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(71) Applicant: **Jacuzzi (UK) Group plc**
Bradford BD4 6ST (GB)

(72) Inventor: **Ozagir, Ozcan**
Bolton BL6 4DU (GB)

(74) Representative: **Orr, William McLean**
URQUHART-DYKES & LORD
5th Floor, Tower House
Merrion Way
Leeds West Yorkshire, LS2 8PA (GB)

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(54) **A water tap**

(57) A water tap (10) having a tap body (11), separate connections (12, 13, 14) on the tap body (11) for receiving supplies of hot water H, cold water C and filtered water F, a common discharge spout (15) mounted on the tap body (11), and valves (20, 24, 25) for controlling the supply of hot water H, cold water C and filtered water F from the tap body (11) to the discharge spout (15). The discharge spout (15) is provided internally with two separate discharge passages (16, 17) only which lead to a common discharge outlet (18) of the spout (15). The tap body (11) defines a route (19) for hot water only, under control of a hot water control valve (20), and which route (19) communicates with a dedicated first one (16) of the two separate discharge passages in the discharge spout (15) and which can therefore discharge hot water H only. The tap body (11) also defines a separate incom-

ing route (21, 22) for each of the cold water C and the filtered water F, and a common outgoing route (23) for one or the other only of cold water C and filtered water F and such common outgoing route (23) communicating with a second of the two separate discharge passages (17) and which is dedicated to said common outgoing route (23). A diverter valve (24) is mounted on the tap body (11) and is operative selectively to control the communication of the incoming route (21) for cold water C, or the incoming route (22) for filtered water F, with the common outgoing route (23) depending upon whether cold water discharge or filtered water discharge is required. A dual purpose water control valve (25) is provided on the tap body (11) and which is operative to control the flow along said common outgoing route (23).

Description

[0001] This invention relates to a water tap having a tap body, separate connections on the tap body for receiving supplies of hot water, cold water and filtered water, a common discharge spout mounted on the tap body, and valves for controlling the supply of hot water, cold water and filtered water from the tap body to the discharge spout.

[0002] It is well known to provide a common discharge spout, for discharging hot and / or cold water, and the spout may have two separate passages, each dedicated to one of the hot and cold water supplies, and which have discharge outlets located adjacent to, or close to each other, and so that a single jet of hot and / or cold water can be discharged. Alternatively, the spout may have a single passage, along which hot only, or cold only water may pass, upon opening of the hot or cold valves. In addition, the tap body may incorporate a pre-mixing chamber, in which hot and cold water supplies may be mixed (upon opening of both of the hot and cold water valves), prior to the mixed supply passing along the single passage in the discharge spout to be discharged as a mixed jet of hot and cold water.

[0003] It is also known to provide a discharge spout with three separate dedicated passages, corresponding to hot, cold, and filtered water supply, and this has the claimed advantage that there will be no "contamination" of the filtered water passage, in that it will always only convey filtered water. However, the fabrication costs of providing three separate routes for the three different water supplies through the tap body, and the provision of three separate discharge passages within the common discharge spout, make this an expensive item which is not suitable for the mass market which requires the facility to obtain occasional supply of filtered water (in addition to more regular usage of hot and / or cold water), but not at premium cost.

[0004] The invention has therefore been developed to address this need in a way that is effective, but simpler in construction and therefore can be made available at a competitive price.

[0005] According to the invention there is provided a water tap having a tap body, separate connections on the tap body for receiving supplies of hot water, cold water and filtered water, a common discharge spout mounted on the tap body, and valves for controlling the supply of hot water, cold water and filtered water from the tap body to the discharge spout, in which:

the discharge spout is provided internally with two separate discharge passages only, which lead to a common discharge outlet of the spout;
the tap body defines a route for hot water only, under control of a hot water control valve, and which route communicates with a dedicated first one of the two separate discharge passages in the discharge spout which can therefore discharge hot water only;

the tap body also defines a separate incoming route for each of cold water and filtered water, and a common outgoing route for one or the other only of cold water and filtered water and such common outgoing route communicating with a second of the two separate discharge passages and which is dedicated to said common outgoing route;

a diverter valve is mounted on the tap body and is operative selectively to control the communication of the incoming route for cold water, or filtered water, with the common outgoing route depending upon whether cold water discharge or filtered water discharge is required; and,

a dual purpose water control valve is provided on the tap body and which is operative to control the flow along said common outgoing route.

[0006] Therefore, in a water tap according to the invention, two discharge passages only are provided in the discharge spout, and the first of which is dedicated to supply hot water only, whereas the second can selectively discharge cold water or (cold) filtered water only, under the control of the dual purpose water control valve, and depending upon whether the diverter valve communicates the incoming cold water route or the incoming filtered water route with the common outgoing route.

