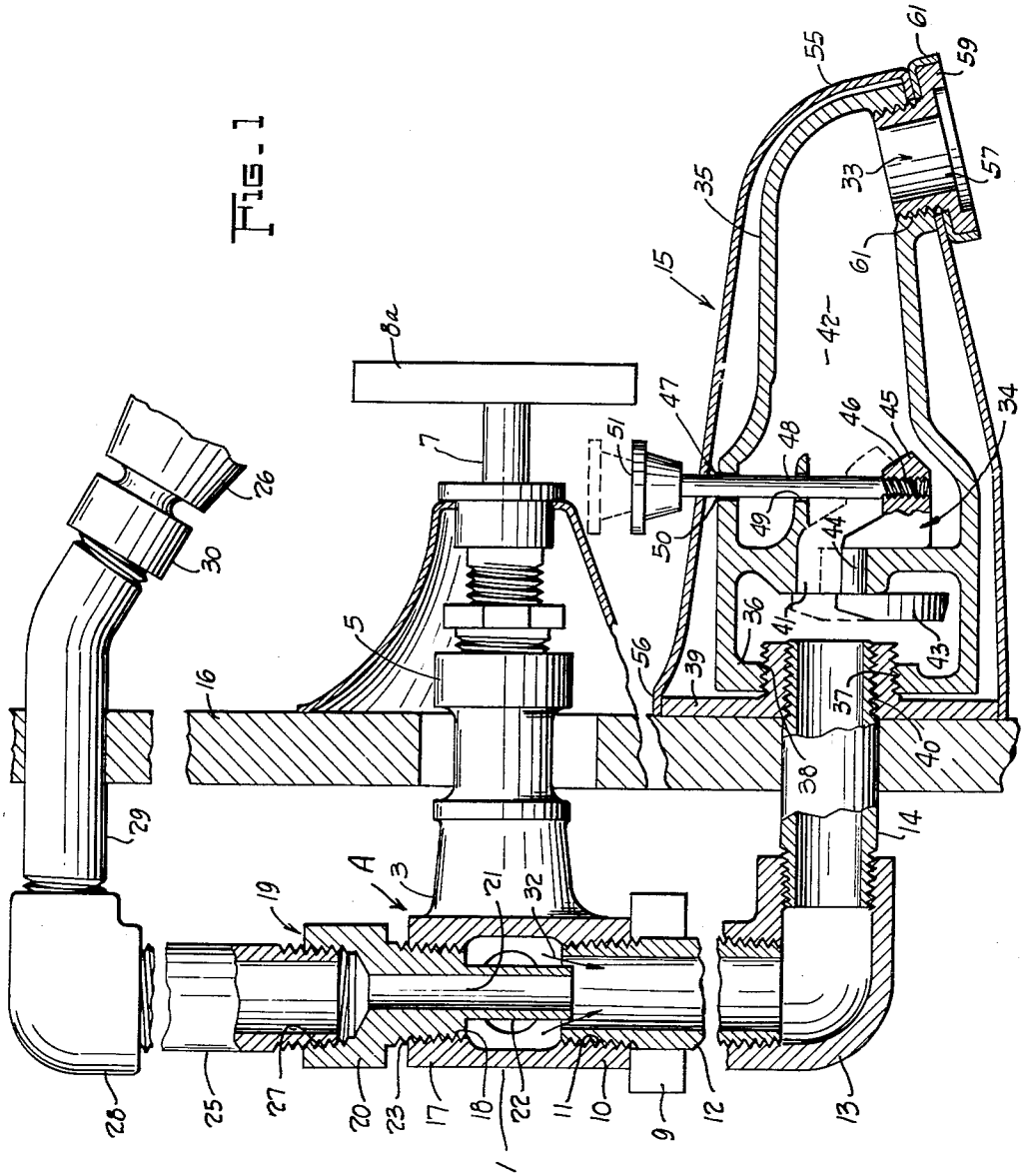
Dec. 12, 1961 R. J. FIFE 3,012,251

TUB AND SHOWER FIXTURES

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FIG. 1



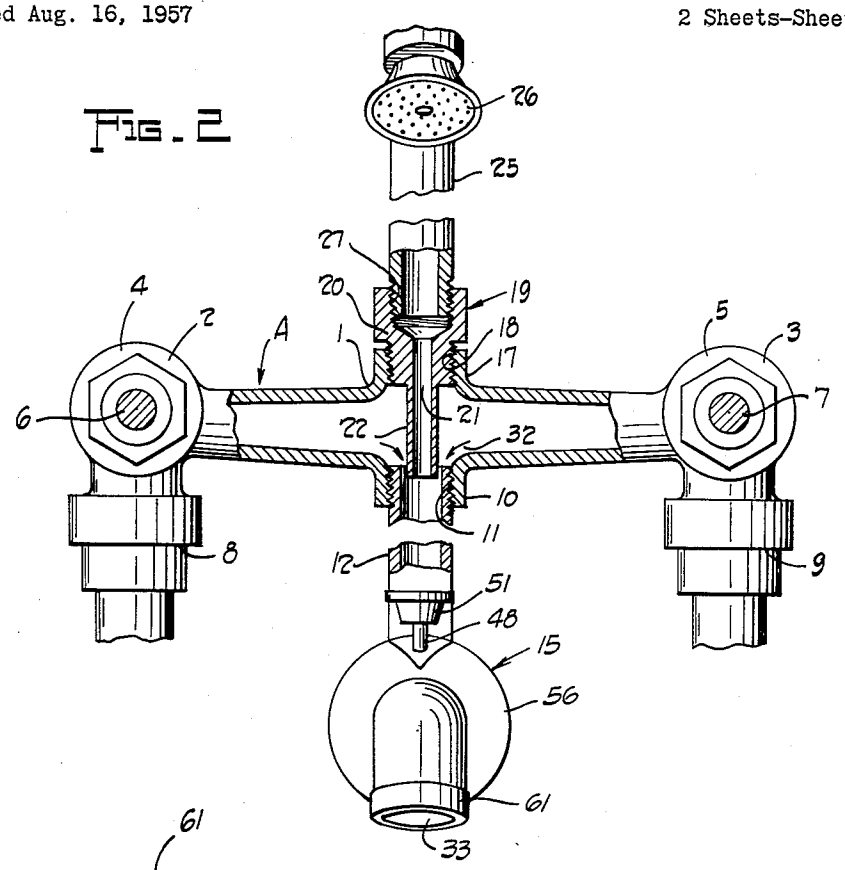
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TUB AND SHOWER FIXTURES

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Fig. 2



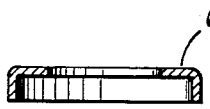


Fig. 3

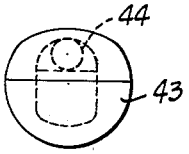


Fig. 6

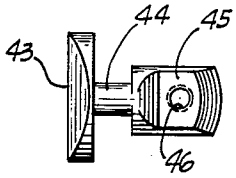


Fig. 5

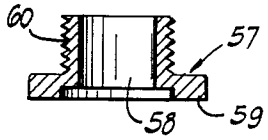


Fig. 4

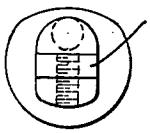


Fig. 7

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TUB AND SHOWER FIXTURES

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1 Claim. (Cl. 4—192)

This invention relates to plumbing fixtures and more particularly to tub and shower fixtures of the built-in types.

In fixtures of the class to which this invention is directed, several different arrangements are commonly used to provide water to both a tub and to a shower.

One of these types is known as the three valve diverter, involving a pair of valves to regulate flow of water to a central mixing chamber, and a third valve intermediate the first two, to direct the water to shower piping and thus the shower head, and likewise to cause the water to flow to a spout, from which it is dispensed into the tub.

The chief objection to the foregoing type is the initial cost thereof and thus another known fixture designated as the two valve tub and shower unit is often availed of to perform the dual function desired.

In this latter type of fixture, it has been customary to provide a body having a central mixing chamber, at the ends of which are arranged the valve instrumentalities for control of the hot and cold water flow therethrough and into the mixing chamber.

Of necessity the piping hook up of such a fixture when installed for supply of water to shower and tub, has heretofore been complicated by the provision of a twin L which is connected to one of the outlets of that fixture, of which there are two provided, the other being plugged in this arrangement, and thence the connections are made to the shower, and also to the spout for tub supply. In this instance the spout is of the so-called diverter type, being of somewhat costly manufacture and design, since it must be chromium plated in accordance with acceptable practice.

Such a spout involves means cooperable with the twin L mentioned whereby stopping the flow through the spout will cause the water to be directed to the shower and vice versa.

While this invention in general involves the same requirements as previously outlined, the results are accomplished much more simply and effectively, both in regard to the function usually fulfilled by the twin L and the cost of manufacture of the spout.

In view of the foregoing therefore, it is a principal object of this invention to provide a two valve bath and shower fixture which eliminates the twin L and simplifies the manufacture of the spout availed of for diversion control.

