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[54] **COMBINED BLENDING AND CHANGEOVER VALVE FOR FLUIDS**
5 Claims, 1 Drawing Fig.

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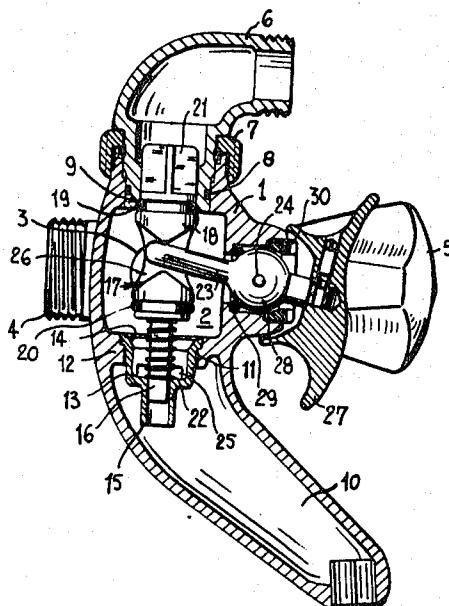
[50] **Field of Search**..... **137/119,**
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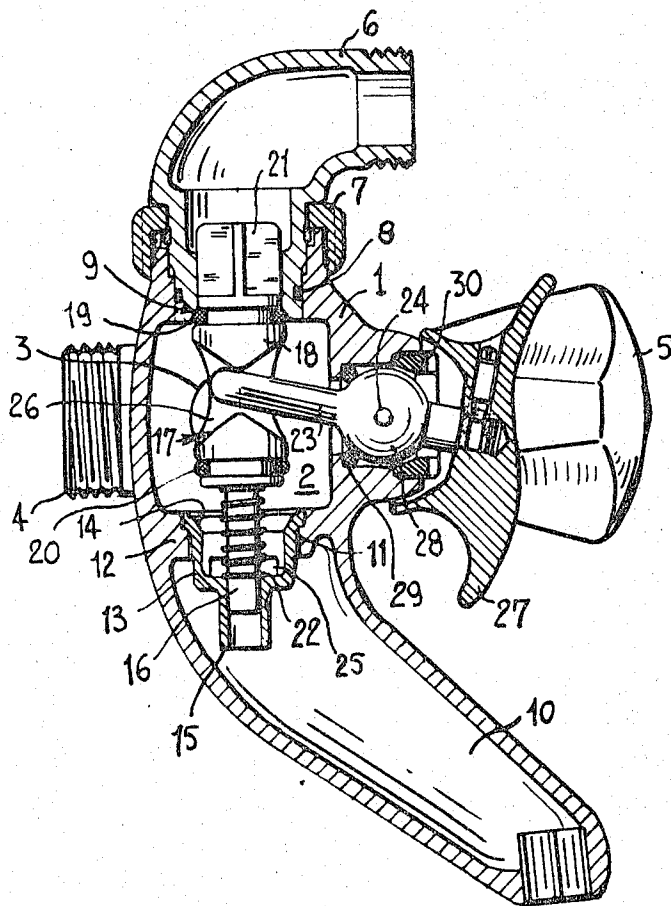
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ABSTRACT: A combined blending and changeover valve comprises a casing having a distribution chamber to which hot and cold water is supplied. A double-acting valve member in the distribution chamber is displaceable between a first end position in which it closes a first outlet to a shower and a second end position in which it closes a second outlet to a spout discharging into a bath. The valve member is movable into its second end position against the action of a spring biasing the valve member into its first end position by a freely pivotable actuating lever which engages in a recess in the body of the valve member. The valve member is adapted to be held in the second end position by pressure in the distribution chamber and the spring acts to return the valve member and the actuating lever to the first end position if a predetermined drop of pressure subsequently occurs in the distribution chamber.





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COMBINED BLENDING AND CHANGEOVER VALVE FOR FLUIDS

BACKGROUND

This invention relates generally to a combined blending and changeover valve for fluids.

In particular the invention relates to such a valve comprising a casing having a distribution chamber receiving a double-acting valve member displaceable between a first end position in which it engages a first seat to close a first outlet and a second end position in which it engages a second seat to close a second outlet.

SUMMARY

It is an object of the invention to provide a combined blending and changeover valve in which the first outlet is automatically closed in response to a predetermined drop of pressure in the distribution chamber

It is another object of the invention to provide such a valve for directing water either to a shower or to a spout discharging into a bath in which there is no risk of the shower operating accidentally

According to the invention there is provided a combined blending and changeover valve for fluids comprising: a casing; a distribution chamber in the casing for receiving fluids to be distributed; first and second seats defining first and second fluid outlets for the distribution chamber; a double-acting valve member within the distribution chamber which has an aperture therein and is displaceable between a first end position in which it engages the first seat to close the first outlet and a second end position in which it engages the second seat to close the second outlet; and wherein the improvement comprises: resilient means engaging the valve member to bias such member into its first end position; and an actuating lever which is freely pivotable between angular end positions corresponding to the end positions of the valve member and which engages in the aperture in the valve member for moving the valve member into its second end position against the action of the resilient means, the arrangement being such that the valve member can be held in the second end position by pressure in the distribution chamber; the resilient means being adapted to return the valve member and the actuating lever to the first end position upon a predetermined drop of pressure in the distribution chamber.

