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(54) **RETAINING BRACKET FOR A SHOWER HOSE**

(57) The invention relates to an retaining bracket (1) for a shower hose (2) to be mounted on a holder (3) and having a retaining section (4) and a mounting section (5), the retaining section (4) forming an opening (6) for guiding the hose (2) so that the hose (2) is moveable in its axial extension through the opening (6) and a hose coupling element (7) connected to the hose (2) is prevented from being moved through the opening (6), the opening (6) having a lateral aperture (8) so that the hose (2) is to be inserted through the lateral aperture (8) into the opening (6), wherein the holder (3) can be assembled with the mounting section (5) of the retaining bracket (1) so that the aperture (8) is closed by the assembled holder (3).

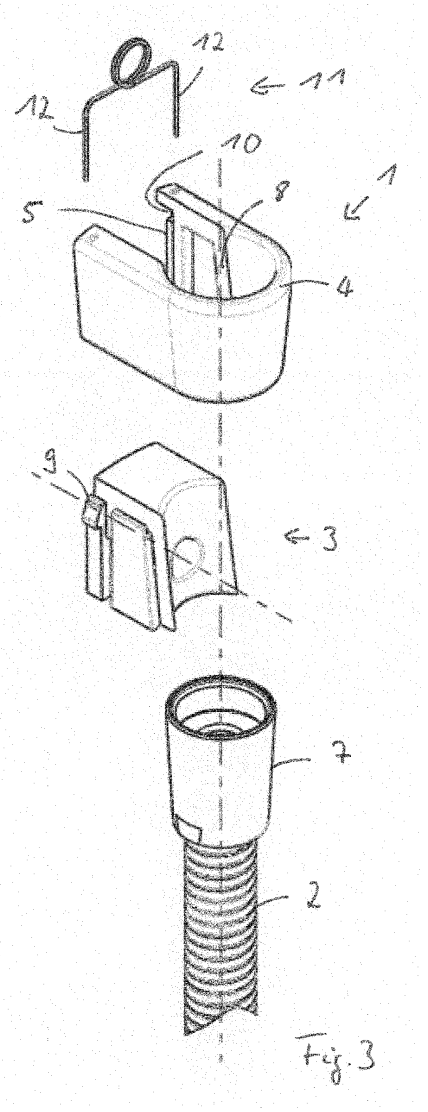

Fig. 3

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Description

[0001] The present invention relates to a retaining bracket for a shower hose to be mounted on a holder and having a retaining section and a mounting section.

[0002] In both standards and certain national regulations of showers and their fittings it is required that the possibility of backflow or back siphonage of eventually contaminated water into the drinking water is avoided. Such a standard is for example EN 1717. As far as mechanical hydraulic protection devices may malfunction, they do not fulfil the requirements of such standards, which for example require a physical air gap. A further possibility to avoid the backflow of the contaminated water is to prevent that the shower hand spray of the shower can reach contaminated water which may be stationary, for example in a bath tub, bidet or toilet. This can be achieved for example, if the shower hose is guided through a retaining ring fixed in such a position that the shower hand spray, which is connected to the shower hose by a hose coupling element, cannot reach the contaminated water. The requirements for such retaining rings are very high, if they are to be used in healthcare or nursing homes to avoid backflow from so called category 5 fluid. For example, the retaining ring must be designed such that the hose coupling element cannot be moved through the retaining ring. Furthermore, the retaining ring may not be loosened from its fixed position simply by hand.

[0003] Therefore, it is an object of the present invention to provide a retaining bracket for a shower hose which can be easily fixed to a desired position and which fulfils the standards to avoid backflow from possibly highly contaminated water.

[0004] This object is solved by a retaining bracket with the features of the independent claim. Favorable embodiments of the retaining bracket are given in the dependent claims and in the description, wherein features of the favorable embodiments can be combined in a technically reasonable manner.

[0005] In particular, the object is solved by a retaining bracket for a shower hose to be mounted on a holder and having a retaining section and a mounting section, the retaining section forming an opening for guiding the hose so that the hose is movable in its actual extension through the opening and a hose coupling element connected to the hose is prevented from being moved through the opening, the opening having a lateral aperture so that the hose is to be inserted through the lateral aperture into the opening, wherein the holder can be assembled with the mounting section of the retaining bracket so that the aperture is closed by the assembled holder.

