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RISER BAR ASSEMBLY

(57) A riser bar assembly, for use in an ablutionary setting, having an adjustable riser bar with a telescopic arrangement comprising:
a first bar element;
a second bar element, translatable relative to the first bar element along a length of the first bar element; and
a collet configured such that relative positions of the first bar element and the second bar element can be fixed by tightening the collet.

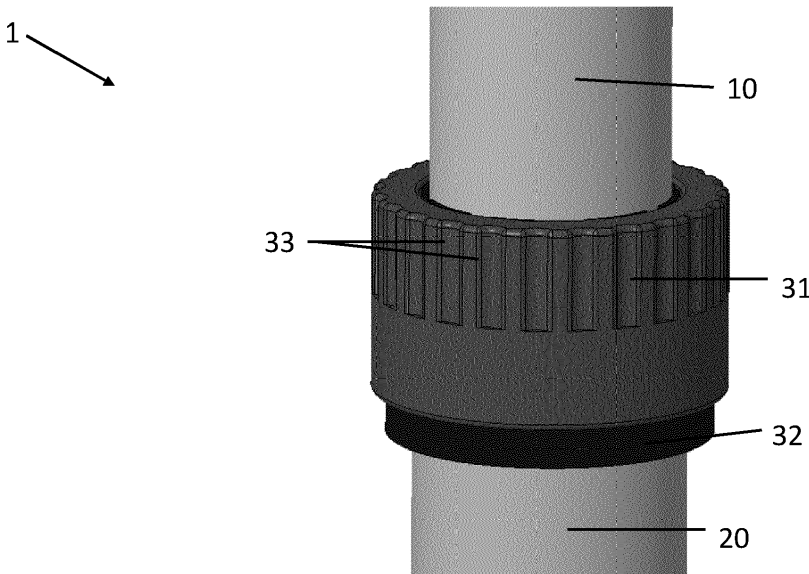


Figure 1

Description

[0001] The present disclosure relates to a riser bar assembly for use in an ablutionary setting. The disclosure also relates to an ablutionary system comprising a riser bar assembly and a method of installation of a riser bar assembly.

[0002] It is known to mount a fixing element for holding a shower head or part thereof on a riser bar. The fixing element may be movable along the riser bar and securable in position at a desired height, thereby allowing a user to vary the height of the shower head.

[0003] It can be desirable to be able to change the length of a riser bar assembly. This can enable an assembly to adapt to the specific requirements of the environment in which it is installed. For instance, a riser bar assembly with a longer length may allow for a larger degree of user adjustment of the height of a fluid delivery device attached thereto, while a riser bar assembly with a smaller length may be installed in an environment with limited available space.

[0004] Changing the length of a riser bar assembly may also be beneficial when retrofitting, allowing pre-existing fixture points for a previous assembly to be used in the new riser bar assembly, thereby preventing unnecessary damage to walls, e.g. within a shower enclosure.

[0005] A first aspect provides a riser bar assembly, for use in an ablutionary setting, having an adjustable riser bar with a telescopic arrangement comprising:

- a first bar element;
- a second bar element, translatable relative to the first bar element along a length of the first bar element; and
- a collet configured such that relative positions of the first bar element and the second bar element can be fixed by tightening the collet.

[0006] The riser bar assembly may further comprise a sleeve having a first aperture through which either the first bar element or the second bar element extends. The sleeve may be configured to be positionable to cover at least partially the collet. The sleeve may be configured to be positionable to sit atop and at least partially cover the collet.

[0007] By covering at least partially the collet, the sleeve may help to prevent inadvertent adjustment of the riser bar assembly. Also, the sleeve may serve to improve the appearance of the riser bar assembly, since the collet may be hidden at least partially from view. The sleeve may provide a design aesthetic intended to match or complement that of the riser bar assembly, e.g. of first bar element and/or the second bar element, and/or that of an ablutionary system comprising the riser bar assembly and/or that of the ablutionary setting where the riser bar assembly is installed.

[0008] At least one functional accessory may be provided by or connected to the sleeve.

[0009] The sleeve may further comprise a portion extending away from the first bar element or the second bar element, wherein one or more functional accessories may be provided by or connected to the portion extending away from the first bar element or the second bar element. The portion extending away from the first bar element or the second bar element may include an aperture for retaining a hose for conveying fluid, e.g. water, to a fluid delivery device such as a shower head.

[0010] The sleeve may comprise a terminal face at least partially enclosing the first aperture. A portion of the sleeve may project from the terminal face a first distance parallel to the axis of the second bar element such that the sleeve surrounds at least part of the collet. The first distance may be greater than or equal to a length of the collet such that the collet is not visible to a user during use of the riser bar assembly.

