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⑤ Shower having a water outlet adjustable in two positions.

⑦ To provide a shower having water outlets capable of being selected alternately in the form of multiple jets or in an atomised form, there is proportioned a shower handle (11, 21) including a shower head (12, 22) provided with a needle valve (13, 23) forming an inner bulge of the shower head (12, 22), a movable distributing valve (15, 25) with conduits (16-17, 26-27) which are closed by the said needle valve (13, 23) for feeding a first water outlet joined to a plurality of sprayers (111, 216), a fixed discoidal member with conduits (113, 212) for feeding a second water outlet, an alternative to the former water outlet, which is opened or closed by the distributing valve (15, 25), and a shower cover (117, 29) rotary with respect to the shower head (12, 22) which is securely, but detachably, joined to the distributing valve (15, 25) for moving it between its two operative positions, as well as fine holes (121, 217) joined to the said second water outlet, and holes (122, 218) of larger diameter joined to the said first water outlet.

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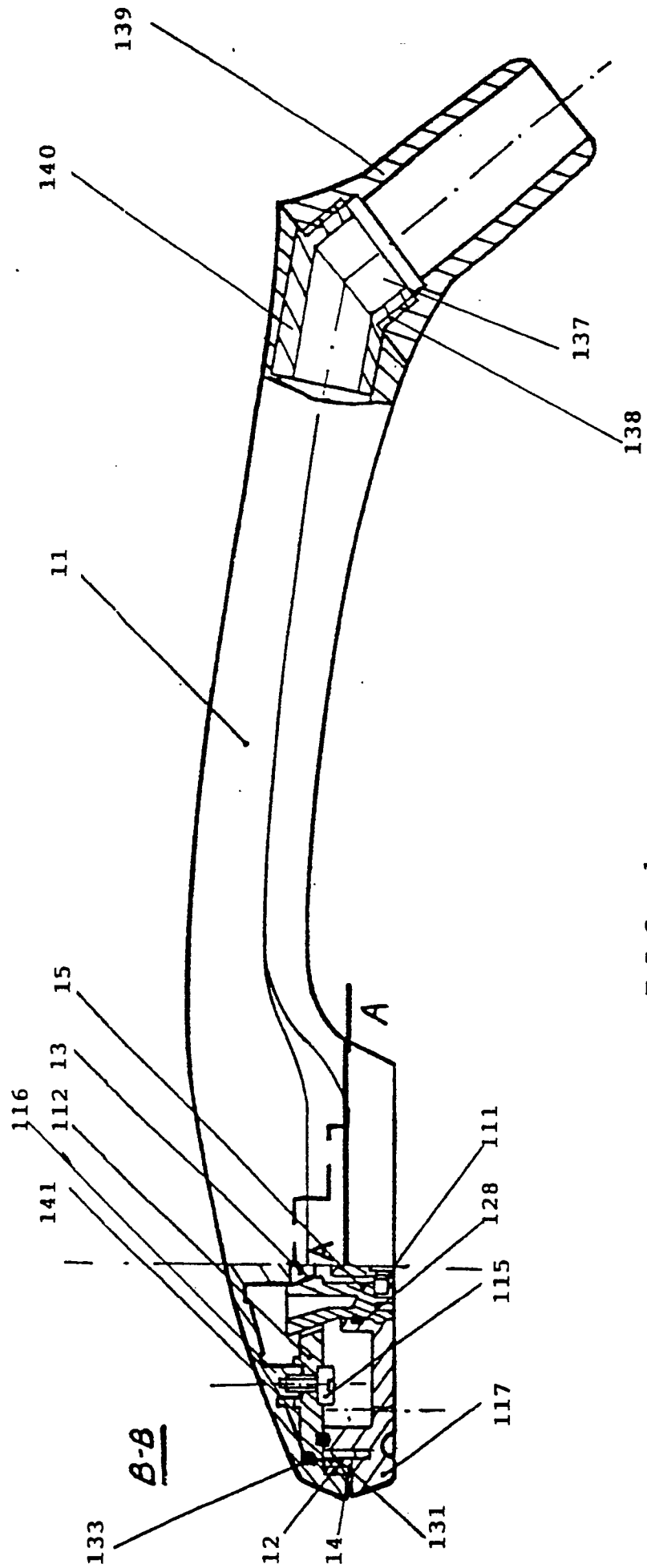


FIG. 1

SHOWER HAVING A WATER OUTLET ADJUSTABLE IN TWO POSITIONS.

The present invention relates to a shower or douche, for example, of the telephone type, having at least two different water outlets capable of being alternately selected. More particularly, the shower is provided with a water outlet having a plurality of jets and another atomised water outlet.

Various models of showers or douches of this type, incorporating devices for varying the characteristics of their water outlets, are known in the market. Hence, showers capable of emitting a plurality of fine water jets and, alternatively, coarser jets having a high air content in the form of bubbles, by activating a two-position button, are known.

The object of this invention is to proportion a shower of the type previously mentioned which is rugged in nature, inexpensive and simple to handle. Additionally, it is an object of the invention to provide the distal end of the shower with an elbow to which will be coupled a water conduit having a configuration suitable for being coupled to an adequate fixing device.

In accordance with the present invention, this object is accomplished inasmuch as the shower will essentially be comprised of :

- A shower handle having a pseudo-spherical end portion in the form of a shower head within which a cylindrical bulge having a needle valve-like truncated ending is centrally provided.
- A distributing valve movable in an axial direction between two positions, incorporating water by-pass conduits, the inlets of which operatively face the said needle valve to close or open them, depending on whether the said distributing valve occupies a raised or a lowered position with respect to the said needle valve, which conduits are connected to a first water outlet joined to a plurality of sprayers.
- A discoidal member securely mounted within the said shower head provided with conduits operatively facing the said distributing valve to open or close them, depending on whether the said distributing valve occupies a raised or lowered position with respect to the said fixed discoidal member, which conduits are connected to a second water outlet, an alternative to that previously mentioned ;
- A shower cover, rotary with respect to the shower head, securely but detachably coupled to the the said distributing valve for moving the said valve in an axial direction between the said raised or lowered positions. the bottom end of which shower cover is provided with a plurality of fine by-pass holes arranged in accordance with concentric circumferences which are joined to the second water outlet fed by the conduits of the

fixed discoidal member, as well as by-pass holes, of larger diameter, joined to the said sprayers connected to the said first water outlet.

In accordance with a preferred mode of embodiment of the invention, the shower head has a perimetral thread cooperative with another thread correspondingly provided in the shower cover, so that the water outlets are selected, alternately, by turning the shower cover with respect to the shower head.

In this embodiment, the distributing valve has an upper truncated portion and a cylindrical end portion which is provided with an axial water by-pass conduit joined to other conduits ending in notches to which the sprayers are coupled. In accordance with the invention, it may be advantageous for the said conduit to be surrounded externally by a blind hollow in order to increase the locking pressure of the said valve on the conduit of the fixed discoidal member ; it may also be advantageous for the end cylindrical portion of the distributing valve to be provided with a notch for preventing the transverse strain thereof.