[0006] In the disassembled state the hose can be easily inserted in the guiding opening through the lateral aperture, while it is prevented in particular by the diameter of the opening that the hose can be released from the retaining bracket in the assembled state, because even if the shower hand spray is decoupled from the hose, the hose coupling element cannot be moved through the opening. At the same time the retaining bracket can easily be fixed with its mount-ing section to the holder, which holder may be mounted in particular to a wall or shower rail in a desired position. By providing the lateral aperture between the opening and the mounting section, only one element is needed to close the lateral aperture and to mount the retaining bracket in a position given by the holder.

[0007] In the assembled state the opening is delimited by the guiding section and the holder which in particular fully enclose the hose. Principally, the opening may have any desired cross section, wherein it must be provided that in the assembled state the diameter or width of the opening at least at some section need to be chosen such that the hose can move through the opening but that it is prevented that the coupling element can be moved through the opening. The coupling elements connected to the ends of the hose are used to couple the hose to the shower hand spray and to a sanitary fitting.

[0008] In particular, the retaining bracket is formed in one piece, so that the retaining bracket can be produced easily, wherein the retaining section is arranged adjacent to the mounting section and the lateral aperture is embodied between the retaining section and the mounting section. Preferably, the mounting section and the lateral aperture are formed such that the hose may be placed with its middle section in the height of the lateral aperture and may be inserted through the lateral aperture into the opening by lateral movement.

[0009] The mounting section and the holder are formed in particular in such a way that the mounting section can be assembled on the holder without the aid of a tool.

[0010] Particularly, the holder is assembled to the mounting section by a positive-locking and/or a non-positive-locking connection, which connection is only to be loosened by a tool. By positive-locking connection it is implied that the two components are connected to each other in the assembled state due to their respective shape, which prevent a relative movement to each other.

[0011] A non-positive-locking connection is for example a frictional connection. Therefore, the holder and the mounting section are directly connected to each other. By such connections it is avoided that connection elements such as screws are needed to connect the holder and the mounting section to each other.

[0012] In a preferred embodiment of the retaining bracket the holder is to be mounted to a wall prior to assembling the retaining bracket to the holder, wherein the opening delimited by the retaining section and the holder has a circular cross section after the retaining bracket is assembled to the holder. The holder has in particular a ring-shaped or cone-shaped cross section with such a smallest diameter that the hose can move through the opening and the hose coupling element is prevented from being moved through the opening. By mounting the holder to a wall, the retaining bracket can be placed at any desirable position within a bathroom.

[0013] The connection between the mounting section and the holder may be provided by a hook that is snapped into a recess, thereby providing a positive-locking connection between the mounting section and the holder.

[0014] In particular, when the retaining bracket with the hose inserted in the opening is mounted to the holder by moving the retaining bracket along the wall to which the holder is mounted, so that the holder is received in the mounting section, a very easy assembling of the retaining bracket is possible. In this regard, it is preferable that the hook is initially deflected by the relative movement of the retaining bracket to the holder and subsequently snaps into the recess, thereby providing a secure connection between the mounting section and the holder.

[0015] In this regard, it is particularly preferable that the connection comprises two oppositely arranged hooks and two respective recesses, wherein the connection can only be released by a special tool comprising two arms which two arms are inserted in the assembled retaining bracket to deflect the two hooks out of the two recesses. If the hooks are deflected out of the recesses, the retaining bracket can be disassembled from the holder. With such a need for a special tool it can be avoided that the retaining bracket can be loosened from the holder only by hand.

[0016] In another preferred embodiment of the retaining bracket, the mounting section forms a rail hole adjacent to the lateral aperture, wherein the rail hole has a larger diameter than an inner diameter of the opening, so that the hose is to be inserted with its hose coupling element through the rail hole and is subsequently laterally to be inserted into the opening, wherein the holder comprises a shower rail that fits frictionally in the rail hole. In this embodiment the retaining bracket is preferably formed in one piece providing in the mounting section a hole for receiving the shower rail and forming the opening in an adjacent section, wherein the rail hole and the opening are connected in the disassembled state by the lateral aperture. Preferably, the retaining bracket is formed with a continuous border that provides the rail hole and the opening. After the shower hose is inserted into the rail hole with its hose coupling element and is subsequently displaced laterally into the opening through the lateral aperture, the aperture is closed by the shower rail, which is inserted into the rail hole. Therefore, the shower hose can be applied to the retaining bracket during installation in the bathroom.

