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(54) Three-part tap assembly

(57) A three-part tap assembly (1) fittable to a supporting surface (3) has a water spout (5) having two inlet channels (19); and two taps (25) for regulating hot and cold water flow to the spout (5); each tap (25) has a respective main body (26) in turn having a water inlet opening (35), an outlet opening (36) connectable to a channel (19) of the spout (5), and a seat (42) engaged in fluidtight manner by a flow regulating device (44); and each main body (26) is defined by a mating surface (28) placed on the supporting surface (3) and fixed to the supporting surface (3), and extends substantially completely on one side of the mating surface (28).

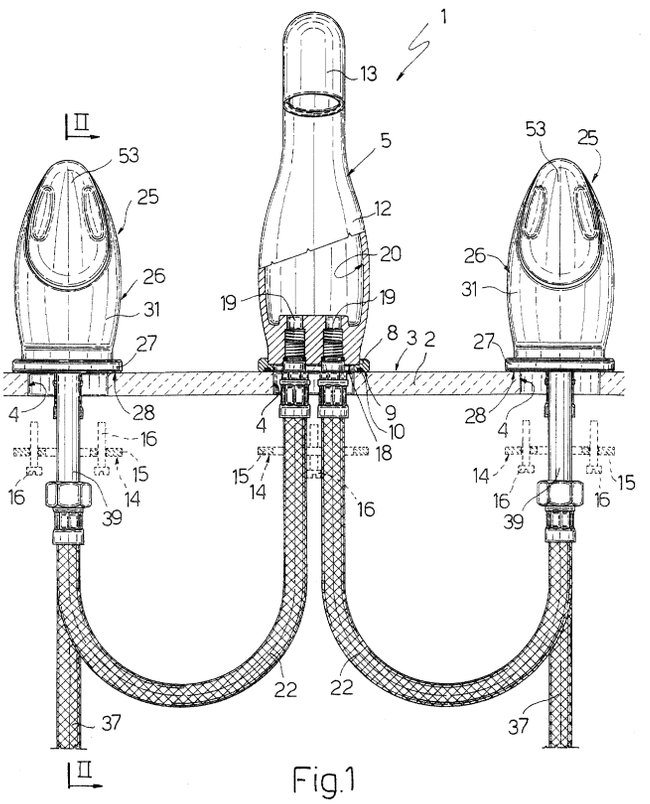

Fig.1

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Description

[0001] The present invention relates to a three-part tap assembly, which is normally fitted, in use, to a sink, and which comprises a water spout and two taps for respectively regulating hot and cold water flow to the spout where the water from the taps is mixed.

[0002] Each of the taps comprises a body or so-called "pedestal", which is fitted integrally to the sink, extends inside a hole formed through the sink, and defines a seat engaged by a stopper which is rotated to regulate water flow to the spout. The "pedestal" comprises a bottom portion underneath the sink and having fittings for the water inlet and outlet pipes; and a top portion on top of the sink and fitted with a cover covering the hole in the sink, and a knob which is turned to manually control the stopper.

[0003] Similarly, the spout engages a respective hole formed through the sink, and comprises a water pipe spout over the sink, and a so-called "cross" T fitting extending beneath the sink and connected to the two "pedestals" by respective pipes.

[0004] Though widely used, known tap assemblies of the type described above have the drawback of being relatively complicated and painstaking to install.

[0005] That is, both the "pedestal" and the "cross" are extremely bulky, rigid bodies, which reduce the already limited space in which to work under the sink, so that it is fairly difficult both to connect the "pedestal" and "cross" to the sink using wrenches and pliers, and to connect the water pipes to the respective fittings.

[0006] Moreover, the taps and spouts of known tap assemblies comprise a relatively large number of component parts.

[0007] It is an object of the present invention to provide a three-part tap assembly designed to solve the aforementioned problems in a straightforward, low-cost manner, and which, in particular, is relatively straightforward in design and easy to install.

