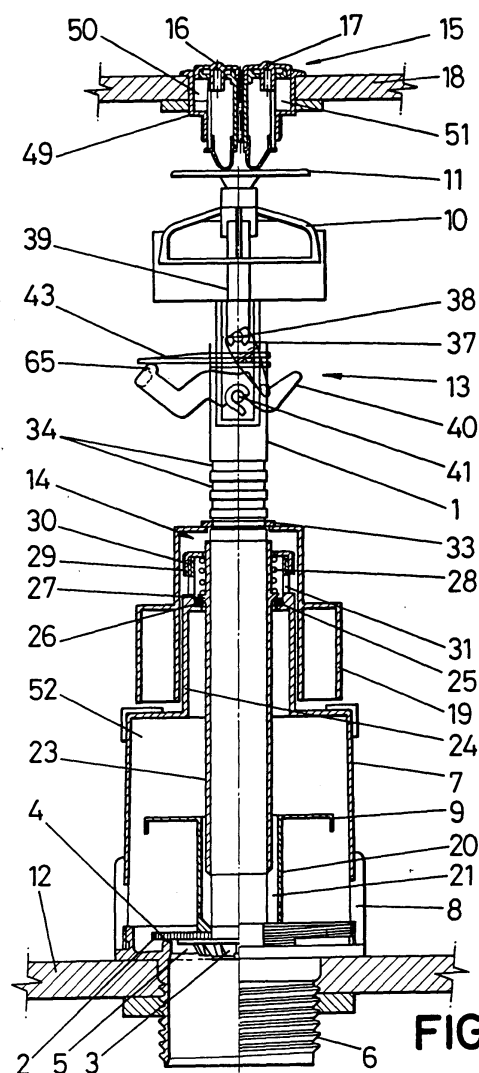
(54) **Device for the total or partial flushing of a toilet tank**

(57) It is a double flushing device for toilets, which gives the user the possibility to choose between partial flushing and total flushing in order to correctly clean the toilet, without the need to interrupt the flushing while same is taken place.

The operation of the device is carried out by means of a double push operating element (11) that is connected to a swivel-mounted mechanism (13) connected in turn to an overflow (1) belonging to the flushing assembly.

It should be pointed out that the partial flushing is advantageously adjustable.

The device of the invention, unlike other conventional devices, proves to be a simple relatively inexpensive device, which additionally operates in a fully correct manner.



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## Description

### OBJECT OF THE INVENTION

[0001] As expressed in the title of this specification, the present invention refers to a device for the total or partial flushing of a toilet tank, in such a way that the user has the possibility to choose between partial flushing and total flushing in order to correctly clean the toilet, without the need to interrupt the flushing while same is taking place.

[0002] On the other hand, aside from being able to adjust the flow used in the total flushing as in conventional devices, it is also possible to adjust the flow of the partial flushing, thus achieving a saving of water and better and more complete service. The assembly of the device of the invention combines great simplicity and effectiveness in a single technical solution.

[0003] In order to choose between partial or total flushing a double push operating element with two buttons, one for each type of flushing, has been provided for.

[0004] The new device of the invention also allows adjustment of the partial flushing draining more or less water to the outlet of the tank.

### BACKGROUND OF THE INVENTION

[0005] Nowadays there are different extremely complicated double flushing devices that prove to be too expensive and there are also other simpler and cheaper ones that are unreliable and whose operation leaves much to be desired.

### DESCRIPTION OF THE INVENTION

[0006] In order to overcome the problems and inconveniences mentioned in the above section, the invention proposes a device for the total or partial flushing of a toilet tank that comprises an overflow, in whose bottom end a conventional sealing has been fastened, the fastening sitting on the outlet of a coupling in an inoperative position, while when the tank is flushed, this sealing frees the outlet which rises along with the overflow upon actuating a double push operating element that has two buttons, one to choose adjustable partial flushing and the other to choose total flushing.

[0007] A hood provided with several bottom openings through which the water passes towards the outlet is fastened onto the coupling, while inside the hood there is a bottom float element fastened to the overflow.

[0008] A top bridge where a center base is coupled has been fastened to the hood. Downward movement of this base by means of the double push operating element facilitates flushing of the tank. For this purpose, the cited center is connected to a swivel-mounted mechanism that acts on the overflow and also on a depressurizing mechanism when the total flushing takes place.

[0009] There is a second top float element coupled to the overflow above the hood. By means of this top float element the partial flushing is regulated, it being possible for it to be located at several levels so that the partial flushing has a larger or smaller flow.

[0010] The top part of the hood is connected to the depressurizing mechanism that has two different embodiments: a center one and a side one.

[0011] Therefore, in order to proceed with the partial flushing of the tank, in principle one actuates one of the two buttons of the operating mechanism, in such a way that the overflow along with the sealing and both float elements rise up to a first specific height, with which, the top float element will be subjected to an upward thrust upon being in principle inside the water of the tank. On the other hand, the bottom float element will be located in an air chamber inside the hood and therefore it will not be subjected to any upward thrust. In this way, the level of the water will rise until it is under the top float element, when the same no longer endures any upward thrust, that along with the overflow and the other similar float element will return to their initial position, thus closing again the outlet of the coupling of the tank by means of the sealing.

[0012] In order to proceed with the total flushing of the tank the other similar button of the mechanism will be actuated, in such a way that the upward movement of the overflow is longer than in the case of partial flushing. In this case, upon actuating the push button the depressurizing mechanism that releases the air chamber of the hood is activated. In this way, the air chamber will flood with water and therefore, the bottom float element as well as the top float element will be in the water, both enduring upward thrust that keeps the overflow in a raised stable position until all of the water comes out through the outlet of the coupling towards the toilet.

[0013] The water emptying capacity of the openings of the hood of the flushing assembly must be greater than the emptying capacity of the coupling, in such a way that the water that exceeds during flushing tends to flood the inside of the hood during the total flushing process. This is important, since the action of the depressurizing mechanism is produced after desealing or release of the coupling. The outlet of water towards the toilet is so great at this time that if water is not retained it would be impossible to adequately flood the inside of the hood, which would produce deficient floatability of the bottom float element, not achieving the desired total flushing and even impairing partial flushing.

[0014] During flushing, the sealing and the bottom float element will be located above the openings of the hood, facilitating the draining, in such a way that the flow of water will not affect the sealing and bottom float element.

