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(54) **A tap**

(57) A tap (1), particularly for kitchens, bathrooms and the like, comprising a body (2), a mixer (3) for mixing hot water and cold water, a water outlet spout (4), a securing device (5) to secure the tap to a supporting surface (80), a control device (6) connected to the mixer (3) to allow mixing of hot water and cold water and a manual control lever (7), connected to the control device (6), able to be operated manually by a user, the outlet spout (4) being screwed onto the mixer (3) and the body (2) consisting of a single tubular member enclosing the mixer (3) and having a radial hole (22) for insertion of the spout (4) which must be screwed onto the mixer (3).

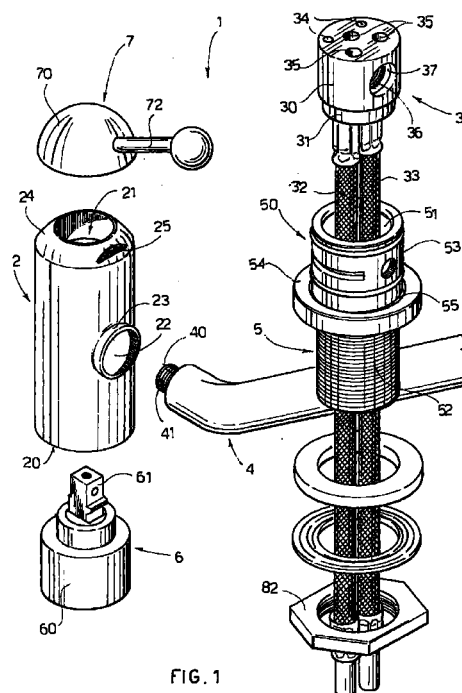


FIG. 1

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Description

[0001] The present invention refers to a tap or faucet particularly for kitchens, bathrooms and the like.

[0002] Reference will be made hereinafter to a single-lever or single-control tap with the mixer at the top, it being understood that the tap in accordance with the invention can also be applied to other types of tap, such as, for example, those with two control knobs and the mixer not at the top.

[0003] As is known, a single-control tap comprises an internal mixer assembly which, operated by a control lever, performs mixing of hot water and cold water before delivering it towards a tap spout. For practical and design reasons, the mixer assemblies are normally mounted at the top of the tap, that is at the free water outlet end thereof.

[0004] In prior art taps, the spout of the tap is welded to a mixer, using as welding means a tin-silver alloy. The mixer is suitably made from a bar, that is to say it is formed from a solid bar of hard metallic material (OT58) which is worked on a lathe.

[0005] The mixer with the welded spout is assembled with other elements to form the body of the tap. The body of the tap essentially comprises three ring members made from a bar: a lower ring, an intermediate ring and an upper ring.

[0006] The lower ring acts as a base for the tap and comprises a member for fixing the tap to the supporting surface of a wash stand. The intermediate ring comprises the mixer with the spout welded thereto. The upper ring comprises the control lever and also serves to secure the intermediate ring formed by the mixer unit and the outlet spout.

[0007] It is evident that a tap according to the prior art has a certain complexity of construction due to the fact that the body of the tap comprises three parts that must be assembled with each other.

[0008] Production of the three rings through turning, from a solid bar of hard metallic material, proves very costly. To this is added the further cost due to the operation of welding the spout to the mixer unit to form the intermediate ring.

[0009] Furthermore the intermediate ring, thus composed, is very bulky and awkward to transport, especially when fairly long spouts are used, such as for example in applications for kitchen taps.

[0010] The object of the invention is to eliminate these drawbacks, providing a tap that is practical, economical and easy to make.

[0011] This object is achieved in accordance with the invention with the characteristics listed in appended independent claim 1.

[0012] Preferred embodiments of the invention are apparent from the dependent claims.

[0013] In the tap according to the invention the outlet spout is screwed to the mixer.

