



(12) **EUROPEAN PATENT APPLICATION**

(21) Application number : **93307728.1**

(51) Int. Cl.<sup>5</sup> : **E03C 1/02, E03C 1/042**

(22) Date of filing : **29.09.93**

(30) Priority : **30.09.92 FI 924400**

(43) Date of publication of application :  
**06.04.94 Bulletin 94/14**

(84) Designated Contracting States :  
**AT BE CH DE DK ES FR GB IE IT LI MC NL PT SE**

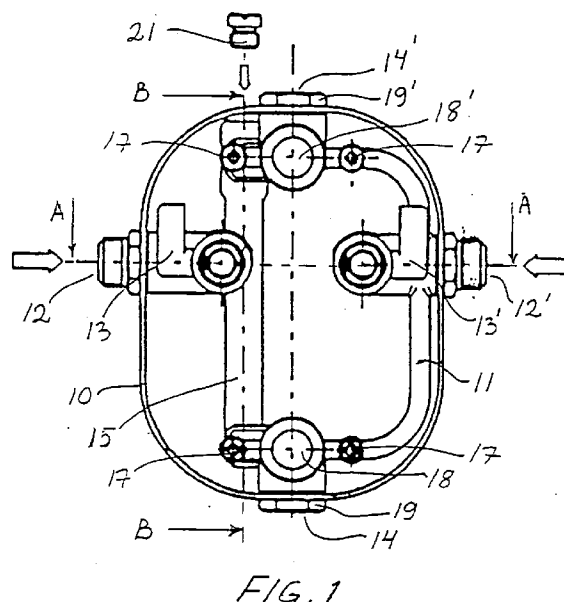
(71) Applicant : **ORAS OY**  
**PL 40**  
**SF-26101 Rauma (FI)**

(72) Inventor : **Saarisalo, Risto Antero**  
**Ruona**  
**SF-27260 Kuolima (FI)**  
Inventor : **Määttänen, Ari Esa**  
**Maade**  
**SF-27100 Eurajoki (FI)**

(74) Representative : **Feakins, Graham Allan et al**  
**RAWORTH, MOSS & COOK RAWORTH HOUSE**  
**36 Sydenham Road**  
**Croydon, Surrey CRO 2EF (GB)**

(54) **Water tap combination.**

(57) The object of the invention is a water tap combination comprising, as separate pieces, a water tap portion (30) and an installation fitting (10). The installation fitting which is installed inside a wall comprises supporting members (11,15) which have adapters (12,12') fitted into cold and hot water input conduits, check valves (13,13') for cold and hot water, two discharge openings (14,14') for outflowing water, a channel (15) which connects the mixing space and the discharge openings (14,14') of outflowing water, two openings (18,18') in the vicinity of either discharge opening (14,14') which can be connected in a sealed manner to respective openings (16,16') of the water tap portion (30). The water tap portion is attached to the installation fitting using attachment members (17). The installation fitting can be adapted to numerous water tap solutions depending on whether both discharge openings (14,14') are kept closed, open, or one of them open and the other one closed, and whether the channel (15) is kept open or closed.



This invention relates to a water tap combination such as a water tap combination including, as separate pieces, a water tap portion and an installation fitting which is built inside a wall, having the water tap portion installed thereto.

When designing contemporary sanitary facilities and during the initial stage of constructing the same, it is necessary to know exactly what kind of water taps are needed for different projects. The installation of the taps should be accomplished simultaneously with the plumbing work. This makes construction of sanitary facilities expensive because the water tap equipment must be provided and installed at an early stage. Altering the construction will also be expensive if the type of the water tap needs to be changed because this often requires extensive plumbing work.

The purpose of the invention is to eliminate the above-mentioned drawbacks and to provide an installation fitting, built inside a wall, for the water tap equipment. The installation fitting can be adapted to various water tap solutions in a simple manner in which it is not necessary to decide the type of water tap at the initial stage of construction. Changing the water tap type afterwards is also very easy. Consequently, the installation fitting consists of a separate product independent of the type of water tap.

The characteristic features of the invention become apparent in Claims 1 and 5.

The object of the invention is a water tap combination comprising influent adapters for cold and hot water, members for mixing cold and hot water and for adjusting the amount of the mixed water, and at least one discharging opening for the mixed water. According to the invention the water tap combination is comprised, on the one hand, of the installation fitting which can be installed inside a wall and comprises the above-mentioned influent adapters and the output openings for cold and hot water, respectively, which communicate with the influent adapters, and on the other hand, a replaceable water tap portion which can be secured to the installation fitting and comprises input openings which are in sealed, matching relationship with the above-mentioned output openings, whereby a connection from the influent adapters is provided when the water tap portion is attached to the installation fitting.

An embodiment of the invention comprises an installation fitting intended to be built inside a wall, the water tap portion being installable to the installation fitting. The installation fitting comprises a supporting member having adapters fitted for influent conduits of cold and hot water, check valves for cold and hot water, two discharge openings for outgoing water, a channel connecting the mixing space and the discharge openings for outgoing water, two openings in the vicinity of either discharge opening which can be connected in a sealed manner to the respective openings of the water tap portion, and attachment mem-

bers which can be used to attach the water tap portion to the installation fitting.