[0015] The sealing includes a thickening that upon being pressed by the corresponding fastening it transmits or adheres with greater pressure to the contour or surface of the overflow avoiding leaks.

[0016] On the other hand, the device of the invention, although it allows for the two depressurizing mechanisms, a center one and a side one, in this respect it should be pointed out that the first embodiment proves to be more advantageous in all senses.

[0017] Hereinafter to provide a better understanding of this specification and forming an integral part thereof, some figures in which the object of the invention has been represented in an illustrative and non-restrictive manner are attached.

### **BRIEF DESCRIPTION OF THE DRAWINGS**

[0018] Figure 1 is a sectioned raised view of the device for the total or partial flushing of a toilet tank, object of the invention. It includes a center depressurizing mechanism.

[0019] Figure 2 is a raised view of the device represented in the previous figure.

[0020] Figure 3 is a sectioned view of the bottom part of the assembly of the device of the invention that includes the center depressurizing mechanism.

[0021] Figure 4 is a perspective view of a center support, which at the same time is connected to a swivel-mounted mechanism in order to carry out the flushing of the tank.

[0022] Figure 5 is a view of the center support connected to the swivel-mounted mechanism and also to a side depressurizing mechanism.

[0023] Figure 6 is a perspective view of a double push mechanism, which is hand operated in order to proceed with the flushing of the tank.

[0024] Figure 7 is a perspective view of a bottom float element that is housed inside a hood belonging to the assembly of the device of the invention.

[0025] Figure 8 is a cross section view of the overflow belonging to the assembly of the device of the invention. Said overflow has a group of longitudinal projections.

[0026] Figure 9 is a perspective view of a top part of an overflow that includes a transversal groove or notch in order to facilitate the connection of the center support connected to the swivel-mounted mechanism of the device of the invention.

[0027] Figure 10 is a raised view of another device of the invention where a side depressurizing mechanism instead of a center depressurizing mechanism is included as in the device represented in other previous figures.

### **DESCRIPTION OF THE PREFERRED EMBODIMENT**

[0028] Making reference to the numbering used in figures 1 to 9 the device for the total or partial flushing of a toilet tank is comprised as of an overflow (1), in whose bottom end a sealing (2) is coupled by means of a short nut (3). This sealing (2) in the inoperative position of the device sits on a perimetric lip (4) constituting the outlet (5) belonging to a conventional coupling (6) to which a

hood (7) is fastened. This hood has some ample bottom openings (8) through which the water passes towards the coupling (6) and from here to the toilet when the device is actuated. Inside the hood (7) there is a bottom float element (9) fastened to the overflow (1).

[0029] In turn a top bridge (10) where a center base (11) is coupled is fastened to the hood (7), the vertical movement of the base facilitates the partial or total flushing of a tank (12) depending on the stroke of said center base (11). For this purpose, this base (11) is connected to a swivel-mounted mechanism (13) that acts on the overflow (1) and also on a center depressurizing mechanism (14). The movement of the center base (11) is carried out by a push mechanism (15) that comprises two buttons, one (16) for partial flushing and the other one (17) for total flushing, said push mechanism (15) being coupled to a cover (18) of the tank (12).

[0030] On the other hand, above the hood (7) there is a top float element (19) mounted on the overflow (1) and freely movable to a specific height that may be easily varied. By means of this top float element (19) the partial flushing of the tank (12) can be controlled, in such a way that the higher up it is placed, the less the flow of water that drains to the toilet will be upon acting on the corresponding button of the push mechanism (15).

[0031] On the other hand, between the overflow (1) and a inside wall (20) of the bottom float element (9) there is an advantageous coaxial space (21), said inside wall also including in its bottom part some openings (22). The center depressurizing mechanism (14) is established coaxially with the overflow (1) and is constituted as of a tube guide (23) coupled with some play around the cited overflow (1) and in correspondence with the hood (7) that has in its top part a tube-shaped narrowing (24), in whose top part there is a ring-shaped recess (25) for insertion of a joint (26) where a projection (27) preferably with a conical shape sits, the projection being integral to the tube-guide (23), the center depressurizing mechanism (14) also having a spring (28) that abuts against the projection (27) of the tube-guide (23) pushing downward at the same time, the opposite end of the spring (28) abutting against a top part (29) connected to the tube-shaped narrowing (24) of the hood (7) by means of a middle section (30) having some radial notches (31) for the passing of water and air. The inside surface of the tube-shaped narrowing (24) of the hood (7) includes several longitudinal guide walls (32) of the tube-guide (23) for the passing of the air (figure 3).

[0032] The top float element (19) is coaxially coupled around the tube-shaped narrowing (24) of the hood (7), at the same time that the position of height of said float element is determined by means of a washer (33) that will fit in one of the several ring-shaped grooves (34) established outside on the overflow, the cited top float element (19) abutting against the cited washer (33).

[0033] In order to facilitate a correct movement of the tube-guide (23) when necessary, the overflow (1) includes several longitudinal projections (35), which per-

mit sliding of the overflow (1) inside the tube-guide (23) that are coaxially coupled. The cited longitudinal projections (35) create a coaxial passage (36) between the overflow (1) and the tube-guide (23).

**[0034]** The bottom part of the tube-guide (23) is partially introduced in the inside of the coaxial space limited between the inside wall (20) of the bottom float element (9) and the overflow (1).

**[0035]** On the other hand, the swivel-mounted mechanism (13) is defined as of a pair of wedges (37) jointly coupled by their top end to some shafts (38) fastened to the top bridge (10) and connected to a bottom fork (39) connected to the center base (11), the bottom end of the wedges (37) contacting with two swivel-mounted latches (40) around some side shafts (41) also fastened to the bridge, both latches (40) being connected by means of a middle arm (42); the arm connecting to a center support (43) connected to the overflow (1) in order to move the same vertically when it is necessary for the partial or total flushing. As it is more clearly shown in figure 9, the overflow (1) has in its top part a notch (44) in order to facilitate the connection and insertion of the center support (43) connected to the latches (40) of the swivel-mounted mechanism (13). The center support (43) includes a bottom guiding rib (45) complementary to a channel (46) belonging to the middle arm (42) of the swivel-mounted mechanism (13). Besides, the center support (43) includes two short side fins (47) that insert in and are led in some guiding areas (48) established in the top bridge (10) (figures 4 and 5).

