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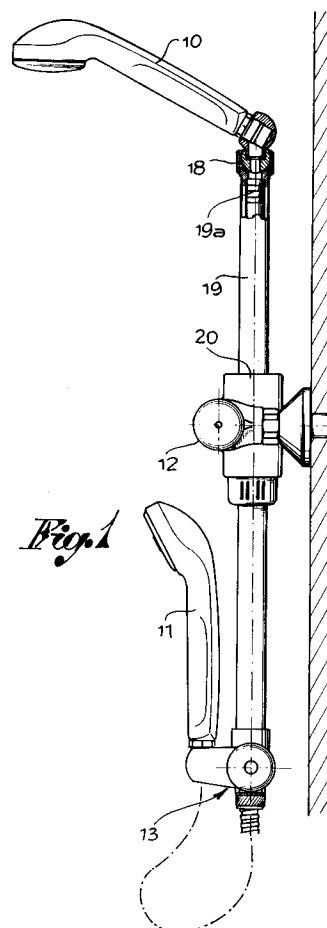
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AT BE DE ES FR GB GR IT NL PT(71) Applicant: **SOL S.p.A.**
Via Montesuello 234
I-25065 Lumezzane S.S. (Brescia)(IT)(72) Inventor: **Otelli, Giordano**
99B Via Mazzini
I-25065 Lumezzane S.S. (Brescia)(IT)(74) Representative: **Manzoni, Alessandro**
MANZONI & MANZONI - UFFICIO
INTERNAZIONALE BREVETTI P.le Arnaldo n.
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I-25121 Brescia (IT)(54) **Shower unit for sanitary systems.**

(57) The invention regards a shower unit for sanitary systems such as shower cubicles, bath tubs and the like, having a verticle tube (19) which is positionable in height in relation to a fixed support (20) and having a conduit for the direct or indirect passage of water, a water distributor switch (13) fitted to the lower end of said verticle tube (19) and hydraulically connected to a thermostatic tap (12) or a mixer for controlling the delivery of water, a wall shower (10) articulated to the top of said verticle tube (19) and at least one manual shower (11) connected to said distributor switch (13).

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The present invention relates to the delivery of water in sanitary systems and in particular regards the delivery of water in shower units.

At present showers which can be fixed to the wall, can be fitted to a latch and manual telephone-type showers which rest on a wall fork or are co-ordinated to the taps of bath tubs are known.

The showers fixed to the wall receive water from a distribution network which is usually a tube inserted inside the wall and has tap controls for hot and cold water or a mixer placed near or away from the shower unit. Latch showers and telephone-type showers usually receive water through a flexible pipe which is attached to taps or to mixers.

The aim of the present invention is to supply a water delivery unit for sanitary systems which has more functions seeing that it includes a wall shower which is movable in height, at least one manual telephone-type shower as well as a free delivery mouth for the water, all the functions being fed through a single conduit which can be attached to a thermostatic tap or to a water mixer or to another possibly centralized intercepting system and through a distributor switch.

Another aim of the invention is to supply a shower unit for the delivery of water in which at least one shower, namely the highest wall one and the distributor switch are fitted to a tube which can be guided and moved upwards and also functions as a conduit for the water or as a housing for a water conduit and in which the thermostatic tap can be placed either away from the unit or along said tube.

The here proposed shower unit for the delivery of water is substantially in accordance with claim 1. It will however be described in further detail with references being made to the attached drawings in which:

Figs. 1 and 2

are side and front views of a unit in which the thermostatic tap is placed along the tube which is movable in an upwards direction;

Fig. 3

is a view of the unit in which the thermostatic tap is placed away from the unit itself and the wall shower is fed through a water conduit which extends in the tube that moves in an upwards direction;

Fig. 4

is a plan view of the distributor switch;

Fig. 5

is a partial section view of the guide and blockage support for the tube which is movable in an upwards direction;

Figs. 6, 7, 8 and 9

are total and partial section views of the distributor switch in various functioning positions;

Fig. 10

is a partial section view of a rotating connection with a flow adjuster for manual showers; and

Figs. 11, 12 and 13

show the flow adjuster along the arrows XI-XI in Fig. 11 and in as many different opening positions.

