(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 1 227 190 A2

(12) EUROPEAN PATENT APPLICATION

(43) Date of publication:
31.07.2002 Bulletin 2002/31

(51) Int Cl.[7]: **E03C 1/06**, E03C 1/05

(21) Application number: **02250590.3**

(22) Date of filing: **29.01.2002**

(84) Designated Contracting States:
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR
Designated Extension States:
AL LT LV MK RO SI

(30) Priority: **30.01.2001 GB 0102358**

(71) Applicant: **AQUALISA PRODUCTS LIMITED**
Westerham, Kent TN16 1DE (GB)

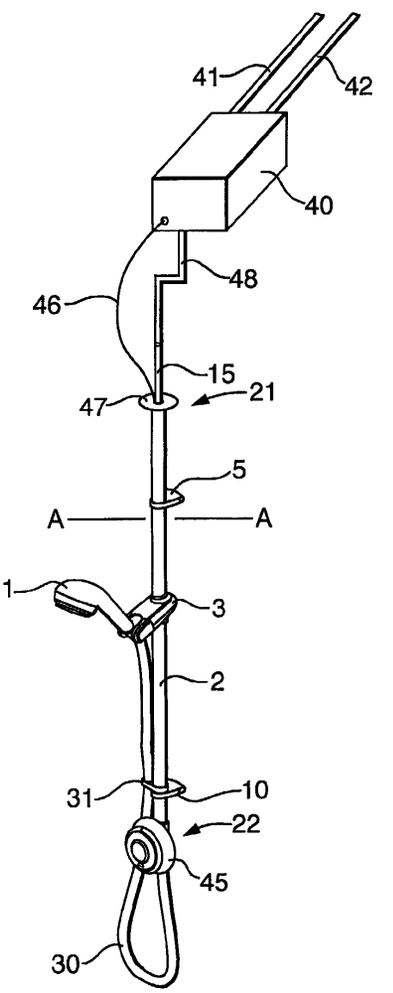
(72) Inventor: **Crawford, Tom**
Westerham, Kent, TN 16 1DE (GB)

(74) Representative: **Smith, Samuel Leonard**
J.A. Kemp & Co.,
14 South Square,
Gray's Inn
London WC1R 5JJ (GB)

(54) Riser rail

(57) A shower unit comprising a showerhead (1) for dispensing water, a riser rail (2) for supporting said showerhead (1), and a flexible tube (30) for connecting said showerhead (1) to a water supply, wherein said riser rail (2) includes a water passage disposed therein for the passage of water therethrough from a first end (21) to a second, opposite end (22), and said flexible tube (30) is connected to said second end (22).

Fig.1(a).



EP 1 227 190 A2

Description

[0001] The present invention relates to showers and more particularly to shower riser rails, their attachment to walls and the attachment of components to the shower riser rail, as well as to the control of electrically controlled valves for mixing hot and cold water and for providing mixed hot and cold water to a showerhead supportable on the shower riser rail.

[0002] Conventional riser rails for supporting showerheads for dispensing water are fixed to walls at either end. The showerhead is then attached to a slider on the riser rail and the showerhead is attached through a flexible tube to a water supply. The water supply is usually either a separate unit mounted on the wall or is the same as for taps on a bath.

[0003] The problem with the above described prior art shower unit is that when the water supply unit is attached to the wall, a trench for the hot and cold water pipes to supply the water supply unit with water must be chiselled out of the wall or the pipes are attached to the wall and may require coving to be attached around them. If the water supply is the same as that for the bath then in order to turn the shower on and off or to control the temperature of the water the user must bend down to reach the controls. This can be difficult for elderly people who already experience problems with the slippery floor of a shower.

[0004] The present invention provides a shower unit comprising: a showerhead for dispensing water; a riser rail for supporting said showerhead; and a flexible tube for connecting said showerhead to a water supply; wherein said riser rail includes a water passage disposed therein for the passage of water therethrough from a first end to a second, opposite end; and said flexible tube is connected to said second end.

[0005] In this way, the extra work involved in attaching water supply pipes to a wall, to embed them in a wall or to cover them with a coving is unnecessary. This saves both time when assembling the shower unit and is also simpler to assemble, only requiring the riser rail to be attached to the wall.

[0006] According to a further aspect of the present invention there is provided a shower unit comprising: a showerhead for dispensing water; a riser rail for supporting said showerhead; and a control device for generating electrical signals; wherein said electrical signals are sendable along at least a portion of said riser rail.

[0007] By providing for electrical signals to be sendable along at least a portion of the riser rail, the need for exterior control wires which would otherwise need to be shielded from water is dispensed with. Also, because the need for wires outside of the riser rail is dispensed with, assembly is made significantly easier and no channelling out of the wall is required for the cable.

[0008] The shower units described above may further comprise an electronically controlled valve for mixing hot and cold water and for providing mixed hot and cold water to said water passage at the first end of the riser rail.

[0009] In this way, assembly of the shower unit is further simplified in that the electronically controlled valve may be placed in spaced apart relationship to the riser rail in a convenient position for the attachment thereto of hot and cold water pipes. The electronic control of the valve also simplifies assembly and especially the amount of plumbing required to install a shower unit according to the present invention.