It may further be advantageous to provide sealing gaskets between the said elements, and more particularly, to provide a sealing gasket between the seat of the shower head and the fixed discoidal member ; similarly, sealing gaskets should be provided between the seat of the fixed discoidal member and the rotary shower cover, as well as between the fixed coupling between the said rotary cover and the distributing valve, and even between the shower head and the rotary shower cover at the threading zone of this latter.

If one of the known telephone-type showers is selected as the preferred embodiment, the handle-shaped end portion will be provided with an ending having an internal thread for an elbow which supports the water supply pipe, and which is made from a synthetic material, for example, from plastic, in order to prevent burns due to heating by the water carried thereby.

In another embodiment of the invention, the threaded coupling between the shower cover and the shower head is replaced by a threading between the movable distributing valve and the fixed discoidal member, the shower cover being securely but detachably joined to the distributing valve, this therefore resulting in a looser threaded coupling, that is to say, the selection of the two possible operative positions by turning the shower cover can be made with a minimum effort. In this embodiment the sprayers are provided on a spraying element fixed to but detachable from the shower cover, therefore resulting in an arrangement capable of being easily detached for cleaning purposes.

For this embodiment, the axial conduit of the dis-

tributing valve is joined to lateral conduits within the said valve for feeding the water to the sprayers, where the said distributing valve forms an upper portion having an enlarged diameter, a second intermediate threaded portion and a bottom portion provided with a housing for a fixing screw to the shower cover. The fixed discoidal member, in turn, has a threaded axial hole for the coupling of the intermediate threaded portion of the distributing valve and water by-pass conduits which lie beneath the upper enlarged portion of the movable distributing valve, so that the said conduits may be closed thereby.

Other characteristics and advantages of the invention will become more apparent from the following description, taken in conjunction with the accompanying drawings, representing non-limited modes of embodiment, and in which :

Figure 1 is an elevational view, partly cut (line B-B) of a telephone-type shower of the invention.

Figure 2 is a lower plan view of the shower of figure 1.

Figure 3 is a plan view of the movable distributing valve of the shower of figure 1.

Figure 4 is a section taken on line A-A of the distributing valve of figure 3.

Figure 5 is a plan view of the fixed discoidal member of the shower of figure 1.

Figure 6 is a section taken on line A-A of figure 5.

Figure 7 is a plan view of the rotary shower cover of the shower of figure 1.

Figure 8 is a sectional view taken on line A-A of figure 7.

Figure 9 is a plan view of a sprayer of the shower of figure 1.

Figure 10 is a sectional view taken on line A-A of figure 9.

Figure 11 is a plan view of the elbow-shaped member of the shower of figure 1.

Figure 12 is a section taken on line A-A of figure 11.

Figure 13 is a partly cut elevational view of a shower according to an alternative embodiment of the invention.

Figure 14 is a lower plan view of the distributing valve of the alternative embodiment of figure 13.

Figure 15 is a section taken on line A-A of figure 14.

Figure 16 is a plan view of the fixed discoidal member of the alternative embodiment of figure 13.

Figure 17 is a section taken on line A-A of figure 16.

Figure 18 is an enlarged detail of the section of figure 17.

Figure 19 is a plan view of the spraying element of the alternative embodiment of the invention of figure 13.

Figure 20 is a partial section taken on line A-A of

figure 19.

Figure 21 is a plan view of a spraying member of the spraying element of figure 19.

Figure 22 illustrates an enlarged detail of the section of figure 20.

Figure 23 is a plan view of the shower cover of the alternative embodiment of the invention shown in figure 13.

Figure 24 is a partial section taken on line A-A of figure 23.

Figure 25 is a plan view of the holes of the shower cover of figure 23.

Figure 26 is a detail of the section of figure 24.

With reference to figures 1 to 12 and in a first preferred embodiment, the shower or douche of the present invention is comprised of a handle 11 with a pseudo-spherical end portion 12, hereinafter called the shower head, within which a cylindrical bulge 13 having a needle valve-like truncated ending, hereinafter called needle valve is centrally provided; additionally, the inner perimetral portion of the said valve head is provided with a thread 14. Further, there is provided a distributing valve 15 having a wide-mouthed inlet conduit 16 connected to other outlet conduits 17, which is coaxial and cooperative with the said needle valve 13. This distributing valve 15 has a first inverted truncated portion 18 and a cylindrical end portion 19, in the base of which there are provided notches 110, preferably three, for the coupling of a like number of sprayers 111, the said notches 110 communicating with the said conduits 17 and consequently with the conduit 16. This arrangement proportions a water by-pass through the said sprayers 111, which is opened and closed by the coupling of the wide-mouthed inlet of the conduit 16 of the distributing valve 15 to the needle valve 13, provided within the shower head 12.

With further reference to figures 1 to 12, and with special reference to figures 5 and 6, it can be seen that a discoidal member 112, having a valve conduit 113, axial and cooperative with the said distributing valve 15, is securely mounted on the shower head 12. In particular, this conduit or hole 113 is truncated having a conicity similar to that of the first portion 18 of the distributing valve 15 with which it cooperates to open or close a passage for the stream of water, as will subsequently be explained in detail. Additionally, this discoidal member 112 is provided with holes 114 for fixing screws 115 in housings 116 correspondingly provided in the shower head 12.

Referring specially to figures 7 and 8, it can be seen that there is provided a disc-shaped shower cover 117, rotatably hinged to the thread 14 of the shower head 12, by means of a screw thread 118, so that it may rotate with respect to the said shower head 12. At the centre of this shower cover 117 there is provided a collar 119 for the fixed, but detachable, coupling of the portion 19 of the distributing valve 5, so

that an integral but detachable whole is formed therewith. Additionally, the cover 117 is provided with a plate 120 having a plurality of by-pass holes 121 in the form of fine holes, arranged according to two concentric circumferences, as well as a central hole 122 communicating with the sprayers 111. As will easily be understood, the turn of the shower cover 117 and the consequent threading on the head 12 will cause the distributing valve 15 to be raised, thereby producing the opening of the central conduit 113 of the fixed discoidal member 112 and the simultaneous closing, by means of the needle valve 13, of the wide-mouthed inlet of the conduit 16. In a similar manner, a turn of the shower cover 117 in an opposite direction will cause the distributing valve 15 to be lowered, with the consequent closure of the central conduit or hole 113 of the discoidal member 112, whilst leaving the said wide-mouthed inlet conduit of the distributing valve 15 free. Thus, the water moving inside the shower head 12 will flow either from the central conduit or hole 113 of the discoidal member 112 and through the fine holes 121 of the shower cover 117, or from the conduits 16 and 17 to the hole 122 through the sprayers 111.

With particular reference to figures 9 and 10, it can be seen that the spraying elements 111 have a central hole 123 and up to four slots 124 arranged in the form of a cross. In this manner, the water is directed through these slots 124 and is expelled in an atomised form through the hole 123 thereof.

As previously mentioned, and as can be seen with more detail in figures 1, 3, 4 and 8, the distributing valve 15 fits closely, at its cylindrical portion 19, into the collar 119 of the shower cover 117. Therefore, the valve 15 is provided with notches 125 and projections 126 cooperative with other notches 127 correspondingly provided in the said collar 119.