[0014] The tap according to the invention has a

body consisting of a single piece. The body of the tap comprises an internally hollow tubular member. The term tubular member is not limited to a necessarily cylindrical element, but refers in general to an internally hollow member having any geometric shape desired.

[0015] At the base of the tap body a securing device is provided to secure the tap to a supporting surface of a wash-stand and the mixer unit is housed inside the body of the tap.

[0016] The mixer unit suitably has a threaded hole to receive the outlet spout. The outlet spout thus has a threaded end to be able to screw into the threaded hole of the mixer.

[0017] The tubular body has a through aperture in a radial direction that is situated in register with the threaded aperture of the mixer, to allow screwing of the threaded end of the spout.

[0018] The manual control of the mixer is mounted on top of the tubular body.

[0019] Both the tubular body and the mixer device housed therein are rotatably mounted on the securing device, so that the outlet spout can be turned together with the tubular body to assume different positions.

[0020] The advantages of the tap according to the invention are evident, in that the three rings made of bar provided in taps of the prior art have been eliminated.

[0021] In the tap according to the invention, a single element made of bar or plastic material consisting of the mixer is maintained. The tubular member forming the body of the tap according to the invention can be made in a tube of a lighter metallic material (for example OT63) with respect to the material used in taps of the prior art. In fact the tubular member essentially acts solely as a cover for the mixer assembly, the tap securing device and the manual control.

[0022] Moreover, with the tap according to the invention, the problem of welding of the spout to the mixer has also been eliminated. In fact the spout and mixer are two separate elements that can be assembled with one another by means of simple screwing.

[0023] The tap according to the invention, having fewer parts for assembly, is extremely simple in structure compared with taps of the prior art. Consequently production costs of the tap according to the invention are reduced, and assembly and maintenance operations are simpler.

[0024] Moreover, the possibility of having the spout separate from the mixer makes it possible to save space in packaging of a tap kit, thus occupying less space during transport.

[0025] Further characteristics of the invention will be made clearer by the detailed description that follows, referring to a purely exemplary and therefore non-limiting embodiment thereof, illustrated in the appended drawings, in which:

Figure 1 is an axonometric, exploded view of the tap according to the invention;

Figure 2 is a longitudinal sectional view showing the tap according to the invention assembled and fixed to the supporting surface of a wash-stand.

[0026] The tap according to the invention, indicated as a whole with reference numeral 1, is described with the aid of the figures.

[0027] The tap 1 substantially comprises a body 2, a mixer 3, an outlet spout 4, a securing device 5, a manual control device 6, and a control lever 7.

[0028] The body 2 consists of an internally hollow tubular element, having a lower aperture 20, an upper aperture 21 and a radial hole 22 communicating with the inside. The radial hole 22 is surrounded by a collar 23 that protrudes outward from the tubular body 2.

[0029] On top of the body 2 two radial recesses 24 and 25 can be provided to receive, if necessary, tools able to lock the body 2 during assembly. The body 2 can be made from a hollow tube of light metallic material, such as OT63.

[0030] The mixer 3 consists of a cylindrical block 30 made by machining on a lathe, from a solid bar of hard metallic material or moulded plastic material. The cylindrical block 30 has at its lower end a cylindrical spigot 31, of smaller diameter than that of the block 30, connected to two flexible tubes 32, 33 for hot water and cold water, respectively.

[0031] Two holes 34 are provided in the upper surface of the cylindrical block 30 for connection to the manual control device 6. Again in the upper surface of the cylindrical block 30 three holes 35 are provided, communicating with a mixing chamber, inside the block 30, which in turn communicates with the flexible tubes 32 and 33 for hot water and cold water.

[0032] A radial hole 36 is provided in the lateral surface of the block 30 and communicates with the inner chamber of the mixer 3. The radial hole 36 has an inner thread 37 to be able to receive the outlet spout 4 in screwing engagement.