[0008] According to the present invention, there is provided a three-part tap assembly fittable to a supporting surface and comprising a water spout having two inlet channels; and two taps for respectively regulating hot and cold water flow to said spout; each said tap comprising a respective main body in turn comprising a water inlet opening, a water outlet opening connectable to the relative said inlet channel, and a seat engaged in fluidtight manner by regulating means for regulating water flow through the tap; and each said main body being defined by a mating surface which is placed on said supporting surface and fixed to the supporting surface; characterized in that said main body extends substantially completely on one side of said mating surface.

[0009] Preferably, said spout is defined by a base surface placed on said supporting surface and connected integrally to the supporting surface, and extends substantially completely on one side of said base surface and between said main bodies of said taps.

[0010] The present invention also relates to a tap for regulating water flow.

[0011] According to the present invention, there is also provided a tap for regulating water flow to a water spout; the tap comprising a main body in turn comprising a water inlet opening, a water outlet opening connectable to said spout, and a seat engaged in fluidtight manner by regulating means for regulating water flow through the tap; and said main body being defined by a mating surface which is placed on a supporting surface and fixed to the supporting surface; characterized in that said main body extends substantially completely on one side of said mating surface.

[0012] A non-limiting embodiment of the invention will be described by way of example with reference to the accompanying drawings, in which:

Figure 1 shows a partly sectioned front view of a preferred embodiment of the three-part tap assembly according to the present invention;
Figure 2 shows a larger-scale section along line II-II in Figure 1.

[0013] Number 1 in Figure 1 indicates a three-part tap assembly fitted to a sink 2 (shown schematically), which has a top supporting surface 3 and comprises, for each of the three parts, a respective through hole 4 formed perpendicular to surface 3 and for the passage of water pipes.

[0014] One of the parts in assembly 1 is defined by a spout 5 comprising a base ring 8, which surrounds respective hole 4 and is defined by a surface 9 mating with surface 3 via the interposition of an annular sealing element 10.

[0015] Spout 5 extends completely on one side of surface 9, i.e. in an accessible position on top of surface 3, and comprises a convex portion 12 integral with ring 8 and terminating, on the opposite side to ring 8, with a water delivery pipe 13. Spout 5 is fitted integrally to sink 2 by a known fastening device, e.g. a device 14 (shown schematically by the dash line) comprising a plate 15 with holes located underneath sink 2 and connected to portion 12 by two screws 16 screwed into portion 12.

[0016] Portion 12 is defined by a surface 18 facing surface 3, and comprises two straight, parallel channels 19, which extend between surface 18 and a hot and cold water mixing chamber 20 communicating with the outside along pipe 13, and are connected by respective known hoses 22 to respective identical taps 25 defining the other two parts of assembly 1.

[0017] With reference to Figure 2, taps 25 regulate hot and cold water flow respectively to spout 5, and each comprise a respective body 26 in turn comprising a mating ring 27 defined by a surface 28 resting on surface 3 via the interposition of an annular sealing element 29 about respective hole 4. Body 26 extends completely on one side of surface 28, i.e. in an accessible position on top of surface 3, and is fixed integrally to sink 2 by a

known fastening device similar, in the example shown, to device 14.

[0018] Body 26 comprises a top portion 31, which is integral with ring 27, is defined by a surface 32 facing surface 3, and defines two straight, parallel conduits 33, 34 having respective openings 35, 36 formed in surface 32. Opening 35 defines an inlet communicating with a water hose 37, and opening 36 defines an outlet communicating with a channel 19 along respective hose 22 and a fitting 39.

[0019] Fitting 39 extends coaxially with conduit 34 from surface 32, and comprises two opposite, externally threaded end portions 40, 41; portion 41 being connected in fluidtight manner to portion 31, inside conduit 34; and portion 40 being connected in fluidtight manner to respective hose 22.

[0020] Portion 31 defines an inner seat 42, which is formed along an axis 43 sloping with respect to conduits 33, 34 and intersecting the axes of conduits 33, 34, and which is engaged by a water flow regulating device 44.