**[0036]** The push mechanism (15) comprises a casing (49) provided with one or two side cavities (50) and (51) where the two buttons (16) and (17) are coupled, the buttons being movable downward and facing the center base (11) coupled to the bridge (10), each one of them having a different stroke, a shorter one for partial flushing and another longer one in order to proceed with total flushing, respectively.

**[0037]** The dimensions of the side bottom openings (8) of the hood (7) have a size with more overall emptying capacity than the outlet (5) of the coupling (6).

**[0038]** With the described arrangement, in order to proceed with the partial flushing of the tank (12) in principle one actuates the button (16) of the push mechanism (15), in such a way that the overflow (1) along with the sealing (2) and both float elements (9) and (19) rise up to a first specific height, whereby, the top float element (19) will be subjected to an upward thrust until in principle it is inside the water of the tank (12). On the other hand, the bottom float element (9) will be situated in an air chamber (52) in the inside of the hood (7) and therefore it will not be subjected to any upward thrust. In this way, the water level will descend until the top float element (19) loses floatability, the moment when the same no longer undergoes any upward thrust, which along with the overflow (1) and the other bottom similar float element (9) will return to their initial position, thus closing again the outlet (5) of the coupling (6) of the tank

(12) by means of the sealing (2) due to the weight of the sealing assembly and due to the fact that the pressure that above all the cited sealing assembly produces the flow of air-water that enters through the coaxial passage or space (36) existing between the overflow (1) and the longitudinal projections (35) of the tube-guide (23) belonging to the center depressurizing mechanism (14).

**[0039]** Secondly, in order to proceed with the total flushing of the tank one actuates the other button (17) of the push mechanism (15), whereby the vertical downward movement of the center base (11) will be greater, the upward movement of the overflow (1) also being longer. Besides, upon actuating on the button (17) of the push mechanism (15) the center depressurizing mechanism (14) which releases the air chamber (52) of the hood (7) is activated. In this way, said air chamber (52) will be flooded with water and therefore the bottom float element (9), just like the top float element (19), will remain in the water of the tank (12), both float elements (9) and (19) thus enduring an upward thrust that keeps the overflow (1) in a stable position until all the water comes out through the outlet of the coupling (6) towards the toilet, the moment when the assembly of the device of the element recovers its initial position due to the weight of the cited overflow (1) and the other elements fastened to the same, aside from intervening as we said above the pressure produced by the air-water flow that enters through the coaxial space (36) existing between the overflow (1) and the tube-guide (23), exerting pressure on the sealing assembly and thus closing the outlet (5) of the coupling (6) by means of the sealing (2).

**[0040]** This new device has a relatively simple advantageous structure, which achieves correct operation at all times.

**[0041]** The emptying capacity of water from the openings of the hood (7) of the flushing assembly must be greater than the emptying capacity of the coupling (6), in such a way that the excess water during flushing tends to flood the inside of the hood (7) during the total flushing process. This is important, since the action of the center depressurizing mechanism (14) is produced after the desealing or release of the coupling (6). At this moment the outflow of water towards the toilet is so great that if a retention of water is not produced it would be impossible to adequately flood the inside of the hood (7), which would produce a deficient floatability of the bottom float element (9), whereby the desired total flushing would not be achieved and this would even harm the partial flushings.

**[0042]** The bottom end of the tube-guide (23) will always be above the height of the openings (8) of said hood (7), in such a way that the entire assembly of the bottom float element (9) and the sealing (2) can be above the openings (8) when the assembly rises to produce the flushing, being free from the action of the water flow that is being emptied.

**[0043]** If this were not the case, this water flow would suck the sealing (2) producing an undesired sealing.

**[0044]** The above detail also improves the passing of the air-water that enters through the coaxial space (36) that exists around the overflow (1) and in the tube-guide (23), and that contributes to the regeneration of the inside of the chamber of the hood (7).

**[0045]** As we have already mentioned above, the passing of air-water through the coaxial space (36) defined between the overflow (1) and the tube-guide (23) favors the emptying of the water from the inside of the chamber (52), that has not been able to come out through the direct effect of the flushing through the openings (8).

**[0046]** In the case of partial flushing, the passing of air-water favors the lowering of the sealing assembly (float element-sealing-overflow) since as the top float element (19) no longer floats, the intake of this fluid (air-water) exerts a certain downward pressure on the assembly.

**[0047]** This effect is similar to the one produced in partial flushing assemblies provided with holes in the top part of the hood.

**[0048]** The bottom float element (9) includes ample openings (22) (figure 7) that facilitate the passing of the air-water fluid that enters through the coaxial space (36) established between the longitudinal projections (35) of the overflow (1) and the tube-guide (23).

**[0049]** Finally, the bottom end of the tube-guide (23) preferably makes a conical closing (53) with the inside of the bottom float element (9) that prevents the passing of the air-water to the inside of the hood (7), while the flushing is produced.

**[0050]** When the water level drops down to the openings (8) of the hood (7), the water inside the hood (7) drops or tends to seek the outside level. However, upon said outside level rising rapidly due to the rapid filling of the tank (12), the chamber of the hood (7) does not empty completely. It is then when upon decoupling the bottom float element (9) from the bottom end of the tube-guide (23), an intake of the air-water flow that will achieve that the water level inside the hood (7) drops until the bottom part of the tube-guide (23), thus assuring the regeneration of the air chamber (52).

**[0051]** On the other hand, it should be pointed out that the sealing (2) includes a thickening that upon being pressed by means of the corresponding fastening it transmits or adheres with greater pressure to the contour or surface of the overflow (1) avoiding leaks.

**[0052]** A device for the flushing that includes a side depressurizing mechanism (54) instead of a center depressurizing mechanism (14) has been represented in figure 10.

**[0053]** Said side depressurizing mechanism (54) is arranged in a displaced and parallel direction with respect to the overflow (1) and it is preferably constituted as of a tube-shaped extension (55) that communicates with the inside of the top part of the hood (7), defining in the top part of the tube-shaped extension (55) a top cavity (56) where a joint (57) is adjusted making up a

seat for a conical surface (58), said joint belonging to a vertical rod (59) that pushes downward by the action of a spring (60), said rod (59) sealing the tube-shaped extension (55), at the same time that the same extends upward and connects to the swivel-mounted mechanism (13). The top cavity (56) of the side depressurizing mechanism (54) communicates with the outside by means of one or several openings (61), the top cavity (56) including a cover (62), in which the vertical rod (59) connected to the swivel-mounted mechanism (13) is guided.

