Dec. 27, 1927. 1,653,956

M. J. GLAUBER

COMBINATION SPOUT AND SPRAY FIXTURE

Filed June 23, 1926

Fig. 1

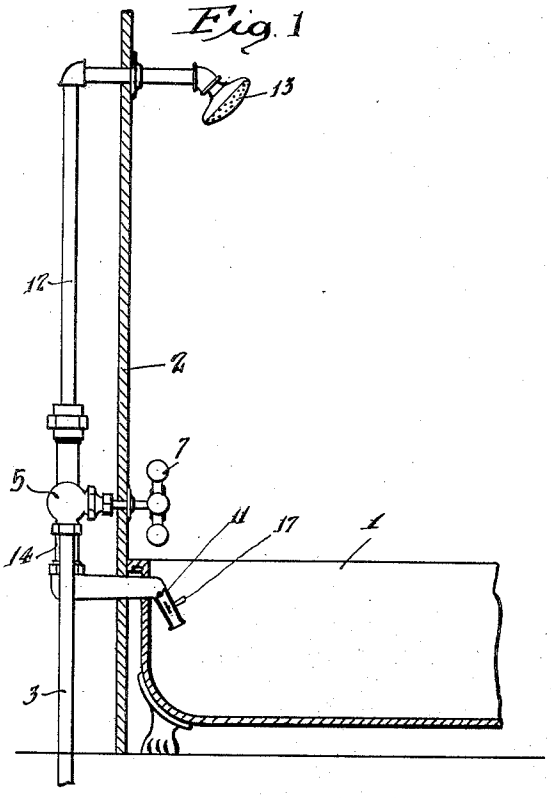


Fig. 2

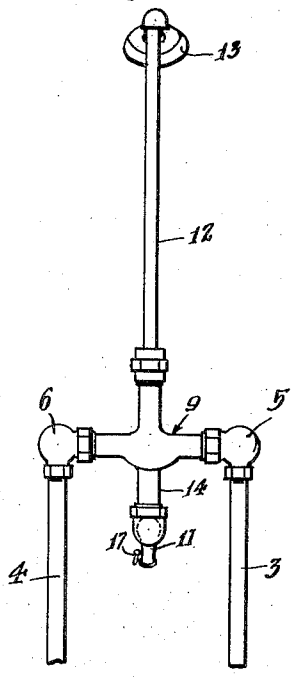


Fig. 3

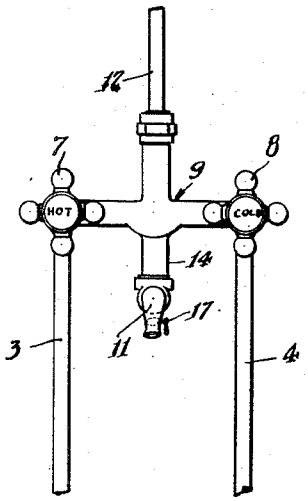
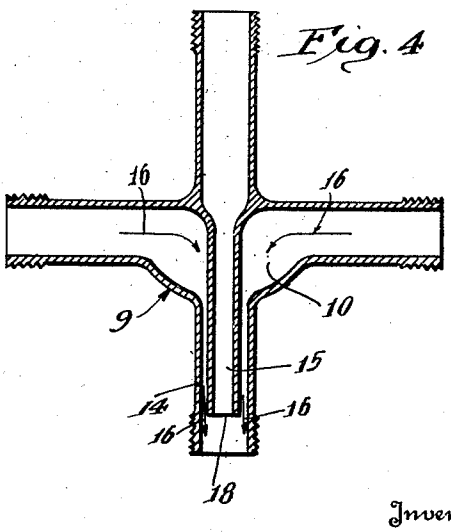


Fig. 4



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UNITED STATES PATENT OFFICE.

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COMBINATION SPOUT AND SPRAY FIXTURE.

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This invention relates to combination spout and spray fixtures and is more particularly directed to a fixture adapted for controlling the discharge of water from a mixing or like chamber either through a spout or a spray.

Heretofore when it has been desired to provide a combination fixture for controlling the discharge of water from a spout or a spray such, for example, as a shower head, it has been common practice to employ a four valve fixture, two of which valves were by-pass valves through which the water was by-passed to the second pair of valves which controlled or regulated the water flow to the shower head. Two mixing chambers were provided in this fixture for mixing the hot and cold water as the same was permitted to pass the valves.

It is the principal object of this invention to simplify this installation, to reduce the number of compression valves required and to control such an installation by one pair of valves, one of which is for the control of the hot water and the other of which is for the control of the cold water, and in which fixture only one mixing chamber is provided from which the water in accordance with this invention is diverted either through the spout or spray as desired.