The here proposed unit essentially has a wall shower (10) and at least a manual telephone-type shower (11) each of which is fed by a thermostatic tap (12) - or a mixer or other intercepting means - through a distributor switch (13) having a free delivery mouth (14) for the water in a bath tub. As well as having a mouth (14), said distributor switch (13) has a water inlet passage (15) which connects to the tap (12) through a flexible pipe (15a), a first water outlet passage (16) and at least a second water outlet passage (17) in another direction in respect to the first.

In an embodiment, the wall shower (10) is articulated to the top of a verticle tube (19) through a sealed joint (18), said verticle tube being guided and positionable along a support (20). Said support (20) is integral to the tap (12) which is connected to the water distribution pipes which extend inside the wall.

The lower end of the tube (19) is connected to the first water outlet passage (16) of the distributor switch (13); the second outlet passage (17) of the distributor switch (13) is connected to a flexible pipe (17a) the end of which is fitted with the manual shower (11) which rests on a fork (13a) integral to said distributor switch.

Therefore, as can be seen in Figs. 1 and 2, the thermostatic tap (12) - mixer or other - is placed along the verticle tube (19); the wall shower (10) is at the top of said verticle tube; the distributor switch (13) with the delivery mouth (14) and manual shower (11) is applied to the lower end of said verticle tube. Thus, the tube (19) forms a conduit for sending the water to the upper shower (10) and is vertically positionable, in the form of a latch, on the support (20) and relatively to the tap (12) in order to vary the height of the upper shower and concordantly of the water delivery mouth (14) at the height of the distributor switch (13).

In another embodiment, as shown in Fig. 3, the wall shower (10) and the distributor switch (13) with a delivery mouth (14) and manual shower (11) are again respectively applied to the upper and lower ends of the verticle tube (19), but the tap (12) is placed away from said tube (19) and this tube is guided and positionable on a support (20a) which is fixed to the wall.

In both embodiments, the water can then be sent by the distributor switch (13) to the upper shower (10) through a possibly flexible pipe (19a), extending in said tube as shown in Fig. 1 instead of

directly through the verticle tube (19). Furthermore, the guide support (20) of the tube (19) has a coupling element (21), friction rings (22) placed in said element and enclosing the tube, a thrust ring nut (23) also enclosing the tube and resting on one of said rings through a conic coupling and a blocking/unblocking handle (24) for the tube by means of said ring nut as shown in Figs. 3 and 5. The support (20) is concealed by a covering or case (25) leaving only the handle (24) free.

As far as the distributor switch (13), (Figs. 6, 7, 8 and 9), is concerned, it has a body (26) which includes the above mentioned water delivery mouth (14), an inlet passage (15) and outlet passages (16, 17). Said body (26) is fitted with a push button switch (27) and a rotating distributor in suitable openings. The push button switch (27) is manually movable in two positions, it has a shutter (29) and is canalized in order to selectively join the inlet passage (15) for the water coming from the tap (12) to the delivery mouth (14) or with the opening of the distributor. In a first position (Fig. 6), the switch permits water to be sent to the delivery mouth (14) whilst excluding the water to be sent to the showers (10, 11). In a second position, the switch (27) permits the delivery mouth (14) to be excluded and to send water towards the distributor (28). Thus, when this appropriately canalized distributor is opportunely rotated, it permits water to be sent to both the wall shower (10) and the manual shower (11), (Fig. 7), or only to the wall shower (10), (Fig. 8), or only to the manual shower (11), (Fig. 9) on the arrows indicated.

The described unit is therefore suitable to be used in shower cubicles, bath tubs and public showers such as in swimming pools or other sport centres with the possibility of distributing the water at different heights and in various forms. The unit can also have a third grip at the height of a distributor switch for another possible shower distributor.

As far as the manual shower (11) is concerned, it can be connected to the end of the relative flexible pipe (11a) through a rotating union (30), (Fig. 10) which has a flow adjuster and a possible filter and unidirectional valve (31).