[0033] The outlet spout 4, shown partially in the Figures, is formed by an internally hollow tubular body. In the end of the outlet spout 4 opposite the outlet end a cylindrical spigot 40 is provided, of smaller diameter than the diameter of the spout 4. The cylindrical spigot 40 is internally hollow and it communicates with inside of the spout 4. The cylindrical spigot 40 has an outer thread 41 able to engage with the inner thread 37 of the hole 36 of the mixer 3. The cylindrical spigot 40 can be made separately from the spout 4 and then connected to the end of the spout by means of welding or other securing means. The cylindrical spigot 40 can also be made as a single piece with the spout 4 by means of removal of material or molding.

[0034] The outer diameter of the spigot 40 of the outlet spout must be substantially equal to the inner diameter of the hole 36 of the mixer, and the outer diameter of the part of the outlet spout 4 near the spigot 40 must be slightly smaller than the inner diameter of the

hole 22 in the tubular body 2.

[0035] The securing device 5 is not described in detail, in that it is to be considered known to the art and is described in Italian patent application MI98U000692 by the same applicant.

[0036] It comprises a hollow tube 50 having axially a through hole 51 of such a diameter as to be able to be passed through by two flexible tubes 32 and 33 carrying the hot water and the cold water.

[0037] The inner diameter of the tube 50 is slightly greater than the outer diameter of the spigot 31 of the mixer 3. In this manner the spigot 31 of the mixer 3 is received inside the hole 51 and the cylindrical block 30 of the mixer abuts against the upper surface of the tube 50. The outer diameter of the tube 50 is slightly smaller than the inner diameter of the tubular body 2, so that the tube 50 can be inserted inside the tubular body 2.

[0038] The tube 50 is divided into an externally threaded lower part 52 and a smooth upper part 53.

[0039] A ring nut 54, substantially annular in shape, having an inner thread, screws into the threaded part 52 of the tube 50, so that the tubular body 2 can abut against the upper surface of the ring nut 54. A ring 55 of material with a low coefficient of friction, such as Teflon, can be provided between the ring nut 54 and the base of the tubular body 2, to allow rotation of the tubular body 2 on said Teflon ring 55, so as to be able to direct the spout 4 in the desired angular position.

[0040] The manual control device 6, per se known, comprises a cylindrical body 60, preferably of plastic material, enclosing an on-off valve controlled by means of an upward protruding, parallelepiped-shaped block 61.

[0041] In the lower surface of the cylindrical body 60 two feet (not shown) are provided such as to engage in the holes 34 provided in the upper surface of the mixer 3. Again in the lower surface of the cylindrical body 60 of the manual control device 6, three holes (not shown) are provided, communicating with the inside of the valve and destined to coincide with the three holes 35 provided on the upper surface of the mixer 3.

[0042] The control lever 7 comprises a rod or handle 72 and a cap 70. The cap 70 is substantially dome-shaped to cover the upper part of the tubular body 2, and has an inner housing 71 (shown in Figure 2) such as to receive the parallelepiped-shaped block 61 of the manual control device 6. In the housing 71 is a threaded hole 73 into which one end of the rod 72 screws so as to come into contact with the parallelepiped-shaped block 61 in order to operate it.

[0043] In this manner the rod 72 can be operated manually by a user, to allow delivery of the water and at the same time mixing of hot water and cold water.

[0044] Assembly of the tap 1 according to the invention is described below.

[0045] The manual control device 6 connected to the mixer 3 is inserted from the lower aperture 20 of the body 2. Then the flexible tubes 32 and 33 for the hot and

cold water are inserted in the hole 51 of the securing device 5, so that the spigot 31 of the mixer 3 settles inside the hole 51 of the fixing device, the lower surface of the cylindrical block 30 of the mixer abuts against the upper surface of the tube 50 of the securing device and the lower surface of the body 2 abuts on the upper surface of the ring nut 54 of the securing device.

[0046] At this point the radial hole 22 of the tubular body 2 is aligned with the radial hole 36 of the mixer 3. The spout 4 can then be mounted, inserting the cylindrical spigot 40 of the spout inside the radial holes 22 and 36 and screwing the spout so that the outer thread 41 of the spigot 40 engages in the inner thread 37 of the radial hole 36 of the mixer.

