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AUTOMATIC BATH AND SHOWER DIVERTER VALVE

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Fig. 1

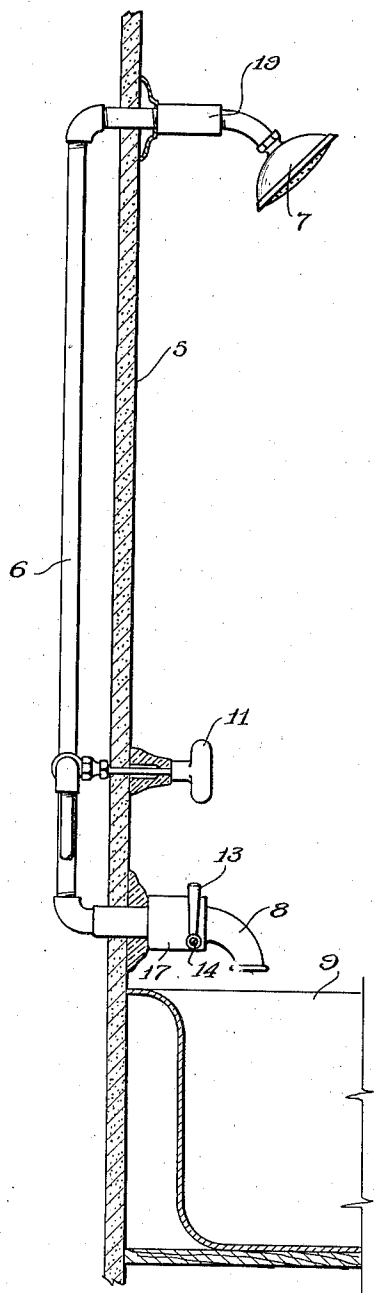


Fig. 3

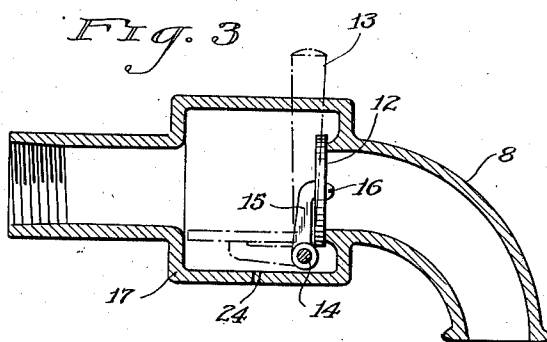


Fig. 4

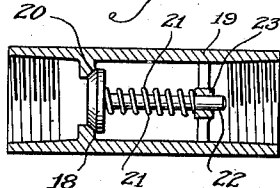
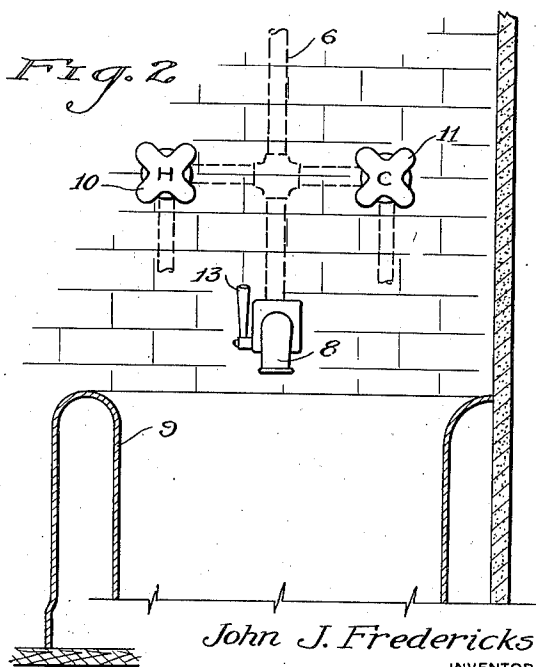


Fig. 2



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AUTOMATIC BATH AND SHOWER DIVERTER
VALVE

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2 Claims. (Cl. 251—126)

The present invention relates to an automatic bath and shower diverter valve.

Combination spout and spray fixtures as at present constructed include diverter valves which are adapted to be actuated to divert the water from the spout outlet to the spray head. In such valves the means for opening and closing the same are manual and there is a liability of a person desiring to take a tub bath becoming sprayed with water from the shower spray unless particular care is taken to actuate the diverter valve to permit the water to flow from the spout of the combination fixture.

The primary object of the invention is, therefore, to provide a diverter valve which is manually operated to control the flow of water to the shower fixture, but which will automatically open after the shower has been shut off thereby preventing the possibility of a second user becoming sprayed from water flowing thru the shower head.

A still further object of the invention is to provide a diverter valve of inexpensive and simple construction composed of a minimum number of parts, and which is automatically held in a non-diverting position by the pressure of water flowing thru the fixture.