The installation fitting can be applied to various water tap solutions depending of whether both discharging openings are kept closed, open, or one of them is kept open and the other one closed, and whether the channel is kept open or closed.

According to an embodiment a plug is fitted in the channel closing the channel, whereby the water coming from the mixing space can be conducted out through the discharge openings. In this case, a water tap portion can be installed which includes two separate water taps through which different amounts of water can be conducted simultaneously, to a shower or a bath-tub, for instance.

According to another form of application, one of the discharge openings is closed and the channel is open, whereby water coming from the mixing space can be conducted from the opening in the vicinity of one of the discharge openings, through the channel, and out of the first discharge opening. This solution can be applied, when water is only conducted to one object (a shower or a bath-tub), whereby the mixed water is conducted to the object of use through a conduit built inside the wall. Furthermore, if the first discharge opening is closed, the water can be conducted out the opening in the vicinity of the first discharge opening to a discharge conduit belonging to the water tap portion. This solution can be applied, for instance, in a hand shower.

The invention is now described in more detail with the aid of the following Figures.

Fig. 1 is a front view of the installation fitting.

Fig. 2 is a side view of the installation fitting with the water tap portion fitted thereto.

Fig. 3 shows a front view of another embodiment of the installation fitting.

Fig. 4 shows a side view of the other embodiment of the installation fitting with the water tap portion installed.

Fig. 5 shows a top view of the cross-section of the installation fitting along line A-A.

Fig. 6 shows a top view of the installation fitting with its water tap portion.

Fig. 7 shows the installation fitting according to Figs. 1 and 2 with its water tap portion as viewed from the side and as an angular cross-section along line B-B, on the one hand, and along the center line, on the other hand.

Fig. 8 shows the installation fitting according to Figs. 3 and 4 with its water tap portion as viewed from the side and as an angular cross-section along line B-B, on the one hand, and along the center line, on the other hand.

Fig. 9 shows a perspective view of the installation fitting according to Fig. 1 with the body of the water tap portion attached.

Fig. 1 shows the installation fitting marked with

reference number 10 which can be shaped like an open prism. Supporting members 11 and 15 have adapters 12, 12' fitted thereto for the influent conduits of cold and hot water and check valves 13, 13' for cold and hot water. These check valves are usually open and they are primarily only closed during reparations. It is very important to close the check valves before the water tap portion (the water tap portion is not shown in Fig. 1 because it is situated in front of the image plane) fitted on top of the installation fitting is removed. When designing the water tap portion, it should be taken into account that these check valves should be easy to access; they should be placed, for instance, behind cover plates which are easy to remove. The installation fitting further includes two discharge openings 14, 14' for outflowing water, a mixing space (the mixing space is not shown in Fig. 1 because it is situated in front of the level of the Figure), and channel 15 which connects discharge openings 14, 14' of the outflowing water, and two openings 18, 18' in vicinity of either discharge opening 14, 14'. Respective openings 16, 16' of the water tap portion can be connected to these openings 18, 18' in a sealed manner. In this Figure, both discharge openings 14, 14' are closed with plugs 19, 19' and a short plug 21 is fitted into channel 15 which leaves channel 15 open so that water may flow from opening 18' through channel 15 to opening 18. Thus the water tap portion shown in Fig. 2 can be applied in this solution. The attachment members which are used to attach the water tap portion to the installation fitting are marked with reference number 17.

Fig. 2 shows a part of the installation fitting according to Fig. 1 with water tap portion 30 fitted into, the water tap portion including quantity adjuster 31', thermostat 32, and discharge pipe 33 of mixed water to a hand shower or the like.

Figs. 3 and 4 show another embodiment of the installation fitting. In this application both discharge openings 14, 14' are open and channel 15 is closed with plug 20, whereby this installation fitting is well-adapted for the water tap portion shown in Fig. 4 which comprises two quantity adjusters 31 and 31' for two different discharge routes which can be installed inside the wall.

Fig. 5 shows an installation fitting according to Figs. 1 and 3 as a cross section and viewed from above along line A-A. When check valves 13 and 13' are open, cold and hot water flow from openings 22 and 22' to the mixing space of the water tap portion thermostat through openings which are in a sealed, matching relationship with openings 22 and 22'. The mixing space of the water tap portion thermostat and the associated, above-mentioned openings are not shown in the Figure. The channel which was mentioned in connection with the former figures, is marked with reference number 15.

Fig. 6 shows the water tap combination, i.e., the

installation fitting and the water tap portion, as viewed from above. This figure shows in more detail the angular section lines along which the angular sections shown in following Figs. 7 and 8 are made.

Fig. 7 shows the installation fitting according to Figs. 1 and 2 with its water tap portion as viewed from the side and as an angular section along line B-B, on the one hand, and along the center line, on the other hand. Openings 16 and 16' of the water tap portion seal the installation fitting to openings 18 and 18'. The water in mixing space 40 flows through the route indicated by the arrow from opening 18' through channel 15 to opening 18, and through to discharge pipe 33 of the water tap portion. Water does not flow out of discharge openings 14 and 14' because they are closed with plugs 19 and 19'. Short plug 21 fitted in channel 15 does not prevent water from flowing in the channel.