[0010] The present invention further provides a riser rail assembly comprising an elongate riser rail for supporting a showerhead, said riser rail having a fixing hole in an elongate outer side wall, and a bracket including: a housing, a wedge member and an engagement portion; wherein said housing has an opening for receiving said riser rail, an outer attachment surface on which said housing is arranged to be attached to a wall and a passage extending between a side wall defining said opening and said attachment surface; said engagement portion is dimensioned to be insertable into said fixing hole of said elongate riser rail and is positionable within said passage; and said wedge member is insertable into said passage from said attachment surface and, when completely inserted into said passage behind said engagement portion, forces said engagement portion to at least partly protrude into said aperture and thereby into said fixing hole when said riser rail is positioned in said opening.

[0011] In this way the position of fixing elements supporting the riser rail on a wall need not be at the end of the riser rail. This allows positioning of the brackets on the wall to be adjusted for convenience of attachment to be chosen rather than the length of the shower rail determining where the fixing elements are to be placed. The provision of a fixing hole in the riser rail and an engagement portion which is insertable into that fixing hole allows the bracket to support at least some of the weight of the riser rail and to prevent rotation of the riser rail in the opening. Because the engagement portion only extends into the opening when the wedge member is fully inserted into the passage, the engagement portion only enters the fixing hole of the riser rail, thereby fixing the riser rail to the bracket, as the bracket is attached to the wall. This feature simplifies the attachment of the riser rail to the wall.

[0012] If the engagement portion is substantially in the shape of a cylinder, then preferably an O-ring surrounds a base of said engagement portion.

[0013] Preferably, the housing comprises at least one attachment through hole for receiving fixing means for securing said housing to a wall. This allows easy assembly of the housing to the wall.

[0014] The riser rail may further comprise a spacer element, said spacer element being positionable between said attachment surface and said wall. Furthermore, said wedge may have resilient fins which protrude into said aperture to engage with said riser rail and exert a

force on said riser rail against said housing when said wedge member is completely inserted into said passage. Advantageously, the wedge member and engagement portion are made of a thermoplastic elastomer.

[0015] In a further aspect of the present invention there is provided a riser rail assembly comprising: a tubular riser rail upon which a showerhead may be supported; and a backing member of a housing, wherein said riser rail has a cut out in a side wall; and said backing member has a riser rail receiving through hole in which said riser rail is positionable and an opening for exposing said cut out in said riser rail when said riser rail is positioned in said riser rail receiving hole; wherein said backing member further comprises an insertion block which is insertable into said opening and said cut out, said insertion block being dimensioned to engage side walls of said cut out and said backing member such that said backing member is attached to said riser rail and such that relative rotation and relative axial movement between said riser rail and said backing member is substantially prevented.

[0016] In this way the attachment of a housing to the riser rail is simplified and does not require specialist tools.

[0017] Advantageously the clamping plate includes a through hole for an electrical wire to pass through from said riser rail to said housing. The housing can further comprise a front member attachable to said backing member over said opening.

[0018] Preferably the riser rail further comprises a water pipe for the flow of water therethrough disposed in said riser rail. In this case, the riser rail may further comprise an end piece attached to said water pipe and wherein said insertion block includes a recess for engaging said end piece when said insertion block is inserted into said opening thereby substantially to prevent relative rotation of said water pipe to said riser rail and relative axial movement of said water pipe to said riser rail. The end piece may include flat opposing sides parallel to the axial direction of said water pipe which are engagable with flat opposing sides of said recess, and the end piece may also include ribs substantially perpendicular to the axial direction of said water pipe which are engagable with ribs in said recess.

[0019] Preferably, the riser rail has a slot in a side wall at an end of said riser rail, and also the backing member has a knob which protrudes into said slot when said riser rail is correctly positioned in said through hole.

[0020] Advantageously, the insertion block comprises at least one rib parallel to the axial direction of said riser rail on an outer surface engagable with at least one rib in said opening of said backing member. Furthermore, the insertion block may comprise at least one rib perpendicular to the axial direction of said riser rail on an outer surface engagable with at least one rib in said opening of said backing member.

[0021] The present invention will now be described by way of example only with reference to the following drawings in which:

Figure 1a is a schematic perspective view of an embodiment of a shower unit according to the present invention;

Figure 1b is a cross section taken through line A-A in Figure 1a.

Figure 2 is a schematic perspective view of a bracket according to the present invention;

Figure 3 is an exploded schematic perspective view of a riser rail and housing according to the present invention;

Figure 4 is a schematic perspective view of a backing member of a housing according to the present invention;

Figure 5 is a schematic perspective view of the end of a riser rail according to the present invention;

Figure 6 is a schematic perspective view of an insertion portion according to the present invention;

Figure 7 is a schematic perspective view of the end of a water pipe with an end piece attached according to the present invention; and

Figure 8 is a schematic perspective view of the cap illustrated in Figure 1.

[0022] In the figures like parts are indicated with like reference numerals.

[0023] Figure 1 shows a shower unit comprising a showerhead 1 for dispensing water supported on a riser rail 2. The showerhead 1 is attached to the riser rail 2 by a clamping member 3. The position of the showerhead 1 on the riser rail 2 is adjustable by moving the position of clamping member 3. The showerhead 1 is removable from the clamping member 3.

[0024] The shower rail 2 is fixed to a wall (not illustrated) by upper bracket 5 and lower bracket 10. The weight of the riser rail may be at least partly supported by either upper bracket 5 or lower bracket 10 or by both. The construction of the bracket(s) and how they may support the load is described in detail below with reference to Figure 2.