[0017] In order that the retaining bracket can be used with different shower rails, it is suggested that the holder comprises a ring-shaped adapter piece fitting with its outer diameter frictionally in the rail hole and receiving the shower rail in its inner hole. With the adapter piece the retaining bracket can be mounted to shower rails with different diameters.

[0018] The invention and the technical field are described with relation to the drawings, which show preferred embodiments of the retaining bracket. The figures show schematically

Fig. 1: a first embodiment of a retaining bracket,
Fig. 2: a holder for the retaining bracket of the first embodiment,
Fig. 3: an exploded view of a tool, the retaining bracket, the holder and a shower hose,
Fig. 4: the elements of fig. 3 in an assembled state,
Fig. 5 a second embodiment of a retaining bracket with an adapter piece in exploded view,
Fig. 6: the retaining bracket and the adapter piece in an assembled state,
Fig. 7: a shower installation with the second embodiment of the retaining bracket and
Fig. 8: a detail of the shower arrangement with the retaining bracket.

[0019] The retaining bracket 1 depicted in fig. 1 is formed in one piece and has a retaining section 4 forming an opening 6 and a mounting section 5. Between the mounting section 5 and the opening 6 an aperture 8 is provided so that a shower hose 2 may be inserted through the mounting section 5 and the aperture 8 into the opening 6. Furthermore, recesses 10 are formed in the mounting section 5, which interact with hooks 9 of a holder 3, which holder 3 is depicted in fig. 2. The holder 3 comprises a central section, with which the holder 3 is mounted to a wall. At each lateral surfaces a projection and a hook 9 are formed, which interact with the mounting section 5 of the retaining bracket 1, when the retaining bracket 1 is assembled to the holder 3.

[0020] In fig. 3 the retaining bracket 1, the holder 3, a shower hose 2 with a hose coupling element 7 connected to the shower hose 2 and a special tool 11 with two arms 12 are depicted in a disassembled state. As the diameter of the hose coupling element 7 is larger than the diameter of the hose 2 and larger than the diameters of the lateral aperture 8 and the opening 6, the retaining bracket 1 can only be applied to the hose 2.

[0021] In a first step, the holder 3 is mounted to a wall. Subsequently, the hose 2 is inserted into the opening 6 of the retaining bracket 1 passing the mounting section 5 and the lateral aperture 8 of the retaining bracket 1. Afterwards, the retaining bracket 1 is assembled on the holder 3 by moving the retaining bracket 1 downwards onto the holder 3. During the movement of the retaining bracket 1, the hooks 9 on the holder 3 are deflected by the mounting section 5 of the retaining bracket 1 and finally snap into the recesses 10 formed in the mounting section 5 of the retaining bracket 1. Thereby, the retaining bracket 1 is connected to the holder 3 in a positive-locking manner. In this assembled state, the hose 2 is enclosed fully by the retaining section 5 and the assembled holder 3. The hose 2 can be moved through the opening 6 delimited by the retaining section 4 and the holder 3 in its axial direction, whereas it is prevented that the coupling elements 7 of the hose 2 can move through the opening 6, as the opening 6 has a smaller inner diameter than the outer diameter of the coupling elements 7.

[0022] For disassembling the retaining bracket 1 from

the holder 3, the special tool 11 with its arms 12 needs to be inserted into the retaining bracket 1 in order to deflect hooks 9 out of the recesses 10. Subsequently, the retaining bracket 1 can be pulled from the holder 3.

[0023] The second embodiment of a retaining bracket 1 as depicted in figs. 5 - 8 is also formed in one piece comprising a continuous border, which forms a retaining section 4 with an opening 6 and a mounting section 5 with a rail hole 13. Between the opening 6 and the rail hole 13, a lateral aperture 8 is formed by the retaining bracket 1. The lateral aperture 8 is closed, when a shower rail 14 or an adapter piece 15 is assembled in the rail hole 13 as depicted in fig. 6.