As can be seen in figure 1, in order to guarantee the watertightness between the collar 119 of the shower cover 117 and the portion 119 of the distributing valve 15, there is provided an O-ring seal 126 which is coupled between the slots 129 and 130 provided in the cylindrical portion 19 and in the collar 119, respectively. Further, with respect to the watertightness between the thread portions 14 and 18 of the head 12 and the shower cover 117, there is incorporated a plastic ring gasket 31 coupled to a notch provided for such purpose in the said shower cover. Similarly, for the watertightness of the seat between the shower head 12 and the discoidal member 112, there is incorporated a gasket 133 coupled to a notch 134 provided in the said discoidal member 112. Likewise, between the discoidal member 112 and the shower cover 117 there is a gasket 141.

In a preferred embodiment of the invention, it may be advantageous to provide a blind hollow 135 coaxially about the wide-mouthed inlet conduit 16. In this manner, thanks to the water pressure, closure of the

distributing valve 15 on the hole or conduit 113 of the discoidal member 112 is favoured.

It may also be advantageous for the lower cylindrical portion 9 of the distributing valve 15 to be provided with a notch 136 which prevents the member from being strained.

Referring particularly to figures 1, 11 and 12, it can be seen that the distal end of the handle 1 incorporates an elbow-shaped member 137 provided with a thread 138 for the coupling of a water supply pipe 139. As can be seen in the said figures, this elbow 137 has a straight projection 140 fitting into the said distal end of the handle 1.

Another preferred embodiment of the invention will now be described in conjunction with figures 12 to 28.

With particular reference to figures 13, 14 and 15, it can be seen that the shower is comprised of a handle 21 having a pseudo-spherical end portion 22, hereinafter called the shower head, within which there is provided a cylindrical bulge having a needle valve like, hollow, cone-shaped ending 23. Further, operatively facing the said bulge 23, there is provided a substantially cylindrical movable distributing valve 25, incorporating an axial wide-mouthed inlet conduit 26 for coupling to the needle valve 23, which has an upper portion 25a having an enlarged diameter, an intermediate threaded portion 25b with lateral conduits 27 communicating with the axial conduit 26 thereof, and a collar-shaped bottom portion 25c provided with a seating for a screw 28 for fixing the shower cover 29, so that the shower cover 29 is fixed to but detachable from the said movable distributing valve 25. This arrangement proportions a water by-pass through the said conduits 26 and 27, which is opened or closed by the lowering/raising of the movable distributing valve 25, as will subsequently be described in detail, by the coupling of the needle valve 23 to the wide-mouthed inlet of the conduit 26.

With further reference to figures 13 to 15, and additionally to figures 16 to 18, it can be seen that a member 210 having a general discoidal arrangement is firmly mounted on the shower head 22 by means of screws, not referenced, coupled to the seats 24a and 24b. The said member includes a central hole 211 having an internal thread 211a for its coupling to the intermediate threaded portion 25b of the distributing valve 25, and it further includes a plurality of conduits 212 arranged about the said central hole 211. The inlet of the said conduits 212 is disposed at a distance suitable for it to operatively face the upper enlarged portion 25a of the said distributing valve 25. This arrangement proportions an alternate water by-pass to that previously mentioned, which is opened or closed by the raising/lowering of the movable distributing valve 25 when it is threaded in the hole 211 of the discoidal member 210. Further, this discoidal member 210 incorporates perforated projections 210a capable

of being coupled to the seats 24a and 24b of the shower head 22, a tongue 210b supported on the shower head 22 and a ring 210c cooperative with the enlarged section 25a of the distributing valve 25 which proportions an adequate water shutoff. Additionally, the bottom end of this discoidal member 210 has a notch 213 for a gasket 214 which rests on portions 29a provided within the shower cover 29.

In accordance with the foregoing, the turn of the shower cover 29, and the consequent threading/unthreading of the distributing valve 25 on/from the intermediate discoidal member 210, establishes, alternately, water by-passes, either through the conduits 212 of the said member 210, or through the axial conduit 26 and the lateral conduits 27 of the said distributing valve 25. A threaded coupling as that described above, which will normally be moistened by the flow of the water, enables the shower cover 29 to be turned, so that the operative positions can be selected with a minimum effort and without having to use lubricating substances.

Referring again to figure 13, and paying special attention to figures 19 to 22, it can be seen that a substantially cylindrical spraying element 215, incorporating a plurality of sprayers 216, is provided within the shower head 22, positioned between the distributing valve 25 and the shower cover 29. The said spraying element 215 includes a central hole 215a for the coaxial coupling of the collar portion 25c of the distributing valve and a perimetral flange 215b for the support coupling in a notch 29b provided in the shower cover 29. As will more clearly be seen in figures 20 and 22, the sprayers 216 are configured as slightly truncated rods to be coupled to the inner part of the shower cover 29, as will subsequently be explained in detail, and the bottom of the said sprayers is provided with notches 216a in the form of by-passes for the water coming from the lateral conduits 27 of the distributing valve 25, as well as a protruding central portion 216b for causing the water to be sprayed.

With further reference to figures 23 to 26, it can be seen that the bottom end of the shower cover 29 includes a first group of fine holes 217 arranged according to two concentric circumferences, as well as a second group of holes 218 having a larger diameter and a truncated section, arranged concentrically with the former. Referring particularly to figures 24 to 26, it can be seen that the bottom end of the shower cover 29 is provided with a plurality of housings 29c for snugly receiving the rod-shaped sprayers 216 and in which there are provided notches 29d for the water by-pass. It can also be seen on the said figures that the outer part of the shower cover 29 is provided with knurled recesses 29e to enable the turning operation of the said shower cover 29, as well as a hole 29f having a cross-shaped formation, for the matched-coupling to a complementary formation 25d correspondingly provided at the bottom end of the col-

lar portion 25c of the said valve 25.

This embodiment is also provided with a gasket 219 between the shower head 22 and the fixed discoidal member 210.

A shower as that revealed in the foregoing description enables the two possible operative positions to be easily selected. More particularly, the shower of the second alternative embodiment enables the turning stress, to change from one operative position to the other to be highly reduced, and it also enables the operation of detaching it, for the purpose of maintaining and cleaning the sprayers, to be carried out. Further, the amount of water consumed, when in the atomised water position, is substantially reduced, and this consequently results in a saving in the energy necessary to heat the water.

Having described the object of the invention in sufficient detail, there only remains to be said that the embodiments resulting from variations in shape, materials and the like, as well as those resulting from the routine application of the foregoing teachings should be deemed as included within the scope thereof, in accordance with the following claims.

