



(11) Publication number : **0 674 054 A1**

(12) **EUROPEAN PATENT APPLICATION**

(21) Application number : **95830084.0**

(51) Int. Cl.⁶ : **E03C 1/04, E03C 1/232**

(22) Date of filing : **09.03.95**

(30) Priority : **10.03.94 IT MI940449**

(43) Date of publication of application :
27.09.95 Bulletin 95/39

(84) Designated Contracting States :
AT BE DE ES FR GB GR PT

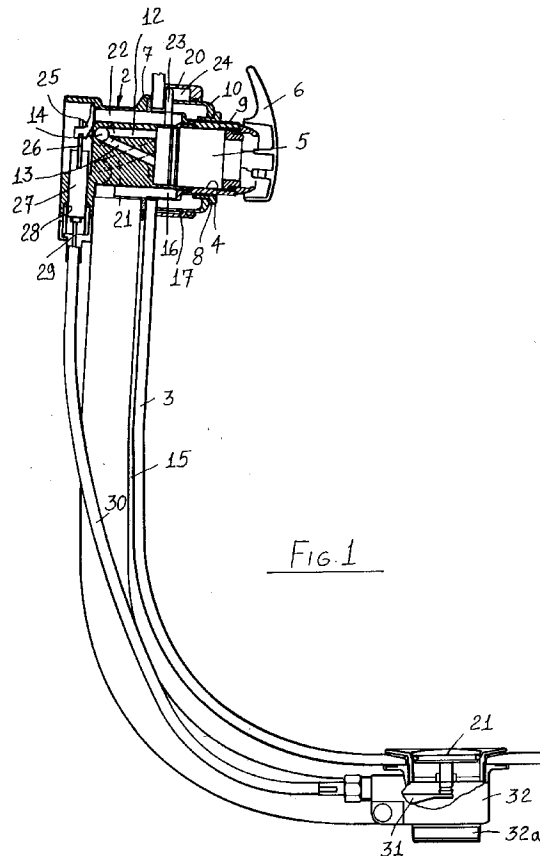
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(54) **Water control device for bath basins.**

(57) The present invention relates to a device for controlling the supplying and releasing of water for hydro-sanitary articles, in particular for bath basins or the like. The device comprises a body (2) which is provided with means for affixing to a wall (3) of a hydro-sanitary article and in the inside of which there is defined an enclosure (4) adapted to house a mixing device (5) for mixing hot and cold water which can be controlled by a control lever (6) coupled to the front end portion of the body of the device which projects from the wall of the hydro-sanitary article. The body of the device is coupled, by a portion thereof, provided to be recessed in the hydro-sanitary article, to an overflow duct (15), which can be coupled to the outlet of the hydro-sanitary article, and communicates with inlets (16) defined in that portion of the device body projecting from the wall of the hydro-sanitary article. On this portion there is moreover provided a knob (20) which is operatively coupled to means for operating the releasing plug (21) of the hydro-sanitary article.



BACKGROUND OF THE INVENTION

The present invention relates to a device for controlling the water supplying and releasing operations for hydro-sanitary articles, which has been specifically designed for bath basins or the like.

As is known, the bath basins are usually associated with a hydraulic assembly for supplying water, which is connected to the bath room wall on the top of the basin and which is usually provided with a water outlet and a water spraying implement, which can be selectively used by operating a lever or knob arranged on the water supplying hydraulic assembly.

Available bath basins are conventionally provided moreover with a knob for operating the water releasing plug, said knob being coupled to a portion of the inner walls of the basin, near a hole which also operates as an overflow element.

The different positions of the water supplying hydraulic assembly and of the water releasing plug control knob, in addition to having a poor aesthetic effect, also make the basin installation work as well as subsequent maintenance operations very complex and expensive.

In particular, maintenance or replacing operations on the water supplying assembly are very expensive since they usually involve also operations on the wall masonry.

SUMMARY OF THE INVENTION

Accordingly, the aim of the present invention is to solve the above mentioned problems, by providing a device for controlling the supplying and releasing of water for hydro-sanitary articles, in particular for bath basins, which can be directly applied to a wall of the hydro-sanitary article.

Within the scope of the above mentioned aim, a main object of the present invention is to provide such a device which can be directly installed on a bath basin by using the hole of the latter which is conventionally provided for controlling the water releasing plug and has a water overflow.

Another object of the present invention is to provide such a device which can be installed in a very simple and quick manner.

Another object of the present invention is to provide such a device which can be easily operated.

Yet another object of the present invention is to provide such a device which is very reliable and safe in operation and which, moreover, is so designed as to greatly simplify possible maintenance operations.