**[0054]** The operation of the device of the invention that includes a side depressurizing mechanism (54) is in general similar to the operation of the device that includes the center depressurizing mechanism (14). Only the way of releasing the top air chamber (52) of the hood (7) varies.

**[0055]** The center support (43') of the device of the invention that includes the side depressurizing mechanism (54), said center support (43') includes an end notch (63) where the vertical rod (59) provided with a ring-shaped projection (64) where the center support (43) abuts in its upward movement in order to move the vertical rod (59) inserts.

**[0056]** When the total flushing of the tank that includes the side depressurizing mechanism (54) is proceeded with, upon pressing button (17) of the push mechanism (15), the air chamber (52) of the hood will be released upon elevating the assembly of the vertical rod (59).

**[0057]** On the other hand, the middle arm (42) that connects both latches (40) of the assembly of the swivel-mounted mechanism (13), said middle arm has a top rib (65) in order to reduce to the maximum the friction with the bottom rib (45) of the center support (43, 43').

**[0058]** The device with the side depressurizing mechanism (54) includes a bottom float element (9') that includes in its bottom part several holes (66) instead of the ample windows (22) that the bottom float element (9) of the device with the center depressurizing mechanism (14) has.

## Claims

1. Device for the total or partial flushing of a toilet tank, comprising an overflow, in whose bottom end a sealing is fastened facing an outlet belonging to a coupling fastened to a tank, a hood provided with some side bottom openings being connected to this coupling, existing inside the hood a bottom float element fastened to the overflow, further comprising a bridge where a center base, movable downward and connected to a swivel-mounted mechanism that acts on the overflow and on a depressurizing mechanism, is connected; there being a push mechanism for downward movement of the center base; a second top float element for partial flushing also being provided for; characterized in that the top

float element (19, 19', 19'') is mounted on the overflow (1) with the possibility of free axial movement with respect to the overflow, the top float element having height adjustment means; there being between the overflow (1) and the inside wall (20) of the bottom float element (9, 9') a coaxial space (21), whereas said inside wall includes in its bottom part, one or several openings (22) or holes (66).

2. Device for the total or partial flushing of a toilet tank, according to the above claim, characterized in that the center depressurizing mechanism (14) is established coaxially with the overflow (1) and is constituted as of a tube-guide (23) coupled with a certain amount of play around the cited overflow and in correspondence with the hood (7) that has in its top area a tube-shaped narrowing (24), in whose top part there is a ring-shaped recess (25) for insertion of a joint (26) where a projection (27) with a preferably conical surface sits, the projection being integral with the tube-guide (23), the center depressurizing mechanism (14) having a spring (28) that abuts against the projection (27) of the tube-guide (23) pushing the same downward, the opposite end of the spring (28) abutting against a top part (29) connected to the tube-shaped narrowing (24) of the hood (7) by means of a middle section (30) having some radial notches (31).
3. Device for the total or partial flushing of a toilet tank, according to the above claim, characterized in that the inside surface of the tube-shaped narrowing (24) of the hood (7) includes several longitudinal walls (32) for guiding the tube-guide (23) and for the passing of air.
4. Device for the total or partial flushing of a toilet tank, according to claims 1 and 2, characterized in that the top float element (19, 19') is coupled coaxially around the tube-shaped narrowing (24) of the hood (7).
5. Device for the total or partial flushing of a toilet tank, according to claims 1 and 2, characterized in that the bottom part of the tube-guide (23) is partially introduced in the inside of the coaxial space (21) limited between the inside wall (20) of the bottom float element (9) and the overflow (1).
6. Device for the total or partial flushing of a toilet tank, according to claim 1, characterized in that the side depressurizing mechanism (54) is arranged in a displaced and parallel direction with respect to the overflow (1) and it is preferably constituted as of a tube-shaped extension (55) that communicates with the inside of the top part of the hood (7'), defining in the top area of the tube-shaped extension (55) a top cavity (56) where a joint (57) is adjusted

making up a seat for a conical surface (58) belonging to a vertical rod (59) that pushes downward by the action of a spring (60), said rod (59) sealing the tube-shaped extension (55), at the same time that the rod extends upward and is connected to the swivel-mounted mechanism (13).

7. Device for the total or partial flushing of a toilet tank, according to the above claim, characterized in that the top cavity (56) of the side depressurizing mechanism (54) is communicated with the outside through one or several openings (61), the top cavity (56) including a cover (62), in which the vertical rod (59) connected to the swivel-mounted mechanism (13) is guided.
8. Device for the total or partial flushing of a toilet tank, according to claims 1 and 2, characterized in that the bottom end of the tube-guide (23) defines the amplitude of the air chamber (52).
9. Device for the total or partial flushing of a toilet tank, according to claims 1 and 8, characterized in that the means to limit the stroke of the top float element (19, 19', 19'') to a specific height, said means essentially consist of a washer (33) insertable in one of the several ring-shaped grooves (34) established in the overflow (1), the cited top float element abutting against the cited washer (33).
10. Device for the total or partial flushing of a toilet tank, according to claims 1 and 2, characterized in that the top float element (19, 19') comprises a bottom part that constitutes the float element itself and a top narrower part coupled around the overflow (1).
11. Device for the total or partial flushing of a toilet tank, according to claim 1, characterized in that the outside surface of the overflow (1) has several projections as a longitudinal striate.
12. Device for the total or partial flushing of a toilet tank, according to the above claim, characterized in that the projections (35) of the overflow (1) create a coaxial passage (36) between said overflow (1) and the tube-guide (23).
13. Device for the total or partial flushing of a toilet tank, according to claim 1, characterized in that the swivel-mounted mechanism (13) is defined as of a pair of wedges (37) coupled jointly by their top end to some shafts (38) fastened to the top bridge (10) and connected to a fork connected to the center base (11), the bottom end of the wedges (37) contacting with two swivel-mounted latches swiveling around some side shafts (41) also fastened to the bridge, both latches (40) being connected by means of a middle arm (42); the arm connecting to a center

support (43, 43') connected to the overflow (1) in order to move the same vertically.

- 14.** Device for the total or partial flushing of a toilet tank, according to claims 1 and 12, characterized in that the overflow (1) has a notch (44) wherein the center support (43, 43') connected to the latches (40) of the swivel-mounted mechanism (13) inserts.