Fig. 8 shows the installation fitting according to Figs. 3 and 4 with its water tap portion as viewed from the side and as an angular section along line B-B, on the one hand, and along the center line, on the other hand. Also in this Figure, openings 16 and 16' of the water tap portion seal the installation fitting to openings 18 and 18'. The water in mixing space 40 flows along the routes indicated by the arrows out of discharge openings 14 and 14' which are open here. Long plug 20 is fitted to channel 15 and prevents water from flowing through the channel.

Attachment members 17 are best seen in Fig. 9 which shows the installation fitting according to Fig. 1 as a perspective view, the body of the water tap portion being attached to the installation fitting.

It is clear to those skilled in the art that different embodiments of the invention can vary within the following Claims.

## Claims

1. A water tap combination comprising influent adapters (12, 12') of cold and hot water, members (31, 31', 32, 40) for mixing cold and hot water and adjusting the quantity of the mixed water, and at least one discharge opening (14, 14', 33) for the mixed water, **characterized** in that, on the one hand, the water tap combination consists of an installation fitting (10) which can be installed inside a wall and comprises said influent adapters (12, 12') and output openings (22, 22') for cold and hot water, respectfully, which are in connection with the influent adapters and, on the other hand, a replaceable water tap portion (30) which can be attached to the installation fitting and comprises input openings which are in a sealed, matching relationship with said output openings (22, 22'), whereby a connection is provided from the influent adapters (12, 12') when the water tap portion

(30) is attached to the installation fitting.

2. A water tap combination according to Claim 1, **characterized** in that the installation fitting (10) further comprises at least one input opening (18, 18') for the mixed water, and an output adapter (14, 14') which is in connection with the input opening, the output adapter forming said discharge opening, whereby the water tap portion (30) correspondingly comprises at least one discharge opening (16, 16') which is in a sealed, matching relationship with said input opening (18, 18'). 5 10
3. A water tap combination according to Claims 1 or 2, **characterized** in that the installation fitting (10) comprises check valves (13, 13') after the influent adapters (12, 12'). 15
4. A water tap combination according to Claims 1 to 3, **characterized** in that the installation fitting (10) comprises two output adapters (14, 14') and a channel (15) which connects these two and which is provided with a replaceable closing member. 20 25
5. An installation fitting (10) intended to be built into the water tap combination according to Claims 1 to 4 and inside a wall, to which installation fitting the water tap portion (30) can be installed, **characterized** in that it comprises supporting members (11, 15) which have adapters (12, 12') to cold and hot water input conduits fitted into, check valves (13, 13') for cold and hot water, two discharge openings (14, 14') for outflowing water, a channel (15) which connects the mixing space and the discharge openings (14, 14') for outflowing water, two openings (18, 18') in the vicinity of either discharge opening (14, 14') which can be connected in a sealed manner to the corresponding openings (16, 16') of the water tap portion (30), and attachment members (17) which can be used to attach the water tap portion (30) to the installation fitting (10). 30 35 40 45
6. An installation fitting (10) according to Claim 5, **characterized** in that a plug (20) is fitted into the channel (15) which closes the channel, whereby the water from the mixing space can be conducted directly out of openings (18, 18') through the discharge openings (14 or 14'). 50
7. An installation fitting according to Claim 5, **characterized** in that one of the discharge openings (14') is closed and the channel (15) is open, whereby the water from the mixing space can be conducted from the opening (18') in the vicinity of one of the discharge openings (14'), through the 55

channel (15) and out of the first discharge opening (14).

8. An installation fitting according to Claim 7, **characterized** in that also the first discharge opening (14) is closed, whereby the water from the mixing space can be conducted from the opening (18') in the vicinity of the second discharge opening (14') through the channel (15) out of the opening (18) in the vicinity of the first discharge opening to the discharge pipe (33) belonging to the water tap portion (30).