The rotating union (30) has a first threaded connection (32) which is fixed to the flexible pipe (17a) through a ring nut (33) on one side and a second threaded connection (34) which screws to the shower body (11) on the other side. This second connection has a transversal pierced side (35) and this side has a pierced neck (36) in its centre which axially couples and can rotate with the first connection (32) so as to permit the shower body to rotate in relation to the flexible pipe. A rotating adjustable ring nut (37) having a central oval-shaped countersunk hole (38) is inserted and seal-

ed between the first connection (32) and the second connection (34). Said ring nut either obstructs or frees each or all the holes of the transversal side (35) of the second connection. Thus, it will be possible to vary the capacity of water delivered through the manual shower by rotating the adjustable ring nut (37) as shown in the drawings of Figs. 11, 12 and 13.

The periphery of the second connection can be marked with a scale and the adjustable ring nut can be marked with a reference index showing the positions of said ring nut and of the capacity of water through the manual shower.

Claims

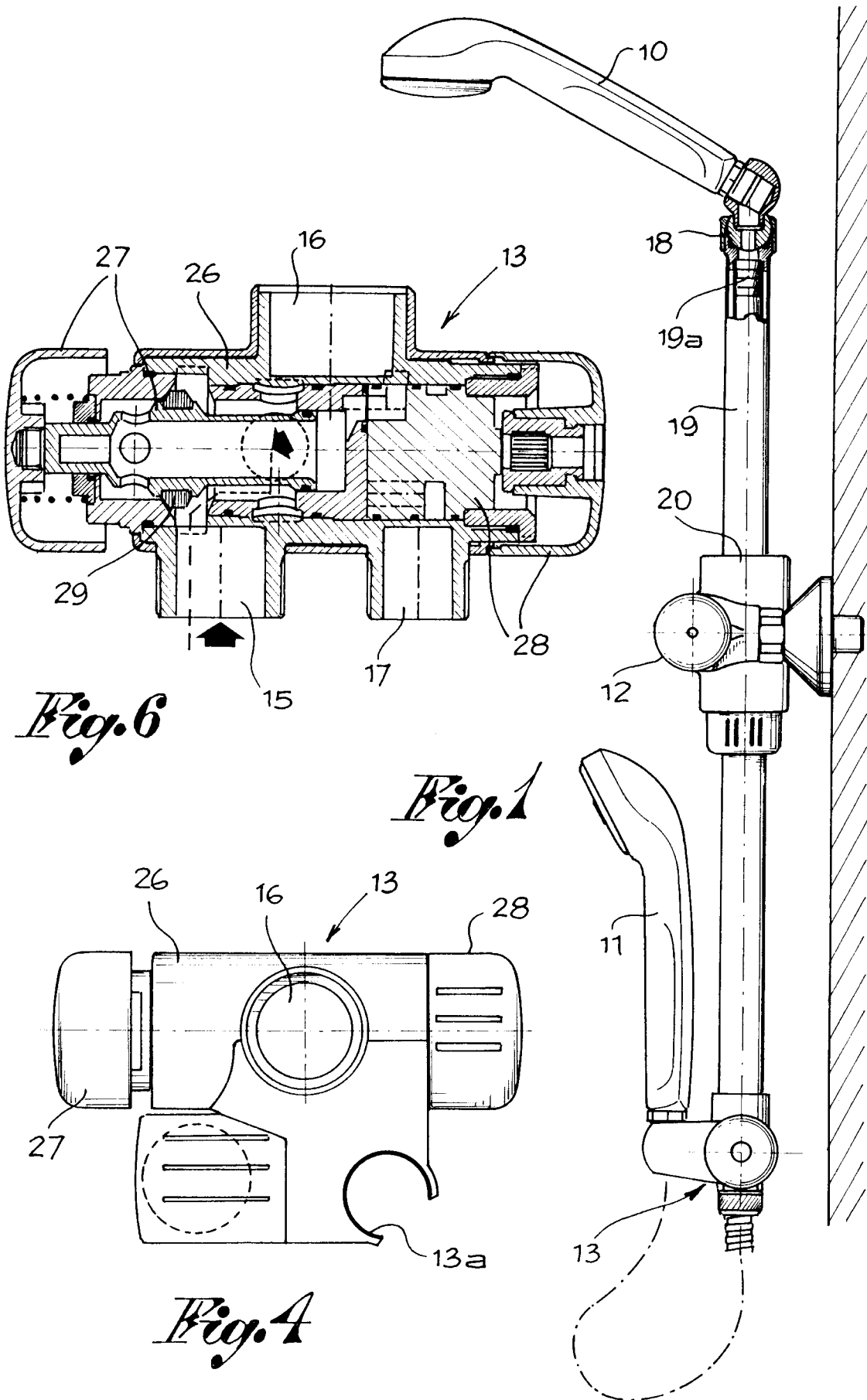
1. A shower unit for sanitary systems such as shower cubicles, bath tubs, public showers and the like, characterized in that a verticle tube (19) is positionable in height in relation to a fixed support (20) and forms a conduit for an either direct or indirect water passage, in that a water distributor switch (13) is fitted to the lower end of said verticle tube (19) and is hydraulically connected to a thermostatic tap (12) or to a mixer or other water delivery control means, in that a wall shower (10) is articulated at the top of said verticle tube (19) and in that at least one manual shower (11) is connected to said distributor switch (13) also having a delivery mouth (14) for the free delivery of water, said distributor switch (13) being able to selectively deviate water coming from said thermostatic tap or mixer to said delivery mouth (14), to said wall shower (10) and/or to said manual shower (11).
2. A shower unit in accordance with claim 1, characterized, in that said verticle tube (19) has a conduit for sending water from said distributor switch (13) to said wall shower (10).
3. A shower unit in accordance with claim 1, characterized in that said verticle tube (19) encloses a flexible or non flexible pipe (19a) for sending water from said distributor switch (13) to said wall shower.
4. A shower unit in accordance to claims 1 and 2 or 3, characterized in that the thermostatic tap or mixer is placed along the verticle tube (19) and is integral with the support (20) of said tube, said tap or mixer connecting to the distributor switch (13) through a flexible pipe (15a).
5. A shower unit in accordance with claims 1 and 2 or 3, characterized in that said verticle tube (19) is fitted to a support (20) which is fixed to