The invention will be fully and comprehensively understood from a consideration of the following detailed description when read in connection with the accompanying drawing which forms part of the application.

In the drawing:

Fig. 1 is a side elevation of a combination spout and spray fixture embodying the present invention.

Fig. 2 is a front elevational view, partly in section, of the spout and control valves.

Fig. 3 is a longitudinal sectional view thru the spout and illustrating the diverter valve as associated within the spout; and

Fig. 4 is a sectional view of a relief or check valve mounted in the shower spray head connection.

Referring to the drawing for a more detailed description thereof, the numeral 5 illustrates a wall in which a combination spout and spray fixture, including a supply pipe 6, spray head 7, and spout 8, is mounted.

A portion of the bathtub indicated by the numeral 9 is disclosed and positioned beneath the spout 8 in the usual manner. Water is supplied to the spray head 7 and spout 8 thru the pipe 6 and controlled thru the valves 10 and 11, the valve 10 controlling the supply of hot water and 11 the supply of cold water, respectively.

The diverter valve indicated by the numeral 12 is positioned within the spout head 8 and is manually operable thru the handle 13 pivotally connected at 14 to an arm 15 attached to the valve 12 at 16. It will be noted that the spout head 8 has an enlarged portion 17 for receiving the diverter valve and actuating mechanism, and referring to Fig. 3 of the drawing, the valve is illustrated in closed position in full lines and in open position in dot and dash lines. The valve when in open position lies within the enlarged portion and is held therein by the pressure of water flowing thru the spout head 8.

For preventing flow of water thru the spray head 7 during the normal flow thru the spout 8 there is provided a relief or check valve 18 which is positioned within the pipe 19. The valve 18 is normally in engagement with the seat 20 and is held thereagainst by means of the compression spring 21 which spring encircles the stem 22 slidable axially in the bearing 23. The valve 18 is opened by the pressure of water flowing thereagainst, and remains open so long as water is flowing thru the spray head, which condition exists when the diverter valve 12 is in the closed position illustrated in Fig. 3 of the drawing. Upon shutting off the supply of water, the valve 18 automatically closes against its seat 20.

In normal operation the valve 12 is in open position, illustrated in dot and dash lines in Fig. 3 of the drawing. When desiring to use the shower spray head, the valve 12 is closed by actuating the handle 13 and the supply of water is cut off to the spout and will flow to the spray head. The water pressure against the valve 12 maintains the same closed, and diverts water to the shower head where the pressure thereof will open the relief valve allowing water to flow thru the spray head. Upon shutting off the supply of water thru the connections 10 and 11, the relief valve 18 closes and water within the supply pipe 6 will flow out thru the restricted opening 24 in the portion 17 thereby forming a vacuum between the relief valve 18 and spout head 8, and said vacuum will cause the diverter valve 12 to be automatically moved to its open position, and any residue of water within the supply pipe 6 will be discharged thru the spout 8.

From the above description it will be seen that there is provided an automatic means for opening the diverter valve so as to prevent a subsequent user being sprayed with water thru the shower fixture when desiring to take a tub bath. The diverter valve 12 must be manually closed at all times to divert water to the shower

fixture and upon shutting off the supply of water, the valve is automatically opened thru the creation of a vacuum between the relief valve and spout head.

- 5 It is to be understood that this improvement is capable of extended application and is not confined to the exact showing of the drawing nor to the precise construction described and, therefore, such changes and modifications may
10 be made therein as do not affect the spirit of the invention nor exceed the scope thereof as expressed in the appended claims.

What is claimed as new is:

1. In a combination tub and shower bath fixture, a pressure actuator diverter valve comprising a casing having an inlet and an outlet, a valve comprising a seat adjacent said outlet and a valve member movable on and off of said seat, means connected with said member manually operable to move said member on said seat
15 to prevent flow of water from the inlet thru said outlet, said means including a delicately counterpoised arm arranged whereby when said valve is closed, relatively slight movement of said
20 member will cause said arm to fully open said
25 member will cause said arm to fully open said

valve, and said valve having provision for causing said valve member to slightly move off of the seat thereby actuating said arm when the fluid under pressure to the inlet is shut off.

2. In a combination tub and shower bath fixture, a pressure actuated diverter valve comprising a casing having an inlet and an outlet, a valve comprising a seat adjacent said outlet and a valve member movable on and off of said seat, means connected with said member manually operable to move said member on said seat to prevent flow of water from the inlet thru said outlet, said means including a delicately counterpoised arm arranged whereby when said valve is closed, relatively slight movement of said member will cause said arm to fully open said valve, and said casing having a restricted fluid outlet opening whereby as water escapes through said opening a relatively slight vacuum is developed in said casing thereby causing said valve member to slightly move off of the seat, and actuating said arm, when the fluid under pressure to the inlet is shut off.

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