[0024] For assembling a shower hose 2 in the retaining bracket 1 the shower hose 2 is inserted in a first step with its coupling element 7 through the rail hole 13 and is subsequently laterally displaced with the hose section through the lateral aperture 8 into the opening 6. Subsequently, the adapter piece 15 is inserted into the rail hole 13 thereby preventing that the hose 2 can be released from the retaining bracket 1. The retaining bracket 1 is subsequently mounted on a shower rail 14 as depicted in figs. 7 and 8 by inserting the shower rail 14 into the inner hole of the adapter piece 15, where the shower rail 14 is connected to the adapter piece 15 by friction.

[0025] As can be seen in fig. 8, the diameter of the opening 6 is chosen such that the hose 2 may be moved along the opening 6 while it is prevented that the coupling element 7 is moved through the opening 6 as the coupling element 7 has a greater diameter than the diameter of the opening 6. The retaining bracket 1 can only be mounted on the shower rail 14 if the shower rail 14 is not yet connected to the wall. This also means that the retaining bracket 1 cannot be disassembled from the shower rail 14 only by hand.

[0026] In a not depicted embodiment, the shower rail 14 has a greater diameter and can be directly mounted in the rail hole 13 of the mounting section 5 of the retaining bracket 1, wherein the mounting section 5 of the retaining bracket 1 and the shower rail 14 are connected due to friction.

[0027] The retaining bracket 1 can be mounted at such a location within the bathroom, that the shower hand spray cannot reach bath tubs, WCs or bidets with possibly contaminated water, wherein the retaining bracket 1 can be mounted easily but cannot be disassembled only by hand.

Reference signs

[0028]

1 retaining bracket
2 shower hose
3 holder
4 retaining section
5 mounting section
6 opening
7 hose coupling element
8 aperture
9 hook
10 recess
11 special tool
12 arm
13 rail hole
14 shower rail
15 adapter piece

Claims

1. Retaining bracket (1) for a shower hose (2) to be mounted on a holder (3) and having a retaining section (4) and a mounting section (5), the retaining section (4) forming an opening (6) for guiding the hose (2) so that the hose (2) is moveable in its axial extension through the opening (6) and a hose coupling element (7) connected to the hose (2) is prevented from being moved through the opening (6), the opening (6) having a lateral aperture (8) so that the hose (2) is to be inserted through the lateral aperture (8) into the opening (6), wherein the holder (3) can be assembled with the mounting section (5) of the retaining bracket (1) so that the aperture (8) is closed by the assembled holder (3).

2. Retaining bracket (1) according to claim 1, wherein the holder (3) is assembled to the mounting section (5) by a positive-locking and/or a non-positive-locking connection, which connection is only to be loosened by a tool.

3. Retaining bracket (1) according to claim 1 or 2, wherein the holder (3) is to be mounted to a wall prior to assembling the retaining bracket (1) to the holder (3), wherein the opening (6) delimited by the retaining section (4) and the holder (3) has a circular cross section after the retaining bracket (1) is assembled to the holder (3).

4. Retaining bracket (1) according to claim 2 and 3, wherein the connection between the mounting section (5) and the holder (3) is provided by a hook (9) that is snapped into a recess (10).

5. Retaining bracket (1) according to claim 4, wherein the retaining bracket (1) with the hose (2) inserted in the opening (6) is mounted to the holder (3) by moving the retaining bracket (1) along the wall to which the holder (3) is mounted, so that the holder (3) is received in the mounting section (5), wherein the hook (9) is initially deflected by the relative movement of the retaining bracket (1) to the holder (3) and subsequently snaps into the recess.

6. Retaining bracket (1) according to claim 5, wherein

the connection comprises two oppositely arranged hooks (9) and two respective recesses (10), wherein the connection can only be released by a special tool (11) comprising two arms (12) which two arms (12) are inserted in the assembled retaining bracket (1) to deflect the two hooks (9) out of the two recesses (10).

7. Retaining bracket (1) according to claim 1 or 2, the mounting section (5) forming a rail hole (13) adjacent to the lateral aperture (8), wherein the rail hole (13) has a larger diameter than an inner diameter of the opening (6), so that the hose (2) is to be inserted with its hose coupling element (7) through the rail hole (13) and is subsequently laterally to be inserted into the opening (6), wherein the holder (3) comprises a shower rail (14) that fits frictionally in the rail hole (13).