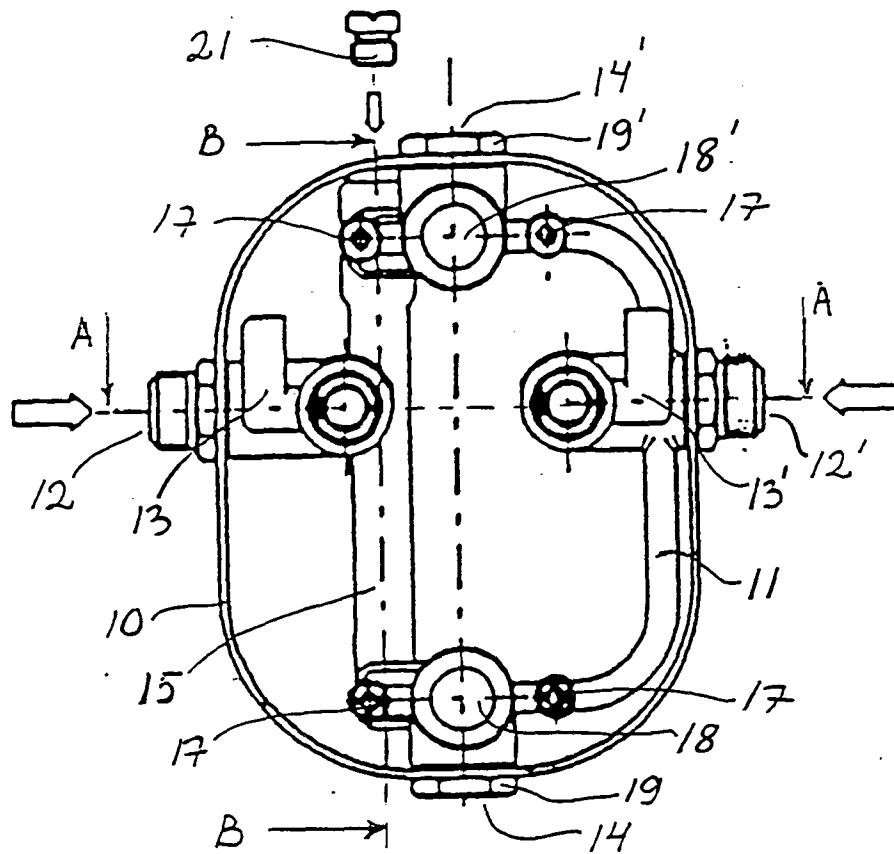


FIG. 1

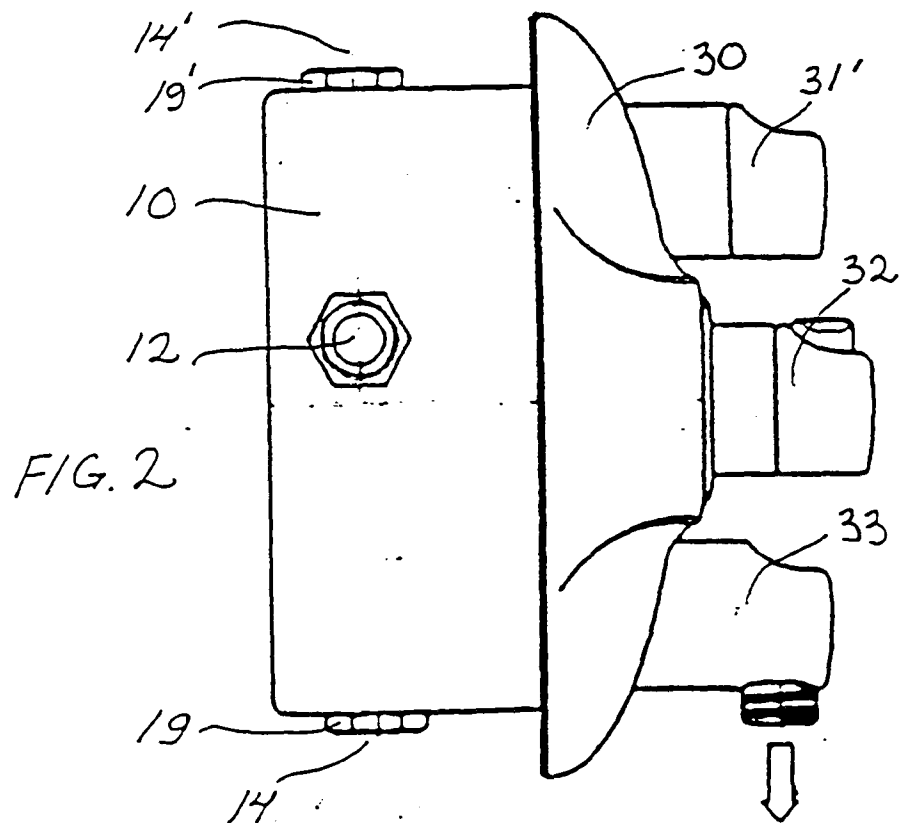