According to one aspect of the present invention, the above mentioned aim and objects, as well as yet other objects, which will become more apparent hereinafter, are achieved by a device for controlling water supplying and releasing in hydro-sanitary articles, particularly for bath basins or the like, characterized

in that said device comprises a body including affixing means for affixing said device to a wall of a hydro-sanitary article, and having an inner enclosure for housing a mixing device for mixing hot and cold water, which can be controlled by a control lever coupled to a front end portion of a body projecting from said hydro-sanitary article, said body being coupled by a portion thereof provided for being recessed in said hydro-sanitary article, to an overflow duct, which can be coupled to an outlet of said hydro-sanitary article, and communicating with inlets defined in a portion of said body projecting from a wall of said hydro-sanitary article, on said portion of said body there being provided a control knob which is operatively coupled with means for operating the releasing plug of said hydro-sanitary article.

BRIEF DESCRIPTION OF THE DRAWINGS

Further characteristics and advantages of the present invention will become more apparent hereinafter from the following detailed disclosure of a preferred, though not exclusive, embodiment thereof, which is illustrated, by way of an indicative, but not limitative example, in the accompanying drawings, where:

Figure 1 is a side elevation partially cross-sectioned view illustrating the device according to the present invention;

Figures 2 and 3 illustrate the device, according to the invention, as seen from an end portion thereof provided for being recessed in the hydro-sanitary article, in two different operating conditions; Figure 4 is a front view illustrating the control device with a switching element and provided for supplying water at an edge of the bath basin;

Figure 5 illustrates the control device, including said switching element, as seen laterally;

Figure 6 illustrates the control device with switching element as seen in cross-section and arranged for water supplying on an edge of the bath basin;

Figure 7 illustrates a further cross-sectional view of the control device, the water supplying being switched to the water spraying implement; and

Figure 8 schematically illustrates the control device coupled to the water spraying implement.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

With reference to the number references of the above mentioned figures, the device according to the present invention, which has been generally indicated at the reference number 1, comprises a substantially cylindrical body 2, which is provided with affixing means for affixing said device to a wall 3 of a hydro-

sanitary article, in particular a bath basin, and inside of which there is defined an enclosure or chamber 4, for housing a water mixing device 5, of any known type, which can be controlled by a lever 6 being coupled to an end portion of the body 2 projecting from the wall 3.

More specifically, the body 2 is provided, on a portion thereof provided for being recessed inside the wall 3, with a shoulder 7, which bears against the opposite side with respect to the exposed to the view side of the wall 3.

The affixing means for coupling the device to the wall 3 substantially comprise a ring nut 8, which is threaded on a substantially cylindrical portion 9 of the body 2 projecting from the exposed to the view side of the wall 3 of the hydro-sanitary article.

In particular, the ring-nut 8 operates against a cover 10, which bears against the exposed side of the wall 3 and which, together with the shoulder 7, restrains the body 2 to the wall 3 of the hydro-sanitary article.

In the body 2, moreover, there are defined hot water and cold water supplying ducts 11, which lead to the bottom of the enclosure 4, and are provided for connection with the inlets of the mixing device 5, as well as two outlet ducts 12 and 13 provided for connection with the outlet of the mixing device 5 and which are merged into a single duct 14 therethrough there is supplied the mixed water.

The provision of two outlet ducts 12 and 13 merging into a single water supply duct 14 will reduce the pressure loss inside the body 2, thereby providing a suitable water flow-rate at the outlet of the device.

The water supplying duct 14, in particular, can be coupled, through any known type of selecting valve, to a fitting for supplying water or to any known type of water spraying implement.

The body 2, in turn, is coupled, near the bottom end thereof, by the portion thereof provided for being recessed, to an overflow duct 15 which can be coupled to the outlet of the hydro-sanitary article and which communicates with inlets 16 defined in that portion of the body 2 projecting from the wall 3, as well as holes 17, defined in the body 10, so as to allow water to freely flow through the overflow duct 15, as the water level arrives at the device 1.

The device according to the invention is moreover provided with a knob 20, which is associated with that portion of the body 2 projecting from the wall 3 and which is operatively coupled to means for operating the water releasing plug 21 of the hydro-sanitary article.

More specifically, the knob 20 is rotatably mounted about the cover 10 and is coupled to a small shaft 22 which is rotatably housed inside the body 2 of the device.

The shaft 22 has the axis thereof parallel to the axis of the body 2, being spaced on the top of the lat-

ter and provided with a cross arm 23 which has a free end portion thereof coupled or engaged in a recess 24 defined on the inner surface of the knob 20, so that a rotary movement of the knob 20 about the axis thereof will cause the shaft 22 to in turn rotate.

The end of the shaft 22 facing the recessed side of the body 2, is provided with a crank element 25 adapted to transform the rotary motion of the shaft 22 into a translation motion.

The crank element 25, as shown, is coupled, through a coupling rod 26, to a cylindrical slider 27, which can vertically slide inside a guide 28 defined inside the body 2.

The cylindrical slider 27 is connected to an end portion of a cable 29, sliding inside a cable sheath 30 and which has the other end thereof connected to an operating or driving lever 31 provided for operating the ratchet type of releasing plug 21.