[0047] At this point the control lever 7 can be mounted so that the parallelepiped-shaped block 61 protruding upward from the body 2 can engage inside the housing 71 in the cap 70 and the cap 70 covers the upper end of the tubular body 2. The rod 72 is then screwed into the hole 73 of the housing 71 so that it is connected to the parallelepiped-shaped block 61 which operates the manual control device 6.

[0048] Lastly the threaded part 52 of the securing device 5 is inserted inside a hole 81 in a supporting surface 80 of the wash stand until the ring nut 54 abuts against the upper surface of the supporting surface 80 and then the securing device can be secured to the surface 80 by means of a threaded nut 82.

[0049] The securing device 5 and the ring nut 54 are fixed. The tubular body 2 is free to rotate on the Teflon ring 55 of the ring nut 54 of the securing device 5. The mixer 3 is also free to rotate on the upper surface of the tube 50 of the fixing device 5. In this manner, by manually pressing the spout 4, which besides being screwed to the mixer 3 is maintained inside the hole 22 of the tubular body 2, the user can cause rotation of the tubular body 2 and thus orientation of the spout 4 in different angular positions.

[0050] Various changes and modifications within the reach of a person skilled in the art can be made to the present embodiment without departing from the scope of the invention defined in the accompanying claims.

Claims

1. A tap (1), particularly for kitchens, bathrooms and the like, comprising a body (2), a mixer (3) for mixing hot water and cold water, a water outlet spout (4), a securing device (5) to secure said tap to a supporting surface (80), a control device (6) connected to the mixer (3) to allow mixing of hot water and cold water and a manual control lever (7), connected to the control device (6), suitable to be operated manually by a user, characterized in that said spout (4) is screwed to said mixer (3).
2. A tap according to claim 1, characterized in that

said body (2) comprises a single tubular member enclosing said mixer (3) and having a radial hole (22) to allow passage of said outlet spout (4) for screwing to the mixer (3).

3. A tap according to claim 1 or 2, characterized in that said spout (4) has at the opposite end to the outlet end, a cylindrical spigot (40) having an outer thread (41) able to engage in an inner thread (37) formed in a radial hole (36) of said mixer (3), the radial hole (36) being in communication with the mixing chamber inside the mixer (3) and the cylindrical spigot (40) being hollow on the inside and in communication with the inside of the spout (4).
4. A tap according to claim 3, characterized in that said cylindrical spigot (40) is secured by welding to the end of the spout (4).
5. A tap according to claim 3, characterized in that said cylindrical spigot (40) is made in one piece with the spout (4).
6. A tap according to any one of claims 3 to 5, characterized in that said body (2) has a collar (23) surrounding the hole (22) and protruding outward from the lateral surface of the tubular body (2), the collar (23) having an inner diameter slightly greater than the outer diameter of the part of the spout (2) near the spigot (40), so that said spout part (40) near the spigot (41) can be received inside said hole (22) of the tubular body (2).
7. A tap according to any one of claims 3 to 6, characterized in that said body (2) abuts on a ring-nut (55) fixed to the securing device (5) and said mixer (3) abuts on the upper surface of said securing device (5) in such a manner that said radial hole (22) of the body (2) is aligned with said radial hole (36) of the mixer (3).
8. A tap according to previous claim 7, characterized in that between the base of said body (2) and the upper surface of said ring nut (54) fixed to the securing device (5) a ring (55) of material with a low coefficient of friction is provided to facilitate rotation of said body (2) so as to be able to orient said spout (4) in different angular positions.
9. A tap according to any one of the preceding claims, characterized in that said body (2) has in its upper part recesses (24,25) to receive means able to secure said body (2) during assembly.
10. A tap according to any one of the preceding claims, characterized in that said manual control lever (7) has a cap (70) able to cover the upper part of said body (2).

