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ADAPTER FOR NIPPLE ON BATH TUB SPOUT

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FIG_1

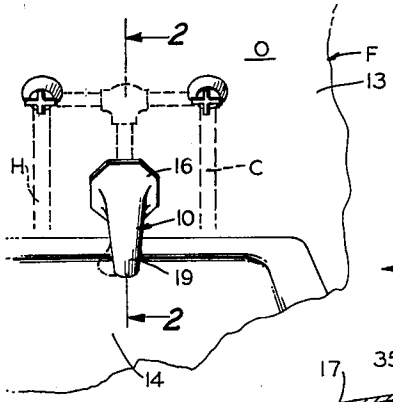
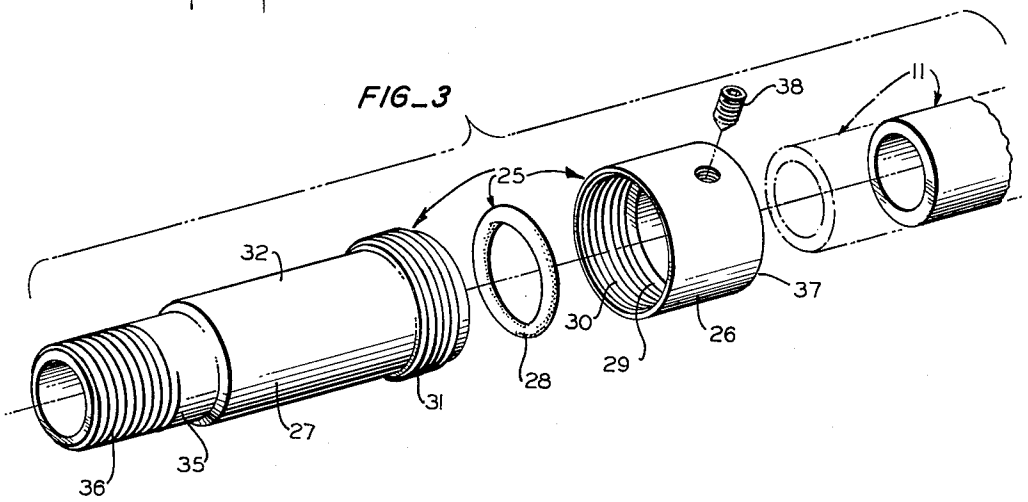


FIG_2

FIG_3



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ADAPTER FOR NIPPLE ON BATH TUB SPOUT

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This invention relates to an adapter between a standard pouring spout for a tub and a nipple mount therefor, and has for one of its objects the provision of an adapter that is readily adjustable relative to a nipple so as to make a perfect fit between the standard pouring spout and the wall through which the nipple from the water supply pipe extends irrespective of variations in the thickness of the wall.

To understand the purpose and function of the adapter of the present invention it should be borne in mind that the nipple upon which the standard spout is to be mounted is originally set into the plumbing during the roughed in stages or framing of the building, i.e., before the finished wall is installed or even located. Moreover, since the rough plumbing is installed between studding, usually 2" x 4" or perhaps 2" x 6", the cold and hot water riser pipes are not necessarily located at dead center of the rough wall. That is to say, the riser pipes may well be closer to that edge of the studding which is to receive the finished wall or it may be farther from it. Now a nipple, as the term is used here, consists of a short length of pipe threaded at both ends and having one end connected to a fitting in a mixing unit between the control valves of the hot and cold riser pipes. The nipple extends horizontally from between the studding and beyond the plane of the contemplated finished wall so as to pour the water into a bath tub or the like. The pouring spout is in reality an ornamental cover usually of a soft metal but neatly plated and finished to hide the unsightly nipple pipe. Heretofore such a spout has been threadedly connected to the opposite or outer end of the nipple. The problem involved is to so dispose the threaded outer end of the nipple such as to enable the back end of the pouring spout to fit snugly against the finished wall so as to cover the rough opening therein through which the nipple extends.