The sheath 30 has one end thereof affixed to the body 2 and the other end thereof connected to the block 32 supporting the water releasing assembly of the hydro-sanitary article, which comprises the releasing plug 21 and related driving or control lever 31.

This block 32 can be associated, in a per se known manner, for example by a threaded portion 32a, with a water releasing pipe.

With reference to Figures 4 to 8, the control device-switch assembly, which is generally indicated at the reference number 101, comprises a cylindrical body 102 housing therein a mixing device comprising a cartridge 105.

The body 102 is coupled to a hot water delivery duct 111 and to a cold water delivery duct 112, which communicate with the cartridge 105, in order to cause the mixed water to exit in a delivery chamber 115, therewith communicates an outer chamber 116, having a port 117 adapted to provide communication with the delivery outlets or fittings 118 which are arranged on an edge of the bath basins.

From the chamber 115, a branching duct 120 extends, thereon is provided a check valve 121 urged by calibrated resilient means 122.

The latter will provide an urging force adapted to hold closed the piston 123 of the branching duct 120.

On the port 117 operates a switching valve, indicated generally at the reference number 130, which comprises a push-button 131 operating against resilient means 132, in order to cause a gasket 133 to close the port 117.

As the port 117 is closed, the value of the pressure inside the chamber 115 and branching duct 120 will increase so as to open the check valve 121, with a consequent supplying of water to the water spraying implement ducts, indicated at the reference number 140 and being coupled to the water spraying implement, indicated by 141.

It is possible to provide either one or two ducts 140, depending on the requirements, and they, as

controlled by a water switching element, will provide two different water delivery regions.

The operation of the device according to the invention will be self-evident from the above disclosure and from the drawings.

In particular, it should be apparent that the device can be applied in a very simple manner at the hole which is usually provided for housing the bath basin water releasing plug, as well as the possible inlet of the overflow duct, and moreover it can be used both for controlling the water supplying both for controlling the operation of the water releasing plug, without preventing the application hole from being used as an overflow element.

From the above disclosure it should be apparent that the invention fully achieves the intended aim and objects.

In particular, the fact is to be pointed out that a device has been provided which can be easily installed and has a very reduced size, and which, moreover, has good aesthetic properties.

A further advantage of the device according to the invention is that it does not require operations to the masonry for the installation thereof.

While the device according to the invention has been specifically designed for application to above basin, it can also be applied advantageously to other hydro-sanitary articles.

The device as disclosed is susceptible to several variations and modifications.

Moreover, all of the details can be replaced by other technically equivalent elements.

In practicing the invention, the used materials, provided that they are compatible to the intended use, as well as the contingent size and shape, can be any, depending on requirements.

Claims

1. A device for controlling water supplying and releasing in hydro-sanitary articles, particularly for bath basins or the like, characterized in that said device comprises a body including affixing means for affixing said device to a wall of a hydro-sanitary article, and having an inner enclosure for housing a mixing device for mixing hot and cold water, which can be controlled by a control lever coupled to a front end portion of a body projecting from said hydro-sanitary article, said body being coupled by a portion thereof provided for being recessed in said hydro-sanitary article, to an overflow duct, which can be coupled to an outlet of said hydro-sanitary article, and communicating with inlets defined in a portion of said body projecting from a wall of said hydro-sanitary article, on said portion of said body there being provided a control knob which is operatively coupled

with means for operating the releasing plug of said hydro-sanitary article.

2. A device according to Claim 1, wherein said knob is rotatably mounted on the substantially cylindrical portion of the body projecting from said hydro-sanitary article, said knob being coupled to a shaft eccentrically arranged of said portion and caused to turn by a rotary movement of said knob, said shaft being coupled to an end portion of a coupling cable connected to a control lever for controlling the water releasing plug.

3. A device according to Claim 2, wherein said shaft is rotatably housed in a body and has an axis thereof parallel to and spaced on the top of the axis of the substantially cylindrical portion of said body.

4. A device according to Claim 2, wherein said shaft is provided with a cross arm having a free end portion thereof housed in a recess defined inside said knob, for transmitting to said shaft the rotary movement transmitted by said knob.

5. A device according to Claim 2, wherein said shaft is provided, at an end thereof facing the end recessed in said body, with a crank element for transforming the rotary motion of said shaft into a translation motion, said crank element being coupled to said cable which is slidably housed inside a sheath connected to said body.

6. A device according to Claim 5, wherein said sheath has another end portion thereof coupled to a block supporting the water releasing assembly of said hydro-sanitary article, comprising said water releasing plug and the related control lever and adapted to be connected to a releasing duct.

7. A device according to Claim 1, wherein in said body are provided at least a hot water delivery duct, at least a cold water delivery duct, said ducts being coupled to inlets of the mixing device, as well as two mixed water outlet ducts, coupled to the outlet of said mixing device and to a mixed water delivery duct.