- 15.** Device for the total or partial flushing of a toilet tank, according to claims 1 and 13, characterized in that the center support (43, 43') includes a bottom guiding rib (45) complementary with a channel (46) belonging to the middle connecting arm (42) of both latches (40) of the swivel-mounted mechanism (13).

- 16.** Device for the total or partial flushing of a toilet tank, according to claims 1 and 13, characterized in that the middle arm (42) that connects both latches (40) has a top rib (65) in order to reduce to the maximum the friction with a bottom rib (45) of the center support (43, 43').

- 17.** Device for the total or partial flushing of a toilet tank, according to claims 1 and 13, characterized in that the center support (43, 43') includes two short side fins (47) that are inserted and led in some guiding areas (48) established in the bridge (10).

- 18.** Device for the total or partial flushing of a toilet tank, according to claims 1, 6, 7 and 13, characterized in that the center support (43) includes an end notch (63) where the vertical rod (59) of the depressurizing mechanism inserts, this vertical rod (59) having a ring-shaped projection (64) where the center support (43) abuts in its upward movement in order to move the vertical rod (59).

- 19.** Device for the total or partial flushing of a toilet tank, according to claim 1, characterized in that the push mechanism (15) comprises a frame (49) provided with one or two side cavities (50 and 51) where the two buttons (16 and 17), movable downward and facing the center base coupled to the bridge (10), are coupled; each one of the buttons having a different stroke, a shorter one for the partial flushing and another longer one in order to proceed with the total flushing, respectively.

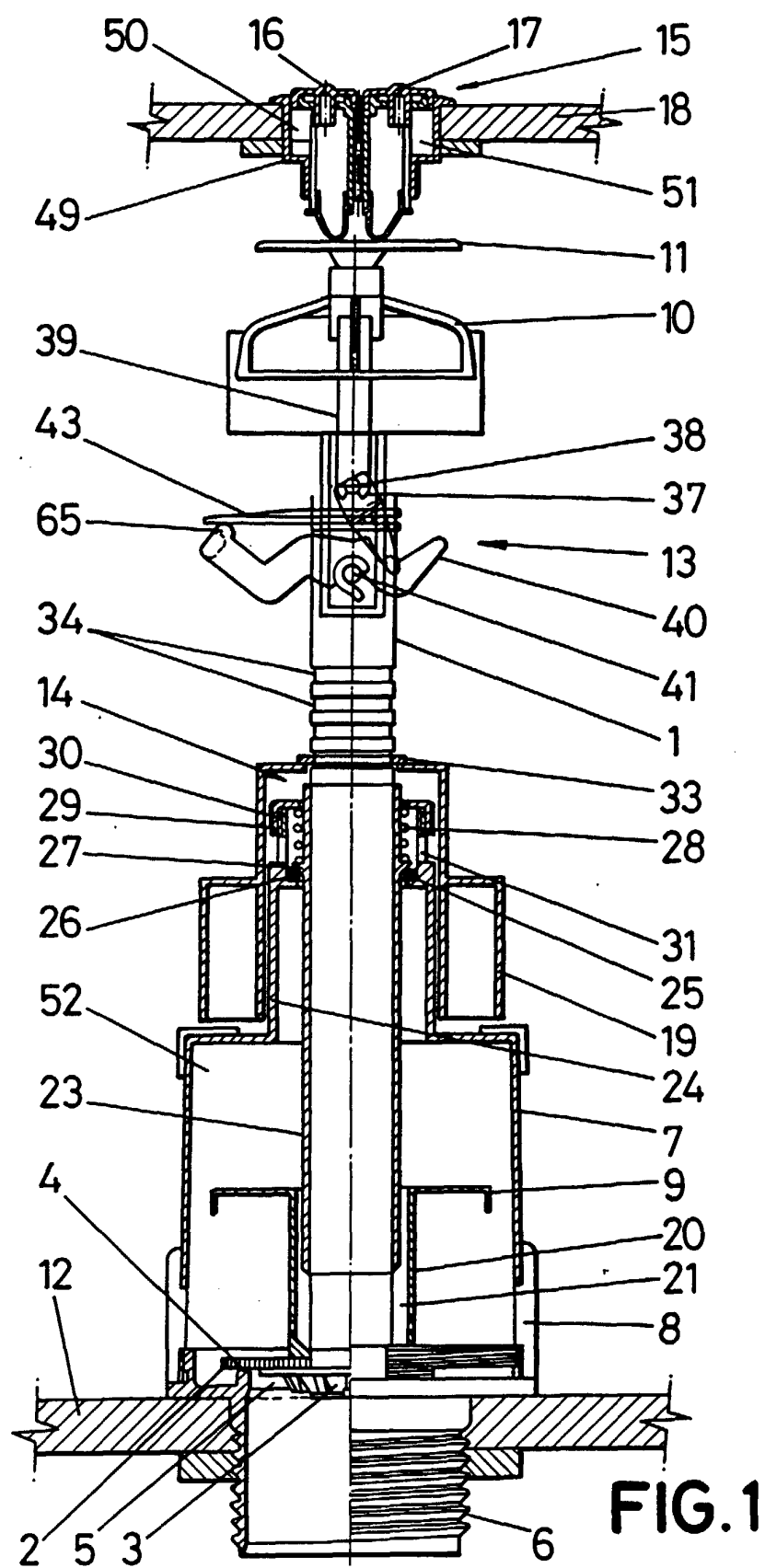
- 20.** Device for the total or partial flushing of a toilet tank, according to claim 1, characterized in that the bottom float element (9) in the inoperative position is inside the air chamber (52) of the hood (7) and above the bottom end of the tube-guide (23).