Further objects and advantages of the invention will become apparent from the following detailed description of an exemplary embodiment thereof.

BRIEF DESCRIPTION OF DRAWINGS

In the appended drawing, the single FIG. illustrates an exemplary embodiment of combined blending and changeover valve according to the invention for directing water either to a shower or to a bath.

DESCRIPTION OF THE PREFERRED EMBODIMENT

In the exemplary valve shown in the drawing, a casing 1 is formed with a central distribution chamber 2 comprising a water inlet 3 communicating with an inlet connection 4 by way of a valve system associated with a control knob 5. There is a similar water inlet on the opposite surface of chamber 2, the respective connections being connectable to hot and cold water pipes.

An elbowed connector 6 secured to casing 1 by nut 7 can be connected to a pipe (not shown) leading to a shower. A gasket 8 provides sealing between elbow 6 and casing 1, and the end of elbow 6 carries a frustoconical valve seat 9 defining a first outlet.

Casing 1 has a spout 10 which communicates with distribution chamber 2 via an aperture 11 in a wall 12 and through which water can flow into a bath. A socket 13 engaged in aperture 11 is formed with a frustoconical valve seat 14 which is disposed opposite seat 9 and defines a second outlet.

Socket 13 comprises a spigot 15 which is of reduced diameter and which forms a tubular guide for a rod-like extension 16 of a double-acting valve member 17. The wall of socket 13 is formed with orifices 25 through which water can flow from socket 13 into spout 10.

Valve member 17 comprises a central, substantially cylindrical body 18 formed with two circular grooves receiving two rubber gaskets 19 and 20 for cooperation with seats 9 and 14. Beyond gasket 19 the valve member 17 carries a spider 21 slidable in the bore of the elbow 6.

A helical spring 22 which is disposed on extension 16 and which bears on the ends of the valve member body 18 and spigot 15 tends to retain the valve member in a first end position illustrated in the drawing in which the valve member engages the seat 9 to close the first outlet to the shower, the second outlet to the bath defined by seat 14 remaining open.

An actuating lever 23 pivotally mounted on casing 1 by a transverse pin 34 has one end engaged in a lateral recess 26 in the valve member 18, its other end being provided with a handle 27. Intermediate its ends the lever 23 comprises a swivel 28 which bears on the inside of a ring gasket 29 to ensure sealing between lever 23 and casing 1. The ends of pivot pin 24 are received in diametrically oppositely disposed grooves in casing 1, and swivel 28 can be tightened against gasket 29 by a screw-threaded ring 30 to take up any wear.

The walls of the recess 26 in the valve member body 18 which extend transversely of the longitudinal axis of the valve member are convex so that the lever 23 abuts the valve member at points which are disposed axially of the two oppositely disposed seats 9 and 14. The lever 23 can pivot freely on pin 24 and its angular position is, therefore, determined by the axial position of the valve lid 17 in the absence of any force on handle 27.

The valve operates as follows:

When water enter the distribution chamber 2, with the valve member 17 in its first end position and with the handle 27 in the position shown in the drawing, it flows towards the spout 10 and the shower connector 6 is closed.

To direct water to the shower, handle 27 must be operated to move the valve member against the force of the spring 22 to its second end position in which it engages seat 14. The result of this movement of the valve member 17 is thus to close the second outlet associated with the spout for the bath and to open the first outlet for the shower. As a result of the pressure which the water applies to the valve member body 18 for a normal shower delivery, the valve member 17 is retained in its second end position even when the handle 27 is released. If, however, the pressure in the chamber 2 drops below a predetermined value because of an interruption of the supply, spring 22 returns the valve member 17 to its first end position which is shown in the drawing and in which the first outlet to the shower is closed and second outlet to the spout for the bath is open.

There is therefore no risk of the shower operating accidentally

I claim:

1. A combined blending and changeover valve for fluids comprising: a casing; a distribution chamber in the casing for receiving fluids to be distributed; first and second seats defining first and second fluids outlets for the distribution chamber; a double-acting valve member within the distribution chamber which has an aperture therein and is displaceable between a first end position in which it engages the first seat to close the first outlet and a second end position in which it engages the second seat to close the second outlet; and wherein the improvement comprises: resilient means engaging the valve member to bias such member into its first end position; and an actuating lever which is freely pivotable between angular end positions corresponding to the end positions of the valve member and which engages in the aperture in the valve member for moving the valve member into its second end position against the action of the resilient means, the arrangement being such that the valve member can be held in the

3

second end position by pressure in the distribution chamber, the resilient means being adapted to return the valve member and the actuating lever to the first end position upon a predetermined drop of pressure in the distribution chamber, said resilient means comprising a helical spring, said valve member being formed at one end with a rodlike extension slidably engaging in a tubular guide and serving as a support for said helical spring.

2. A valve as claimed in claim 1, wherein the guide is disposed downstream of the second seat.

4

3. A valve as claimed in claim 2, wherein the guide is in the form of a tubular member fitted in the valve casing.

4. A valve as claimed in claim 3, wherein the tubular member is formed integrally with the second seat.

5. A valve as claimed in claim 1, wherein, the actuating lever engages in a recess the valve member, which recess is bounded by two opposite convex sidewalls on which the lever can bear.

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