

The present invention relates to a remotely controlled opening tap and is applied in particular but not exclusively to mixer taps.

5 Taps of this type have already been manufactured, having a detection cell housed in the body of the tap which, when the user's hands are in an area close to the outlet spout, sends a signal to an electronic device located outside the tap which activates two solenoid valves via a relay so as to control the opening of the two valves, the mixing of hot and cold water being effected at the tap outlet.

10 Apart from the fact that such devices require two solenoid valves, they cause serious installation problems.

15 A tap of this type is also known in which the mixing of hot and cold water is effected upstream of the general valve which is controlled by a single solenoid valve.

 Such a tap is described in patent US-A-4 741 363.

20 However, the tap described in this patent has proved to be of little advantage and requires complicated parts for assembly.

 Similar comments apply to the tap described in document GB-A-2 206 397.

 The problems listed below are inherent in a tap of this design.

25 Firstly, the manufacture of the various component parts of the tap should not require high precision machining, which would increase the cost price of the tap.

 The various parts should be as straightforward to assemble as possible.

30 The body must be designed in such a way that sufficient space is reserved to house the solenoid valve controlling the conventional valve, the detection device and the electronic system.

35 The invention, which overcomes these problems, relates to a remotely controlled opening tap of the mixer type, formed of two sets of assembled parts, the first part or base having water inlets and a mixing chamber for this water, whilst the second part or body, positioned above the first, is of tubular shape and has a pouring nose at its upper part communicating with the mixing chamber by means of a conventional valve, and houses a dry chamber containing a solenoid valve controlling
40 the conventional valve and a casing housing a detection device and its electronic system, wherein the water leaving the mixing chamber passes to the seat of the conventional valve via a pipe extending parallel to the direction in which the conventional valve moves, characterised in that the pipe is formed of a tube, the ends
45 of the tube being freely engaged in the bores of a plug bearing the valve and a shouldered part with the mixing chamber respectively, the ends of the tubes being sealed by torus joints.

 The invention will be more clearly understood from the following description

and with reference to the attached drawings, given by way of example only, in which:

Figure 1 shows a vertical section of a tap in accordance with the invention;

5 Figure 2 is a sectional view along a line II-II of figure 1;

Figure 3 is a partial view, in perspective, showing a detail of the embodiment.

By referring to the drawings, it may be seen that the tap is formed by assembling two parts 1 and 2.

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Part 1 or the base is fixed on a support and comprises water inlets 3 and 4 and the mixing chamber 5.

15 Part 2 or the body is preferably fixed to the base 1 by means of a screw 6 and a collar 7, such as those described in detail in French patent FR-A-2 641 052 filed on 23 December, 1988, in the name of the present applicant.

20 The body 2, which is of a tubular shape, has a conventional valve 8 at its upper end providing communication between the mixing chamber 5 and the pouring nose 2a.

The seat 9 of the valve communicates with the mixing chamber via a tube 10.

25 The tube 10 is arranged parallel to the axis of the body 1 so as to house in the body a dry chamber 11 in which are housed the solenoid valve 12 and a casing 13 housing the detection device and electronic system.

30 The seat 9 is borne by a shouldered plug 14, supported under a corresponding shoulder of the upper part of the body 1, as may be seen in figures 1 and 2.

The tube 10 is engaged by its upper end in a bore 15 of the plug 14 and by its lower end in a bore 16 of the base 1. Torus joints 17 provide sealing. The length of the tube 10 is less than the distance separating the bases of the bores 15 and 16.

35 In accordance with one embodiment, the bore 16 is provided with a shouldered part 18, engaged on the base 1 and held thereon by a screw 19 (such as that described in the previously mentioned French patent).

40 As may be seen from the description and drawings, all the parts described above are assembled in one position parallel to the axis X-Y.

Electricity is supplied by means of a cable 20 penetrating the base 1 through its support surface 1.

45 The cable 20 is connected to a female connector 21, guided in the direction of the axis X-Y in a groove 22 in the shouldered part 18 (Figure 3).

The casing 13 has connecting pins 23 and 24 extending along the direction of

the axis X-Y.

The pins 24 may co-operate with a connector 25, linked to the solenoid valve 12 by a flexible cable 26.

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Still conforming to the aim of manufacturing parts with relatively high machining tolerances, the plug 14 has two columns 27, screwed by one of their ends into the plug and having at the other a cylindrical end 28 engaging in a bore 29 located in the upper section of the casing without there being any play.

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By means of a plate 30, the columns 27 also have the function of retaining the part 31 providing access to the conventional valve and the solenoid valve fixed to the latter, as may clearly be seen from the drawings.

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Clearly, the present invention is not limited to the embodiment described and illustrated. On the contrary, it may be applied to embodiments of all shapes and sizes, in accordance with the claim.

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CLAIM

5 A remotely controlled opening tap of the mixer type, made from two sets (1 and 2) of assembled parts, the first (1) or base having water inlets (3-4) and a mixing chamber (5) for this water, whilst the second (2) or body, which is positioned above the first, is of a tubular shape having a pouring nose (2a) at its upper part communicating with the mixing chamber (5) by means of a conventional valve (8) and houses a dry chamber (11) in which a solenoid valve (12) for controlling the conventional valve (8) is housed together with a casing (13) containing a detection device and its electronic system, the water leaving the mixing chamber (5) passing to the seat of the valve (8) by means of a pipe extending parallel to the direction (X-Y) in which the valve (8) moves, characterised in that the pipe is formed by a tube (10), the ends of the tube (10) being engaged freely in bores (15-16) of a plug (14) bearing the valve (8) and a shouldered part (18) comprising the mixing chamber (5) respectively, sealing at the ends of the tube (10) being by provided by torus joints (17).

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