[0025] The riser rail 2 illustrated in Figure 1 is in the form of a tube with a circular cross section. The riser rail 2 may have any cross section. It may, for example, have a square cross section and need not necessarily be hollow. In the illustrated embodiment a water pipe 15 is provided in the riser rail 2. The water pipe 15 provides for the passage of water from a first end 21 of the riser rail 2 to a second end 22 of the riser rail 2. Although in the illustrated embodiment, the passage of water through the riser rail is illustrated as being provided for by a water pipe 15 this is not necessarily the case. For example, side walls of the riser rail may, on their inner surface, provide a water passage for a passage of water therethrough.

[0026] In the illustrated embodiment, the showerhead 1 is connected to the second end 22 of the riser rail 2 by a flexible tube 30. A clip 31 holds the flexible tube 30

in close proximity to the riser rail 2. In another embodiment, the showerhead 1 may be attached directly to the second end 22 of the riser rail 2. Furthermore, body jets (i.e. nozzles for dispensing water towards a user of the shower from the side) can be attached to the riser rail 2 as can other add-ons. The riser rail 2 may have holes in the side wall for the dispensation of water there through.

[0027] In the embodiment illustrated in Figure 1, mixed hot and cold water is supplied to the water pipe 15 at the first end 21 of the riser rail 2 by an electronically controlled valve 40 which mixes hot water, supplied by a hot water tube 41, and cold water, supplied by cold water tube 42, in the desired ratio. The temperature of the water is controlled by a control device 45 which is attached at the second end 22 of the riser rail 2. Electrical signals are sent along the riser rail 2 from the control device 45 to the electronically controlled valve 40. In the embodiment illustrated in Figure 1, this is provided for by a control wire 46 between the control device 45 and the electronically controlled valve 40 and is disposed within the riser rail 2, for instance alongside the water pipe 15. This is most clearly illustrated in Figure 1b. The wire 46 may be connected to the control device 45 and the electronically controlled valve 40 with connectors such as plugs and sockets. Alternatively, electrical signals may be sent along the riser rail 2 through an electrical circuit comprising the water pipe 15 and the riser rail 2 itself, so long as the water pipe 15 and the riser rail 2 are electrically insulated from one another.

[0028] In the arrangement shown in Figure 1, the riser rail 2 is intended to extend up to the ceiling of the room in which the shower unit is installed. A cap 47 covers the hole which is required in the ceiling for the riser rail 2 and the water pipe 15. The cap 47 may also be used to support at least some of the weight of the riser rail assembly.

[0029] In order to bypass a joist or other structural members, a kinked tube 48 may be attached to the end of water pipe 15 so as to connect the water pipe 15 without having to disturb the joist or structural member. In particular, the kinked tube 48 is shaped so as to divert the path mixed water from a first axis to a second axis displaced from but generally parallel to the first axis.

[0030] In an alternative embodiment to that illustrated in Figure 1, the showerhead 1 may be attached to the second end 22 of the riser rail 2 without the use of a flexible tube 30. In such an embodiment the mixed water is fed up the riser rail to the showerhead 1 at the top. The control device 45 would be situated on the riser rail 2 away from the end (21, 22).

[0031] The construction of the bracket(s) 5, 10 which are supporting the load of the riser rail 2 illustrated in Figure 1, will now be described in detail with reference to Figure 2. Such bracket(s) comprise a housing 100, a wedge member 110 and an engagement portion 120. The engagement portion 120 is important in that it prevents rotation of the riser rail 2 in the housing 100 and also supports the weight of the riser rail 2. It does this by being dimensioned to be insertable into a fixing hole (not illustrated) in a side wall 222 of a riser rail 2.

[0032] The housing 100 has an opening 102 for receiving the riser rail 2. The side walls which define the opening 102 surround at least a portion of the riser rail 2. In the illustrated embodiment the side walls of the opening 102 completely surround the riser rail 2. The opening 102 in the housing 100 should be of a similar cross section to that of the riser rail 2 which need not be circular. The housing 100 is attachable to a wall on an outer attachment surface 103. This is affected in the illustrated embodiment by two fastening means 130 which fit in attachment through holes 106. The attachment through holes 106 exit on the attachment surface 103 and in this way the housing 100 can be attached to a surface on the attachment surface 103. In the embodiment as illustrated in Figure 2, a spacer element 140 is positioned between the attachment surface 103 and the wall to which the riser rail 2 is to be attached. The spacer elements 140 may be used to vary the distance of the riser rail 2 from the wall, for example, to avoid lateral joists in the ceiling. The spacer element 140 has through holes 142 from a first surface 144 to a second surface 146. The fastening means 130 (which may be screws, bolts, nails etc) pass through the attachment through holes 106 in the housing 100 and through the fixing holes 142 in the spacer element 140 into the wall. In this way the attachment surface 103 is brought into contact with the first surface 144 of the spacer element 140 and the second surface 146 of a spacer element 140 is in contact with the wall.

[0033] A passage 104 extends between a side wall of the opening 102 and the attachment surface 103. The engagement portion 120 is insertable into the passage 104 from the attachment surface 103 such that it does not protrude into the opening 102. When the whole of the wedge element 110 is positioned completely within the passage 104 such that it does not protrude over the attachment surface 103, the engagement portion 120 protrudes into the opening. In this way, when the housing 100 is fastened to the wall such that the attachment surface 103 lies against another surface (such as first surface 144 of the spacer element 140) the wedge element is forced into the passage 104 and the engagement portion 120 is moved into a position where it protrudes into the opening 102. A correctly positioned riser rail 2 within the opening 102 is then fixed to the bracket 100 by the protrusion of the engagement portion 120 into the fixing hole. The engagement portion 120, wedge element 110 and passage 104 are dimensioned such that when the bracket 100 is attached to the wall and the wedge element is fully inserted into the passage 104, substantially no relative movement between the wedge member 104, engagement portion 120 and housing 100 is possible.