Another object of this invention is to provide a combination spout and spray fixture which, when employed in connection with a bath spout and shower spray or head, will greatly reduce the liability of scalding occasioned by the discharge of hot water from the shower head or spray.

Another object of this invention is to provide a combination spout and spray fixture, the cost of production of which is greatly reduced over that combination spout and spray fixture heretofore commonly used, in that there is required in this fixture only two compression valves which perform the function heretofore performed by four of such compression valves.

Another object of this invention is to provide a combination spout and spray fixture which is of simple construction and which may be installed with a minimum of labor and requires less pipe for installation so as to reduce the cost of installation and maintenance.

Other objects and advantages of this invention will be apparent from the following detailed description of a preferred embodiment thereof as illustrated in the accompanying drawings, in which drawings:

Figure 1 is a side elevation of a bath and shower combination illustrating the combination spout and spray fixture embodied in this invention as adapted thereto.

Figure 2 is a rear end elevation thereof looking toward the rear of the wall.

Figure 3 is an enlarged fragmental front elevation thereof.

Figure 4 is an enlarged sectional view illustrating one form of ejector control embodied in this invention.

In the preferred embodiment of this invention, illustrated in the accompanying drawings, I have illustrated a combination spout and spray fixture as adapted for use in connection with a shower and bath spout. However, this invention is not limited to such use but might be equally well applied in connection with a sink fixture for providing the ordinary sink spout and a dish spray and might likewise be employed in connection with laundry trays, lavatories, or for connecting two spouts, or two sprays, with a common mixing chamber, or the like.

In the embodiment of this invention, illustrated in the drawings, 1 illustrates a bathtub which is secured in position adjacent a wall 2. Behind the wall 2 are hot and cold water supply pipes 3 and 4, respectively, which are provided with control valves 5 and 6 which may be of any desired or preferred type as are well understood in the art, and which valves 5 and 6 are preferably provided with actuating handles 7 and 8, respectively, which extend through the wall to a point of access on the inner side of the wall 2. The bodies of the valves 5 and 6 may be formed integral with or connected to a casting 9 which provides a mixing chamber 10 for the mixing of hot and cold water prior to the discharge thereof through the spout 11 or through the pipe 12 to the shower head or spray 13.

I have discovered that if the pipe 12 is merely connected with the mixing chamber 10 and when the valves 5 and 6 are open, the water will be discharged through both the spout 11 and shower head 13, due to the friction of the water during its discharge through the connecting nipple 14 and spout 11. This discharge through the shower head 13 may be somewhat controlled by re-

ducing the size of the pipe 12 or the interior diameter thereof relative to the interior diameter of the nipple 14 and spout 11. However, this has been found to be an inadequate control and in nowise positive and dependent primarily upon the water pressure in the hot and cold water supply pipes 3 and 4.

I have found that the diversion or control of the discharge of the water from the mixing chamber 10 either to the spout 11 or spray 13 may be had by inserting or forming an ejector nipple 15 into and through the mixing chamber 10 so that as the water passes through the mixing chamber 10 in the directions indicated by the arrow 16, that the ejector or jet actions created in the interior of the ejector nipple 15 tend to draw air downward through the nipple 15 and pipe 12 to which the nipple 15 may be secured or formed integral therewith. This drawing of air through the ejector nipple 15 prevents the backing up of water through the nipple 15 and pipe 12 to the spray 13 so that the water may be alone discharged through the spout 11 without danger of the same passing out of the spray 13.

When it is desired to divert the water from the mixing chamber 10 to the spray 13, a valve 17 of any desired or preferred construction is actuated to close the spout 11 so that when the valves 5 and 6 are opened the water must pass through the ejector nipple 15, a pipe 12 and from the spray 13.

The valve 17 may be of any desired or preferred construction and may be mounted in any position within the nipple 14 or spout 11 below the end 18 of the ejector nipple 15 and is preferably of such construction that the same does not materially restrict the water passage through the nipple 14 and spout 11.

As illustrated in Figure 4, the ejector nipple 15 may be cast integral with the casting 9 or the ejector nipple 15 may be screw-threaded into position so as to extend into the nipple 14 at an opening formed at a position immediately above the nipple 14 or the nipple 15 may be formed integral with the pipe 12 and screw-threaded into position at the aforesaid opening formed immediately over the nipple 14, all of which manner of construction will be obvious to those skilled in the art.

The nipple 15 may be constructed of any desired material such as iron, brass, or any suitable or desirable metal and might even be formed of flexible metal or rubber tubing.