8. A device according to Claim 1, wherein said affixing means comprise a ring-nut which can be threaded about the portion of said body projecting from said hydro-sanitary article and engaging with a cover abutting against the wall of said hydro-sanitary article, through said cover being provided holes communicating with said overflow duct.

9. A device according to Claim 8, wherein said knob

is rotatably assembled about said cover.

10. A device according to Claim 1, wherein said device further comprises, inside said body, a water mixing cartridge leading to a water delivery chamber, communicating with an outer chamber and a switching duct, said annular chamber communicating, through a port controlled by a switching valve with delivery outlets arranged near an edge of the bath basin, on said switching or branching duct being mounted a calibrated check valve for controlling a communication with at least a duct communicating with a water spraying implement.
11. A device according to Claim 10, wherein said switching valve is provided with a push-button element which can be accessed from the outside of said body and provided for bearing a sealing gasket, abutting on said port, for closing the communication with the water delivery outlets, and generate an increased pressure for overcoming the pressure provided by said check valve so as to open the communication toward the duct communicating with said water spraying implement.
12. A device according to Claim 10, wherein said check valve is provided with a piston which is resiliently urged by calibrated resilient means for providing an urging force preventing said valve from opening as the delivery chamber communicates with the outer chamber.

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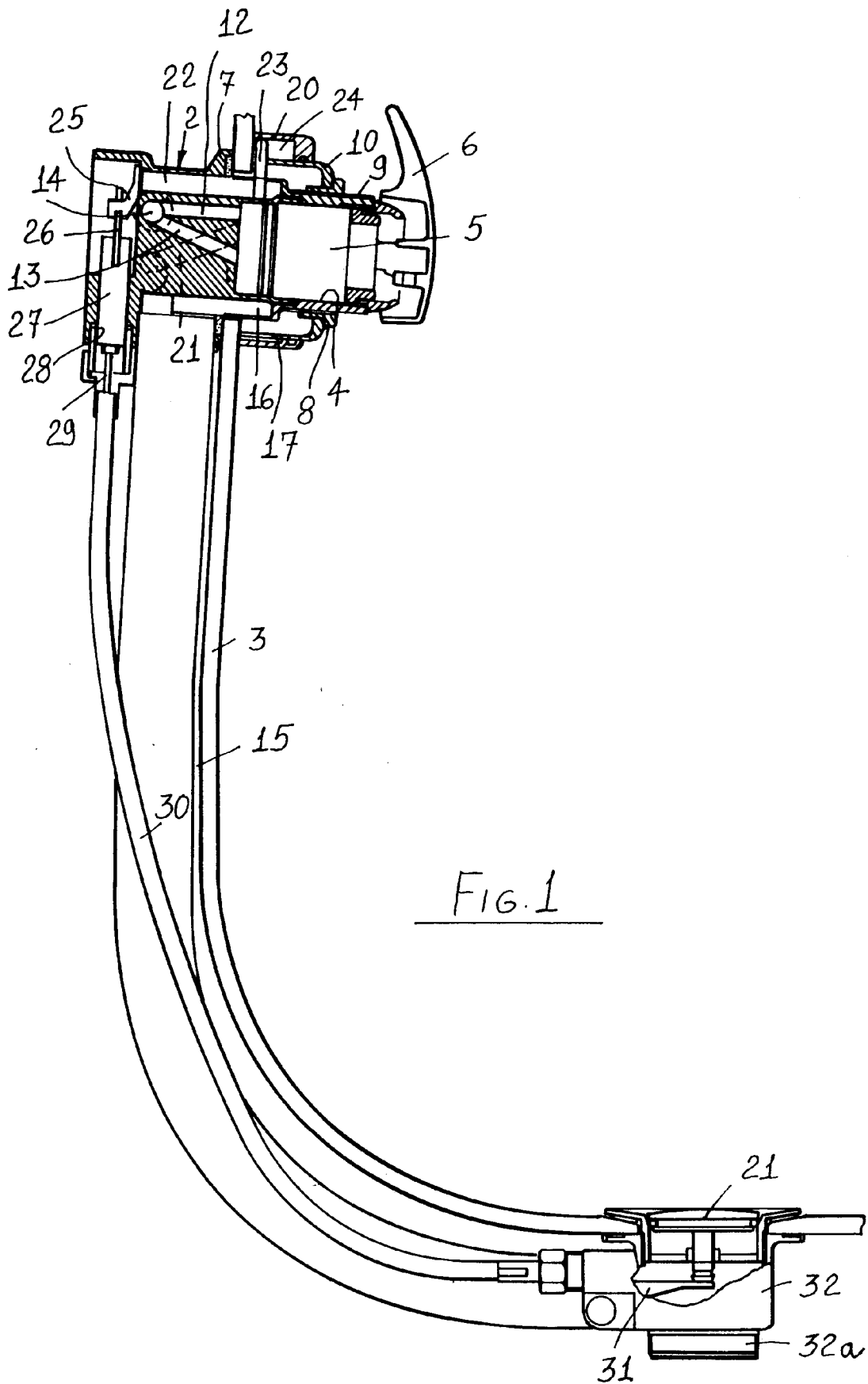