[0034] During assembly, once the riser rail 2 has been inserted into the opening 102, the fixing hole in the side

wall of the riser rail 2 may be aligned with the engagement portion 120 and the engagement portion inserted into the fixing hole by pushing the wedge element 110 completely into the passage 104 before the bracket is secured to the wall. In this way, alignment and securing the bracket 100 to the wall can be carried out in separate operations.

[0035] In the illustrated embodiment, the engagement portion 120 forms part of the wedge element 110. This is not essential in that the engagement portion 120 and the wedge element 110 may be formed from two separate elements. In either case, resilient fins 125 may also protrude into the opening 102 when the wedge element 110 is fully inserted into the passage 104. Those resilient fins serve the purpose of engaging with the outer surface of the riser rail 2 to exert a force on the riser rail 2 against the housing 100. This serves to substantially prevent rattling of the riser rail 2 in the bracket 100. Such an effect may alternatively or in addition be performed by the provision of an O-ring on the engagement portion which may be knob-shaped. Preferably the engagement portion is made of a thermoplastic elastomer. Recesses 107 formed in the side wall defining opening 102 hold the clip 31 (see Figure 1) perpendicular to the control device 45 to prevent the flexible tube 30 from hanging over the control device 45.

[0036] If the bracket 5, 10 does not need to take the load of the riser rail assembly but is only for support, the bracket is constructed in the same way albeit without engagement portion 120. In this arrangement no fixing hole is necessary in the riser rail 2.

[0037] Figure 3 illustrates the way in which the control device 45 is attached to the riser rail 2 and the way in which the water pipe 15 is supported within the riser rail 2.

[0038] The housing 45 is comprised of four main components, namely a backing member 300, an insertion block 320, a clamping plate 340 and a front member 350. The riser rail 2 which is tubular is prepared with a cut out 20 near the second end 22. The cut out is defined by a missing portion of the side wall of the riser rail 2.

[0039] As can be seen in Figure 3, the water pipe 15 is provided with an end piece 150 attached to an end.

[0040] Each of the main components illustrated in Figure 3 will now be described in detail by referring to Figures 4 to 7.

[0041] Figure 4 illustrates the backing member 300 of the housing 45. The backing member 300 has a riser rail receiving through hole 302 into which the riser rail 2 is insertable. In the illustrated embodiment, the riser rail receiving hole 302 opens on two sides of the backing member and internally is partly defined by a rear side 303 which is an inner surface of the backing member 300. When the riser rail 2 is inserted in the riser rail receiving hole 302 (not necessarily in contact with the rear side 303), a portion of the side wall of the riser rail 2 is exposed by an opening 304 in the housing which is opposite the rear side 303.

[0042] In order to ensure that the riser rail 2 is positioned correctly in the backing member 300, as can be seen in Figure 5, a slot 25 is provided in a side wall at the second end 22 of the riser rail 2. When the riser rail 2 is inserted into the through hole 302 of the backing member 300, the slot 25 is lined up with protrusion 310 which protrudes into the through hole 302 from the rear side 303 of the backing member 300. The slot 25 and protrusion 310 are arranged to ensure that the cut out 20 of the riser rail 2 faces the opening 304 of the backing member 300 and that the cut out 20 is at a predetermined height relative to the housing 45.

[0043] The insertion block 320 as is illustrated in Figure 6 is dimensioned to be insertable into the cut out 20 of riser rail 2 when the riser rail 2 is positioned in the backing member 300. The insertion block 320 is inserted into the cut out 20 through opening 304. Engagement of a top surface 321 of insertion block 320 with a top side wall 26 of cut out 20 of the riser rail 2, combined with engagement of ribs 322 on each side of insertion block 320 with horizontal ribs 306 on each side of the backing member 300 ensure that the backing member 300 may not move up (as illustrated) the riser rail 2. Similarly, engagement of bottom surface 323 of insertion block 320 with bottom side wall 27 of cut out 20 of riser rail 2 and engagement of ribs 322 with ribs 306 ensures that the backing member 300 does not slide off the bottom of riser rail 2.

[0044] Relative axial rotation of the riser rail 2 to housing 300 is prevented by engagement of sides of insertion block 320 with side walls 28, 29 of cut out 20 of riser rail 2. Optionally, ribs formed on the bottom surface 323 of insertion block 320 may engage with vertical ribs 308 formed on backing member 300. The skilled person will appreciate that the cut out 20 may be any shape so long as that shape is compatible with the shape of the insertion block 320.

[0045] Insertion block 320 also has a through hole 325 for an electrical wire to pass through from the riser rail 2 to the housing 45. Side walls of defining the through hole 325 prevent the wire from chaffing against the top side wall 26 of cut out 20 of the riser rail 2.

