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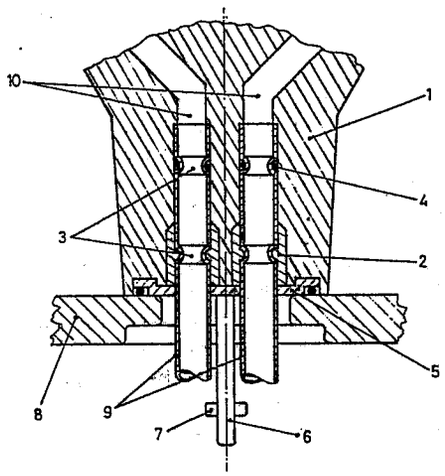
(54) Arrangement for fastening feed pipes to sanitary fittings.

(57) An arrangement is described for fastening water feed pipes to sanitary fittings by means of the releasable coupling of fastening and sealing elements. The arrangement object of the invention has two lengths of different diameters in each one of the holes or input ducts (10) made in the base of the fitting element (1), of which the one of smaller diameter performs a tightening or sealing function, while the one with a larger diameter is intended for accommodating the corresponding holding socket (2). The tightening or sealing of the connection is achieved through a slot or ring-shaped recess (3) made in the ends of the feed pipes (9). Fastening is achieved combining a fastening socket (2) with a holding plate (5) located in the base of the body of the fitting element (1).

FIG-2



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Description

Arrangement for fastening feed pipes to sanitary fittings

The present invention refers to a releasable fastening arrangement of the water feed pipes to sanitary fittings.

At the present time, for fastening and sealing water feed pipes to sanitary fittings, three kinds of techniques are used,

a) Principally, and to a great extent, there is direct welding of the pipes to the body;

b) In some cases suitable adhesives replace welding;

c) There is also use of direct screwing of the pipe to the body by means of a sealant applied to the thread or otherwise by a toroidal gasket between the body and the pipe.

The mentioned techniques mean, on the one hand, that the fastening is more expensive and, on the other hand, the impossibility, or at least great difficulty, of replacing the fitting elements in the event of damage.

By means of the present invention the said drawbacks are amply overcome, by providing a fastening arrangement comprising different elements coupled to each other in a releasable manner, whereby it is possible to simply and readily disassemble the fitting elements, in the event of replacement or repair.

For this purpose the fastening arrangement object of the invention provides that the holes or input ducts placed in the base of the fitting element will have two lenghts of different diameter. One of these lenghts, that is, the smaller or innermost one, is intended to perform the function of tightening or sealing, whereas the other length, that is, the larger or outermost one, is intended for accommodating the corresponding fastening socket.

According to another aspect of the present invention, the ends of the feed pipes which can be accommodated in the holes or ducts of the fitting element have two slots or ring-shaped recesses, of which the innermost one is intended to procure the sealing of the connection applying a toroidal gasket in the said pipe slot in coincidence with the smaller hole diameter, while the second slot is provided for holding the pipe in position, immobilising it by means of a socket provided with an inner coller or rim which is accommodated in said second slot, the two sockets in this way being left locked into the housings of the fitting element body, in the zone of greater diameter of the hole, in turn clamping the pipes and immobilising them in position.

According to another aspect of the arrangement object of this invention, holding of the pipes is achieved by means of a plate in which there are two holes of the same diameter as the outer diameter of the feed pipes and which are spaced apart by the same distance as these, by passing the mentioned pipes through the holes of the holding plate until the latter is applied to the base of the fitting element, to thus prevent the holding sockets from being disassembled from the feed pipes.

The holding plate of the fastening sockets of the feed pipes is fastened by means of simple application of the same on the surface of the sanitary article into which the fitting element is intended to be incorporated, said holding plate being locked between the mentioned surface and the lower side of the base of the fitting element.

Lastly, and according to a further feature of the arrangement object of the invention, fastening of the holding plate is performed by means of a fastening stud to the sanitary article, joined to the base of the fitting element, at its free end part having a fastening element, such as a screw nut, collar or the like, which locks the plate against the member on being set in its stop position.

An illustrative embodiment will be described below, in no way restrictive, of the object of the invention, making reference to the accompanying drawings, wherein:

figure 1 is a lower plan view of a fitting element which has to be fastened to the feed pipes; and

figure 2 is an axial cross-section of the portion corresponding to the coupling of the fitting element with all of the component parts assembled.

In the body 1 of the fitting element two parallel holes 10 are placed which constitute the water feed ducts, intended to accommodate the corresponding feed pipes 9 connected to the main water supply.

In each one of said holes 10 there are two successive lengths of different diameters, the one with a smaller diameter located further inside, being the one intended for performing the sealing function and the larger, or more outer one, being for accommodating what will be called fastening socket 2.