Claims

1. Shower having a water outlet adjustable in two positions, of the type having water outlets in the form of multiple jets and in an atomised form, characterised in that it is comprised of :
 - A shower handle (11, 21) having a pseudo-spherical end portion (12, 22) in the form of a shower head, within which a bulge (13, 23) in the form of a needle valve is centrally provided ;
 - A distributing valve (15, 25), movable in an axial direction between two positions, incorporating water by-pass conduits (16-17, 26-27), the inlets of which operatively face the said needle valve (13, 23) for closing or opening them, depending on whether the said distributing valve (15, 25) occupies an axially raised or lowered position with respect to the said needle valve (13, 23), which conduits (16-17, 26-27) are connected to a first water outlet joined to a plurality of sprayers (111, 216) provided for such purpose ;
 - A discoidal member (112, 210) firmly mounted within the said shower head (12, 22), provided with conduit/s (113, 212) operatively facing the said distributing valve (15, 25), for opening or closing them, depending on whether the said distributing valve (15, 25) occupies an axially raised or lowered position with respect to the said fixed discoidal member (112, 210), which conduit/s (113, 212) is/are connected to a second water outlet, an

alternative to the former ; and

– A shower cover (117, 29) which can rotate about the shower head (12, 22), securely but detachably coupled to the said distributing valve (15, 25) for moving the said valve (15, 25) in an axial direction between the said raised or lowered positions, the bottom end of which cover (117, 29) is provided with a plurality of fine holes (120, 217) arranged according to concentric circumferences which are connected to the second water outlet fed by the conduit/s (113, 212) of the fixed discoidal member (112, 210), as well as by-pass holes (112, 218) having a larger diameter and also concentric with the former, connected to the said sprayers (111, 216) joined to the said first water outlet.

2. Shower according to claim 1, characterised in that the distributing valve (15) has an upper inverted truncated portion (18) which is cooperative, for its closure/opening, with conduit (113) of the said fixed discoidal member (112), and a substantially cylindrical bottom end portion (19), the base of which is provided with notches (110) for the coupling of the said sprayers (111) which are connected to the conduits (17) of the distributing valve (15).
3. Shower according to claims 1 and 2, characterised in that the shower head (12) has a perimetral thread (14) for the coupling of a thread (118) correspondingly provided in the shower cover (117); and in that a collar (119) is axially provided within the shower cover (117) for securely but detachably coupling the distributing valve (15).
4. Shower according to claim 1 to 3, characterised in that the coaxial conduit (16) of the distributing valve (15) is coaxially and externally provided with a blind hollow (135) to increase the locking pressure on the central conduit (113) of the fixed discoidal member (112), thanks to the pressure of the water ; and further in that the bottom end portion (19a) of the distributing valve (15) is provided with a notch (136) to increase the resistance thereof.
5. Shower according to claims 1 to 4, characterised in that the sprayers (111) are comprised of a cylindrical body for fitting into each of the notches (110) of the distributing valve (15) and they have a tiny hole (123) and up to four slots (124) arranged in the form of a cross for the flow of the water.
6. Shower according to claim 1, characterised in that the movable distributing valve has an upper portion (25a) of enlarged diameter, a laterally threaded intermediate portion (25b), in which the said conduits (17) are laterally provided, and a collar-shaped bottom end portion (25c) for the coupling of the shower cover (29) by means of a screw (28) ; and in that there is provided, within the conduits (212) of the fixed intermediate discoidal member (210), a central hole (211) with an internal thread (211a) for the coupling of the intermediate threaded portion (25b) of the said distributing valve (25), so that the said conduits (212) can be opened/closed by the threading/unthreading of the distributing valve (25) on/from the said discoidal member (210), that is to say, by turning the shower cover (29) in one direction or the other ; and further in that the sprayers (216) are provided as rods arranged circumferentially along the bottom end of a spraying element (215) having a central hole (215a) for the axial coupling of the collar-shaped bottom portion (25c) of the distributing valve (25) ; and in that the inside of the shower cover (29) is provided with a notch (29b) for receiving the perimetral flange (215b) of the spraying element (215), as well as housings (29c) for the rod-shaped sprayers (216).
7. Shower according to claims 1 and 6, characterised in that the housings (29c) of the shower cover (29) are provided with notches (29d) for the water by-pass cooperative with notches (216a) and a central portion (216b) correspondingly provided in the said sprayers (216) of the spraying element (210).
8. Shower according to claims 1, 6 and 7, characterised in that the central hole (29f) of the shower cover (29) is provided with a cross-shaped formation for the matched-coupling to a complementary formation (25d) correspondingly provided at the bottom end of the distributing valve (25).
9. Shower according to claims 1 or 6, characterised in that the needle valve-shaped bulge (13, 23) is substantially cylindrical with a hollow truncated ending.
10. Shower according to claims 1 or 6, characterised in that the distal end of the shower handle (11, 21) is provided with an elbow-shaped element (137) having a thread (138) for the coupling of a water supply pipe (139) which has a straight projection (140) fitting into the said distal end of the handle (11, 21).