[0007] The dual purpose water control valve therefore can be quite simply a standard cold water control knob, button or handle, and the diverter valve can be sourced economically by utilising existing technology available in bath taps or similar, or incorporated into the tap body (diverters are used to divert water flow between a common discharge spout to fill the bath and a supply line leading to a shower fitting or similar).

[0008] The flow along the second discharge passage can be changed easily between (unfiltered) cold water supply and filtered water supply, and if there are any consumer concerns that the passage has previously conveyed unfiltered water, it is only necessary to let the filtered water flow run for a little longer to flush out the passage, before filling a glass, jug etc with filtered water.

[0009] Conveniently, the diverter valve is arranged to revert automatically to cold water routing to the common outgoing route (after operation to route filtered water), and this reversion may be after a predetermined time period e.g. for long enough to fill a glass, and under spring or other return control.

[0010] A preferred embodiment of water tap according to the invention will now be described in detail, by way of example only, with reference to the accompanying schematic drawing.

[0011] Referring to the drawing, a water tap according to the invention is designated generally by reference 10 and has a tap body 11, separate connections 12, 13, 14 on the tap body 11 for receiving, respectively, supplies of cold water C, filtered water F and hot water H. A common discharge spout 15 is mounted on the tap body 11,

and valves are provided to control the supply of hot water H, cold water C and filtered water F from the tap body 11 to the discharge spout 15.

[0012] The discharge spout 15 is provided internally with two separate discharge passages only, namely first passage 16 which is dedicated to convey hot water only, and second discharge passage 17 which is dedicated to supply cold water or filtered water. As can be seen, the passages 16 and 17 lead to a common discharge outlet 18 of the spout 15.

[0013] The tap body 11 defines a route 19 for hot water only, under control of a hot water control valve 20, and route 19 communicates with the dedicated first discharge passage 16 of the discharge spout 15, and which can therefore discharge hot water only.

[0014] The tap body 11 also defines separate incoming routes 21 and 22 for each of the cold water C and the filtered water F. The tap body 11 also defines a common outgoing route 23 for one or the other only of cold water C and filtered water F, and such common outgoing route 23 communicates with the second discharge passage 17, which is dedicated to the common outgoing route 23.

[0015] A diverter valve 24 is mounted on the tap body 11 and is operative selectively to control the communication of the incoming route 21 for cold water C, or the incoming route 22 for filtered water F, with the common outgoing route 23. According to the operation of the diverter valve, cold water C or filtered water F can be discharged via the outlet 18 of the spout 15, via dedicated second discharge passage 17.

[0016] A dual purpose water control valve 25 is provided on the tap body 11, and is operative to control the flow along the common outgoing route 23.

[0017] Therefore, in the water tap 10 shown in the drawing, two discharge passages 16, 17 only are provided in the discharge spout 15, and the first passage 16 is dedicated to supply hot water only, whereas the second passage 17 selectively discharges cold water, or filtered water only, under the control of the dual purpose water control valve 25, and depending upon whether the diverter valve 24 communicates the incoming cold water route 21 or the incoming filtered water route 22 with the common outgoing route 23.

[0018] The dual purpose water control valve 25 can be quite simply a standard cold water control knob, button or handle, and the diverter valve 24 can be sourced economically by utilising existing technology available in bath taps, or similar.

[0019] The diverter valve 24 may be arranged to revert automatically to cold water routing to the common outgoing route (after operation to route filtered water only), and this reversion may be after a predetermined time period, or under spring or other return movement control.

Claims

1. A water tap (10) having a tap body (11), separate connections (12, 13, 14) on the tap body (11) for receiving supplies of hot water H, cold water C and filtered water F, a common discharge spout (15) mounted on the tap body (11), and valves (20, 24, 25) for controlling the supply of hot water H, cold water C and filtered water F from the tap body (11) to the discharge spout (15), in which:

the discharge spout (15) is provided internally with two separate discharge passages (16, 17) only which lead to a common discharge outlet (18) of the spout (15);