[0011] The collet may be formed of two parts: a first part and a second part. The first part may have an internal thread. The second part may have an external thread which engages the internal thread of the first part. The internal thread and the external thread may both be tapered such that as one part of the collet is rotated with respect to the other part of the collet, the first part exerts an inwards radial force on the second part and by extension on the first bar element which fixedly secures the first bar element to the second bar element.

[0012] The second part of the collet may have two ends: a fixed end; and a free end. The fixed end may be fixed translationally to the second bar element. The free end may have one or more vertical slots aligned with an axis of the second bar element such that as the collet is tightened, the one or more vertical slots enable an internal diameter of the free end to decrease, securing the first bar element relative to the second bar element.

[0013] A fixing element for holding a fluid delivery device or a part thereof may be attached to, e.g. releasably coupled to, the first bar element or the second bar element.

[0014] A wire may pass along at least a portion of a length of the first bar element and/or the second bar element. The wire may be disposed at least in part within the first bar element and/or the second bar element.

[0015] A channel for conveying fluid, e.g. water, may pass along at least a portion of a length of the first bar element and/or the second bar element. The channel may be disposed at least in part within the first bar element and/or the second bar element. The channel may comprise a tube or a pipe. The channel may be provided at least in part by the first bar element and/or the second bar element.

[0016] The riser bar assembly may comprise one or more connectors configured to attach the first bar element and/or the second bar element to a surface such as a wall within an ablutionary setting.

[0017] In an implementation, the riser bar assembly may comprise a first connector configured to attach the first bar element to a surface within an ablutionary setting

and a second connector configured to attach the second bar element to the surface within the ablutionary setting.

[0018] A second aspect provides an ablutionary system comprising:

a riser bar assembly according to the first aspect attached to a surface within an ablutionary setting; and
a fluid delivery device in fluid communication with a source of a flow of fluid, e.g. water, having a user-desired temperature and/or flow rate.

[0019] A third aspect provides a method of installation of a riser bar assembly for use in an ablutionary setting comprising:

adjusting a total length of riser bar assembly by sliding a first bar element telescopically relative to a second bar element; and
tightening a collet to fix the relative positions of the first bar element and the second bar element.

[0020] The method may comprise at least partially covering the collet with a sleeve. The method may comprise positioning the sleeve such that the sleeve contacts and at least partially covers the collet.

[0021] The method may comprise attaching the riser bar assembly to a surface such as a wall in the ablutionary setting.

[0022] The riser bar assembly may be a riser bar assembly according to the present disclosure.

[0023] The skilled person will appreciate that except where mutually exclusive, a feature or parameter described in relation to any one of the above aspects may be applied to any other aspect. Furthermore, except where mutually exclusive, any feature or parameter described herein may be applied to any aspect and/or combined with any other feature or parameter described herein.

[0024] Further, where considered appropriate, reference labels have been repeated among the figures to indicate corresponding or analogous elements.

[0025] Embodiments will now be described, by way of example only, with reference to the accompanying drawings, in which:

Figure 1 shows a portion of a riser bar assembly;

Figure 2 shows a cross-sectional view of the riser bar assembly of Figure 1;

Figure 3 shows the riser bar assembly of Figure 1 with a sleeve element covering the collet;

Figure 4 shows an ablutionary system; and

Figure 5 shows a method of installation of a riser bar assembly.

[0026] Referring to Figures 1, 2 and 3, a riser bar assembly 1 is shown. The riser bar assembly 1 includes an adjustable riser bar comprising a first bar element 10 and a second bar element 20. The first bar element 10 has a first end 11 (Figure 4) and a second end opposite the first end 10. Similarly, the second bar element 20 has two ends: a first end 21 (Figure 2) and a second end 22 (Figure 4) opposite the first end 21. At least a portion of the second bar element 20 is hollow.

[0027] The second end of the first bar element 10 is configured to fit telescopically within the first end 21 of the second bar element 20. At least a portion of the second bar element 20 is coaxial with the first bar element 10. As best shown by Figure 2, an outer diameter of the first bar element 10 is less than an inner diameter of the second bar element 20 such that at least a portion of the first bar element 10 fits telescopically within at least a portion of the second bar element 20. The riser bar assembly 1 is thus configured to allow translation of the first bar element 10 relative to the second bar element 20 along the axis of the first and/or the second bar element 10, 20. Such relative translation varies a total length 70 (Figure 4) of the riser bar assembly 1, measured along an axis of the first bar element 10, allowing the riser bar assembly length 70 to be adjusted by an installer or a user.

[0028] The riser bar assembly 1 may include one or more connectors configured to secure either or both of the first bar element 10 or the second bar element 20 to a surface such as a wall. The one or more connectors may be located at any position on the first bar element 10 and/or the second bar element 20.

