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(54) Shower-bath water delivery apparatus with associated wall support means

(57) Shower-bath water delivery apparatus comprising a water spray head (1) connected to a flexible water supply hose (2) through a conduit (3) housed in a handle portion (4). Support means for the water delivery apparatus comprise a vertical groove (14), formed in a wall (15), to which said the portion (4) is capable of being removably attached, by interference of shapes and/or elastic deformation, in a position that can be selectively varied longitudinally to adjust its height.

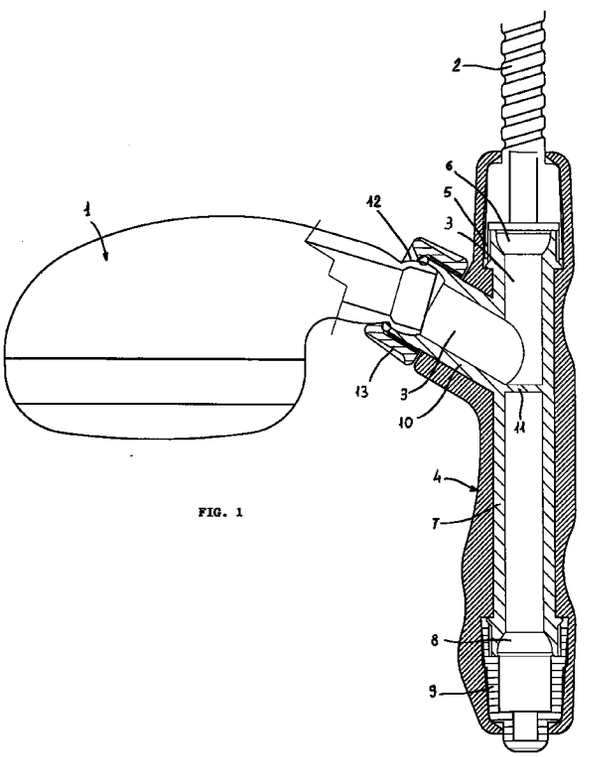

FIG. 1

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Description

The present invention refers to a shower-bath water delivery apparatus of the type generally known also by the term "douche" and comprising a spray head connected to a flexible water-supply hose through a conduit housed in a handle.

Such water delivery apparatuses are generally known to be usually associated with support means adapted to slide along a vertical wall-mounted rod and lockable with respect thereto by screw-type or similar locking mechanisms. As a result, the water delivery apparatus can be either directly hand-held by a person or be hung to its support means in a position that can be adjusted to any suitable height.

All these solutions, however, involve the use of a great number of component parts to attach the vertical rod to the wall and to install the water delivery apparatus on the rod assembly. Furthermore, such a rod assembly, owing to its being mounted protrusively from the wall, may turn out as being undesirably obstructive and can most easly cause the persons using the shower-bath to suffer contusions or even injuries.

It is therefore a purpose of the present invention to provide a shower-bath water delivery apparatus which is particularly safe and convenient to use, as well as associated with particularly simple and unobstructive wall-mount support means.

According to the present invention, such an aim is reached in a shower-bath water delivery apparatus, and related wall-mount support means, incorporating the features as set forth in the appended claims.

The characteristics and the advantages will be more readily apparent from the description which is given below by way of non-limiting example with reference to the accompanying drawings, in which:

- Figure 1 is a partially sectioned side view of an embodiment of the water delivery apparatus according to the present invention;

- Figure 2 is a schematic front view of the water delivery apparatus illustrated in Figure 1, shown without its spray head and associated to wall-mount support means;

- Figure 3 is a partially sectioned side view of the water delivery apparatus illustrated in Figure 2;

- Figure 4 is a cross-section view of the water delivery apparatus illustrated in Figure 2, shown in a condition in which it is hung on to wall-mount support means associated therewith, in a first embodiment thereof;

- Figure 5 is a cross-section view similar to the one illustrated in Figure 4, but shown in a second embodiment thereof;

- Figure 6 is a view of a variant of the water delivery unit shown in Figure 1.

Referring in particular to Figures 1, 2 and 3, it can be noticed that the shower-bath water delivery apparatus is illustrated to mainly include a water spray head 1, preferably of the adjustable type, which is connected to to a flexible water supply hose 2 through a conduit 3 housed in a handle 4.