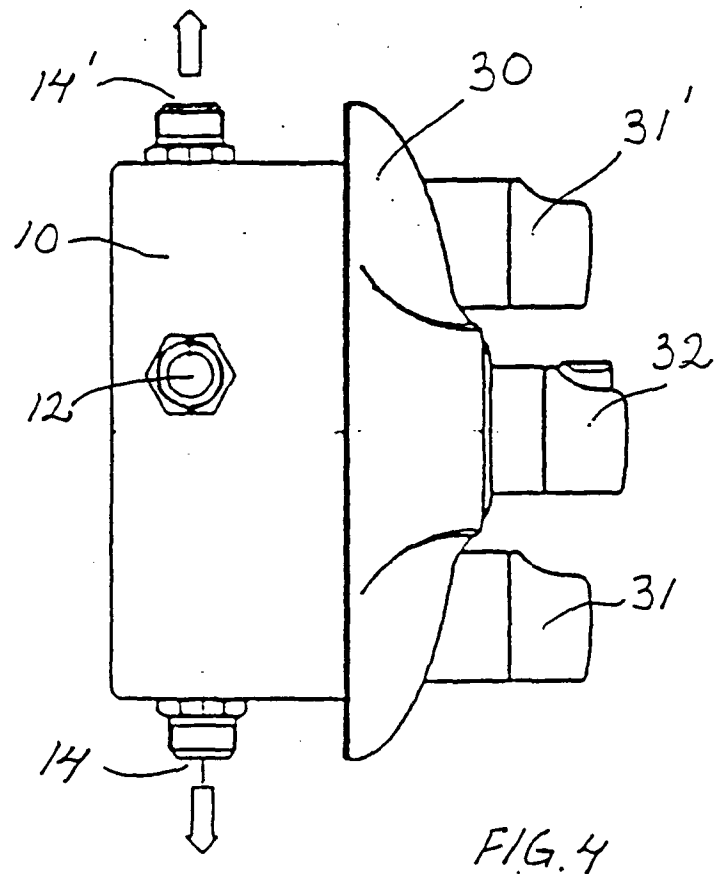
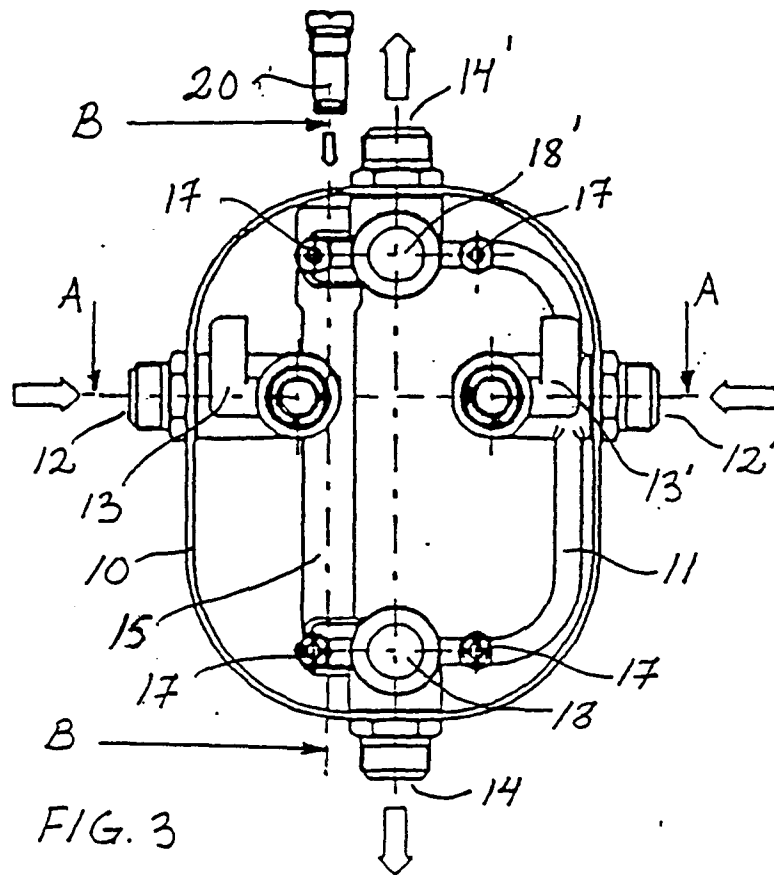