Each of the feed pipes 9 is provided with two slots or ring-shaped recesses which are intended for performing the basic functions of sealing and fastening, performing the first function by means of a toroidal gasket 4 accommodated in the innermost slot of the pipes, in coincidence with the smaller diameter of the holes.

Holding is achieved by combination or cooperation of the fastening socket 2 mentioned above and a holding plate 5 located in the base of the fitting element body 1, the fastening sockets 2 complying with the twofold mission of achieving, on the one hand, the immobility of the pipes 9 so that they will not undergo any damage on being bent in order to connect them to the main water supply and, on the other hand, their being kept in position with the aid of the holding plate 5, so that they will not be forced out on subjecting them to pressure.

Said holding sockets 2 have an inner collar or ring-shaped rim and clamp the pipe, opening up laterally by means of a longitudinal hinge until making said ring-shaped rim coincide with the slot 3 of the pipe, whereupon they close up. When the whole is introduced into the holes of the body, the fastening sockets 2 fit into the largest diameter zone

of the holes 10, the sockets and the pipes this way being locked together.

The holding plate 5 has two holes of the same diameter and separated by the same distance as the feed pipes 9, making the latter pass through said openings or holes of the plate until reaching the base of the fitting element, said plate 5 preventing the fastening sockets and, therefore, the feed pipes 9, from coming out.

In accordance with a first, simpler, embodiment of the manner of holding the plate 5, this is applied directly on the surface of the sanitary element 8 to which the fitting element 1 has to be applied, locking said plate 5 against the base of the body, whereby it is duly kept in its position at the same time as, with said plate, it holds the feed pipes 9 the way indicated earlier.

In a second embodiment a fastening stud 6 to the sanitary article is used, into which a fastening element 7 is incorporated, such as a screw nut, collar or the like, which suitably holds the plate on being set in its stop position.

The present invention, in any of its embodiments, can be used in pipes of whatever material, although copper is considered to be the ideal material.

The material of the sockets of the fastening plate can be either plastic or metal, plastic being considered more suitable for the sockets and metal, for example brass, for the plate.

Claims

1.- Arrangement for fastening feed pipes to sanitary fittings, by means of releasable coupling of fastening and obturating elements, characterised in that each one of the holes or input ducts (10) placed in the base of the fitting element (1) has two lengths of different diameters, of which the smaller, or innermost one, is intended to perform the tightening or sealing function while the larger, or outermost one, is intended for accommodating the corresponding holding socket (2).

2.- An arrangement according to Claim 1, characterised in that the ends of the feed pipes (9) accommodatable in the holes (10) of the fitting element (1) have two slots or ring-shaped recesses (3), of which the innermost one is intended for achieving the sealing of the connection, by means of application of a toroidal gasket (4) in the said slot (3) of the pipe in coincidence with the smaller diameter of the hole (10), while the second slot (3) is intended to hold the pipe in position, immobilising it by means of a socket (2) provided with a collar or inner rim, which is accommodated in said second slot of the pipe, both sockets being locked in their housings of the member of the fitting element (1) in the zone of greater diameter of the hole, in turn clamping the pipes and immobilising them in their position.

3.- An arrangement according to the preceding Claims, characterised in that the holding of the pipes is achieved by means of a holding plate (5) in which two holes have been made of the same diameter as the outer diameter of the feed pipes (9) and separated by the same distance as the latter, making the said pipes pass through the holes of the plate until the latter is applied to the base of the fitting element (1) to prevent the holding sockets from being disassembled from the feed pipes.

4.- An arrangement according to Claims 1 to 3, characterised in that the holding plate (5) of the fastening sockets (2) of the feed pipes (9) is held by means of the simple application of the same on the surface (8) of the sanitary article into which the fitting element (1) is intended to be incorporated, said plate (5) remaining locked between the said surface (8) and the bottom side of the base of the fitting element (1).

5.- An arrangement according to Claims 1 to 4, characterised in that the holding of the plate (5) is effected by means of a fastening stud (6) to the sanitary article, joined to the base of the fitting element (1) and having at its free end portion a fastening element (7), such as a screw nut, collar or the like, which locks the plate (5) against the body, on being set in its stop position.