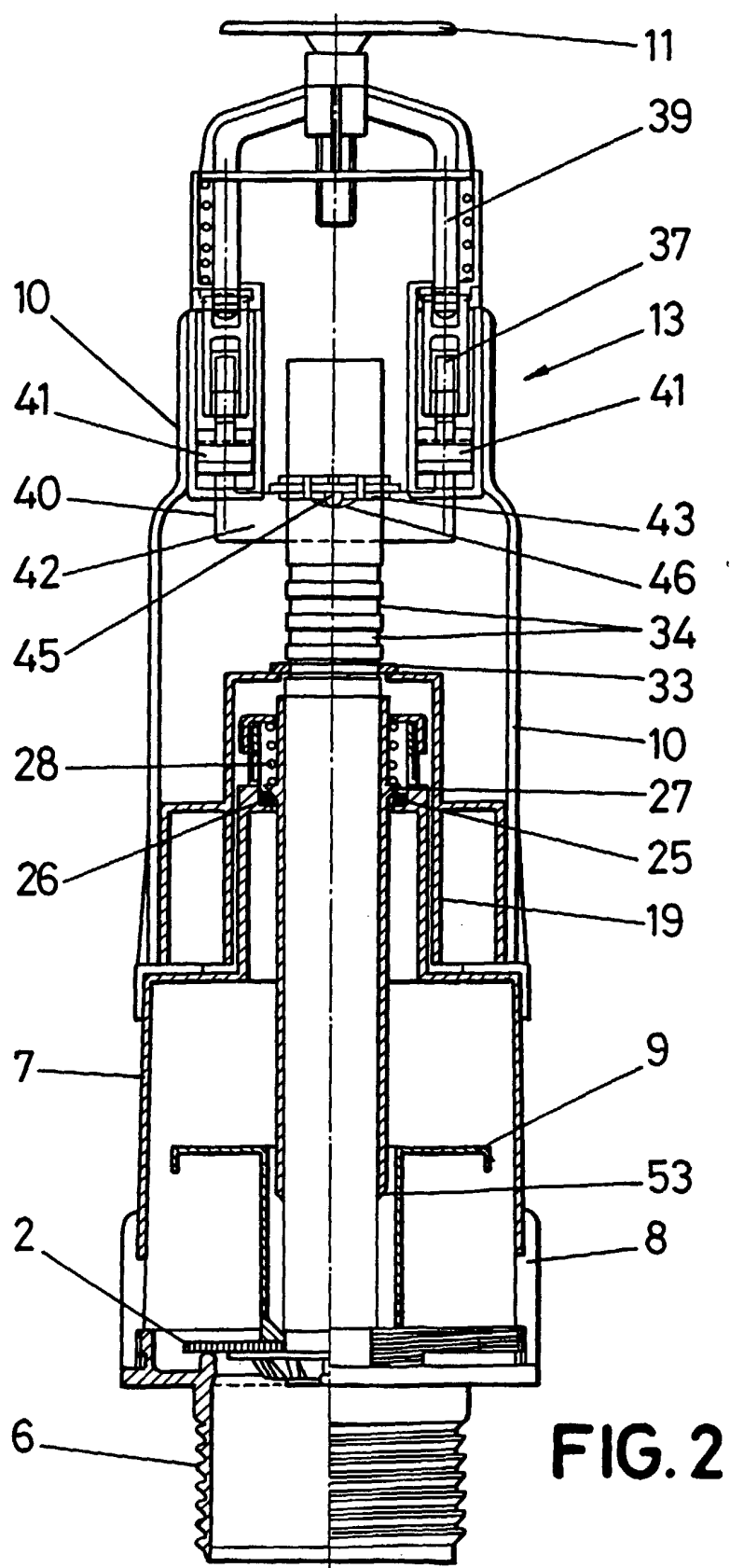
- 21.** Device for the total or partial flushing of a toilet tank, according to claims 1 and 2, characterized in that

the bottom end of the tube-guide (23) has a shape capable of being sealed on the inside bottom of the bottom float element (9).

- 22.** Device for the total or partial flushing of a toilet tank, according to the above claim, characterized in that preferably the shape of the end of the tube-guide (23) is conical, just as the shape of the inside bottom of the bottom float element (9) is.

- 23.** Device for the total or partial flushing of a toilet tank, according to claim 1, characterized in that the dimensions of the bottom side openings (8) of the hood (7, 7') have a size with overall emptying capacity, greater than that of the coupling (6).