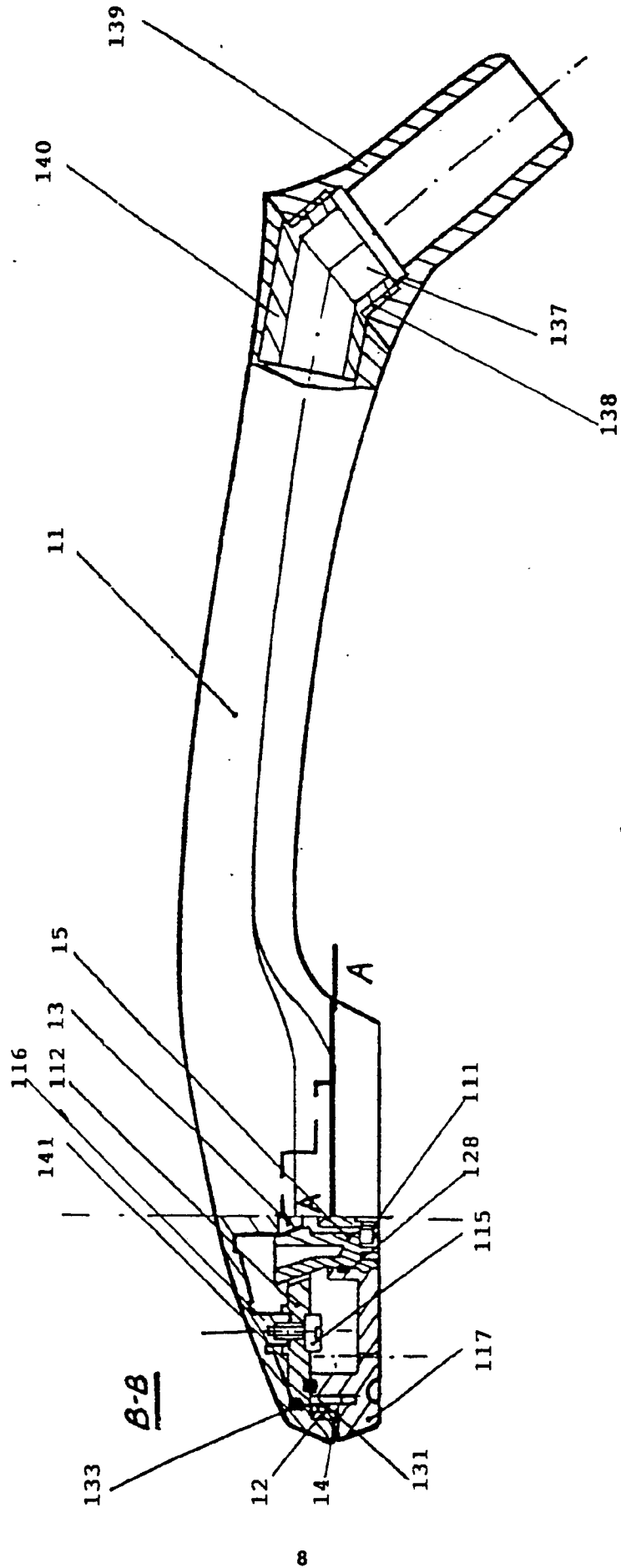


FIG. 1

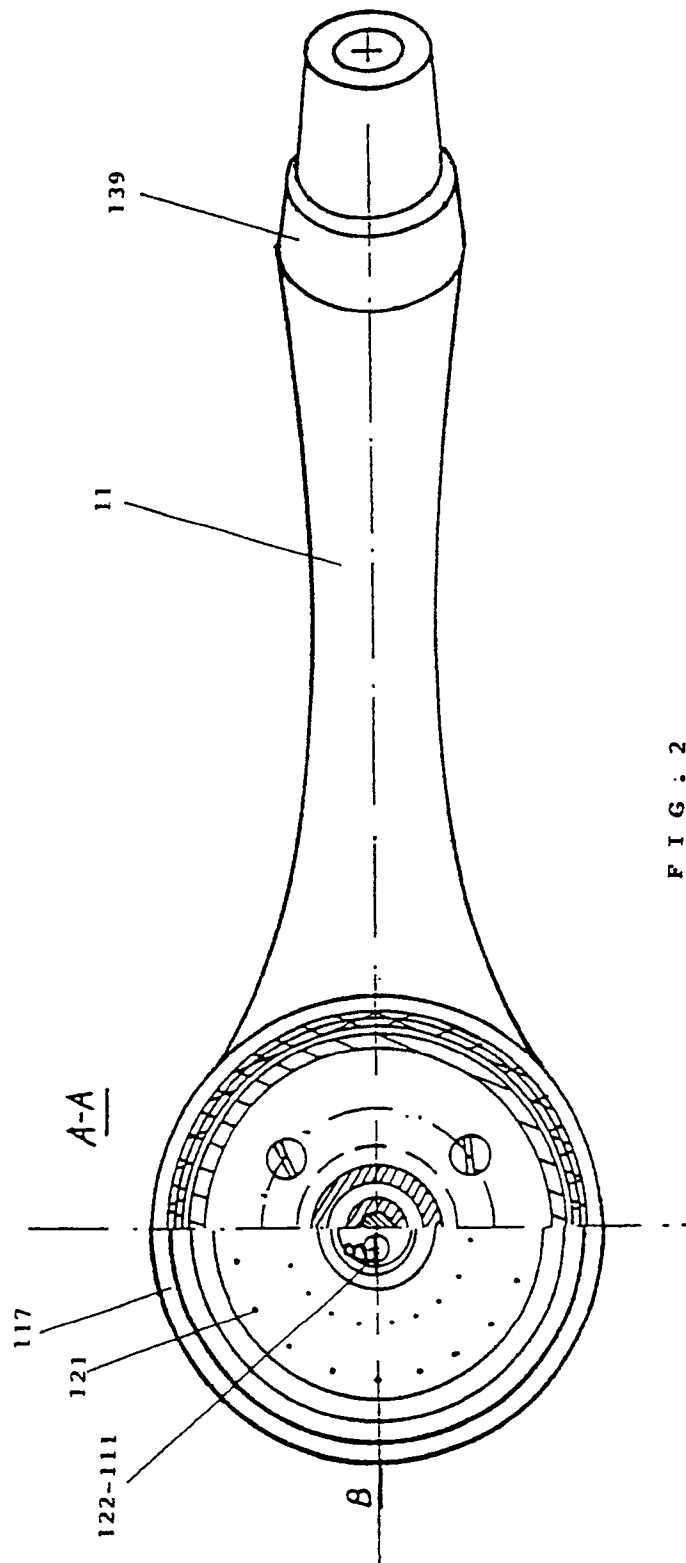
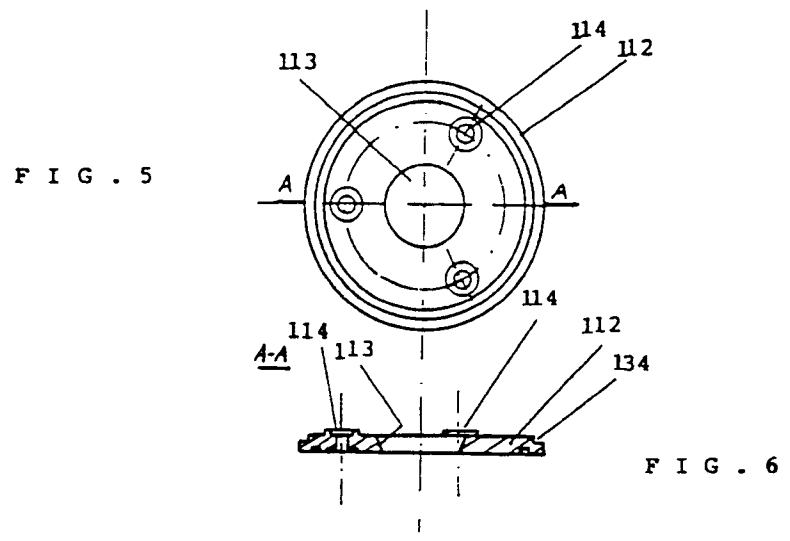
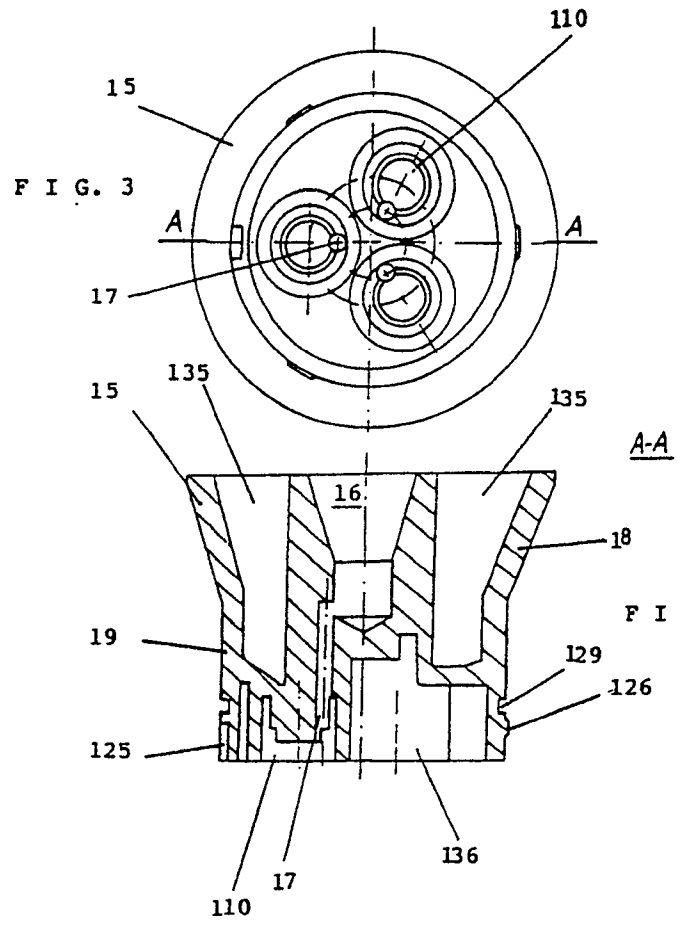
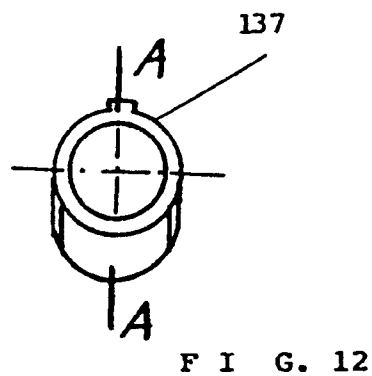