[0029] The riser bar assembly 1 further comprises a collet 30. The relative positions of the first bar element 10 and the second bar element 20 can be fixed by tightening the collet 30. The collet 30 is formed of two parts: a first part 31 having an internal thread and a second part 32 having an external thread which engages the internal thread of the first part 31. The first part 31 may have a textured surface to enable sufficient grip while tightening the collet 30. For example, in the illustrated example, the first part 31 has a series of grooves 33 regularly spaced around the outer circumference of the first part 31.

[0030] The first part 31 has a substantially annular shape, configured such that at least a portion of the second part 32 may fit within the first part 31. The second part 32 is also substantially annular in shape such that at least a portion of the first bar element 10 may fit within the second part 32. As best shown in Figure 2, the second part 32 is fixed to the first end 21 of the second bar element 20, thereby preventing translation of the second part 32 along the second bar element 20. The second part 32 may be formed integrally with the second bar element 20 or may be formed separately and then fixed to the second bar element 20, for example, with an adhesive.

[0031] The internal thread of the first part 31 and the external thread of the second part 32 are both tapered

such that as one part of the collet 30 is rotated with respect to the other, the first part 31 exerts an inwards radial force on the second part 32 and by extension on the first bar element 10. This inwards radial force secures the first bar element 10 to the second bar element 20 preventing movement of the first bar element 10 with respect to the second bar element 20.

[0032] The second part 32 of the collet 30 has two ends: a fixed end 321, fixed translationally to the second bar element 20; and a free end 322. The free end 322 may have one or more vertical slots aligned with the axis of the second bar element 20. As the collet 30 is tightened, the one or more vertical slots may enable an internal diameter of the free end 322 to decrease, securing the first bar element 10 relative to second bar element 20.

[0033] As best seen in Figure 3, The riser bar assembly 1 includes a sleeve 40 which extends around an outer circumference of the first bar element 10. The sleeve is movable longitudinally along the first bar element 10.. The sleeve 40 is configured to be positionable to sit atop and cover the collet 30.

[0034] A terminal face 41 of the sleeve 40 has a rim enclosing a first aperture 42 through which the first bar element 10 extends. The first aperture 42 fits snugly around the first bar element 10, to limit or prevent fluid or dirt ingress into the collet 30. An O-ring or other sealing means may be configured to provide a fluid-tight seal between the sleeve 40 and the first bar element 10, e.g. around or adjacent the perimeter of the aperture 42.

[0035] The first aperture 42 is configured to receive the first bar element 10. In the example shown in Figures 1 to 3, the first and second bar elements 10, 20 are cylindrical and the first aperture 42 is circular. A diameter of the first aperture 42 is greater than or equal to an outer diameter of the first bar element 10, but less than an outer diameter of the first part 31 of the collet 30. In this example, when the sleeve 40 is positioned to cover the collet 30, the terminal face 41 contacts the first part 31 of the collet 30 and the first bar element 10 extends through the first aperture 42.

[0036] The sleeve 40 is configured to completely surround the collet 30. In this example, an inner diameter of the sleeve 40 is greater than or equal to the outer diameter of the first part 31 of the collet 30 to allow this. As shown in Figure 3, the sleeve 40 may extend downwardly from the terminal face 41 a first distance 44 measured parallel to the axis of the second bar element 20. As in the illustrated example, the first distance 44 may be greater than the length of the collet 30 measured parallel to the axis of the second bar element 20 such that the sleeve 40 surrounds and covers the collet 30, in order that that the collet 30 is not visible to a user during use of an ablutionary system comprising the riser bar assembly 1.

[0037] The terminal face 41 extends laterally away from the first bar element 10 and comprises a second aperture 43 spaced from the first aperture 42. The second aperture 43 is configured to retain, in use, a hose connected to a fluid delivery device such as a shower head.

The second aperture configured to retain, in use, a hose connected to a fluid delivery device such as a shower head will be understood to be an example of a functional accessory that may be provided by or connected to the sleeve 40. The sleeve 40 may provide or be connected to any suitable functional accessory or combination of functional accessories, for example: a holder for a fluid delivery device such as a shower head and/or a tray or a shelf such as a soap dish.

[0038] In the example shown in Figure 3, the second aperture 43 extends through a radially extending perturbation 45 of the sleeve 40. The sleeve 40 may be rotatable with respect to the first and second bar elements 10, 20 when the collet 30 is tightened or loose. This may enable a user or installer to reposition the one or more functional accessories according to their needs. Alternatively or additionally, a securing means may be configured to hold the sleeve 40 in a desired location and/or orientation, e.g. to prevent inadvertently uncovering the collet 30 and/or to prevent inadvertent rotation of the one or more functional accessories. The securing means may have a locked configuration to hold the sleeve 40 in the desired location and/or orientation and an unlocked configuration to permit the location and/or orientation of the sleeve 40 to be altered.