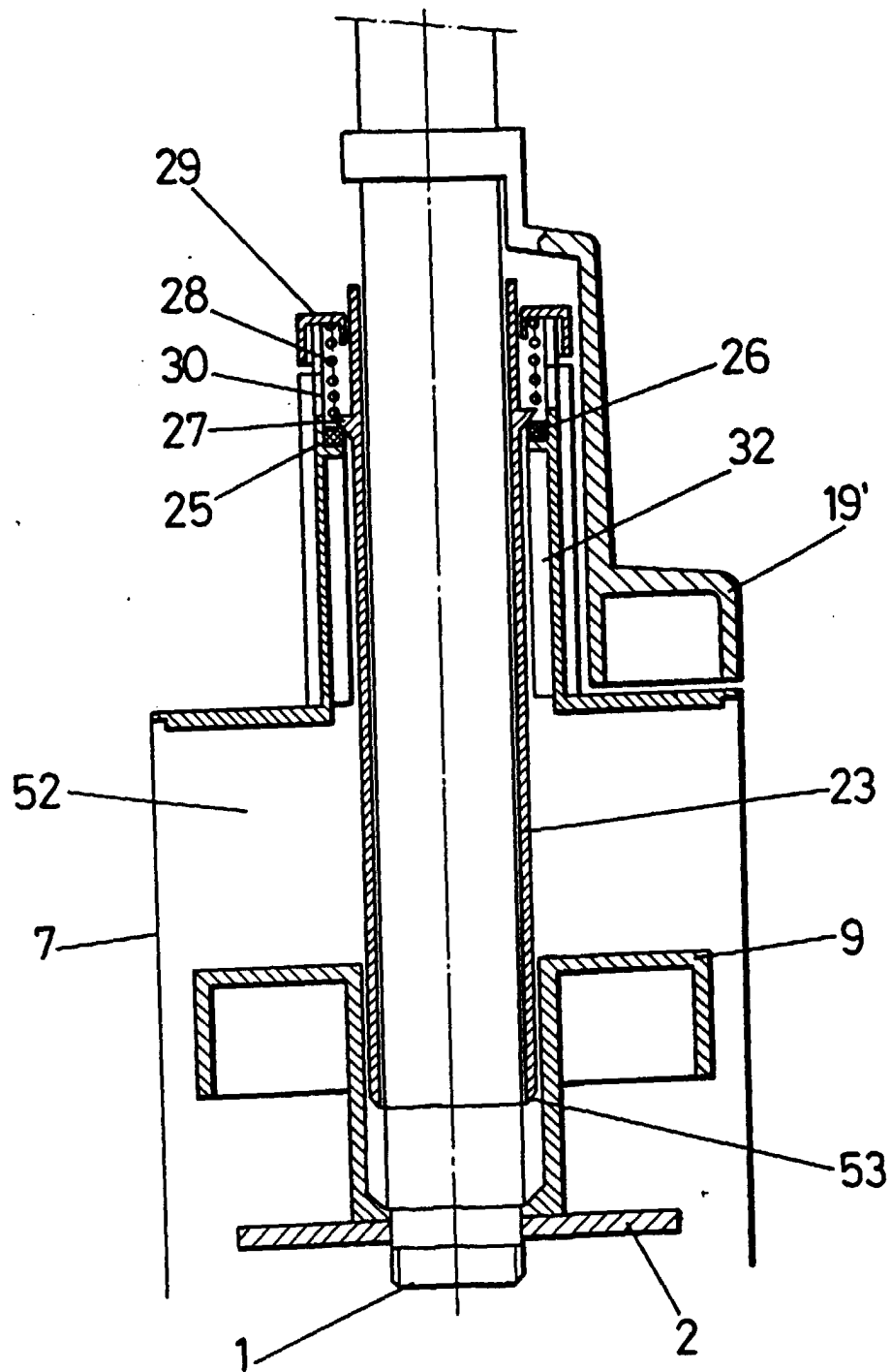
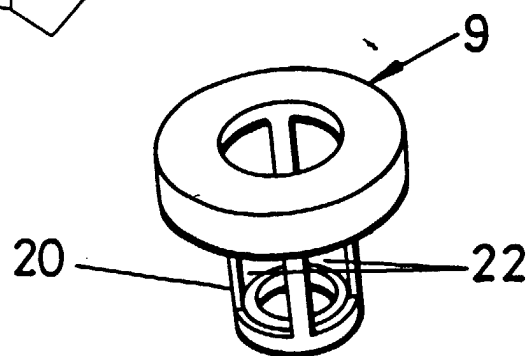
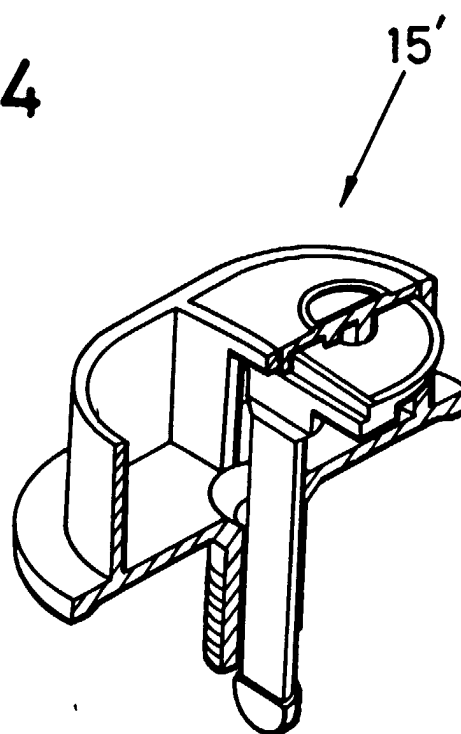
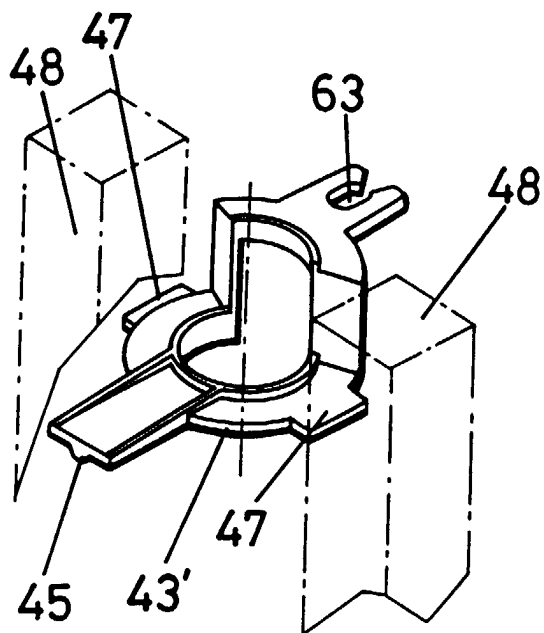
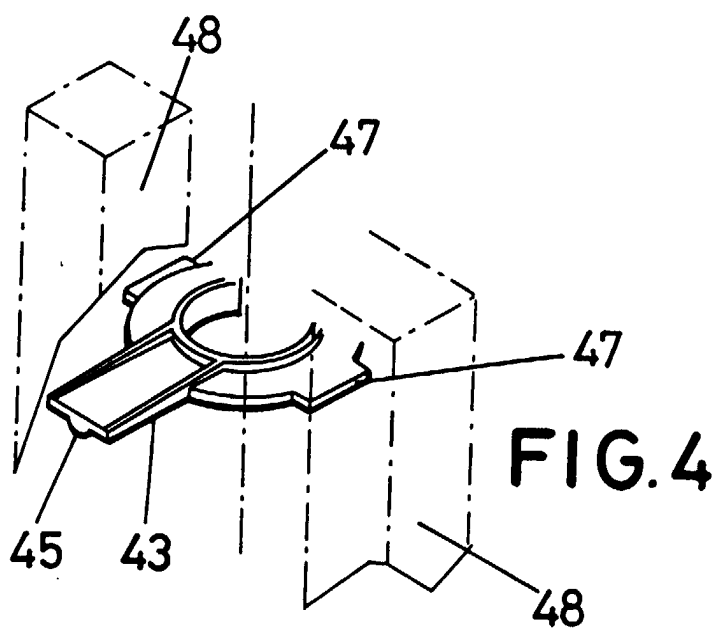
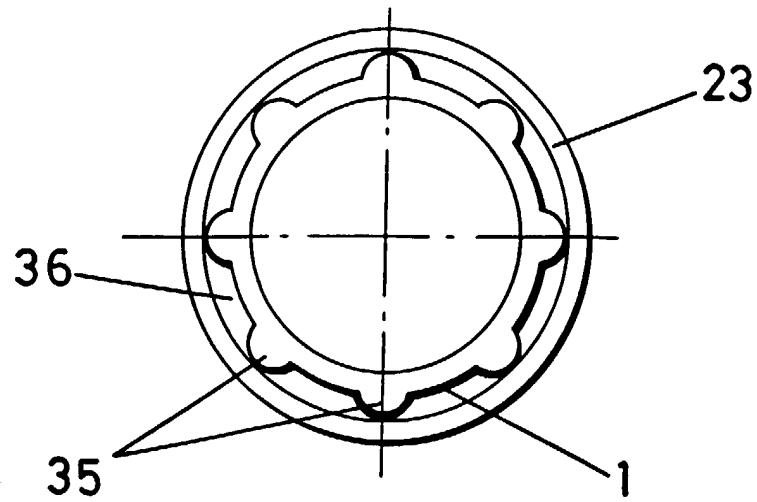
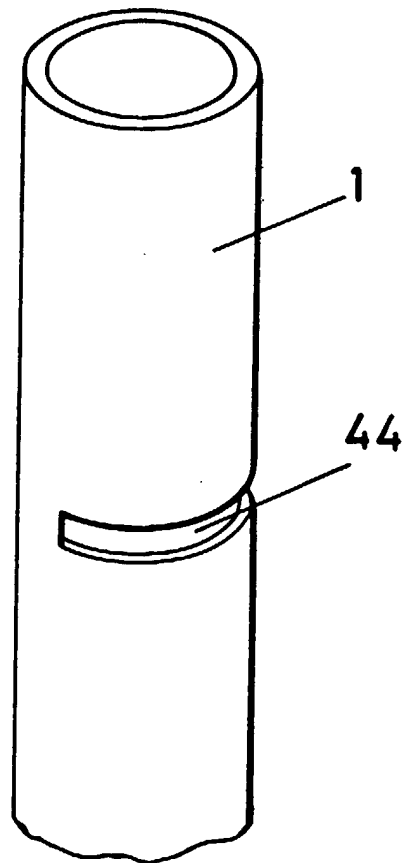