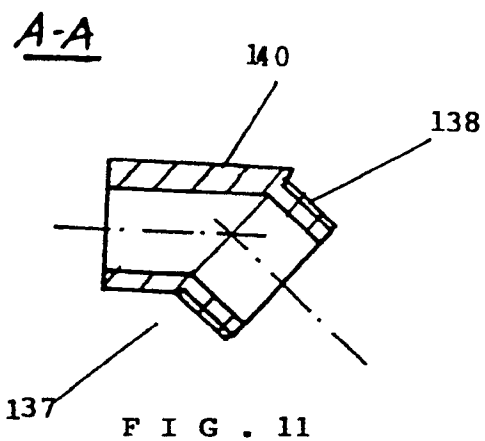
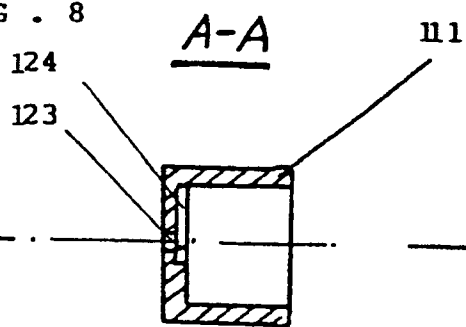
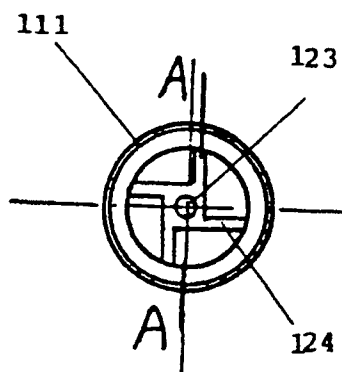
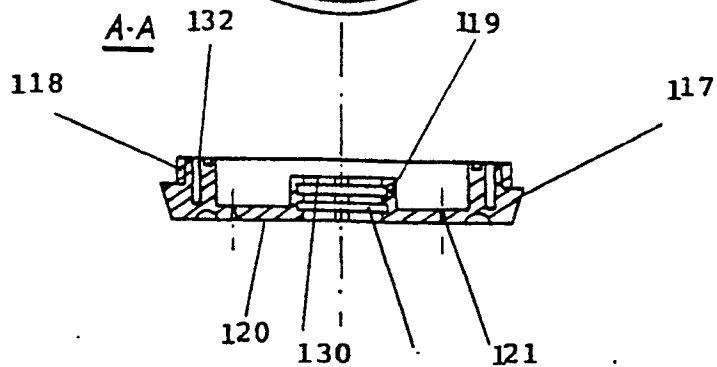
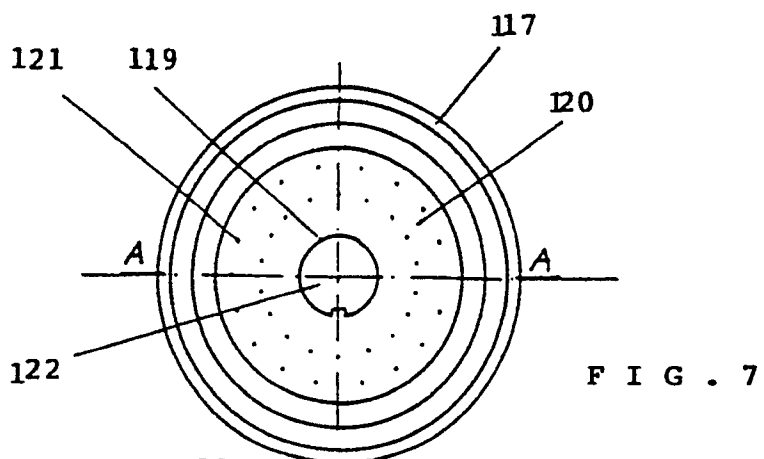