[0046] In order that the insertion block 320 is not accidentally removed from the backing member 300, the clamping plate 340 may be attached to the backing member using screws 341 which screw into screw receiving holes 312 in backing member 300. The clamping plate 340 ensures that the insertion portion 320 does not rotate relative to the backing member 300. This is done by ensuring that the clamping plate 340 engages tightly with the (flat) back of the insertion portion 320 to hold the insertion portion 320 square to the clamping plate 340. The clamping plate 340 is provided with corresponding holes for the screws and also with an extra hole 342 for the passage of an electrical wire. The height of the extra hole 342, when assembled, is higher that the hole in the insertion portion to prevent water running along the wire into the back of the front of the housing

350. To fully assemble, the front member 350 of the housing 45 may be attached to the backing member 300. Integral with the backing member 300 is a spray wall 314 which surrounds the opening 304. The clamping member 340 engages with the spray wall 314 (optionally in a recess) such that in the event of water finding its way into through hole 302 the water is prevented from leaking into the front member 350.

[0047] Because the insertion block 320 is fixed vertically and horizontally relative to the backing member 300, the insertion block 320 may be used for fixing the position of the water pipe 15. This is achieved by providing the water pipe 15 with an end piece 150 which may be engaged by the insertion block 320.

[0048] As is illustrated in Figure 7, the end piece 150 attached to the end of water pipe 15 includes flat opposing sides 155 which are substantially parallel. Horizontal ribs 157 protrude in a direction substantially perpendicular to the axial direction of the water pipe 15. The end piece 150, when assembled, lies in a recess 330 of the insertion block 320 as is illustrated in Figure 6. Recess 330 has inner side walls 332 on opposing surfaces which are substantially parallel and engage the flat opposing sides 155 of the end piece 150. In this way, the end piece and thereby the water pipe 15 are prevented from rotating axially relative to the insertion block 320. A horizontal rib 335 in recess 330 engages with the horizontal ribs 157 of end piece 150 to thereby prevent movement in the axial direction of the end piece 150 and thereby the water pipe 15 relative to the insertion member 320.

[0049] The flexible hose 30 may then be attached to the end piece 150 through a screw fitting 158 on the bottom of the end piece 150. In this way, the control device 45, the riser rail 2, the water pipe 15 and the flexible tube 30 as illustrated in Figure 1 can all be securely attached relative to one another.

[0050] The height of the cap 47 on the riser rail 2 is adjustable so that the riser rail 2 need not be cut to length depending on the height of the ceiling. As is illustrated in Figure 8, this is achieved by providing an inner surface of a hole through which the riser rail passes with a groove 471 in which an o-ring (not illustrated) is provided. The compression of the o-ring on the rail is sufficient to hold the weight of the cap 47.

Claims

1. A shower unit comprising:

a showerhead for dispensing water;
a riser rail for supporting said showerhead; and
a flexible tube for connecting said showerhead to a water supply; wherein
said riser rail includes a water passage disposed therein for the passage of water therethrough from a first end to a second, opposite end; and
said flexible tube is connected to said second end.

2. A shower unit according to claim 1, further comprising an electronically controlled valve for mixing hot and cold water and for providing mixed hot and cold water to said water passage at said first end of said riser rail.

3. A shower unit comprising:

a showerhead for dispensing water;
a riser rail for supporting said showerhead; and
a control device for generating electrical signals; wherein
said electrical signals are sendable along at least a portion of said riser rail.

4. A shower unit according to claim 3, wherein said riser rail includes a water passage disposed therein for the passage of water therethrough from a first end to a second opposite end;

said signals are sendable via said first end; and
said showerhead is connectable to said second end such that water is supplyable to said showerhead from said second end.

5. A shower unit according to claim 4, further comprising a flexible tube for connecting said showerhead to said second end.

6. A shower unit according to claim 3, 4 or 5, further comprising an electronically controlled valve controlled by said electrical signals for mixing hot and cold water and for providing mixed hot and cold water to said showerhead.

7. A shower unit according to claim 1 or 2, further comprising a control device for generating electrical signals; and wherein
said electrical signals are sendable along at least a portion of said riser rail to said second end.

8. A shower unit according to any one of claims 4 to 7, wherein said water passage is comprised of a water pipe disposed within said riser rail.

9. A shower unit according to claim 8, wherein said water pipe and riser rail are electrically conductive and are insulated from each other, said electrical signals being sendable through an electrical circuit comprised of said riser rail and said water pipe.

10. A shower unit according to any one of claims 3 to 8, wherein said electrical signals are sendable through an electrical circuit comprised of at least

one wire disposed in said riser rail.

11. A shower unit according to any one of the preceding claims, further comprising a kinked tube attached to said first end.

12. A riser rail assembly comprising an elongate riser rail for supporting a showerhead, said riser rail having a fixing hole in an elongate outer side wall, and a bracket including:

a housing, a wedge member and an engagement portion; wherein
said housing has an opening for receiving said riser rail, an outer attachment surface on which said housing is arranged to be attached to a wall and a passage extending between a side wall defining said opening and said attachment surface;
said engagement portion is dimensioned to be insertable into said fixing hole of said elongate riser rail and is positionable within said passage; and
said wedge member is insertable into said passage from said attachment surface and, when completely inserted into said passage behind said engagement portion, forces said engagement portion to at least partly protrude into said aperture and thereby into said fixing hole when said riser rail is positioned in said opening.

13. A riser rail assembly according to claim 12, wherein said engagement portion is part of said wedge member.

14. A riser rail assembly according to claim 12 or 13, wherein said engagement portion is substantially in the shape of a cylinder.