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FIG.- 1

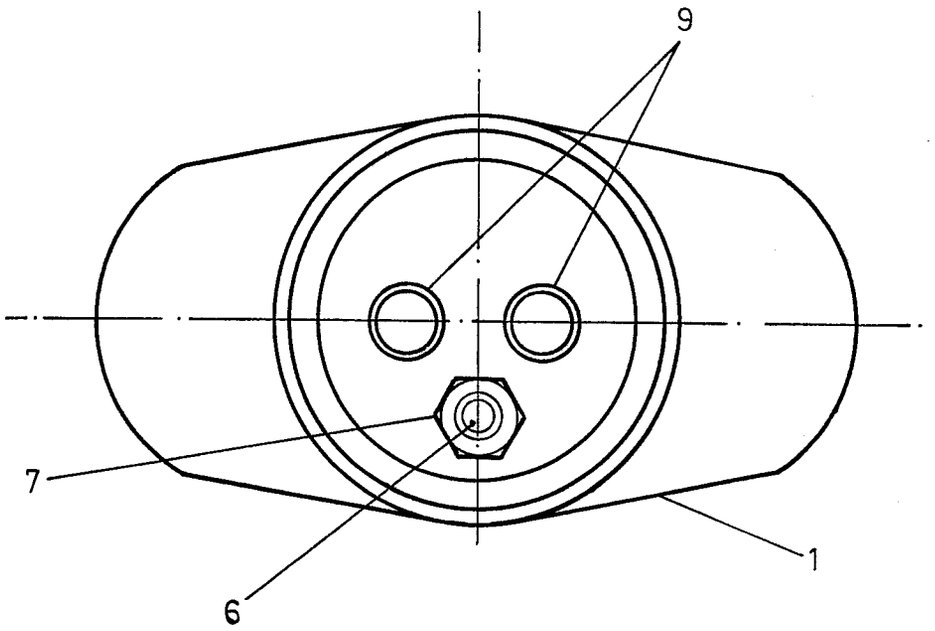
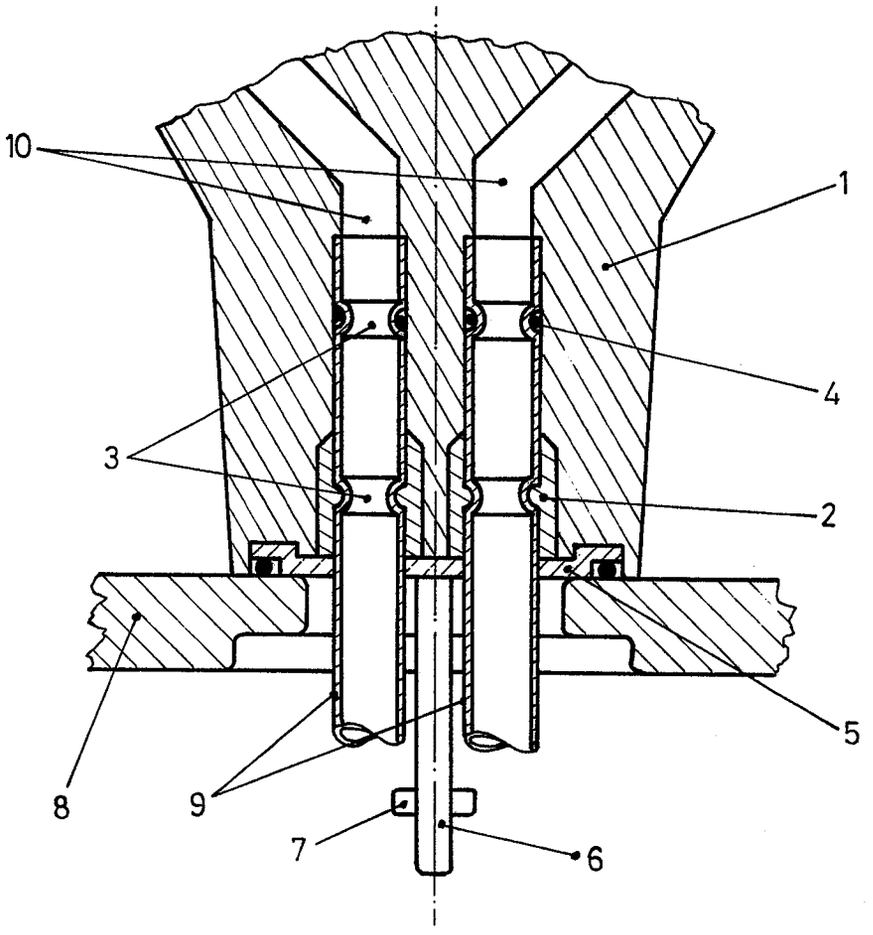


FIG.- 2



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EUROPEAN SEARCH REPORT

Application Number

EP 87 50 0047

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.4)
Y	DE-A-2 453 738 (ANESSI) * Pages 5,6; figures 1-11 *	1-5	E 03 C 1/04
Y	US-A-4 037 624 (TURNER et al.) * Figure 3 *	1-5	
A	DE-A-3 332 773 (HANSA METALLWERKE AG) * Pages 10-12; figures 1,2 *	1,2,5	

TECHNICAL FIELDS SEARCHED (Int. Cl.4)

E 03 C
F 16 L

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	26-01-1988	HANNAART J.P.

CATEGORY OF CITED DOCUMENTS

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