8. Retaining bracket (1) according to claim 7, wherein the holder (3) comprises a ring-shaped adapter piece (15) fitting with its outer diameter frictionally in the rail hole (13) and receiving the shower rail (14) in its inner hole.

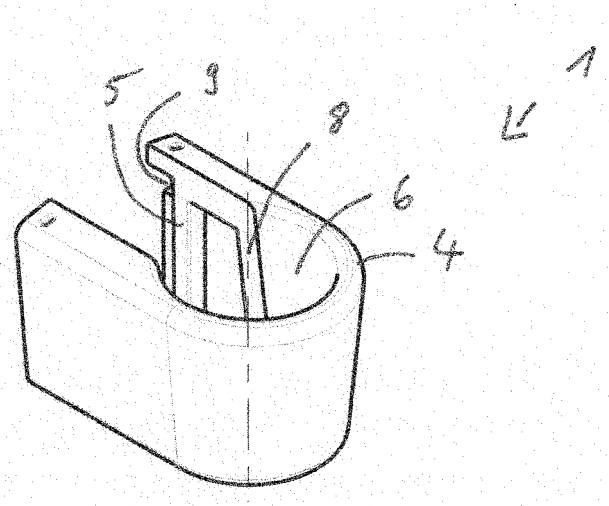

Fig. 1

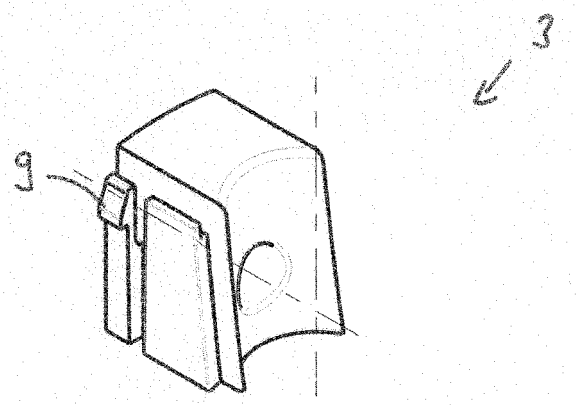

Fig. 2

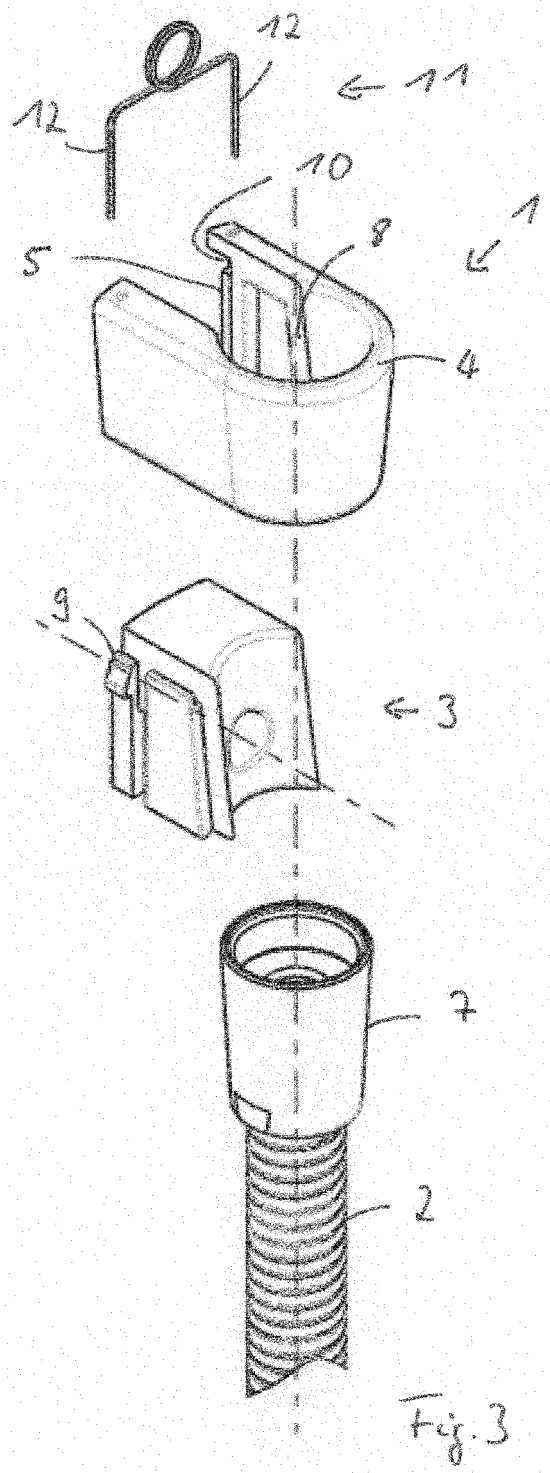

Fig. 3

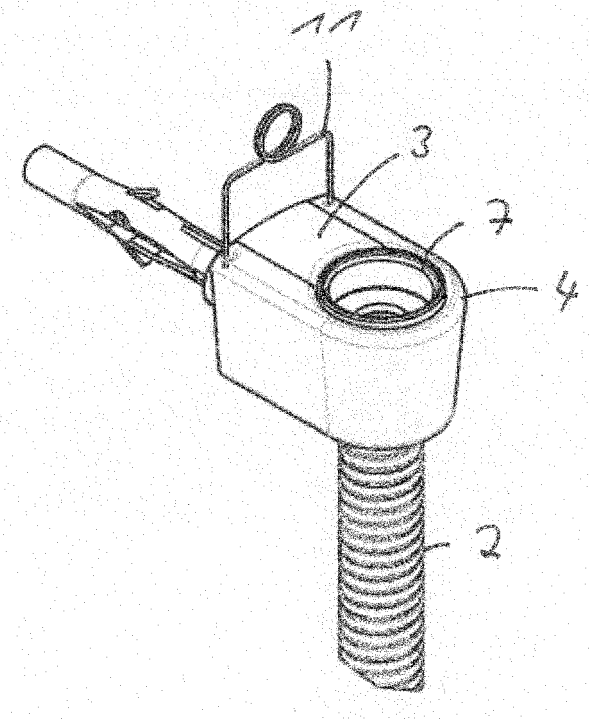

Fig. 4