More precisely, the flexible hose 2 is connected by means of a threaded ring nut 5 to the upper end portion 6 of a substantially rectilinear rigid pipe 7 extending longitudinally within the handle 4. The opposite end portion 8 of said rigid pipe 7 is preferably closed by a cup-like threaded element 9. Furthermore, the rigid pipe 7 comprises an integrally formed transversal offshoot 10, preferably adjacent to the above mentioned end portion 6, downstream of which the pipe 7 is provided with an inner closing rib 11. Conclusively, the conduit 3 is substantially formed by the transversal offshoot 10 and that portion of the pipe 7 which lies upstream of the rib 11.

The water spray head 1 comprises an end portion 12 having a partially spherical surface, by means of which it is mounted in a swivelling manner on the free end portion of the transversal offshoot 10, which is innerly shaped in a corresponding manner, by means of a threaded locking ring 13. In contrast with prior art solutions, therefore, the water spray head 1 is not connected to the rigid pipe 7 in a straight, butt-joint like manner, but is on the contrary arranged laterally with respect thereto, in correspondence of the transversal offshoot 10.

It should be noticed that the water delivery apparatus must normally operate in its vertical position, so as illustrated in the Figures, so that the sealing rib 11 is able to most advantageously prevent water from stagnating in the portion of rigid pipe 7 which lies downstream of the same rib.

At least a part of the handle 4, which is more clearly illustrated in the Figures 2 and 3, can be made of suitably overmoulded soft rubber or similar material so as to substantially enclose the rigid pipe 7 with its offshoot 10. Thanks to the flexibility of such a material, in correspondence of the end portion 6 of the pipe 7 the handle 4 can most easily be enlarged elastically in order to allow for the introduction of the locking nut 5 and, therefore, the connection of the flexible hose 2 with the rigid pipe 7.

According to a further feature of the present invention, the water delivery apparatus is associated with simple wall-mount support means which most advantageously do not include any protruding element. In particular, referring also to Figure 4, it can be noticed that such support means include at least a substantially vertical groove 14, which is provided in a wall 15, to which the handle 4 is capable of being attached in a removable manner in a position that can be selectively varied longitudinally.

Thanks to the afore described lateral arrangement of the water spray head 1, the handle 4, and the whole water delivery apparatus with it, can be attached longitudinally in the groove 14 by interference.

In the case that the handle 4 is at least partially made of soft, flexible material, as afore mentioned, the water delivery apparatus would not require the provision of special means for it to be locked in position in the groove 14, which may be rectilinear and uniform. By appropriately sizing the groove 14 and the flexible handle 4 in their cross-section dimension, it is in fact possible, by exerting a slight pressure thereupon, for the same handle to get attached longitudinally in the groove 14 by interference through elastic deformation, as shown in Figure 4.

In practical use, the water delivery apparatus according to the present invention can be easily and conveniently seized and held by its handle 4 which is preferably given an ergonomic shape. Alternatively, the water delivery apparatus may be wall-mounted to an adjustable height, ie. in a position that can be varied longitudinally at will, ie. as desired, with respect to the groove 14 in the wall 15. In this connection, the adjustment of the height of the water delivery apparatus can be carried out by either letting the handle 4 to longitudinally slide along the groove 14 or pulling out the handle from the groove and, while exerting a slight pressure thereupon, re-attaching it in a different position in the same groove.

The operations involved in attaching and removing elastically the handle 4 to and from the support groove 14 may be further facilitated by integrally providing at least a pair of projections 16, 17 substantially opposing each other on the side surface of the handle. Such projections would in fact minimize the surface of interference between the handle 4 and the groove 14, thereby advantageously reducing the effort which the user is requested to apply when carrying out said operations for attaching and detaching the handle.

Alternatively, for the water delivery apparatus to be positioned in a more stable manner, the handle 4 may be attached longitudinally in the groove 14 by the interference of the shapes. In this particular case, the handle may be made of a rigid, instead of a soft or flexible material. As illustrated in Figures 2 and 5, for instance, the interference of shapes with the groove 14 is preferably obtained by making use of the projections 16, 17 of the handle 4. In this case, the handle 4 may be locked in the groove 14, in a position that can be selectively varied longitudinally, by means of attachment provisions arranged at discrete levels, which may for instance be formed by a plurality of appropriately shaped support recesses 18 provided laterally in the groove 14 and adapted to loosely accomodate the projections 16, 17 of the handle, so as to support the whole water delivery apparatus.