[0021] Device 44 comprises a substantially tubular casing 46, which extends along axis 43, is integral with portion 31, and, inside seat 42, separates an axial chamber 47, communicating with conduit 33, in fluidtight manner from an annular chamber 48 communicating with conduit 34. Casing 46 defines a passage 50 (shown partly), which connects chambers 47 and 48 and is engaged in fluidtight manner by a stopper 51 which rotates about a respective axis coincident with axis 43 to vary the passage section and hence the water flow through tap 25.

[0022] Stopper 51 comprises a knurled end pin 52 extending axially outside casing 46 and seat 42, and connected integrally to a knob 53 for manually controlling stopper 51.

[0023] At the assembly stage, hoses 37 are connected to taps 25, and hoses 22 to spout 5; hoses 37, 22 are inserted through holes 4; taps 25 and spout 5 are fitted to sink 2; and, finally, hoses 22 are connected to portions 40 of fittings 39.

[0024] As will be clear from the foregoing description, assembly 1 has an extremely straightforward structure enabling assembly 1 to be fitted quickly and easily to hoses 22, 37 and sink 2.

[0025] That is, with the exception of fittings 39, spout 5 and taps 25 extend completely above surface 3 with no bulky, rigid bodies underneath sink 2, so that the fitter has more space in which to work as compared with known solutions comprising taps with "pedestals" and a spout with a "cross" fitting.

[0026] Moreover, taps 25 and spout 5 are relatively compact geometrically, and comprise a relatively small number of components by having, unlike known solutions, no additional elements covering holes 4.

[0027] Clearly, changes may be made to assembly 1 as described herein without, however, departing from the scope of the present invention.

[0028] In particular, device 44 may be other than as described and illustrated herein, though still housed inside a body 26 extending substantially completely on one side of surface 28, just as spout 5 extends substantially completely on one side of surface 9 and between bodies 26 of the two taps 25.

Claims

1. A three-part tap assembly (1) fittable to a supporting surface (3) and comprising a water spout (5) having two inlet channels (19); and two taps (25) for respectively regulating hot and cold water flow to said spout (5) ; each said tap (25) comprising a respective main body (26) in turn comprising a water inlet opening (35), a water outlet opening (36) connectable to the relative said inlet channel (19), and a seat (42) engaged in fluidtight manner by regulating means (44) for regulating water flow through the tap (25) ; and each said main body (26) being defined by a mating surface (28) which is placed on said supporting surface (3) and fixed to the supporting surface (3) ; **characterized in that** said main body (26) extends substantially completely on one side of said mating surface (28).

2. An assembly as claimed in Claim 1, **characterized in that** said spout (5) is defined by a base surface (9) placed on said supporting surface (3) and connected integrally to the supporting surface (3), and extends substantially completely on one side of said base surface (9) and between said main bodies (26) of said taps (25).

3. An assembly as claimed in Claim 1 or 2, **characterized in that** each said main body (26) comprises two parallel conduits (33) (34) extending respectively between said seat (42) and said inlet opening (35) and between said seat (42) and said outlet opening (36).

4. An assembly as claimed in Claim 3, **characterized in that** said seat (42) has an axis (43) sloping with respect to said conduits (33) (34).

5. An assembly as claimed in Claim 4, **characterized in that** said regulating means (44) define, in said seat (42) and together with the relative said main body (26), an axial chamber (47) communicating with one (33) of said conduits, and an annular chamber (48) communicating with the other (34) of said conduits.

6. An assembly as claimed in any one of the foregoing Claims, **characterized in that** said base surface (9) and said mating surface (28) define respective annular supporting portions (8) (27) which are placed around respective holes (4) formed through said

supporting surface (3).

7. An assembly as claimed in any one of the foregoing Claims, **characterized in that** each said main body (26) carries a fitting (39) extending from one (36) of said inlet and outlet openings (35) (36) and comprising a threaded end portion (40) for the connection of a respective pipe (22).

8. An assembly as claimed in any one of the foregoing Claims, **characterized in that** said inlet channels (19) are parallel and terminate in a mixing chamber (20) for mixing said hot and cold water.