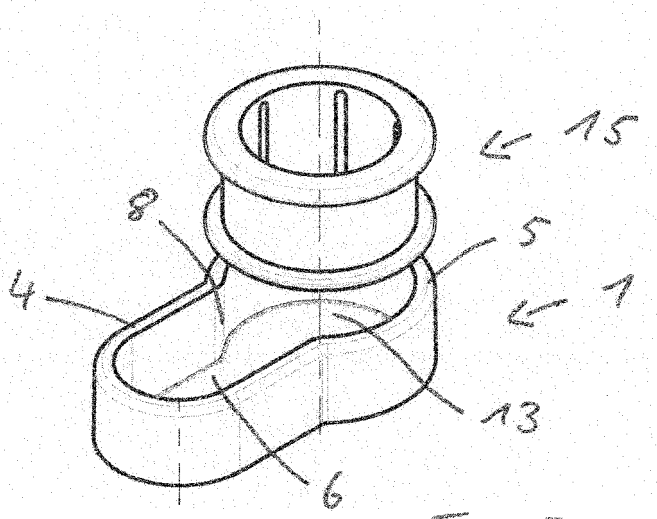

Fig. 5

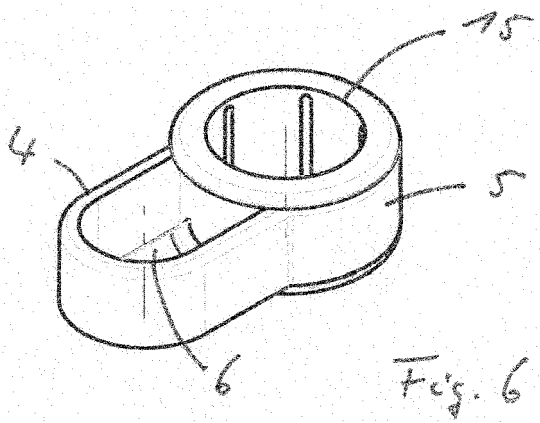

Fig. 6

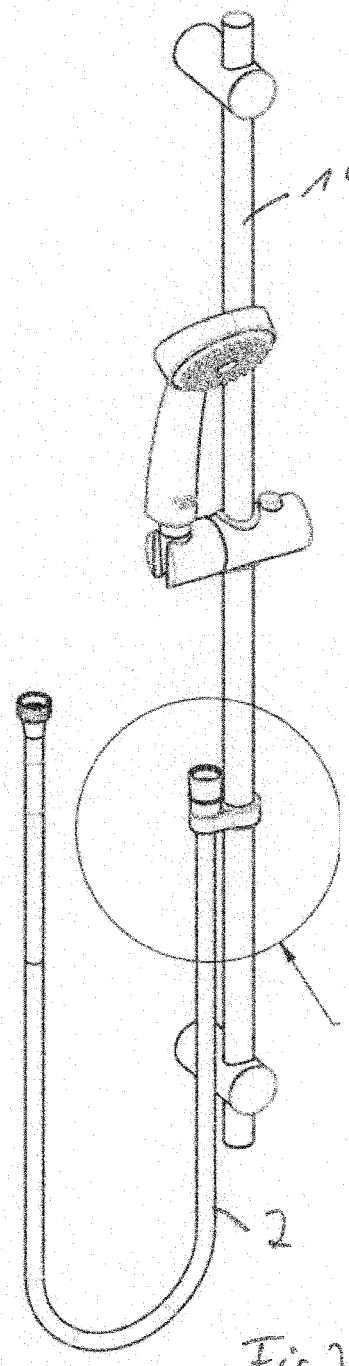

Fig. 7

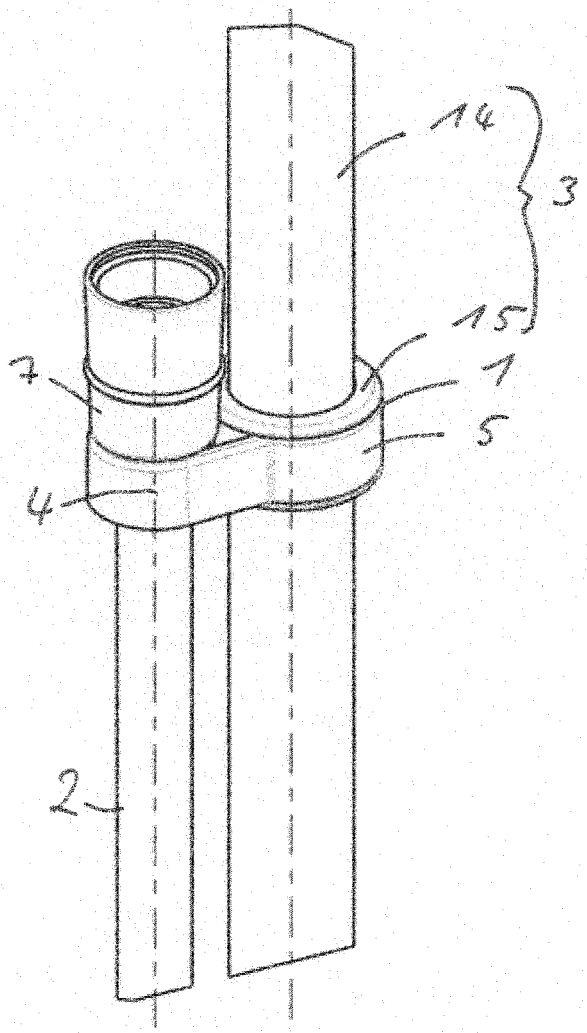

Fig. 8

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EUROPEAN SEARCH REPORT

Application Number
EP 15 17 2757

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	WO 2008/109964 A1 (MALLAM LUKE [AU]) 18 September 2008 (2008-09-18) * figures 10,11 * -----	1	INV. E03C1/06
X	GB 2 419 287 A (KOHLER MIRA LTD [GB]) 26 April 2006 (2006-04-26) * figures 2-4 * -----	1,7	

TECHNICAL FIELDS SEARCHED (IPC)

E03C

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	13 January 2016	Flygare, Esa

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 15 17 2757

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13-01-2016

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