FIG. 2



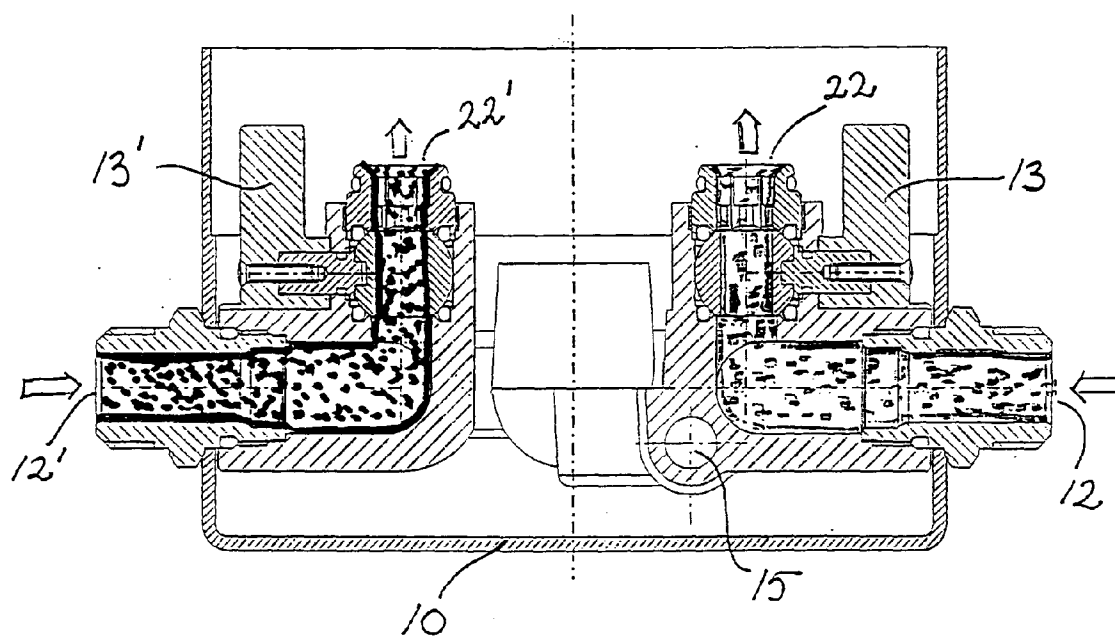


FIG. 5