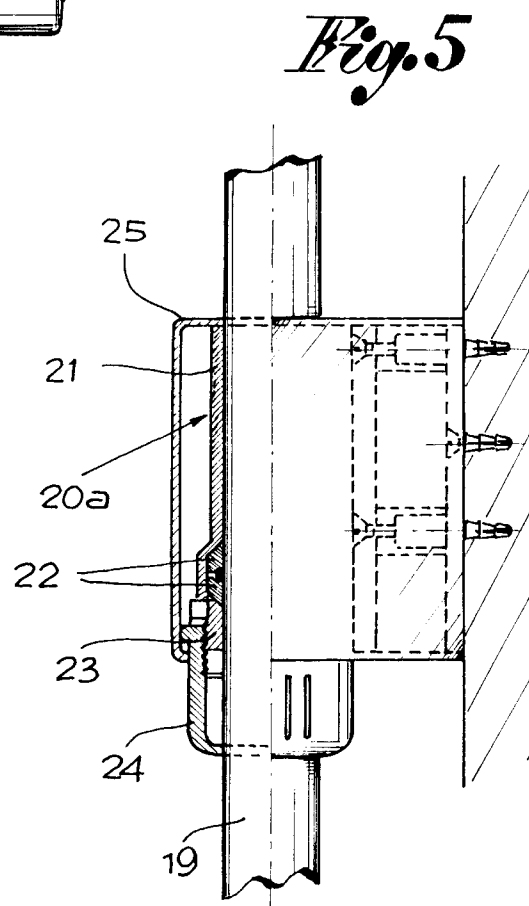
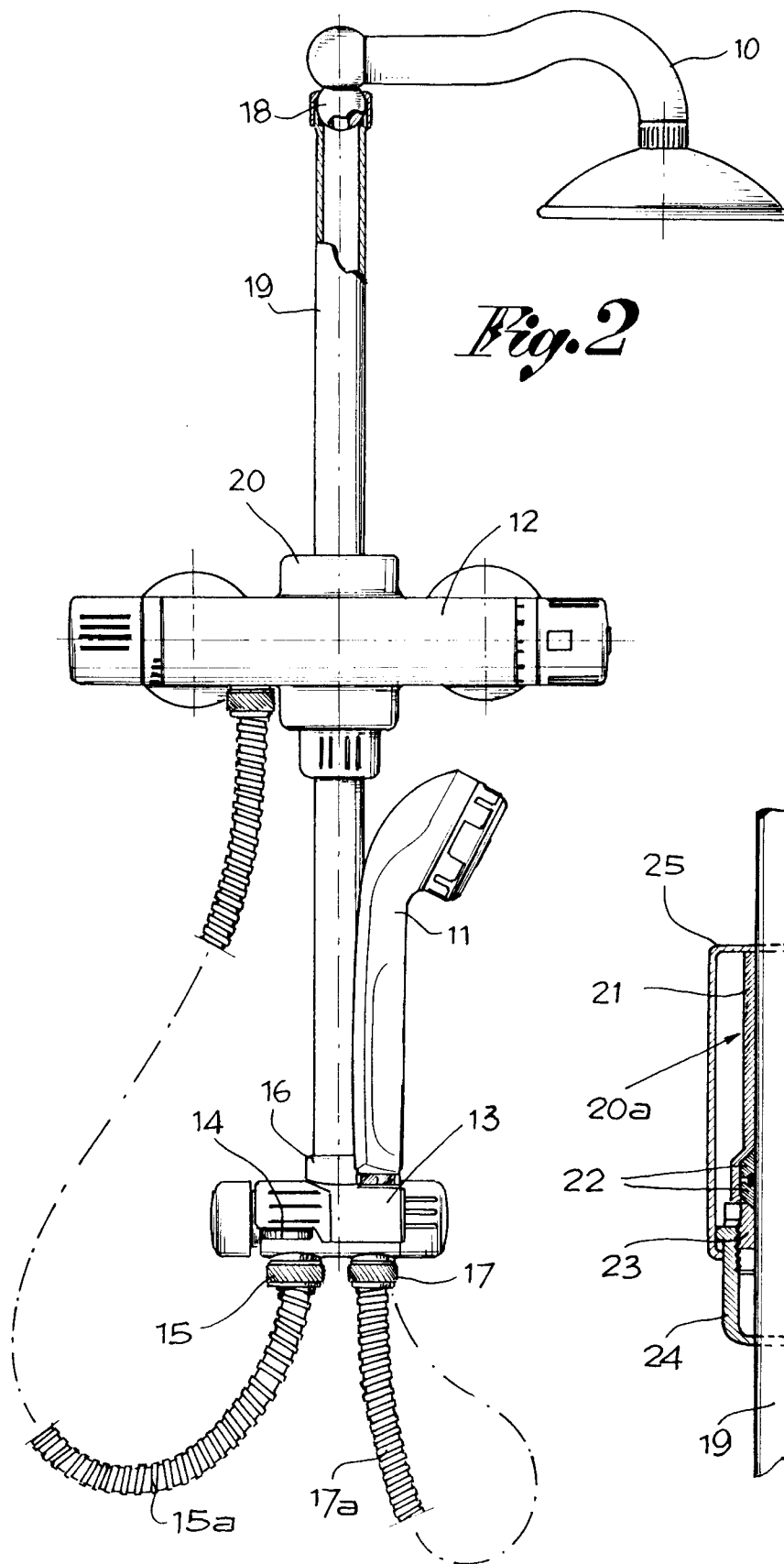
the wall and in that the thermostatic tap or mixer is placed away from said verticle tube and is connected to the distributor switch (13) through a flexible pipe (15a).