[0039] Figure 4 shows an ablutionary system 100. The ablutionary system 100 comprises the riser bar assembly 1 shown in Figures 1 to 3. The ablutionary system 100 is installed within an ablutionary setting 101. Components and functional units which in terms of function and/or construction are equivalent or identical to those of the previously-described embodiment are provided with the same reference signs. The explanations pertaining to Figures 1 to 3 therefore apply in analogous manner to Figure 4.

[0040] The riser bar assembly 1 includes a first connector 60a and a second connector 60b. The first connector 60a is configured to secure the first bar element 10 to a wall 103 within the ablutionary setting 101. the second connector 60b is configured to secure the second bar element 20 to the wall 103 within the ablutionary setting 101. The first connectors 60a is located at or near the first end 11 of the first bar element 10. The second connector 60b is located at or near the second end 22 of the second bar element 20.

[0041] The ablutionary system 100 is configured such that the second bar element 20 is closer to a floor 102 of the ablutionary setting 101 than the first bar element 10 is to the floor 102.

[0042] The riser bar assembly 1 is configured to allow translation of the first bar element 10 relative to the second bar element 20 along the axis of the first and/or second bar element 10, 20. Such relative translation varies the total length 70 of the riser bar assembly 1, measured along an axis of the first bar element 10, allowing the riser bar assembly length 70 to be adjusted by an installer or a user.

[0043] A shown in Figure 4, a hose 52 passes through

the second aperture 43. The hose 52 is retained by the second aperture 43. The hose 52 provides fluid communication from a source of a flow of water having a user-desired temperature and/or flow rate (not shown) to a handheld shower head 50. The source of the flow of water having a user-desired temperature and/or flow rate may include, for example, an instantaneous water heater for an electric shower system or a mixer valve, e.g. a thermostatic mixer valve.

[0044] A neck portion of the handheld shower head 50 is received in a fixing element 51 releasably coupled to the first bar element 10. The fixing element 51 is located above the sleeve 40. The handheld shower head 50 may be removed from the fixing element 51 as required during use of the ablutionary system 100.

[0045] In the example shown in Figure 4, the fixing element 51 is releasably coupled to the first bar element 10. However, the riser bar assembly 1 may alternately be installed inverted in an ablutionary setting i.e., with the first bar element 10 closer to a floor 102 of the ablutionary setting 101 than the second bar element 20 is to the floor 102. In this case, the fixing element 51 may be releasably coupled to the second bar element 20 and the sleeve 40 inverted with respect to the collet 30 such that the second bar element 20 extends through the first aperture 42 of the sleeve 40. In this configuration, the terminal face 41 of the sleeve 40 would contact the second part 32 of the collet 30.

[0046] In the example riser bar assembly shown in Figures 1 to 4, the first and second bar elements 10, 20 are both substantially cylindrical. However, it will be appreciated by those skilled in the art that the first and second bar element 10, 20 may have a variety of shapes. For example, a cross section of either or both of the first and bar element 10, 20 may be triangular, square, hexagonal or any other regular or irregular shape.

[0047] Figure 5 shows schematically a method 200 of installation of a riser bar assembly according to the disclosure, e.g. the riser bar assembly 1. Components and functional units which in terms of function and/or construction are equivalent or identical to those of the previously described embodiments are provided with the same reference signs.

[0048] The method 200 comprises at least three steps.

[0049] A first step 201 of the method 200 involves adjusting a total length of the riser bar assembly 1 through sliding the first bar element 10 telescopically relative to the second bar element 20. This may result increasing or reducing the total length 70 of the riser bar assembly 1. The total length 70 is measured parallel to an axis of the first bar element 10.

[0050] A second step 202 of the method 200 involves tightening the collet 30 thereby fixing the relative position of the first bar element 10 with respect to the second bar element 20.

[0051] A third step 203 of the method 200 involves fixing one of the first connector 60a or the second connector 60b to the wall 103 within the ablutionary setting 101 such

that either the first bar element 10 or the second bar element 20 respectively is fixedly secured to the wall 103.ablutionary setting

[0052] The method 200 may additionally comprise a fourth step 204. The fourth step 204 of the method 200 may involve fixing the other of the first connector 60a and the second connector 60b to the wall 103 of the ablutionary setting 101 such that the other one of the first bar element 10 and the second bar element 20 is fixedly secured to the wall 103 of the ablutionary setting 101.

[0053] The method 200 may additionally comprise a fifth step 205. The fifth step 205 of the method 200 may involve positioning the sleeve 40 such that the sleeve 40 contacts and at least partially covers the collet 30. The sleeve may be positioned to sit atop and cover the collet 30.

[0054] Although shown in a specific order in Figure 5, the steps 201, 202, 203, 204, 205 of the method 200 may be completed in any suitable order. For example, the first connector 60a may be secured to the wall 103 prior to the total length 70 of the riser bar assembly 1 being adjusted. In another example, the sleeve 40 may be positioned such that the sleeve 40 contacts the collet 30 immediately after the collet 30 is tightened.