FIG. 2





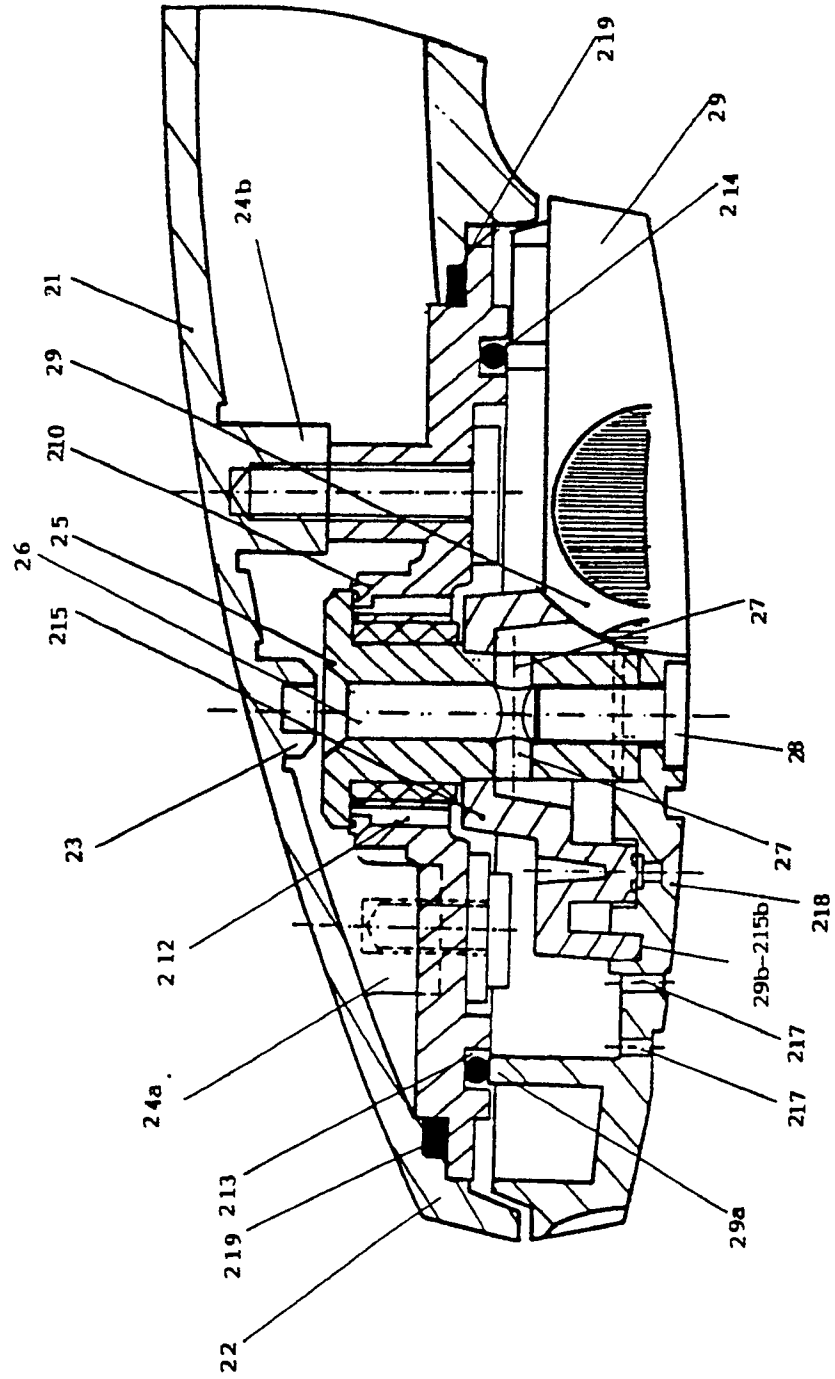


FIG. 13

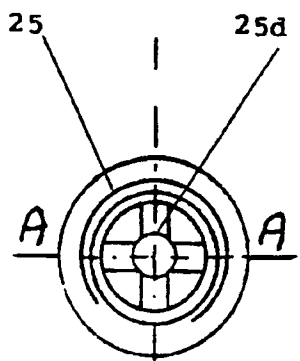


FIG. 14

A-A

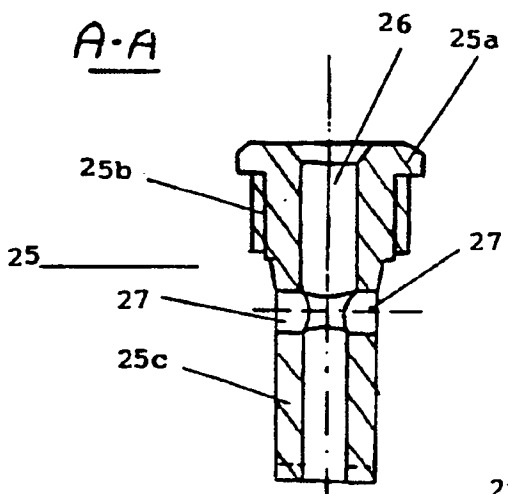


FIG. 15

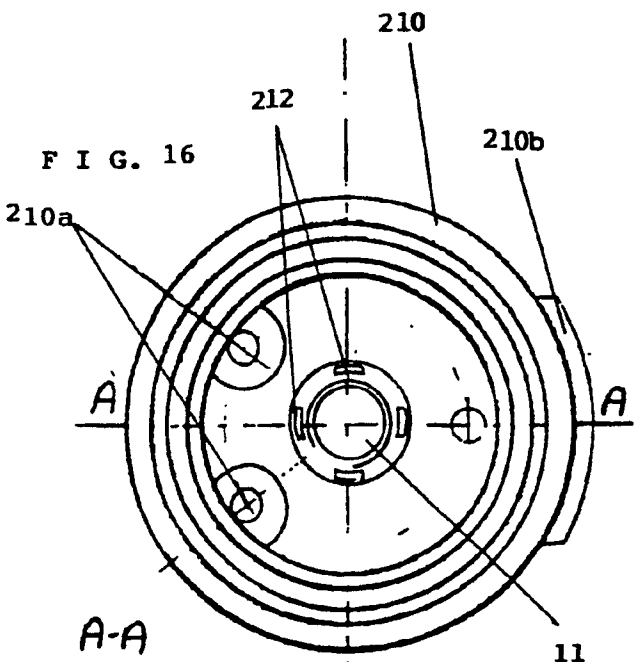


FIG. 16

A-A

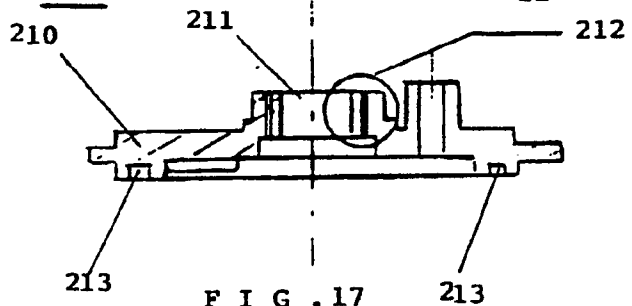


FIG. 17