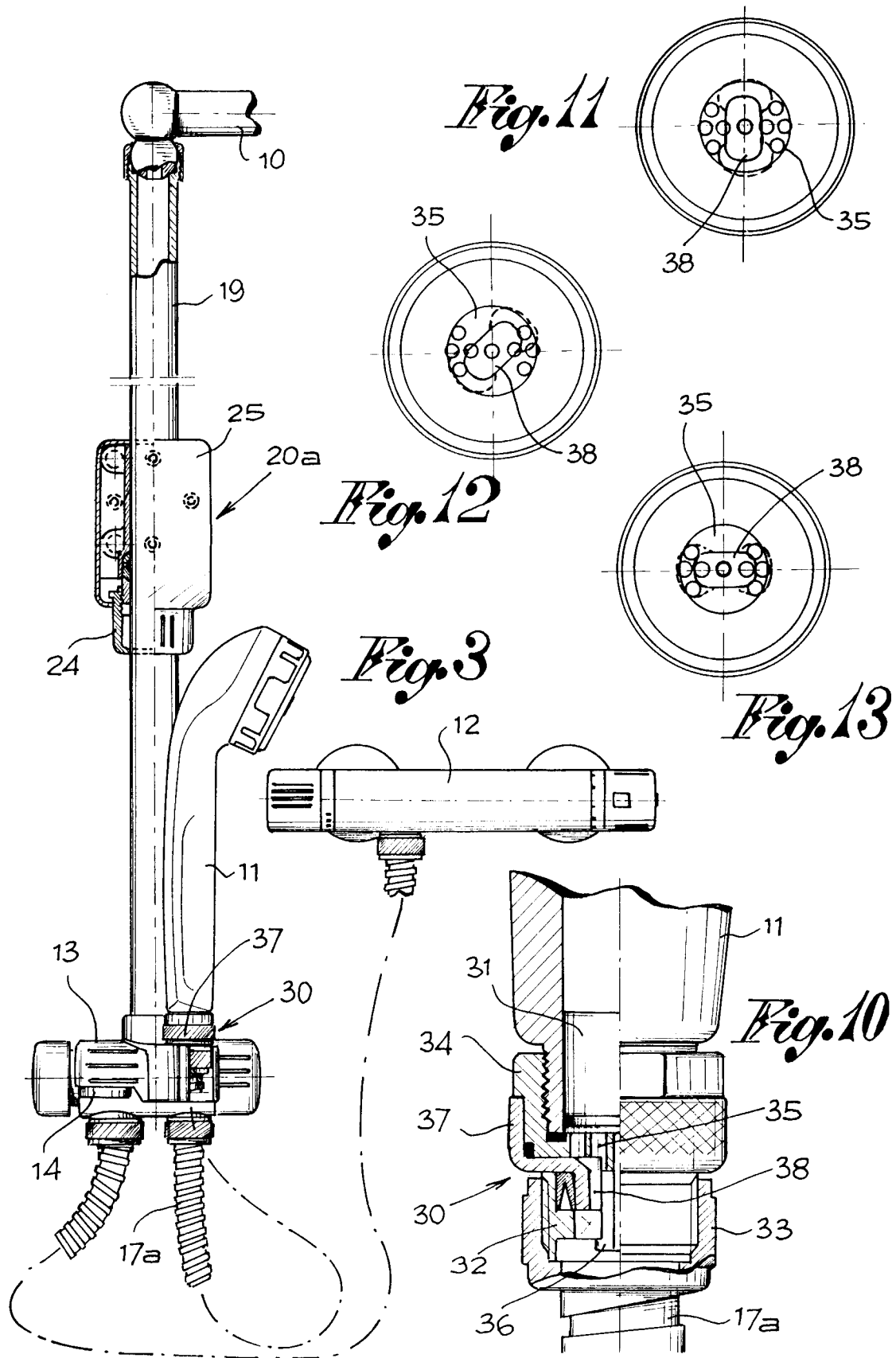
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6. A shower unit in accordance with claims 3 or 4, characterized in that the fixed support (20) has guiding and blocking means (23, 24) of the verticle tube (19) at various heights.
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7. A shower unit in accordance with any one of the preceding claims, characterized in that the distributor switch (13) has a body (26) with an inlet passage (15) for water coming from the thermostatic tap or mixer (12), a first outlet passage (16) for water towards said wall shower (10) through said verticle tube (19), at least a second outlet passage (17) for water towards said manual shower (11) and a free water delivery mouth (14), a push button switch (27) and a rotating distributor (28) in said body, said switch having a shutter (29) and being canalized in order to selectively connect said water inlet passage (15) with said distributor (28) or with