Having fully described a preferred embodiment of my invention, it is to be understood that I do not wish to be limited to the exact details herein set forth, which may obviously be varied without departing from the spirit of my invention as set forth in the appended claims.

I claim:

1. In a combination spout and spray fixture, the combination of a mixing chamber having an inlet and a pair of outlets, one of which outlets is provided with an ejector device.

2. In a combination spout and spray fixture, the combination of a mixing member having an inlet, a spout outlet, a spray outlet, and an ejector device connected with one of said outlets and extending through the mixing chamber and into the other of said outlets.

3. In a combination spout and spray fixture, the combination of a mixing member having an inlet, a spout outlet, a spray outlet, and an ejector device connected with the spray outlet and extending into the spout outlet.

4. In a device of the class described, the combination of a hot and cold water mixing member, a hot water supply pipe, a valve for controlling the flow of water from the said supply pipe to the said mixing member, a cold water supply pipe, a valve for controlling the flow of cold water to the said mixing member, a pair of outlets from the said mixing member, and an ejector nipple connected with one of said outlets and extending into the other of said outlets.

5. In a device of the class described, the combination of a mixing member having an inlet, a pair of outlets from the mixing member, an ejector nipple connected with one of said outlets and extending into the other of said outlets, and a diverting valve mounted in the latter of said outlets beyond the end of the said nipple.

6. In a combination fixture, the combination of a mixing member having an inlet and a pair of outlets, one of which outlets is provided with an ejector nipple, and a diverting valve in the other of said outlets.

7. In a combination spout and spray fixture, the combination of a mixing member having a pair of inlets, valves mounted in the inlets for controlling the flow into the mixing chamber, a pair of outlets, one of which outlets is provided with an ejector device, and the other of which outlets is provided with a diverting valve.

8. In a combination spout and spray fixture, the combination of a member having an inlet, a spout outlet, a spray outlet, a valve mounted in the inlets for controlling the flow into the member, an ejector device connected with one of the said outlets and extending through the member and into the other of said outlets, and a diverting valve mounted in the latter of said outlets.

9. In a combination spout and spray fixture, the combination of a mixing member, an inlet, a spout outlet, a spray outlet, an ejector nipple connected with the spray outlet and extending into the spout outlet, and

a diverting valve mounted in the spout outlet.

10. In a device of the class described, the combination of a hot and cold water mixing member, a hot water supply pipe, a valve for controlling the flow of water from the said supply pipe to the mixing member, a cold water supply pipe, a valve for controlling the flow of cold water to the said mixing member, a pair of outlets from said mixing member, an ejector nipple connected with one of said outlets and extending into the other of said outlets, and a diverting valve mounted in the latter of said outlets beyond the end of the said nipple.

11. In a combination fixture, the combination of a mixing chamber providing a pair of tubular inlets, a tubular outlet, and an ejector nipple connected with a second outlet and extending into the first said outlet.

12. In a device of the class described, the combination of a hot and cold water mixing member adapted to be connected with hot and cold water valved supply pipes, an outlet from the said mixing member, a second outlet from the said mixing member, an ejector nipple connected with the second said outlet and extending into the first said outlet, and a diverting valve mounted in the first said outlet beyond the end of the said nipple.

13. In a combination spout and spray fixture, the combination of a mixing member, a spout conduit extending from the mixing member, a spray conduit extending from the mixing member, hot and cold water supply pipes for conducting hot and cold water to the mixing member, a spout connected with the spout conduit, a diverting valve, and means extending through the spout for operating the diverting valve.

14. In a combination spout and spray fixture, the combination of a mixing member, a spout conduit extending from the mixing member, an inlet for the mixing member, a spray conduit extending from the mixing member, a spout connected with the spout conduit, a diverting valve, and means operably connected with the diverting valve and extending through the spout for operating the diverting valve.

15. In a combination spout and spray fixture, the combination of a mixing member, a spray conduit extending vertically upward from the mixing member, a spout, means for connecting the spout with the mixing member, an inlet for the mixing member, a diverting valve, and means extending through the spout for operating the diverting valve.

16. In a combination spout and spray fixture, the combination of a mixing member having inlet and outlet passages, and an ejector device provided in one of the passages.

17. In a device of the class described, the combination of a hot and cold water mixing member, a hot water supply pipe, a valve for controlling the flow of hot water from the supply pipe to the mixing member, a cold water supply pipe, a valve for controlling the flow of cold water to the mixing member, a pair of outlets from the mixing member, and an ejector device for controlling the flow of water through the outlets.

Signed at Los Angeles, California, this 16 day of June, 1926.

MYRON J. GLAUBER.