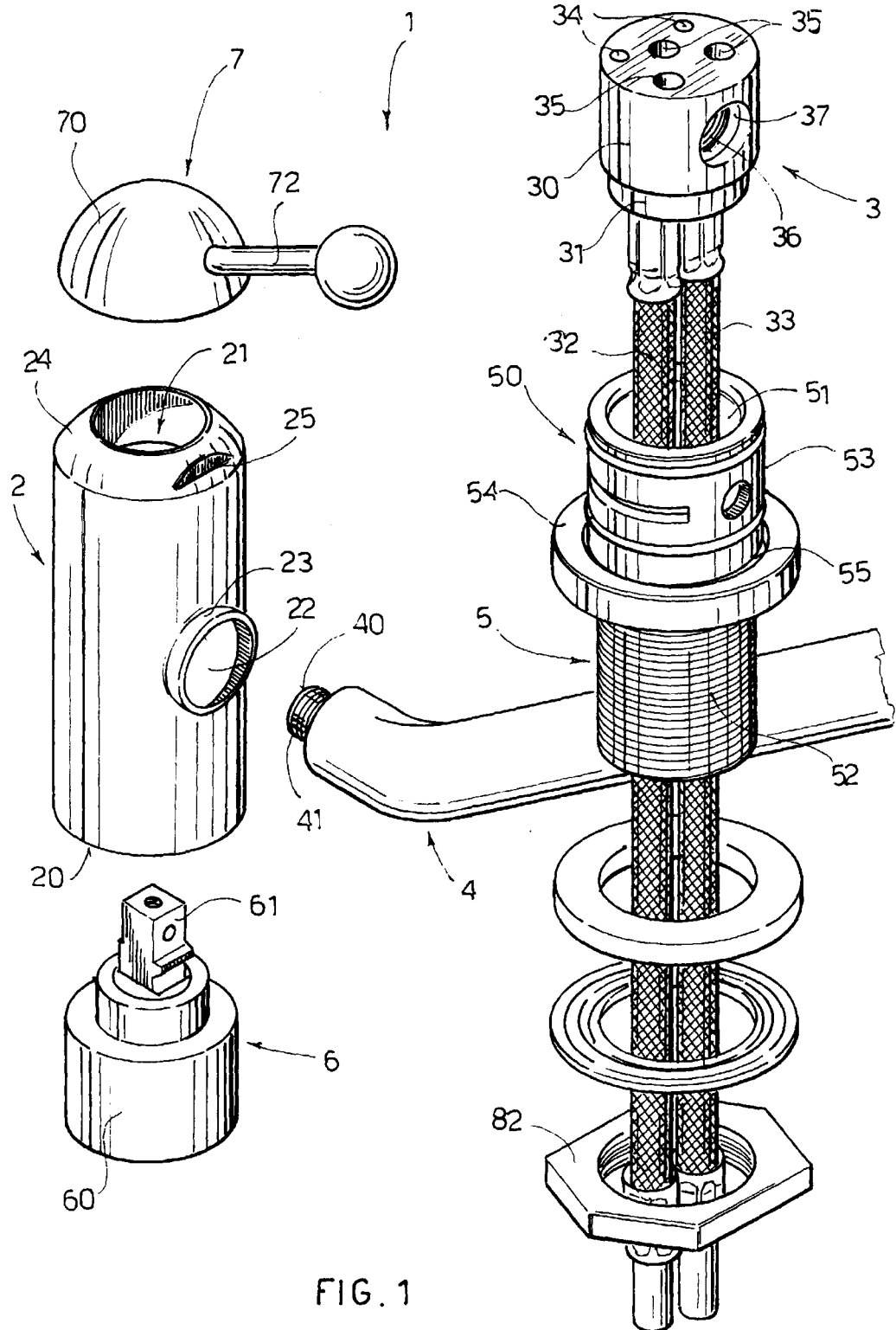


FIG. 1