said delivery mouth (14), whilst said rotating distributor (28) is canalized for sending water selectively towards the wall shower, towards the manual shower or towards both showers.
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8. A shower unit in accordance with one of the preceding claims, characterized in that the manual shower (11) is connected for the end of a flexible pipe through a rotating union (30), said flexible pipe being connected to the second water outlet passage (17) of the distributor switch (13) and in that said rotating union (30) incorporates a capacity adjuster for the water going towards said manual shower, said capacity adjuster having a rotating adjustable ring nut (37) with an oval-shaped countersunk hole (38) which interacts by selectively closing and opening the holes (35) formed in said connection element (32) fixed to the body of said shower.
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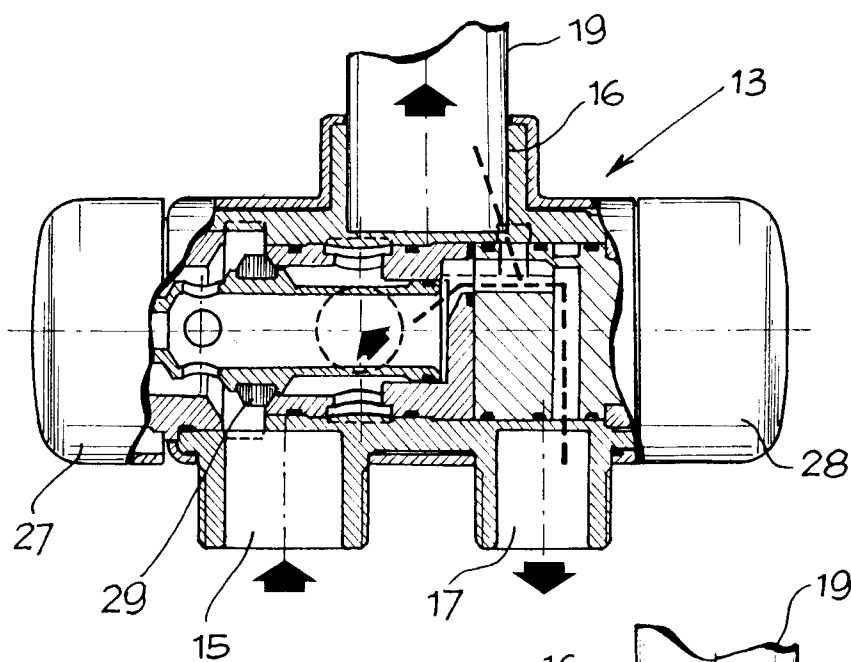