FIG. 3

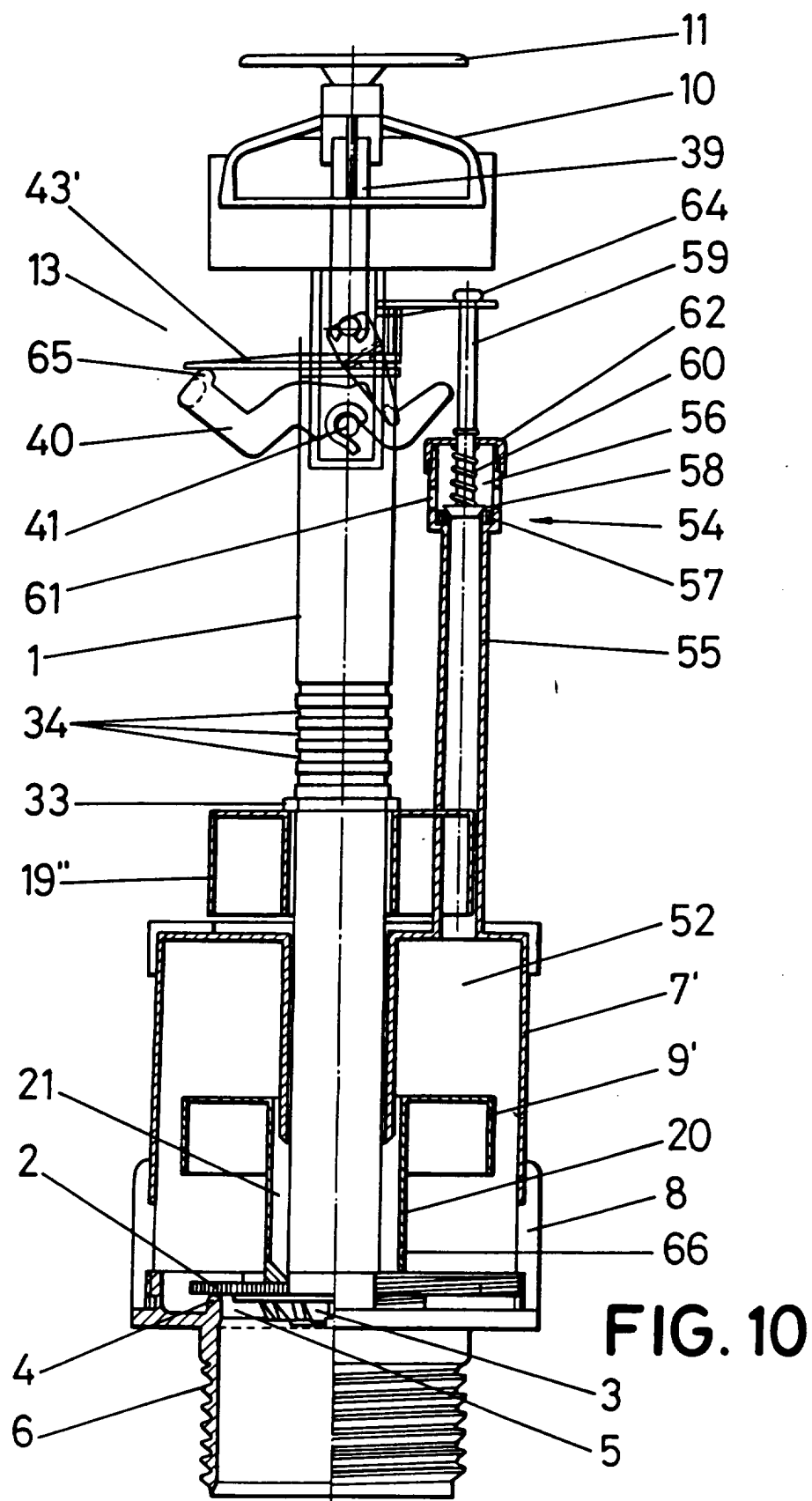




**FIG. 8**



**FIG. 9**





European Patent  
Office

## EUROPEAN SEARCH REPORT

Application Number  
EP 99 20 2161

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| The present search report has been drawn up for all claims                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                    |                                  |                                              |
| Place of search                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                    | Date of completion of the search | Examiner                                     |
| THE HAGUE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                    | 7 December 1999                  | Tellefsen, J                                 |
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EPO FORM 1503 03 82 (PatCat1)

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EP 99 20 2161

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The members are as contained in the European Patent Office EDP file on  
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

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