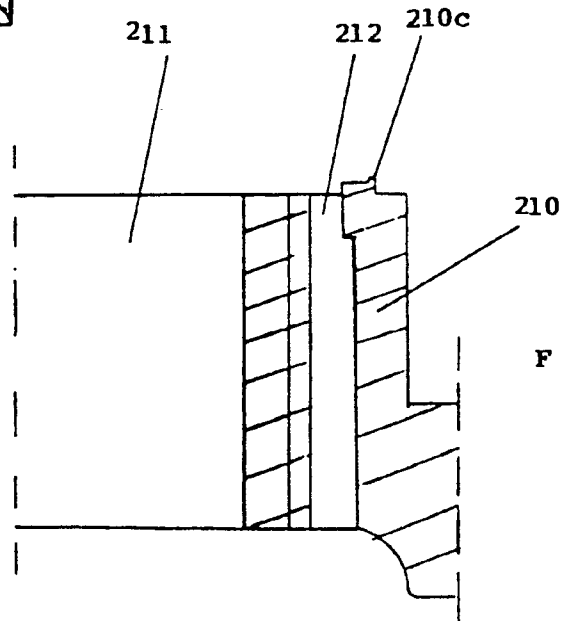
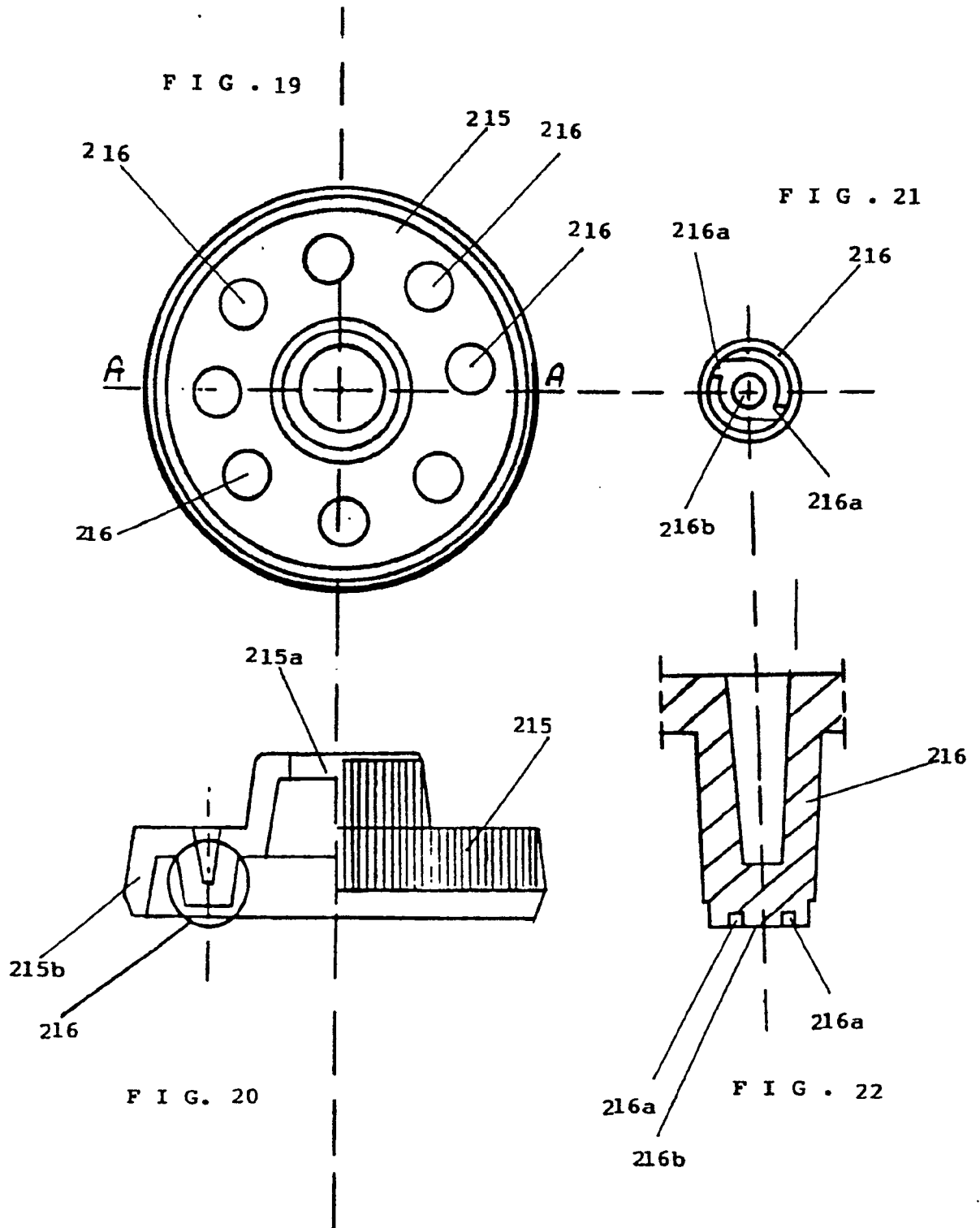
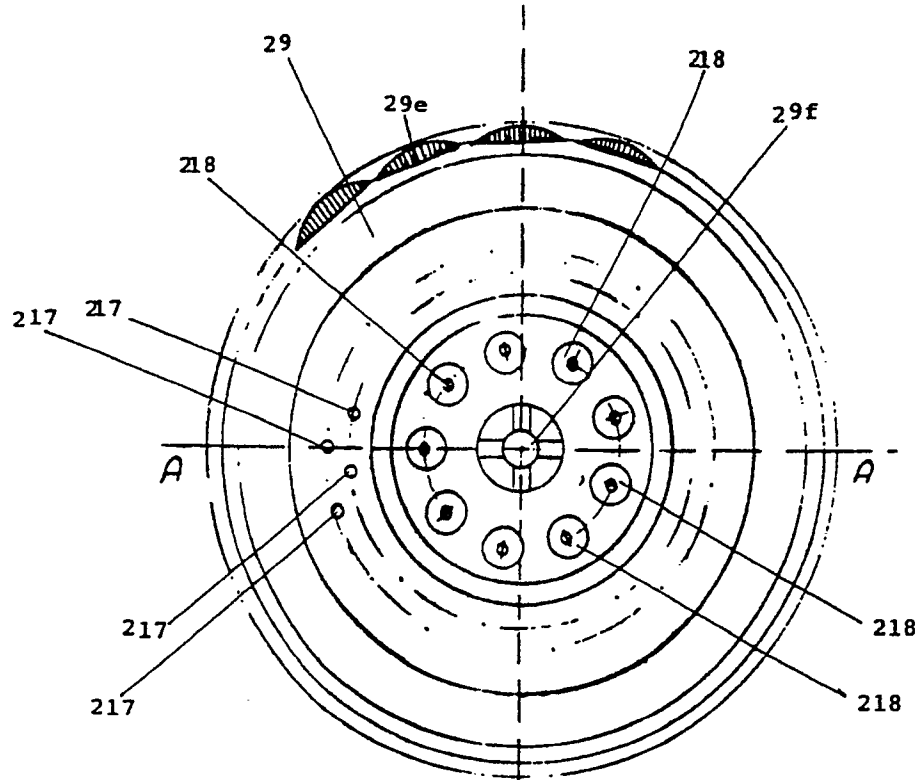
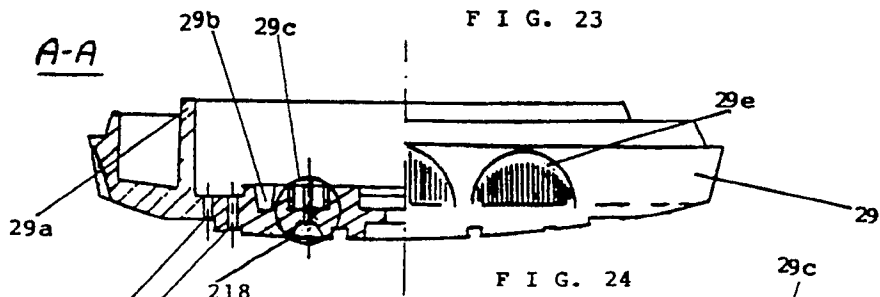


FIG. 18

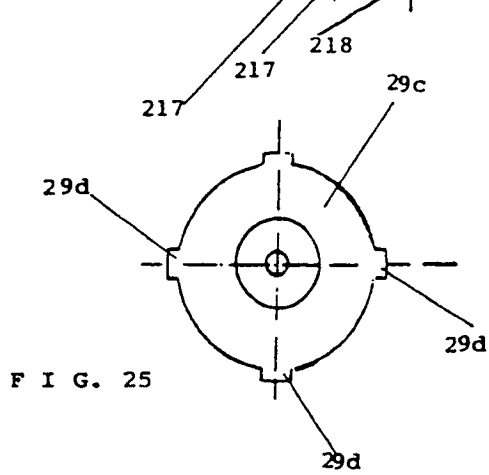




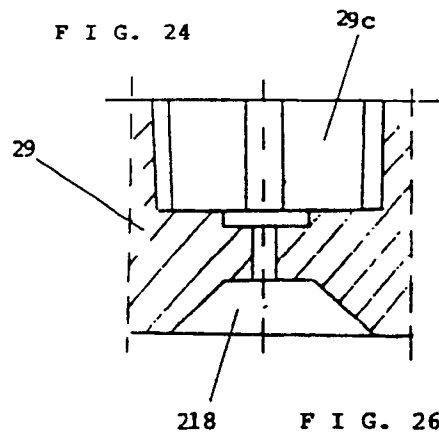
F I G. 23



F I G. 24



F I G. 25



F I G. 26