[0055] The method 200 may be completed by an installer of the riser bar assembly 1.

[0056] The term 'end' is used throughout this disclosure to describe a final part of an object, it includes a terminal face of the object but is not limited to this. For instance, an 'end' of a bar element may comprise a terminal face and a section of the length of the bar element immediately neighbouring said terminal face.

[0057] Within this disclosure, 'a wall of an ablutionary setting 101' may be, for example, a wall of a domestic dwelling or a panel wall of a shower enclosure. Within this disclosure, 'a floor 102 of an ablutionary setting 101' may be, for example, a floor of a domestic dwelling or a shower tray of a shower enclosure.

[0058] It will be understood that the invention is not limited to the embodiments above-described and various modifications and improvements can be made without departing from the concepts herein. Except where mutually exclusive, any of the features may be employed separately or in combination with any other features and the disclosure extends to and includes all combinations and sub-combinations of one or more features described herein.

Claims

1. A riser bar assembly for use in an ablutionary setting having an adjustable riser bar with a telescopic arrangement comprising;

a first bar element;

a second bar element, translatable relative to the first bar element along a length of the first

- bar element; and
a collet configured such that relative positions of the first bar element and the second bar element can be fixed by tightening the collet.
2. The riser bar assembly of claim 1 further comprising a sleeve having a first aperture through which either the first bar element or the second bar element extends.
3. The riser bar assembly of claim 2, wherein the sleeve is configured to be positionable to cover at least partially the collet.
4. The riser bar assembly of claim 2 or claim 3, wherein the sleeve is configured to be positionable to sit atop and at least partially cover the collet.
5. The riser bar assembly of claim 2, claim 3 or claim 4, wherein at least one functional accessory is provided by or connected to the sleeve.
6. The riser bar assembly of claim 5 further comprising a portion extending away from the first bar element or the second bar element, wherein one or more functional accessories are provided by or connected to the portion extending away from the first bar element or the second bar element.
7. The riser bar assembly of any one of the preceding claims, wherein a fixing element for holding a fluid delivery device or a part thereof is attached to the first bar element or the second bar element.
8. The riser bar assembly of any one of the preceding claims, wherein a wire passes along at least a portion of a length of the first bar element and/or the second bar element.
9. The riser bar assembly of any one of the preceding claims, wherein a channel for conveying fluid passes along at least a portion of a length of the first bar element and/or the second bar element.
10. The riser bar assembly of any one of the preceding claims comprising one or more connectors configured to attach the first bar element and/or the second bar element to a surface within the ablutionary setting.
11. An ablutionary system comprising:
a riser bar assembly according to any one of the preceding claims attached to a surface within an ablutionary setting; and
a fluid delivery device in fluid communication with a source of a flow of fluid having a user-desired temperature and/or flow rate.
12. A method of installation of a riser bar assembly for use in an ablutionary setting comprising:
adjusting a total length of riser bar assembly by sliding a first bar element telescopically relative to a second bar element; and
tightening a collet to fix the relative positions of the first bar element and the second bar element.
13. The method of claim 12 comprising at least partially covering the collet with a sleeve, optionally comprising positioning the sleeve such that the sleeve contacts and at least partially covers the collet.
14. The method of claim 12 or claim 13 comprising attaching the riser bar assembly to a surface in the ablutionary setting.
15. The method of any one of claims 12 to 14, wherein the riser bar assembly is a riser bar assembly according to any one of claims 1 to 10.