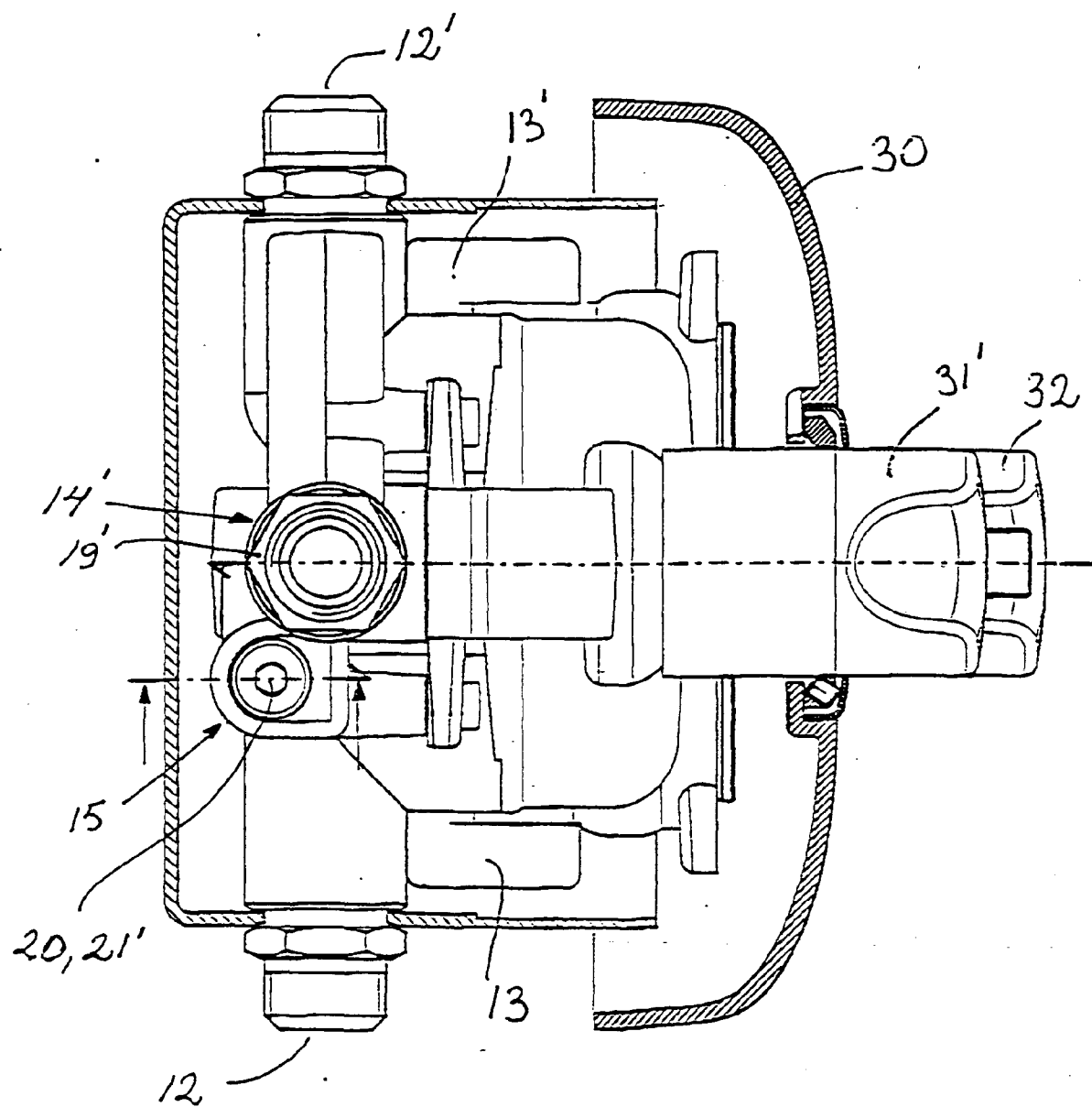
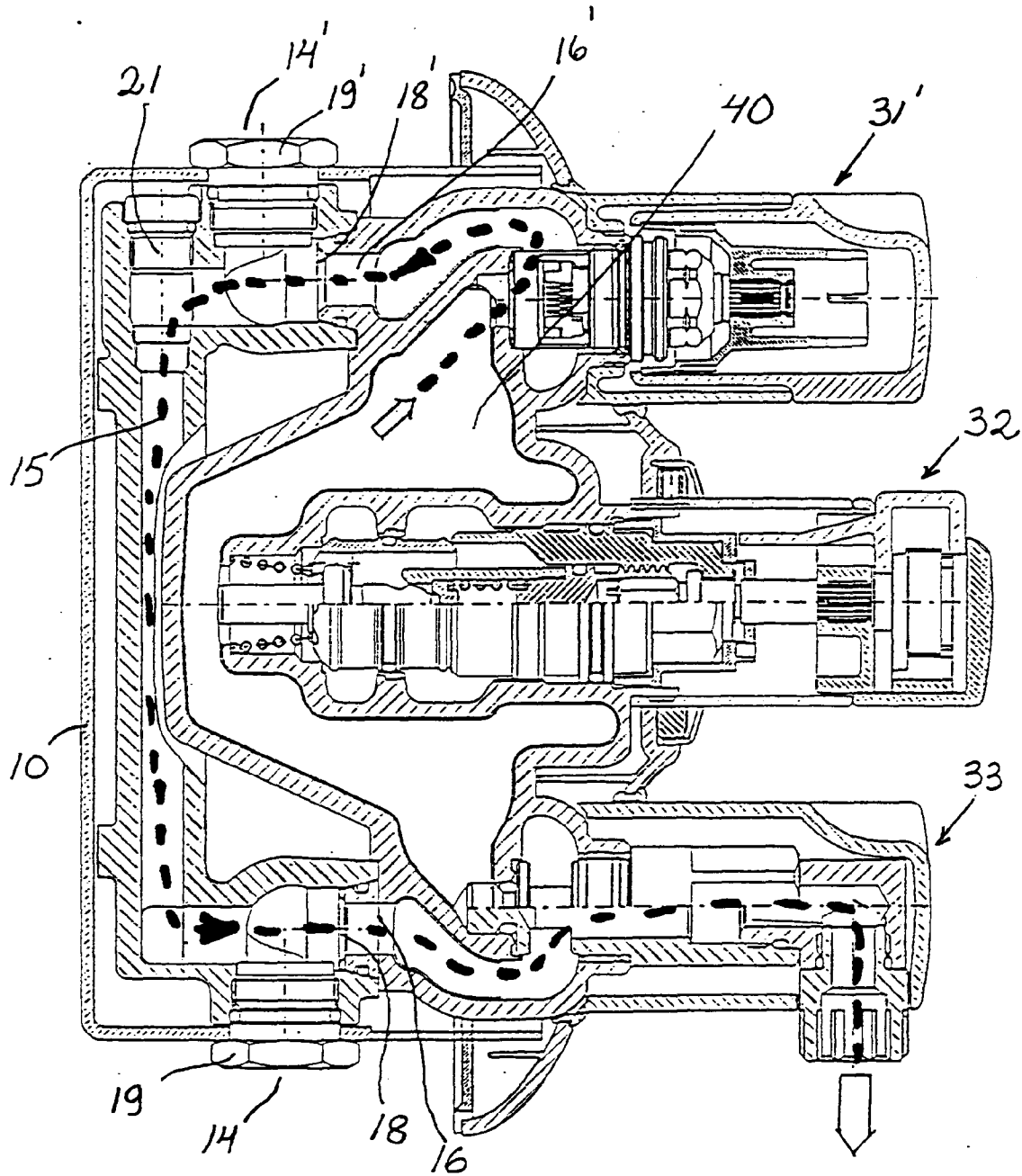