A further object of the invention is to provide an air and fluid passage unit, replacing the complicated twin L and simplifying the piping hook up, by eliminating certain usual connections and without any change in present manufacture of the fixture body itself.

In addition to the above, the unit provided is a simple part, cheaply manufactured and installed in the fixture without affecting the operation thereof and at the same time being removable if desired.

Still another object of the invention is to provide a composite spout which involves an inner body in the form of a simple casting without special regard for surface finish, an outer shell which may be made by techniques affording fine finish bases, without undue preliminary preparation, and an adaptor by which, in conjunction with a mounting flange, the shell is positioned over the inner body and retained thereon, the control of flow through the spout, being regulated by a control member extending therefrom.

Another object of the invention is to provide a simple arrangement and parts therefor which will effectively provide for delivery to tub or shower of all required water flow but prevent simultaneous supply thereto.

Other and further objects of the invention will be understood from a consideration of the specification appended hereto and shown in the drawings wherein:

FIGURE 1 is a substantially full sized illustration, somewhat fragmentary in nature and largely in section, illustrating the various features of this invention involving the tub and shower supply of water.

FIGURE 2 is a front elevation view, partly in section and somewhat fragmentary likewise, further illustrating the relationship of the parts of this invention.

FIGURE 3 is a cover member for an adaptor.

FIGURE 4 is the adaptor with which the cover member of FIGURE 3 is used.

FIGURES 5, 6, and 7 are top rear and front views of the control member availed of in the spout.

Turning now to a consideration of the drawings, and particularly FIGURES 1 and 2 initially, there is shown what may generally be called and is usually known as a two valve fixture unit designated A in which a central mixing chamber portion **1** is provided, the said mixing chamber portion being equipped at its ends and integrally formed therewith with valve sections **2** and **3** in which valve units of conventional form, not particularly illustrated, are mounted in the bonnets designated **4** and **5** respectively.

The usual stems **6** and **7** are provided and as shown in FIGURE 1 suitable handles such as **8***a* are likewise provided for the stems **6** and **7**, largely as is conventionally acceptable in the trade.

In order to connect the valve as a whole up to a water supply, the usual hot water connection at **8** is provided and a cold water connection **9** these being usual unions or other type of connection as will be required by the particular installation.

At the center of the mixing chamber A and extending downwardly therefrom is a first outlet designated **10**, which outlet is equipped with threads at its interior portion indicated at **11**, the threads **11** being intended to accept as illustrated in FIGURE 1 the nipple or pipe section designated **12**, which nipple or pipe section **12** is in turn connected to an elbow **13**, the elbow **13** likewise being connected to a further nipple or pipe member **14** for supply of water to the tub through a spout generally designated **15** which will be described more in detail hereinafter.

It will be apparent of course that the fixture of this invention is shown as being mounted behind a wall such as **16** and thus is a built-in fixture of generally known characteristics but hooked up in a different manner as will be understandable hereinafter.

Arranged substantially opposite and above the first outlet **10** is a second outlet **17**, which outlet is likewise provided with threads **18** therein, this outlet being the one through which the water will flow to the shower as will be shortly described, there being provided an air induction and fluid passage unit generally designated **19**, which includes a body **20** having a passage **21** therein, which passage **21** is in turn connected to a tubular member **22**, the passage in the tubular member **22** and the passage **21** being obviously aligned and for the purposes hereof the entire unit being of integral nature and made from one piece preferably although not necessarily.

It will be understood that suitable threads such as **23** are provided on the body **19** so that the said threads may be entered in the threads **18** and positioned in the outlet **17** as shown in FIGURES 1 and 2.

In order to connect the piping **25** to the shower head illustrated at **26**, suitable threads such as **27** are provided

at the upper end of the body 19 and thus the piping 25 may be connected therewith.

Obviously a suitable elbow such as 28 is provided and a shower arm 29 is arranged to be connected to the shower head 26 by a ball joint 30 all of the foregoing being largely conventional as respects the shower connection.

As shown in FIGURES 1 and 2, the tubular portion 22 of the unit 19 is arranged so as to extend into the outlet 10 and thus substantially into the piping 12 in said outlet whereby when water is introduced into the mixing chamber section 1, the normal tendency thereof under pressure will be to flow in the direction of the arrows indicated at 32 and thence downwardly into the piping 12 and thus to the spout 15 shortly to be described. As the water flows in the direction of the arrows 32, obviously air will be induced to flow through the unit 19 and there will be no tendency for the water normally to back up or move upwardly in the piping 25 connected to the shower head 26.