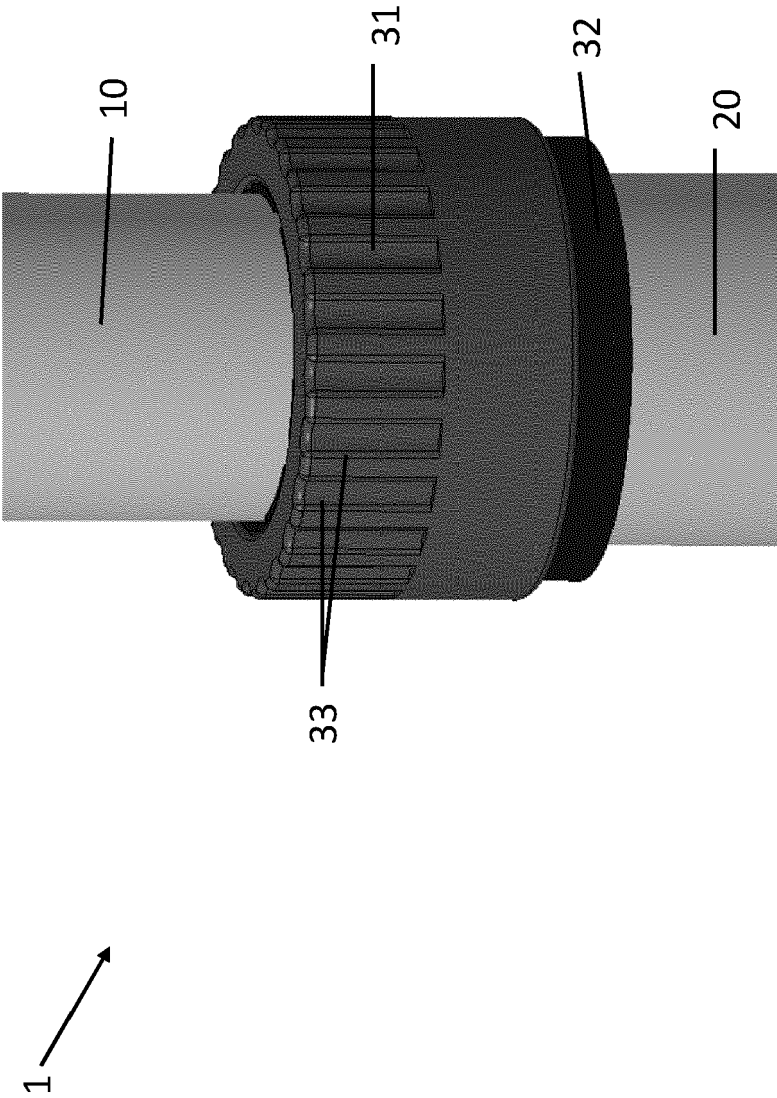


Figure 1

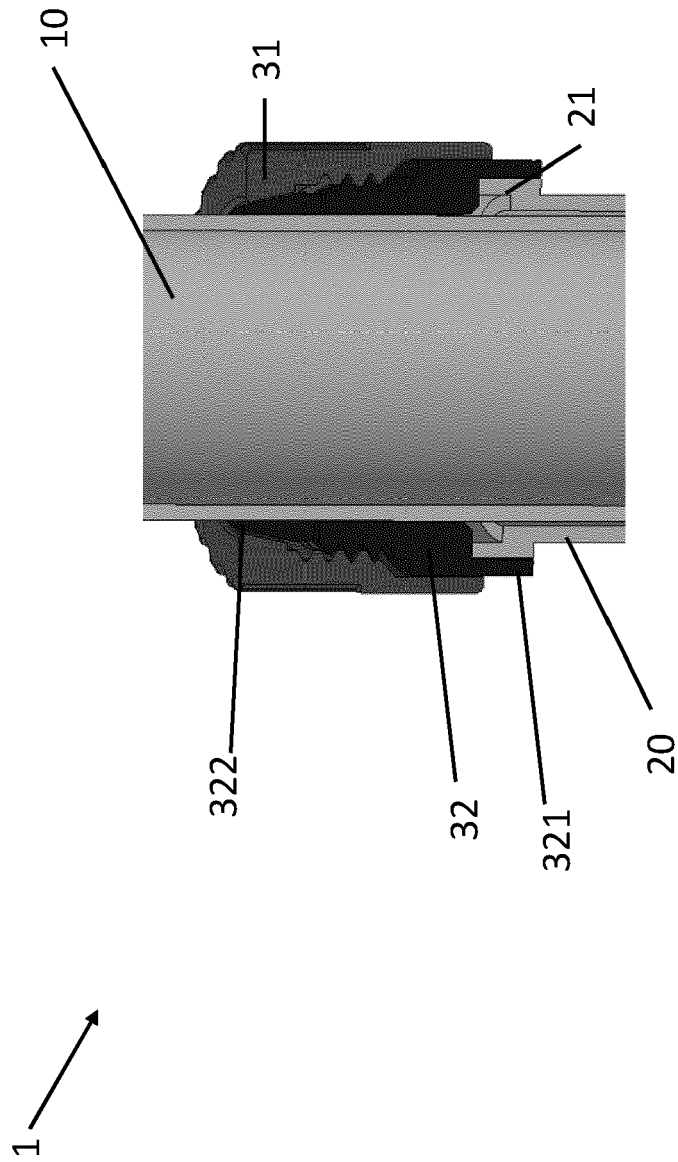