9. A tap (25) for regulating water flow to a water spout (5); the tap comprising a main body (26) in turn comprising a water inlet opening (35), a water outlet opening (36) connectable to said spout (5), and a seat (42) engaged in fluidtight manner by regulating means (44) for regulating water flow through the tap (25); and said main body (26) being defined by a mating surface (28) which is placed on a supporting surface (3) and fixed to the supporting surface (3); **characterized in that** said main body (26) extends substantially completely on one side of said mating surface (28).

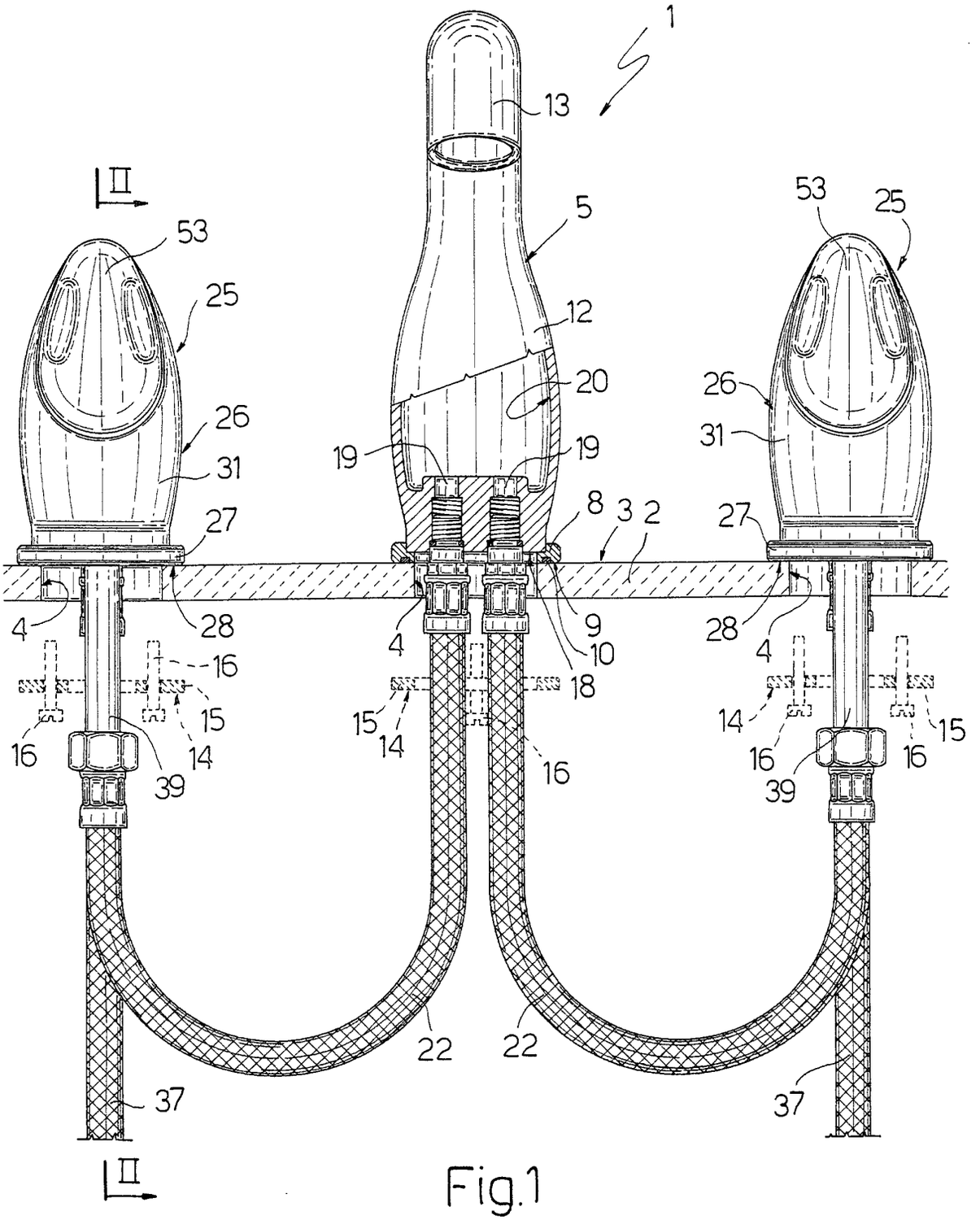

Fig.1

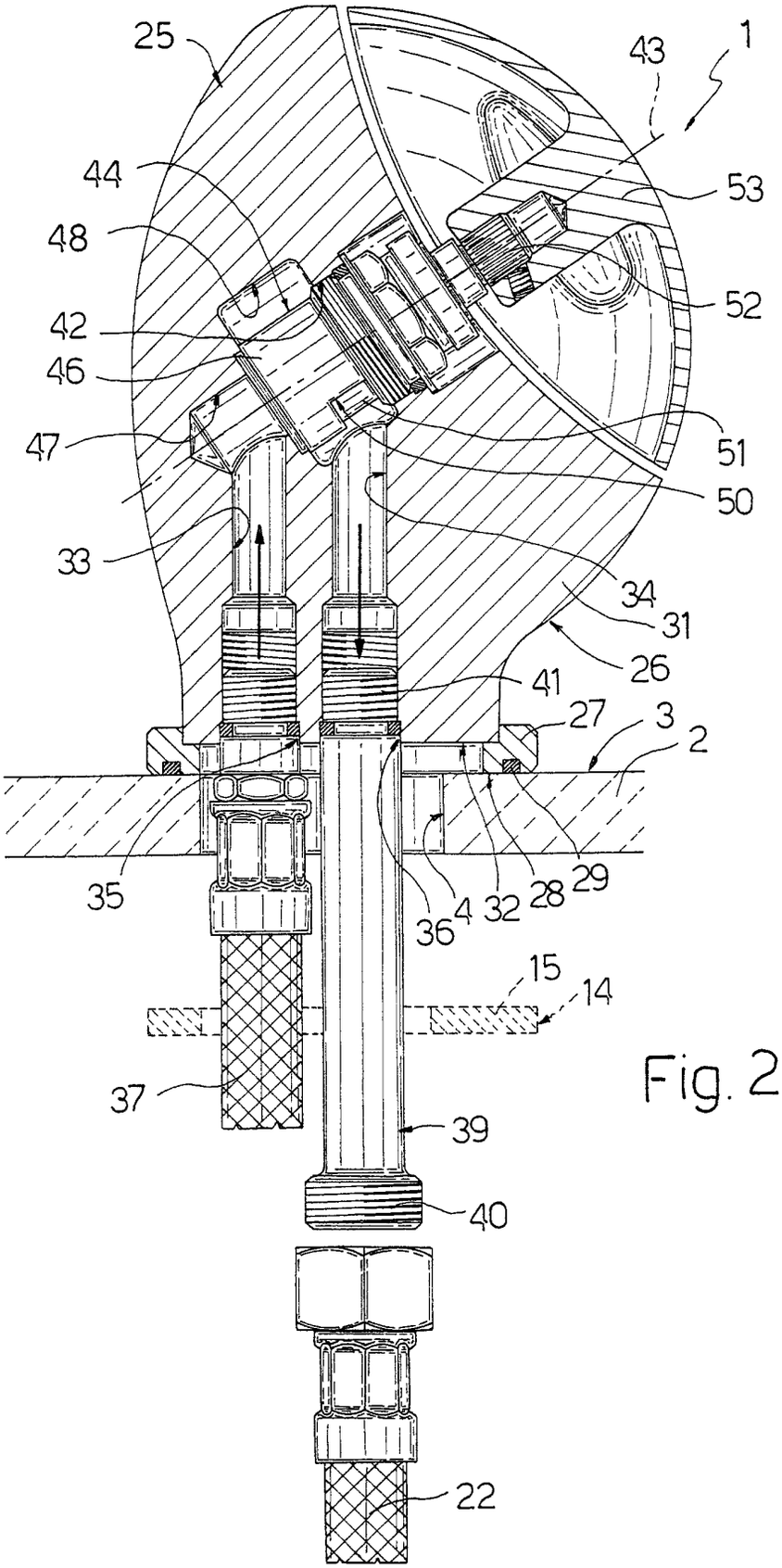
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Fig. 2