As best illustrated in Figures 2 and 4, for the position of the water delivery apparatus to be changed along the groove 14, it will be sufficient for the handle 4 to be pulled out frontally, so as to cause the projections 16, 17 to disengage the associated support recesses 18, and the water delivery apparatus to be then re-positioned longitudinally in the groove 14 by letting the projections 16, 17 engage other support recesses 18 situated at a different height. In a preferred manner, both the projections 16, 17 of the handle 4 and the support recesses 18 of the groove 14 are provided in a two-by-two, side-by-side arrangement.

It will of course be appreciated that the afore described shower-bath water delivery apparatus may be the subject of a number of modifications without departing from the scope of the present invention.

For example, the flexible water supply hose 2, as shown in Figure 6, may be connected, via the threaded coupling ring 5, to the lower end portion 8 of the rigid pipe 7. In such a case, the threaded cup-like sealing element 9 will close the upper end portion 6 of the rigid pipe 7. The rib 11 may on the contrary be omitted, or it may be provided in a different, higher position, ie. downstream of the offshoot 10 with respect to the water supply hose 2. In any case, the conduit 3 will be formed by the offshoot 10 and that portion of rigid pipe 7 which connects the same offshoot with the flexible water supply hose 2.

It will be further appreciated that the water delivery apparatus according to the present invention may be selectively attached in the groove 14 in a combined manner, ie. by both interference of shapes and elastic deformation.

In a further variant of the afore described embodiment according to the present invention, only the walls of the groove 14 or, alternatively, also the walls of the groove 14 may be made of an appropriate flexible material facilitating said interference coupling by elastic deformation.

Claims

1. Shower-bath water delivery apparatus comprising a water spray head connected to a flexible water supply hose through a conduit housed in a handle portion, wall-mount support means being adapted to hold the water delivery apparatus in a position that can be adjusted in its height, **characterized in that** said support means comprise at least a substantially vertical groove (14) which is formed in said wall (15) and to which said handle portion (4) is capable of being removably attached by interference in a position that can be selectively varied in a longitudinal direction.

2. Shower-bath water delivery apparatus according to claim 1, **characterized in that** the handle portion (4) is adapted to be attached longitudinally in said groove (14) by the interference of the shapes.

3. Shower-bath water delivery apparatus according to claim 2, **characterized in that** the handle portion

(4) is adapted to be attached longitudinally in said groove (14) by the interference of the shapes in correspondence of at least a pair of substantially opposite projections (16, 17) provided on the side surface of the same handle portion.

4. Shower-bath water delivery apparatus according to claim 3, **characterized in that** said groove (14) is provided with a plurality of side support recesses (18) arranged at discrete levels and adapted to selectively accomodate and support said projections (16, 17) of the handle portion (4).

5. Shower-bath water delivery apparatus according to any of the preceding claims, **characterized in that** at least a part of the handle portion (4) is flexible and adapted to be attached longitudinally in said groove (14) by interference through elastic deformation.

6. Shower-bath water delivery apparatus according to claim 5, **characterized in that** the handle portion (4) is adapted to interfere by elastic deformation with said groove (14) in correspondence of at least a pair of substantially opposite projections (16, 17) provided on the side surface of the same handle portion.

7. Shower-bath water delivery apparatus according to any of the preceding claims 1 to 4, **characterized in that** the walls of said groove (14) are flexible and the handle (4) is capable of being attached longitudinally in said groove (14) by interference through elastic deformation.

8. Shower-bath water delivery apparatus according to claim 1, **characterized in that** said conduit (3) is formed by at least a portion of rigid pipe (7) extending longitudinally inside the handle portion (4), as well as an offshoot (10) extending transversally from said rigid pipe (7), said water spray head (1) being attached to an end portion of said offshoot.

9. Shower-bath water delivery apparatus according to claim 8, **characterized in that** the water spray head (1) is connected to said offshoot (10) in a swivelling manner.

10. Shower-bath water delivery apparatus according to claim 8, **characterized in that** the flexible water supply hose (2) is connected to an end portion of said rigid pipe (7), which comprises an inner sealing rib (11) situated downstream of the offshoot (10).