FIG. 6





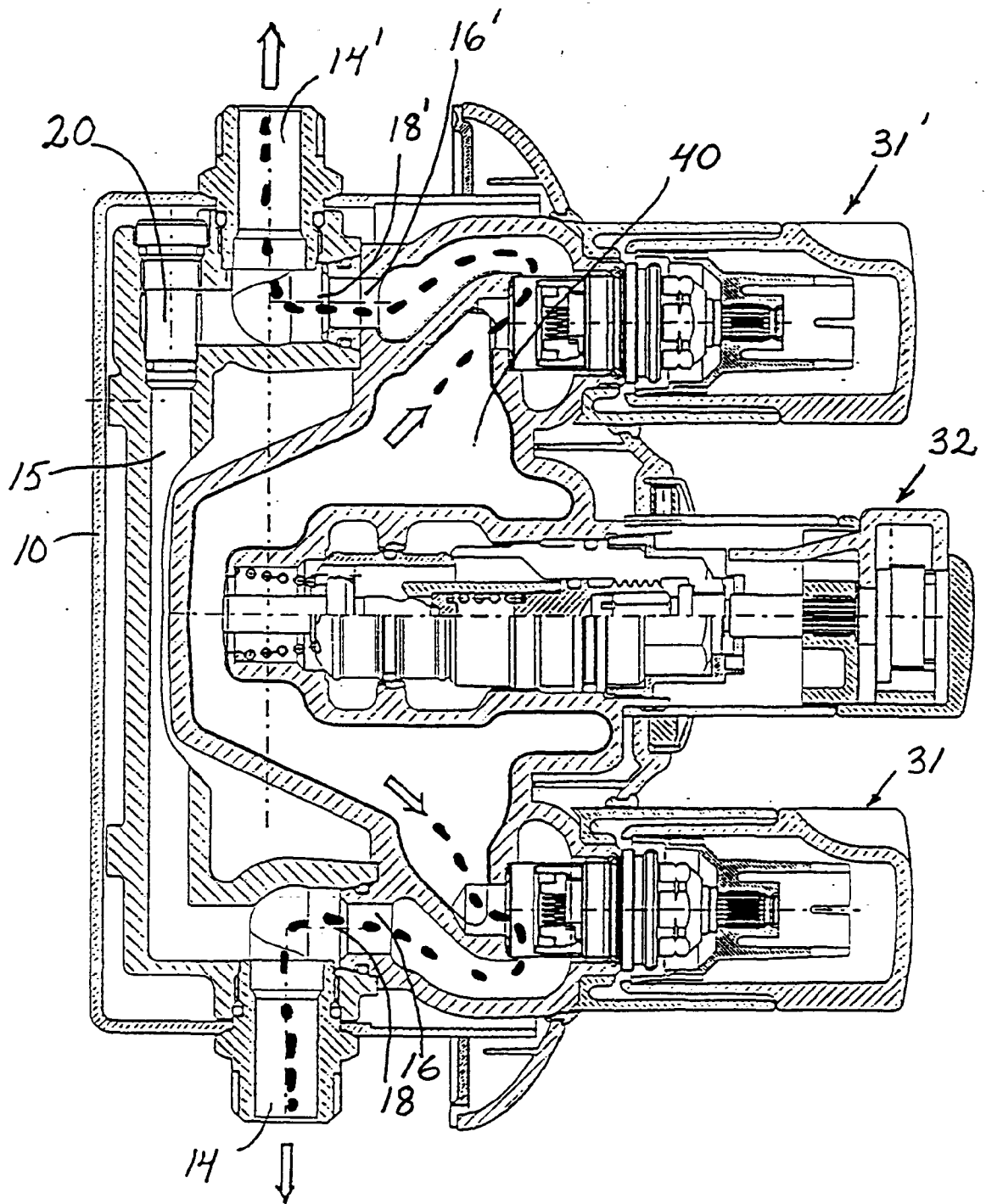


FIG. 8

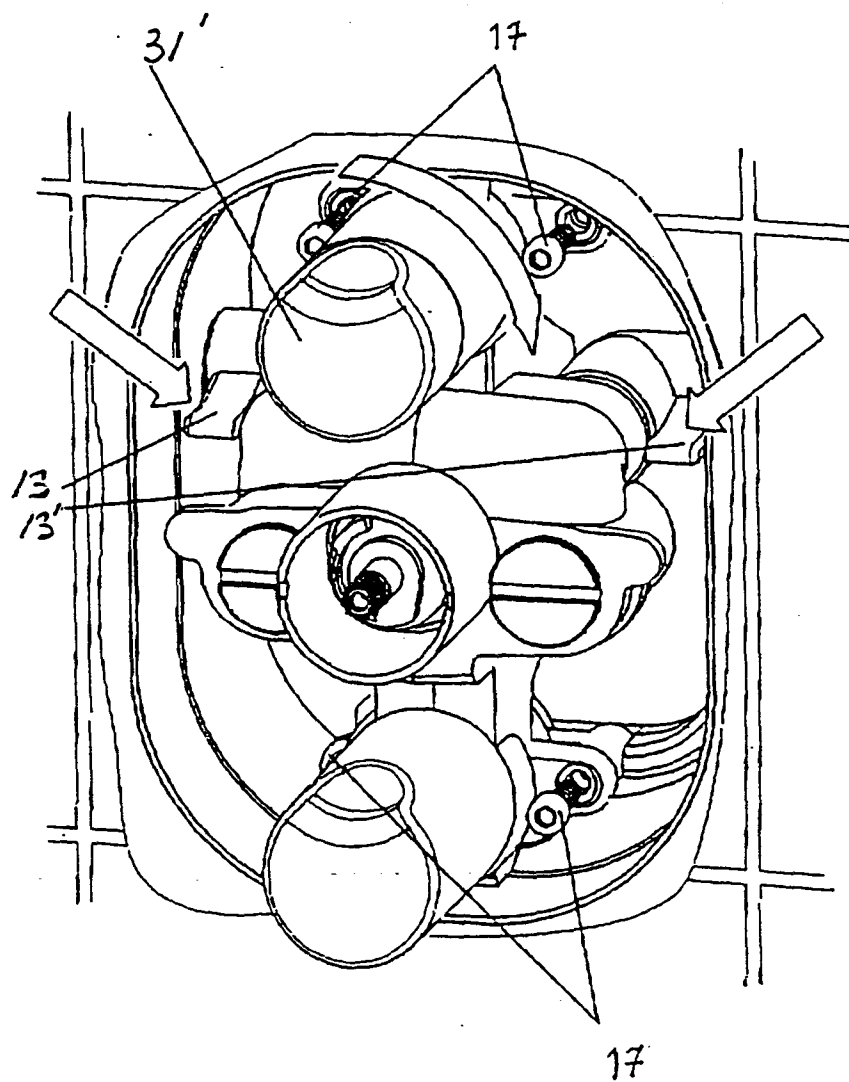


FIG. 9



European Patent  
Office

# EUROPEAN SEARCH REPORT

Application Number  
EP 93 30 7728

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.5)
X	FR-A-2 615 881 (ROMANELLI) * page 1, line 4 - line 18 * * page 3, line 13 - page 5, line 27; figures *	1-8	E03C1/02 E03C1/042
X	DE-A-30 09 599 (GRUBER) * page 4, line 3 - line 28 * * page 6, line 11 - page 9, line 26; figure *	1,3	
A	---	4,5	
X	EP-A-0 048 906 (GEORG FISCHER AKTIENGESELLSCHAFT) * page 3, paragraph 1 - paragraph 2 * * page 4, paragraph 2 - page 5, paragraph 2; figures 1,3,4 *	1	
A	---	5	
A	US-A-4 848 391 (MILLER ET AL.) -----		
			TECHNICAL FIELDS SEARCHED (Int.Cl.5)
			E03C
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 23 December 1993	Examiner De Coene, P
<p><b>CATEGORY OF CITED DOCUMENTS</b></p> <p>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</p> <p>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 ..... &amp; : member of the same patent family, corresponding document</p>			

EPO FORM 1503 03.92 (P04C01)