15. A riser rail assembly comprising:

a tubular riser rail upon which a showerhead may be supported; and
a backing member of a housing, wherein
said riser rail has a cut out in a side wall; and
said backing member has a riser rail receiving through hole in which said riser rail is positionable and an opening for exposing said cut out in said riser rail when said riser rail is positioned in said riser rail receiving hole; wherein
said backing member further comprises an insertion block which is insertable into said opening and said cut out, said insertion block being dimensioned to engage side walls of said cut out and said backing member such that said backing member is attached to said riser rail and such that relative rotation and relative axial movement between said riser rail and said backing member is substantially prevented.

16. The riser rail assembly according to claim 15, wherein said insertion block a through hole for an electrical wire to pass through from said riser rail to said housing.

17. The riser rail assembly of claim 15 or 16, wherein said housing further comprises a clamping plate attachable to said backing member for enclosing said insertion block in said opening.

18. A combination of the features of two or more of a) the shower unit of any one of claims 1 to 11, b) the riser rail assembly of any one of claims 12 to 14, and c) the riser rail assembly of any one of claims 15 to 17.

Fig.1(a).

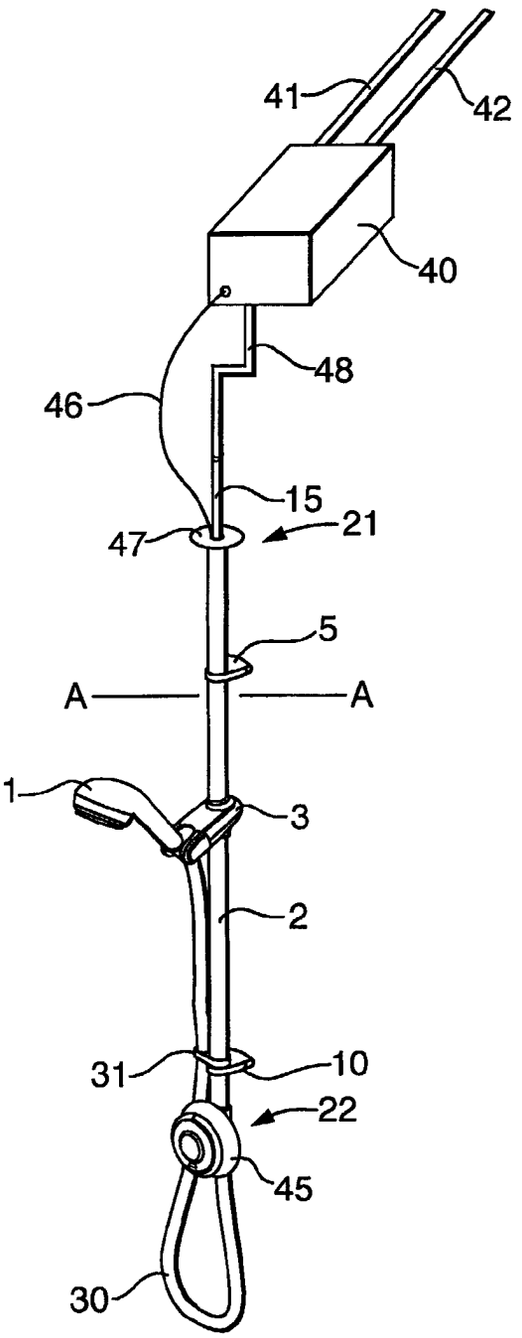
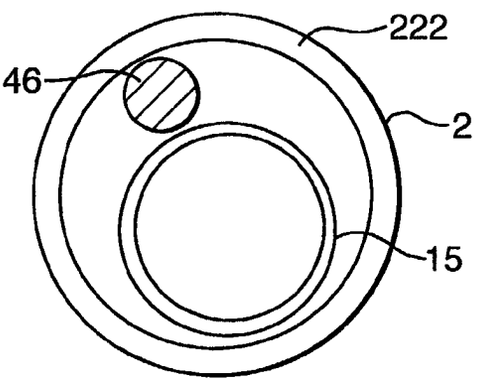


Fig.1(b).