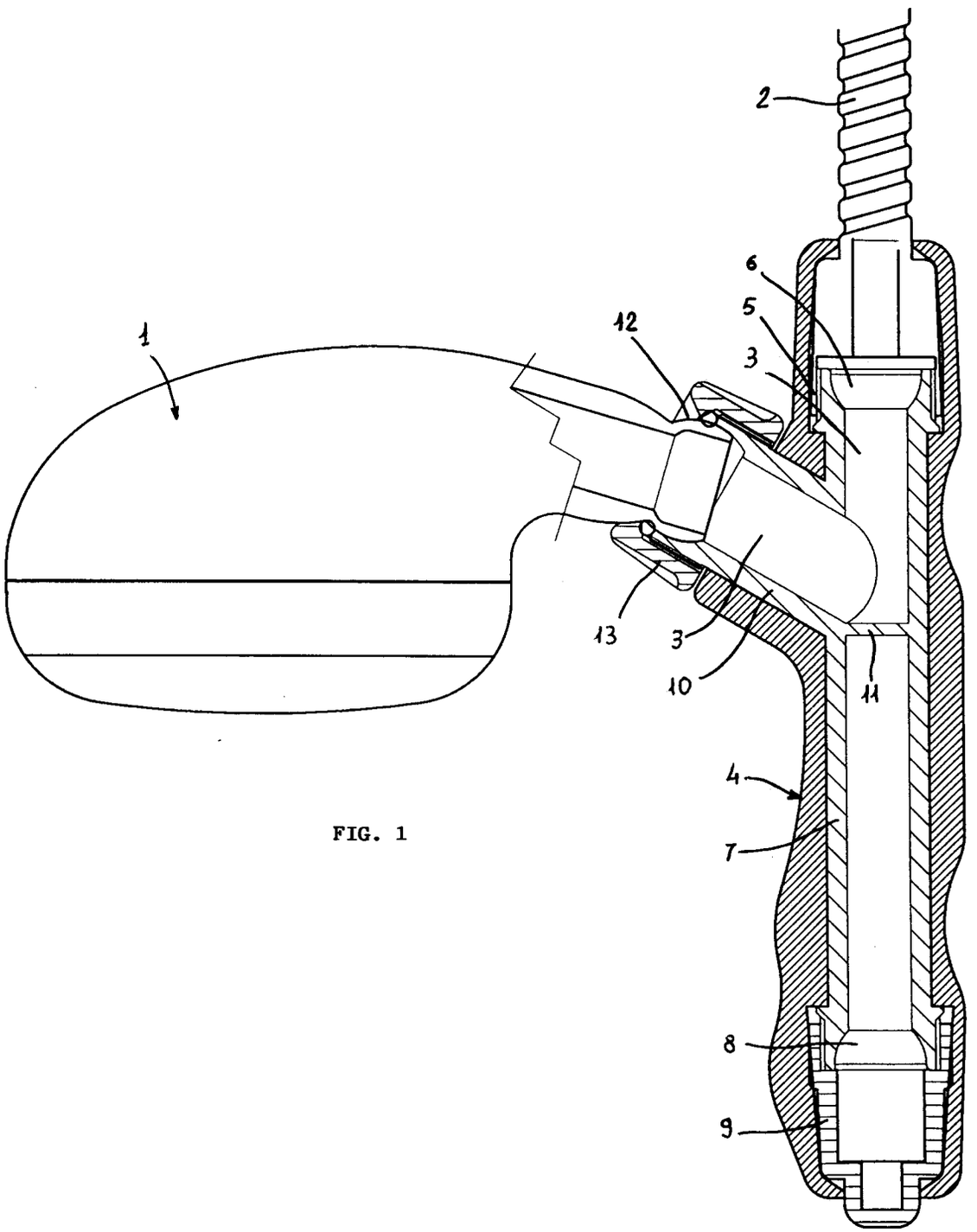

FIG. 1

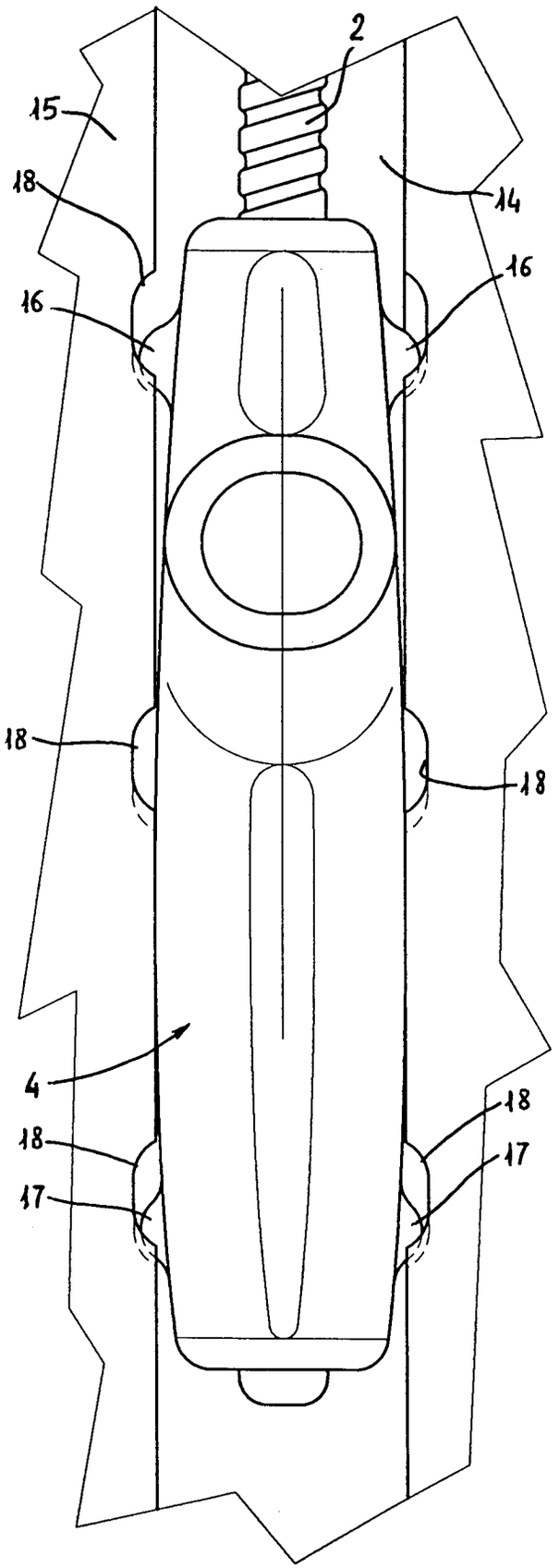

FIG. 2

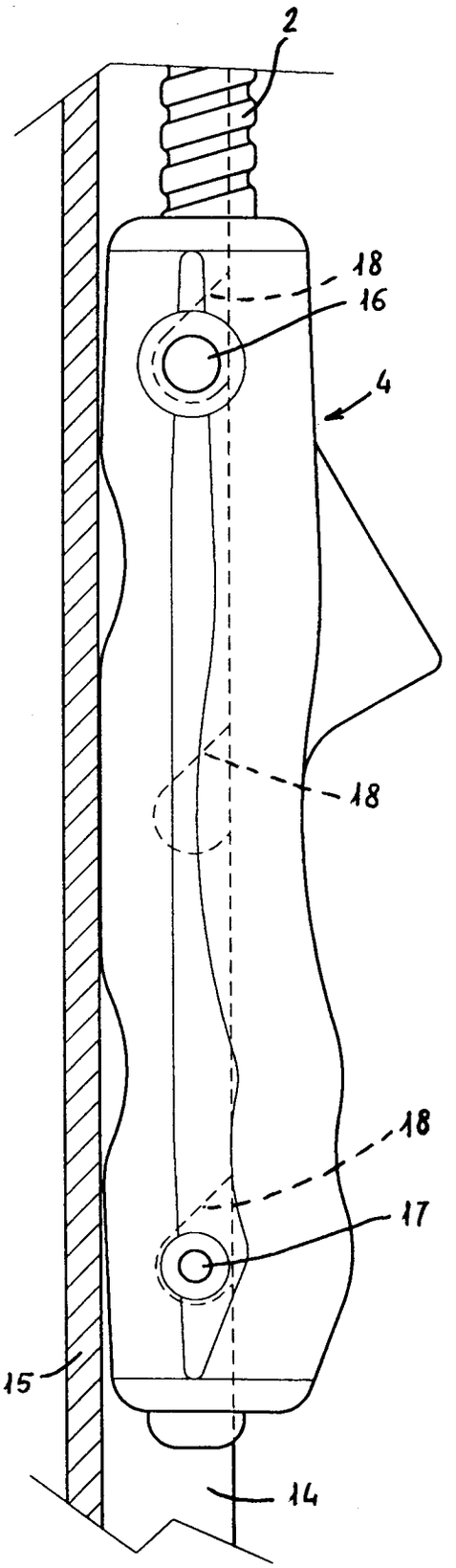

FIG. 3

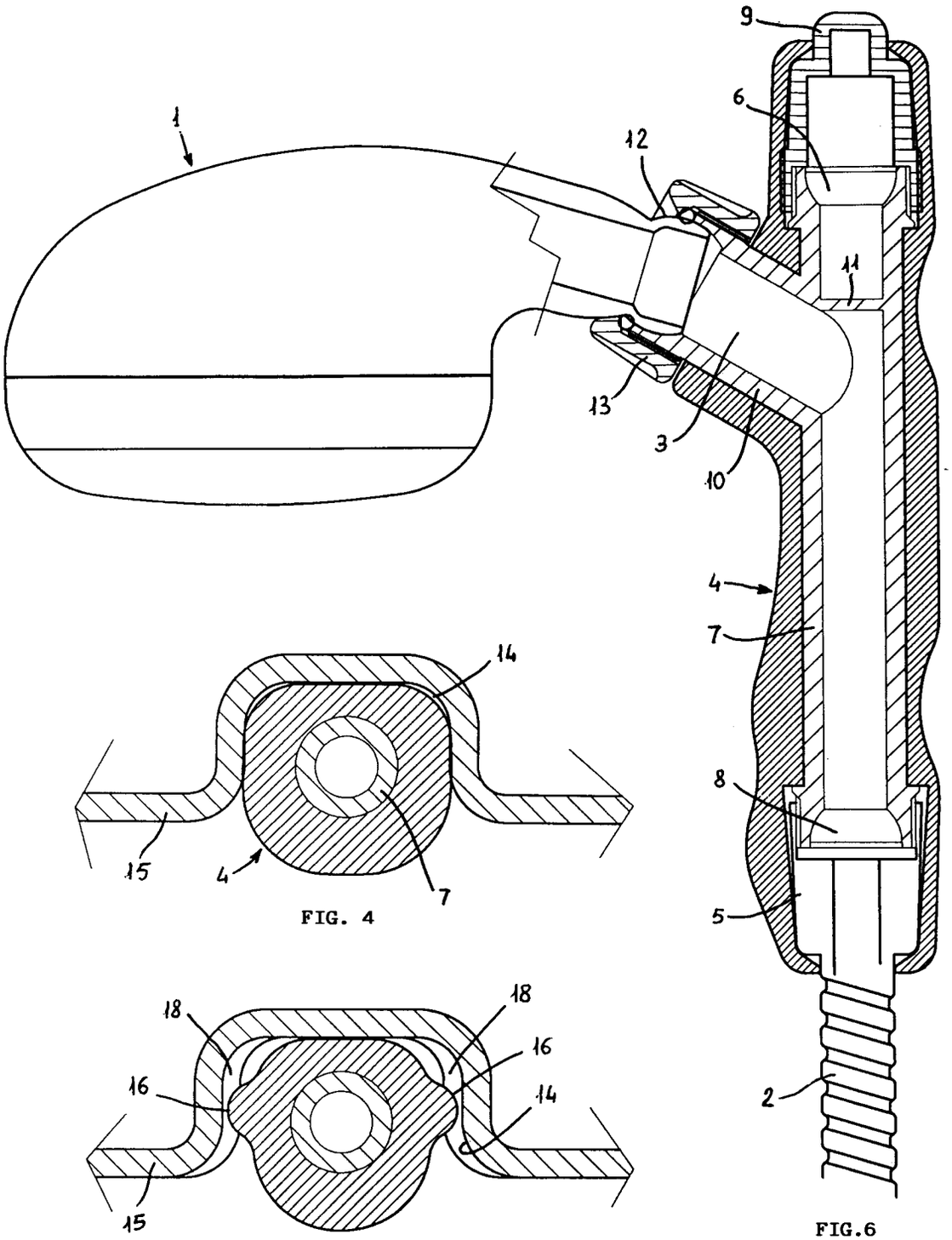

FIG.6

FIG. 4

FIG. 5

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EUROPEAN SEARCH REPORT

Application Number
EP 96 10 2836

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	CH-A-453 237 (BOSSHARD) * column 2, line 20 - column 2, line 28; claim 1; figures 1,2 *	1	E03C1/06
A	US-A-3 404 410 (SUMIDA) * column 3, line 37 - column 4, line 4; figures 3,4 *	5,7	
A	US-A-4 865 254 (KRAGLE) * column 3, line 7-8; figure 2 *	8	
A	US-A-4 275 908 (ELKINS ET AL.)		

TECHNICAL FIELDS SEARCHED (Int.Cl.6)

E03C

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	19 June 1996	Hannaart, J

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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