Figure 2

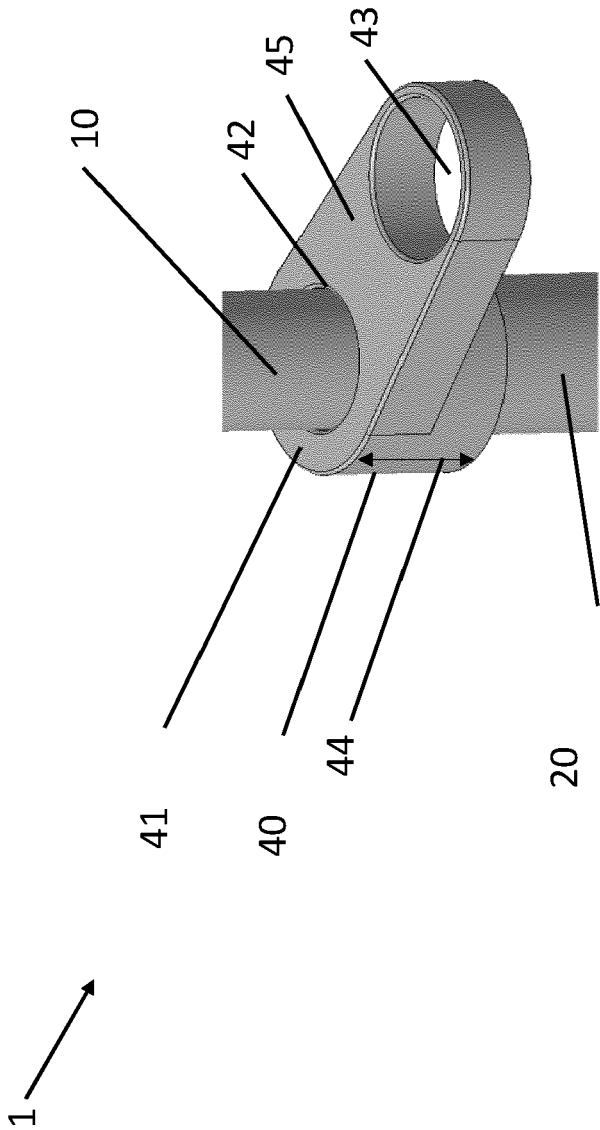
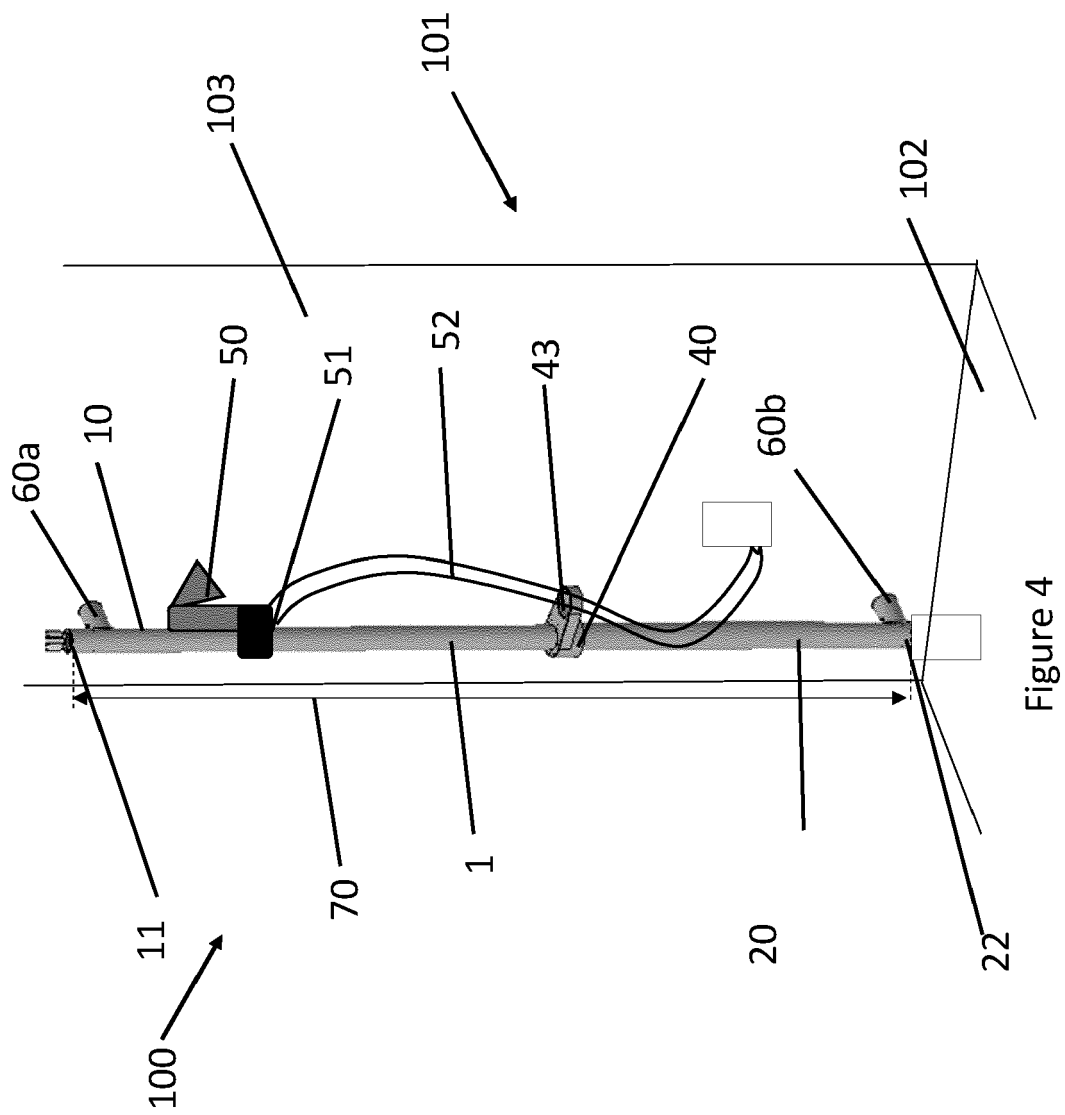