Fig. 7

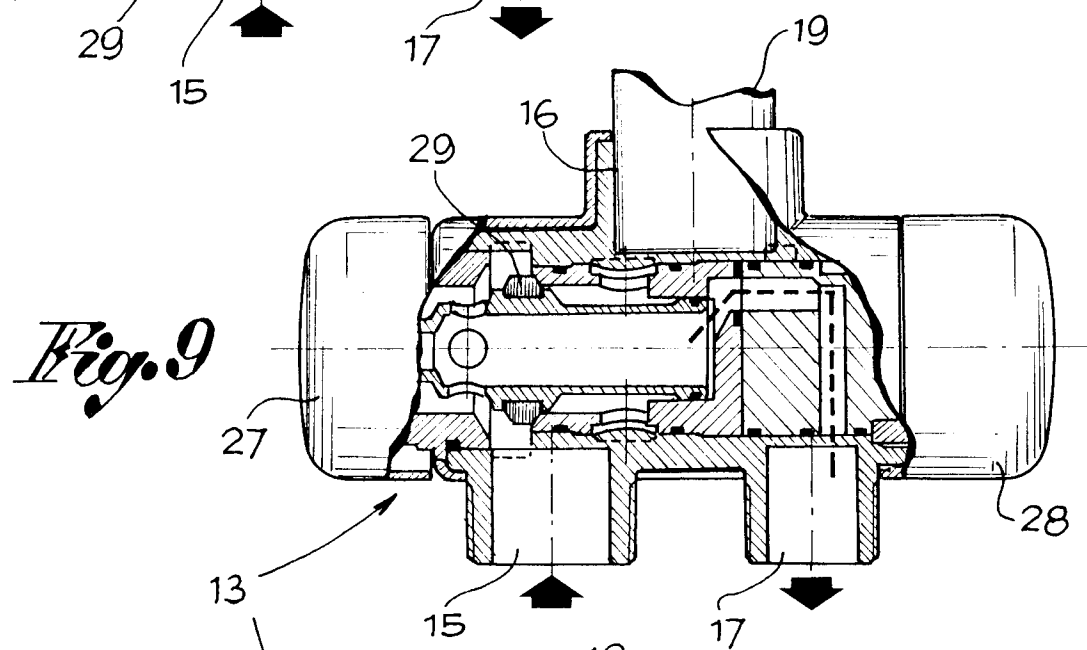


Fig. 9

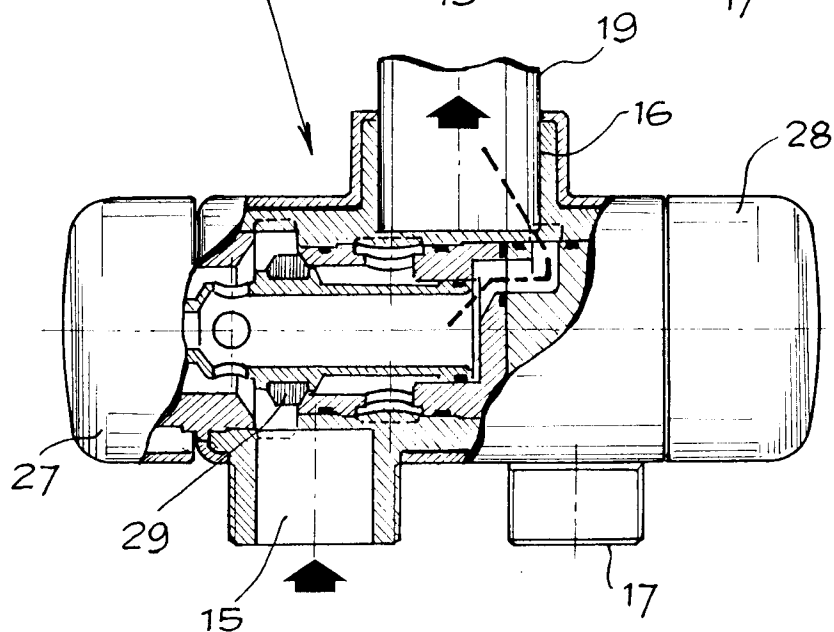


Fig. 8



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EUROPEAN SEARCH REPORT

Application Number

EP 92 83 0404

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)
Y A	DE-A-2 145 014 (HANS GROHE GMBH & CO KG) * page 2, paragraph 2; figures * ---	1-3 7	E03C1/06 A47K3/22
Y	DE-B-2 601 059 (KILB & BRANDENBURG) * the whole document * ---	1-3	
A	FR-A-1 350 509 (SCHMIEDL) * figure 1 * ---	1	
A	DE-A-2 720 507 (KNAPP) * figures * ---	1-6	
A	US-A-1 446 887 (DONOVAN) * the whole document * ---	1,8	
A	EP-A-0 379 035 (HANS GROHE GMBH & CO KG) * claims; figures * -----	1,7	
			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
			E03C A47K
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 18 JUNE 1993	Examiner VAN BEURDEN J.J.C.A
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			