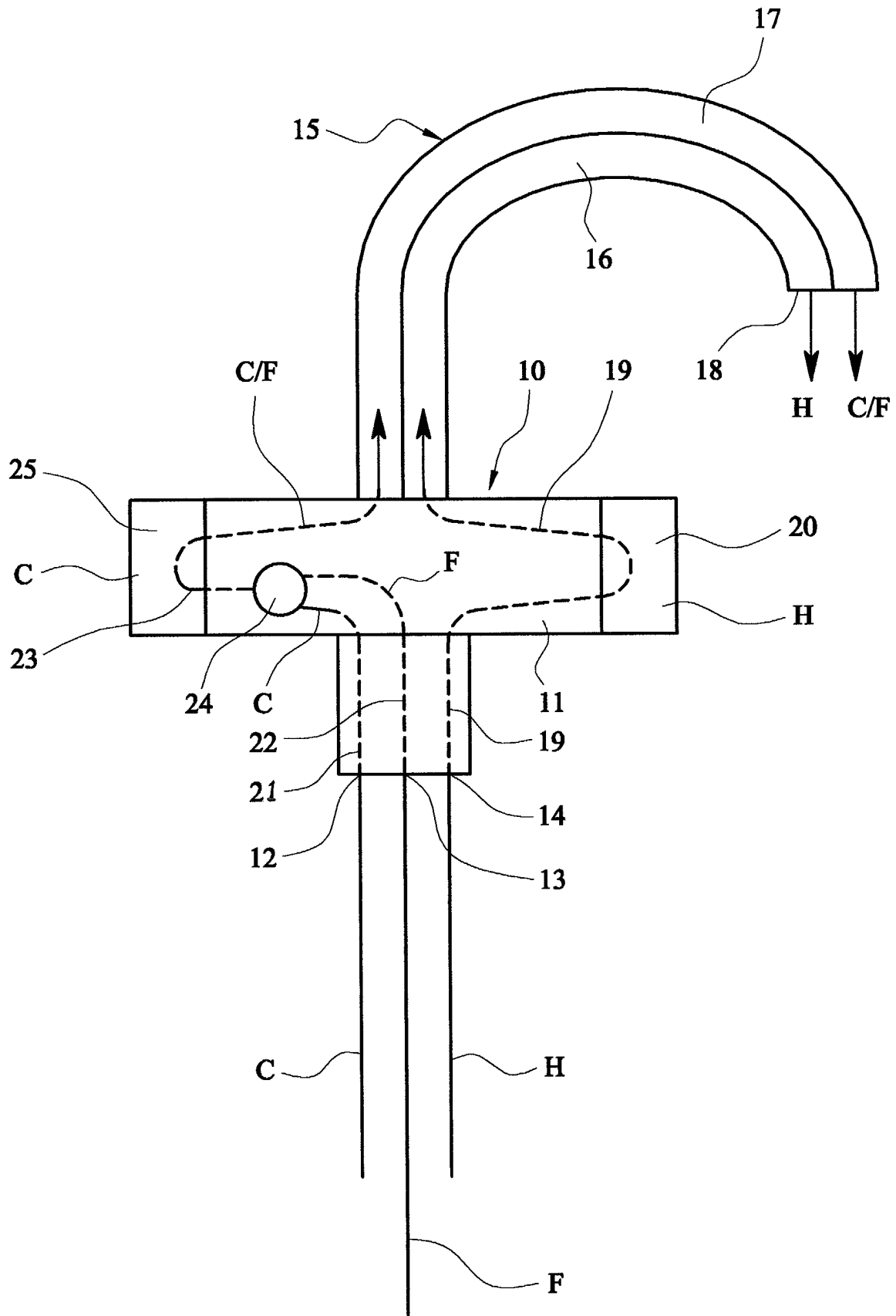
the tap body (11) defines a route (19) for hot water only, under control of a hot water control valve (20), and which route (19) communicates with a dedicated first one (16) of the two separate discharge passages in the discharge spout (15) and which can therefore discharge hot water H only;

the tap body (11) also defines a separate incoming route (21, 22) for each of the cold water C and the filtered water F, and a common outgoing route (23) for one or the other only of cold water C and filtered water F and such common outgoing route (23) communicating with a second of the two separate discharge passages (17) and which is dedicated to said common outgoing route (23);

a diverter valve (24) is mounted on the tap body (11) and is operative selectively to control the communication of the incoming route (21) for cold water C, or the incoming route (22) for filtered water F, with the common outgoing route (23) depending upon whether cold water discharge or filtered water discharge is required; and,

a dual purpose water control valve (25) is provided on the tap body (11) and which is operative to control the flow along said common outgoing route (23).

2. A water tap according to claim 1, in which the dual purpose water control valve (25) comprises a cold water control knob, button or handle.
3. A water tap according to claim 1 or 2, in which the diverter valve (24) is manually operable to divert flow of cold water C only, or filtered water F only, to the common outgoing route (23).
4. A water tap according to claim 3, in which the diverter valve (24) is arranged to revert automatically to cold water routing to the common outgoing route (23), after operation to route filtered water F to the outgoing route (23).





European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 02 25 8696

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The present search report has been drawn up for all claims			
Place of search MUNICH		Date of completion of the search 28 May 2003	Examiner Flygare, E
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			

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

EP 02 25 8696

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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