Figure 3



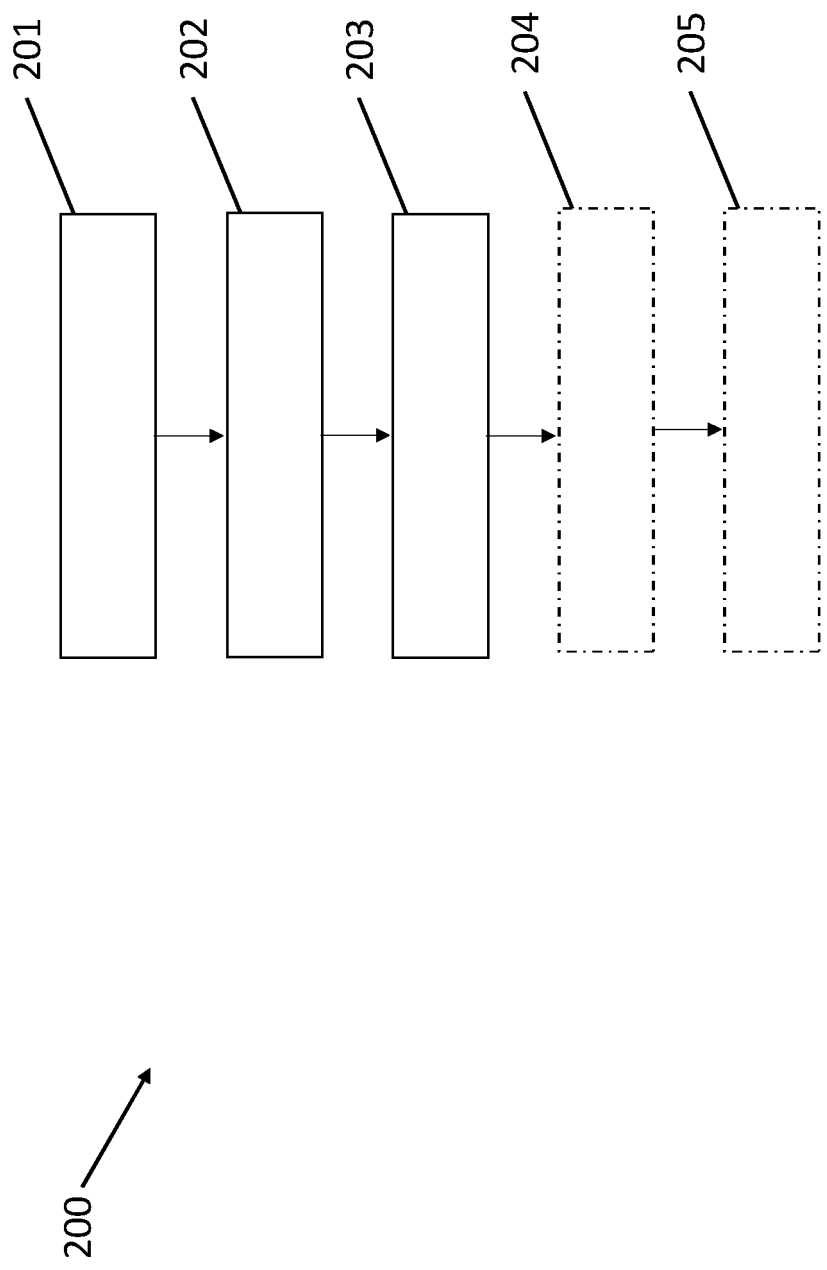


Figure 5



EUROPEAN SEARCH REPORT

Application Number

EP 23 17 9485

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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	CN 108 894 288 A (FUJIAN NANAN LANYUAN SANITARY EQUIPMENT CO LTD) 27 November 2018 (2018-11-27) * paragraph [0004] - paragraph [0032]; figures 1-7 *	1-15	INV. E03C1/06
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			TECHNICAL FIELDS SEARCHED (IPC)
			E03C
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 30 November 2023	Examiner Martinez Cebollada
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	

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 23 17 9485

5 This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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30-11-2023

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