Since this normal movement of the water will take place, it will flow through the spout 15 and the outlet 33 thereof until such time as a shut-off means generally designated 34 is actuated as will be shortly described after the spout itself is described in detail.

Turning now to a consideration of FIGURE 1, and the details shown in FIGURES 5, 6, and 7, the spout is comprised of an inner body designated 35 equipped at one end with an inlet portion 36 threaded at 37, the threads 37 being arranged to receive externally threaded portion 38 of a mounting flange 39, the flange 39 being round in configuration and being equipped with suitable threads 40 internally thereof to receive the nipple or piping 14 previously mentioned.

The inner body 35 of the spout unit 15 is cored out as shown so as to provide a passageway 41 therein, aligned substantially with the central portion of the flange 39 so that water directed to the pipe 14 will enter the passage 41 and move through a fluid passage 42 in the body and thence outwardly through the outlet 33 previously mentioned.

Now in order to control the movement of liquid through the passage 41, the shut-off means 34 is provided, involving a closure member 43 somewhat elliptical in plan connected by a necked down portion 44 to a weight portion 45. The weight portion 45 is in turn equipped with a threaded section at 46 for engagement by the control part designated 47 including the stem 48 guidingly mounted in an opening 49 and a further opening 50 in the inner body 35, the upper end of the stem 48 being equipped with a handle or knob 51 whereby the closure member 43 may be raised and lowered over the passage 41 as will be readily apparent.

It will be understood further that the configuration of the face of the member 43 is such that upon impingement of water entering the spout inner body 35 through the nipple 14, the said closure member 43 will be maintained in the dotted line position shown in FIGURE 1 and thus close the said passage 41.

When the passage 41 has been thus closed by manipulation of the control part 47, as to raise the member 43 upwardly, the water backs up in the connections 12, 13, and 14 and thus through the first outlet 10 mentioned and into the hollow or tubular member 22 and thus upwardly into the piping 25 leading to the shower 26, and thus of course be delivered from the shower for use as will be understood.

If it is desired thereafter to again direct the water flow into the tub, the control unit 47 will be pushed downwardly and the water permitted to flow through the passage 41. Alternatively when the water flow is shut off by manipulation of the handles such as 8 of the valve units at opposite ends of the body A, the weight of the part 45 will cause the shut off means 34 to move downwardly by gravity to permit flow again of the water through the spout when the valves under the control of handles such as 8 are again manipulated.

Since the inner body 35 is preferably a rough casting, and thus would normally require finishing so as to chromium plate the same to fit in with the appearance of the rest of the fixture, in this instance it is desirable to provide a finish for the spout likewise and this is effected in a novel manner by providing a shell designated 55 which shell fits around and fairly conforms to the outer configuration of the inner body 35 being mounted at one end at 56 so as to be supported on the flange 39 and the other end being arranged to receive therewithin an adaptor 57 shown in enlarged detail in FIGURE 4 as including a passage 58 therein and the flange portion 59 with suitable threads 60 being provided on an extension to screw into corresponding threads 61 formed in the outlet 33 of the inner body 35.

Under some conditions it will be desirable to cover the exposed portion 59 of the adaptor and for that purpose a cup shaped member 61 is furnished and mounted over the adaptor as shown in FIGURE 1, the entire unit being screwed into the threads 61 of the inner body 35 and brought into engagement with the opening in the shell 55 to thereby maintain the shell mounted in connection with the flange 39 by the portion 56 as well as the adaptor just described.

It will be understood readily from the foregoing that there is thus no necessity for availing of a twin L and the complicated piping involved thereby, the air induction and fluid passage unit being substituted therefor and readily applied to the fixture where necessary or desired to furnish diversion of water flow to the tub and to the shower. By the same token it will be readily understood that such a unit can be furnished for any fixture and need not be of any particular complication to carry out the function desired of preventing the back up of water into the shower piping when water is flowing through the spout to the tub yet permitting water to flow to the shower piping when the spout is operated upon by the control means provided to compel the flow of liquid to the shower as previously explained.

I claim:

In a diverter of the class described in combination, a two valve body having centrally located shower and tub outlets, the shower outlet having an air and water passage unit removably mounted therein, said unit being in turn connected to shower piping, and the tub outlet being connected to a composite spout having an inner body through which water may flow, a shell surrounding said inner body, a connecting flange at one end of the spout engaging the shell, and an adapter at the other end of the inner body likewise engaging the shell, said shell being thereby retained and positioned with respect to the inner body and the inner body being thus connected to piping leading from the tub outlet aforesaid.

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