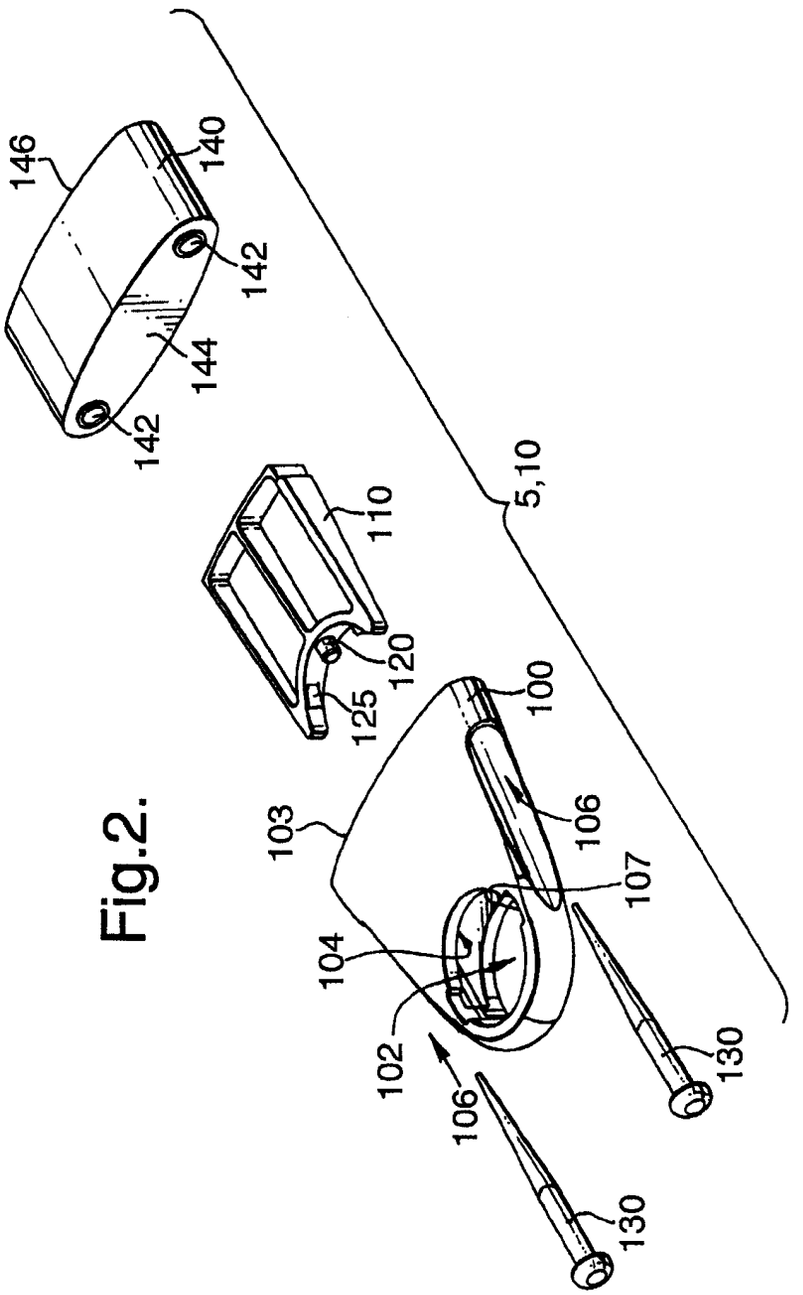

146
140
142
144
142
5,10
110
120
125
100
103
106
107
104
102
106
130
130

Fig.2.

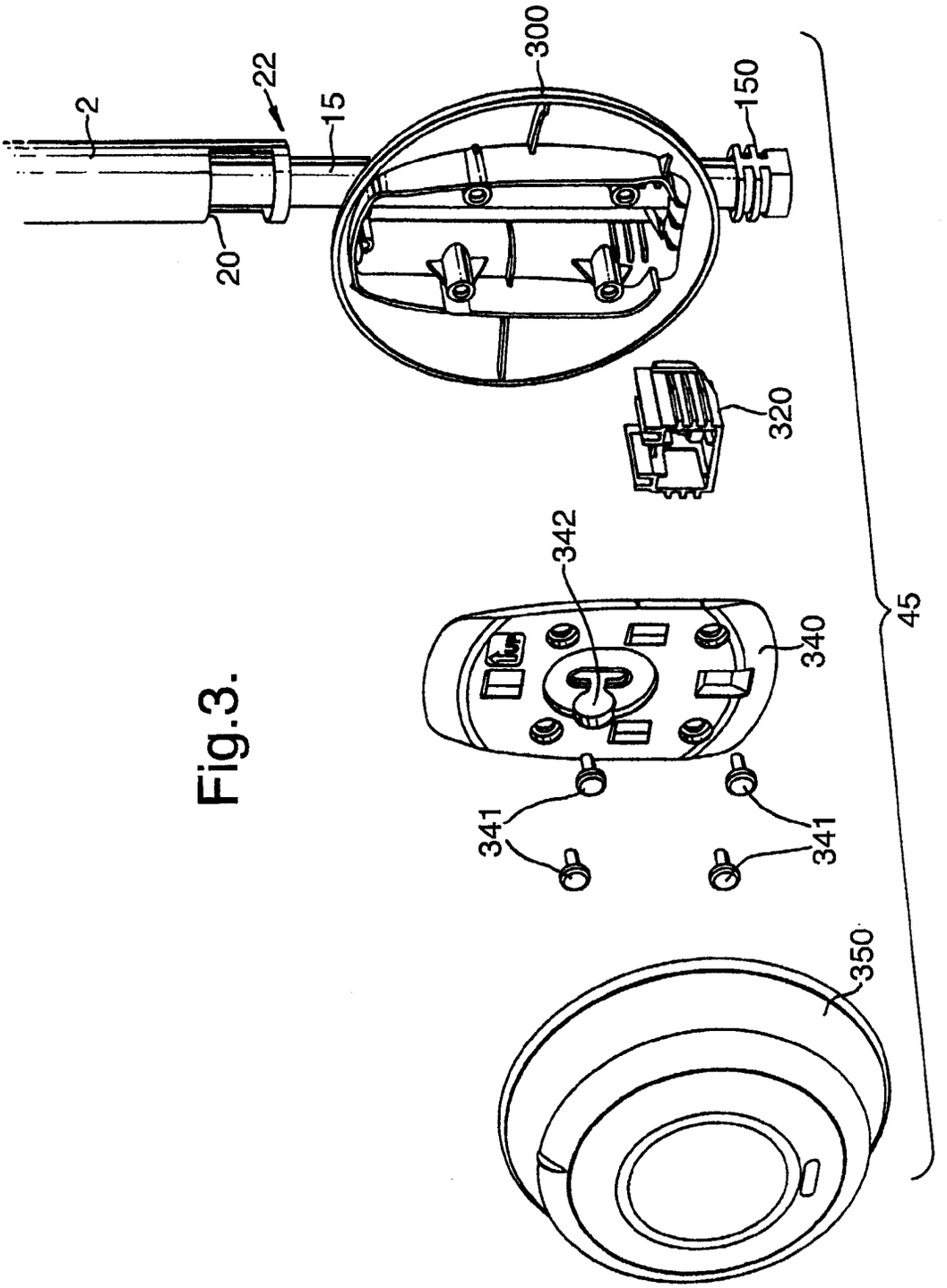


Fig.3.