FIG. 1

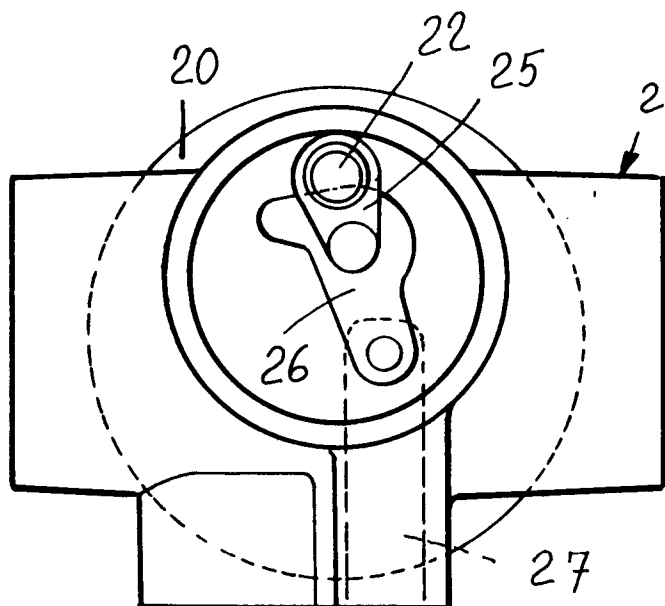


FIG. 2

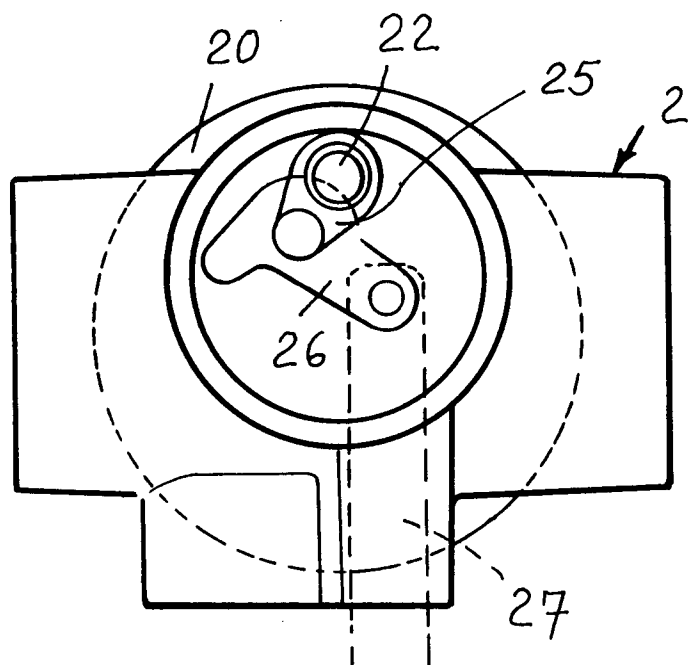


FIG. 3

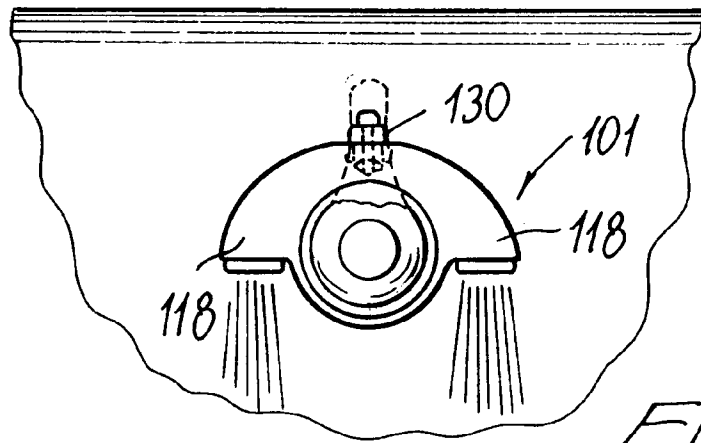


FIG. 4

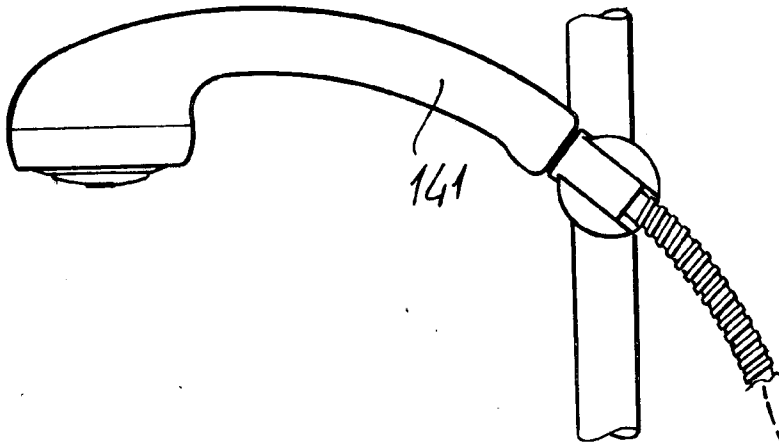
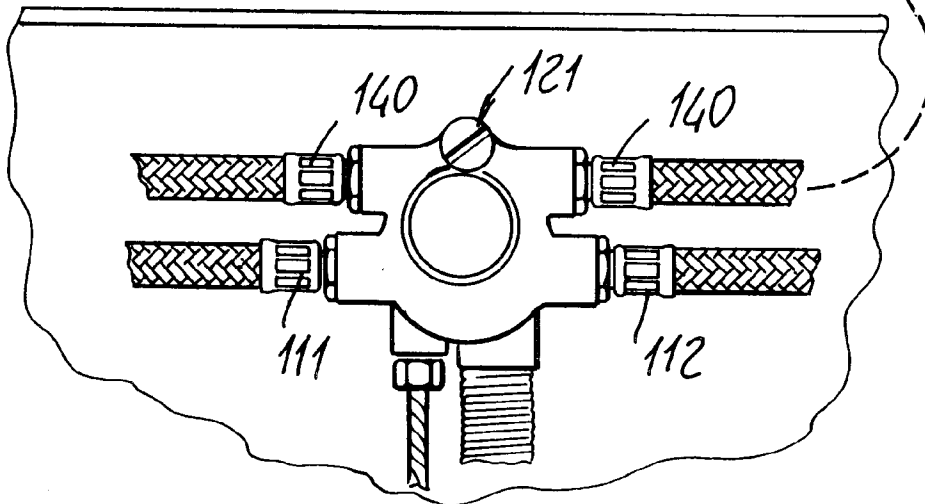