Fig.4.

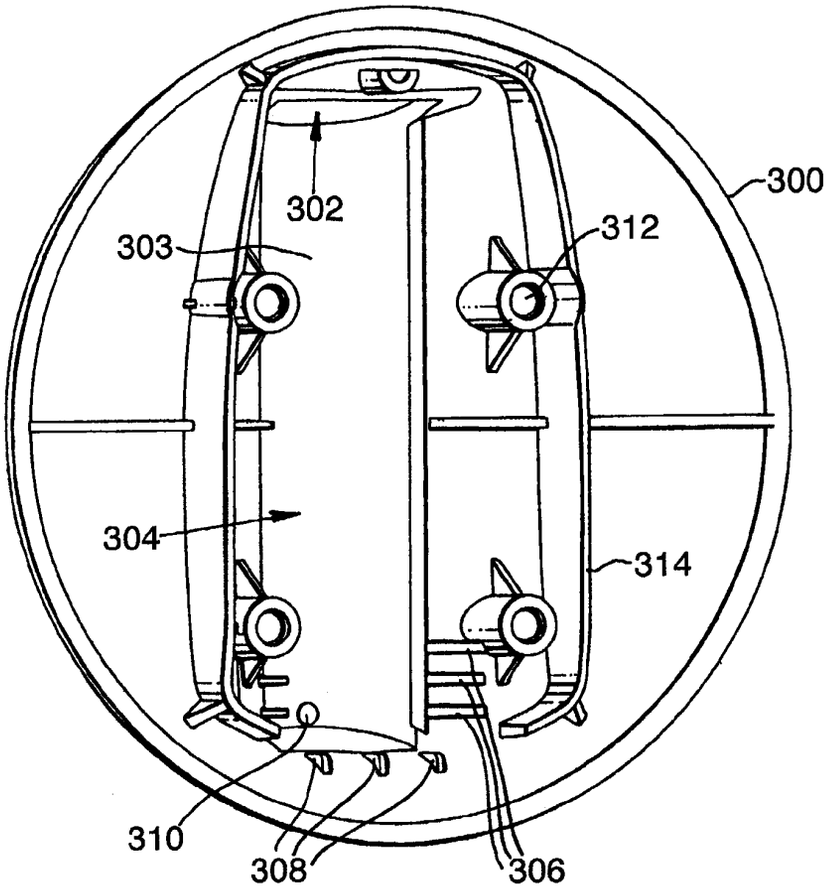


Fig.5.

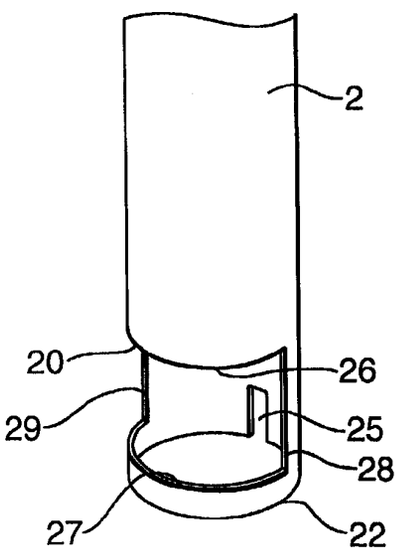


Fig.6.

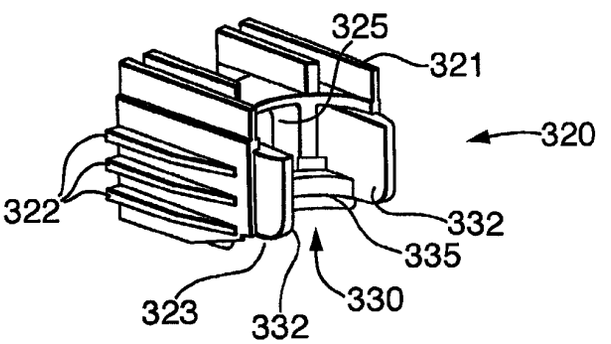


Fig.7.

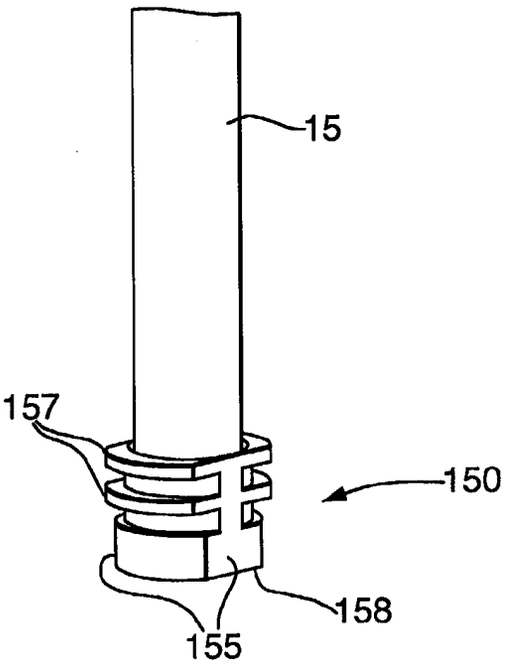


Fig.8.