FIG. 8



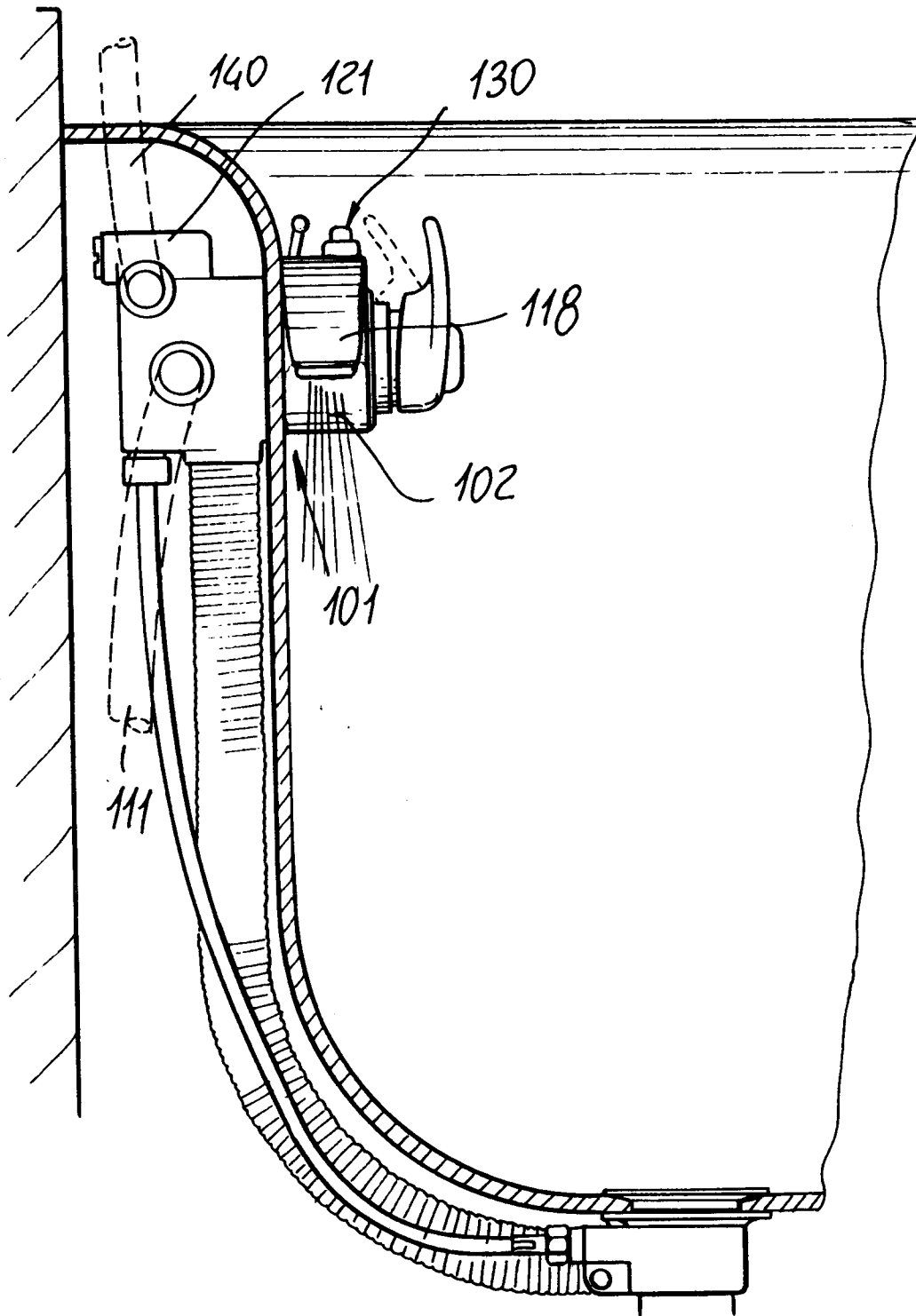
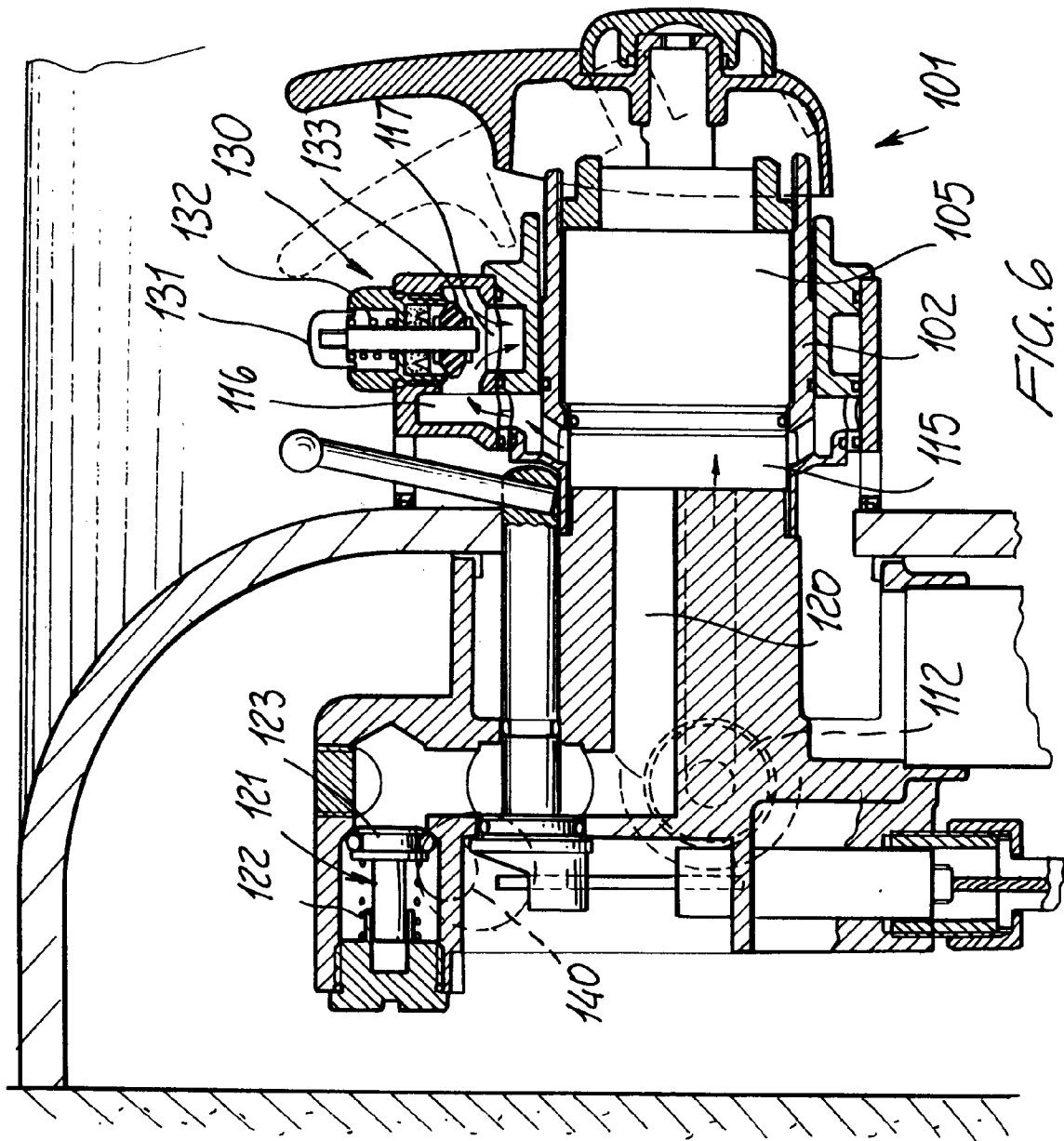
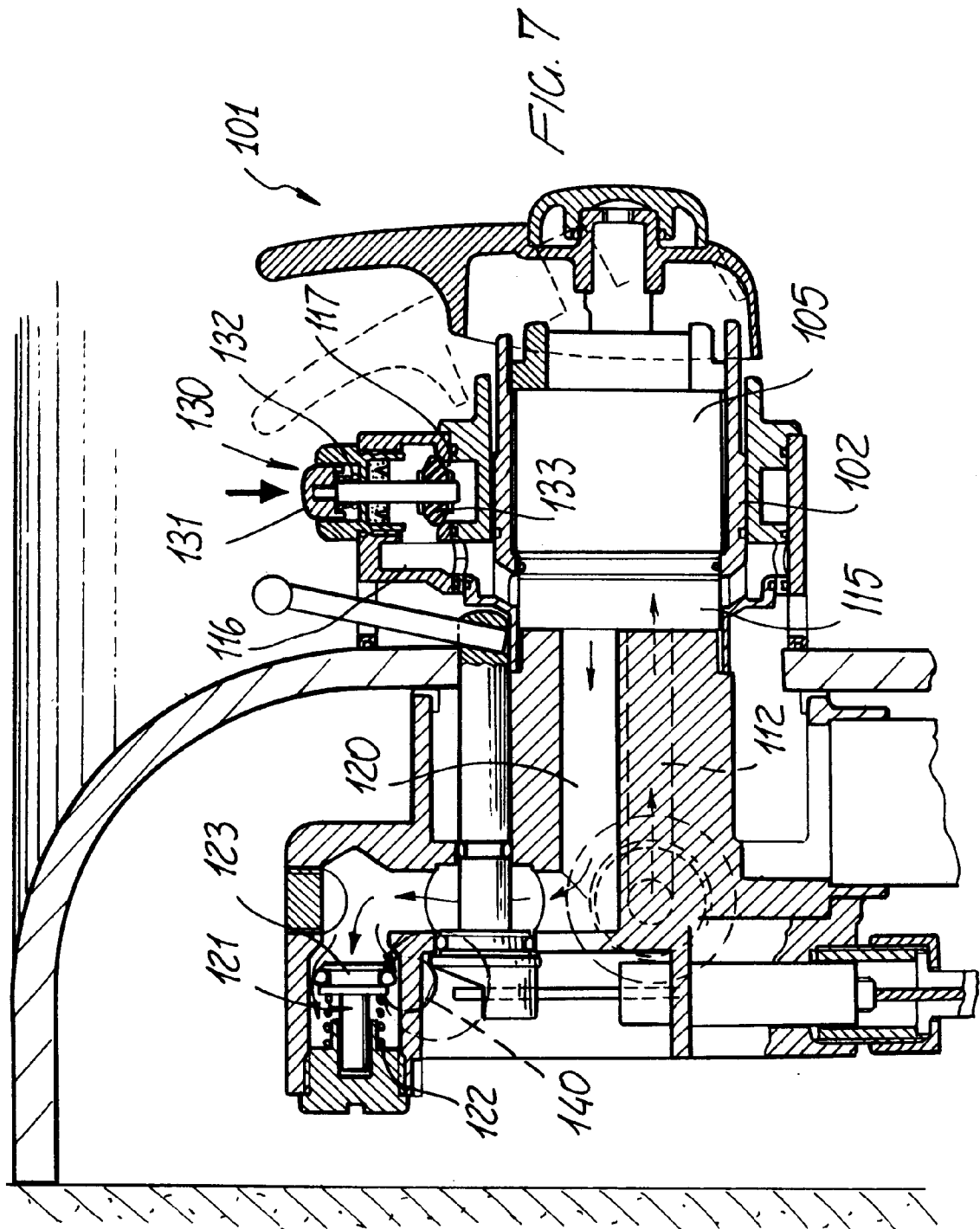


FIG. 5







European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 95 83 0084

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
X	EP-A-0 139 909 (GARLASCHELLI) * page 5, paragraph 7 - page 12, paragraph 2; figures *	1-9	E03C1/04 E03C1/232
Y	---	10-12	
Y	US-A-2 009 651 (CONDÉ ET AL.) * page 1, right column, line 46 - page 2, left column, line 15; figures *	10-12	
A	---	1-6	
A	US-A-4 594 738 (GEBERT) * column 1, line 43 - column 2, line 40; figures *	1-6	
A	---	10-12	
A	US-A-4 085 469 (PETURSSON) * column 2, line 55 - column 4, line 9; figures *		
A	---		
A	US-A-3 895 643 (WARD) * column 3, line 35 - column 4, line 10; figures 4,5 *		

The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (Int.Cl.6) E03C
Place of search THE HAGUE		Date of completion of the search 29 June 1995	Examiner De Coene, P
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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