Since the finished wall is not in place at the time the nipple is secured to the rough plumbing, keeping in mind that the riser pipes are not accurately located between the studding, and since the tolerances on the internal threading of the pouring spout is limited it will be appreciated that a snug fit between the pouring spout and finished wall cannot be attained unless the originally placed nipple is replaced by one of proper length or has been cut and threaded to suit the particular conditions as they exist after the finished wall has been applied and its location otherwise established.

In the absence of achieving such particulars with reasonable certainty the plumber in applying the pouring spout to the nipple may find the outlet end of the spout angularly disposed rather than directed downwardly (vertical position) as it should be. In such cases the plumber may attempt to force the outlet end of the spout into proper (vertical) position by inserting a bar or rod thereinto and swinging the bar and outlet end of the spout toward the desired position by forcing the thread on either the spout or inner end of the nipple. In either case the results are disastrous because not only may the seal be broken between the threaded inner end of the nipple and the mixer fitting thus causing a possible leak but worse of all the soft metallic spout cannot be thus forced (its back end abutting the finished wall) because the rod or bar will tear and/or break open the spout

and thus render it useless and unsightly for the purpose of ornamentally covering the nipple.

One of the objects of this invention is the provision of a structure that enables the plumber to make a perfect fit of the spout against the wall without changing nipples and without changing the external appearance of a conventional spout, and which structure provides a stronger structure than heretofore to better withstand the abuse to which pouring spouts are subjected due to persons grasping them or placing their weight on the spouts in raising and lowering themselves into the tub.

Another object is to provide an adapter between the pouring spout and nipple to compensate for variances in length of the nipple and/or the disposition of the free end of the nipple from the finished wall.

It is another object of this invention to provide an adapter between a pouring spout and a fixed nipple facilitating longitudinal extension of the fixed nipple to suit the fitting of the spout snugly against the finished wall.

It is a further object of this invention to provide an adapter between a pouring spout and a fixed nipple facilitating 360° circumferential disposition of a spout receiving threading relative to the fixed nipple to suit the fitting of the spout snugly against the finished wall.

It is yet another object of the present invention to provide a threaded adapter having sliding sealed fit both longitudinally as well as circumferentially relative to a fixed nipple to facilitate a snug fit between a finished wall through which the nipple extends and the back edge of a pouring spout threadedly connected to the threaded adapter.

These and other objects and advantages of the present invention will become apparent in the following description when read in the light of the drawings in which:

FIG. 1 is a fragmentary illustration of a pouring spout projecting from a finished wall in juxtaposition to a bath tub.

FIG. 2 is a longitudinal section through the pouring spout and wall of FIG. 1 as well as the rough plumbing nipple and the adapter therefor embodying the present invention.

FIG. 3 is an enlarged exploded perspective view of the components of the adapter of FIG. 2.

In the drawings a conventional pouring spout **10** of generally accepted standard design is shown as a means for covering and for attachment to a nipple **11** which as a part of the rough plumbing extends through an opening **12** formed in a finished wall **13** adjacent one end of a tub **14**.

During roughing in of the plumbing hot and cold pipes H and C, respectively, rise vertically between the studding or other structural members of a wall W and are installed prior to the application of the finished wall surfacing F such as plaster, sheetrock and tile. These pipes H and C terminate in valve fittings joined by a transverse mixing pipe having a central fitting communicating with the nipple **11**. As previously stated, the risers and disposition of the nipple are seldom accurately placed but only roughly so. Moreover, it is customary to cap the nipple **11** so that when the valves are turned on the pipes can be subjected to the pressurized water during plumbing inspection to ascertain whether or not there are any leaks in the system.

From the foregoing it will be appreciated that after the finished wall F has been applied the nipple **11** projecting therefrom, being capped, has a threaded free end upon which the cap is secured. In the most ideal situation the threaded end of the nipple should be located a predetermined distance from the surface of the finished wall F, this distance being determined by the distance between the back or bell end **16** of the pouring spout **10** and the internal threading **17** within the latter.

It should here be noted that regardless of outer configuration, ornamentation and/or appearance of a conventional spout 10, the distance between its bell end 16 and the internal threading 17 therein is constant. In other words there is an accepted standard dimension D, as designated in FIG. 2 of the drawing, for the distance between the edge 18 of the bell 16 and the internal threading 17 of a standard pouring spout such as the one shown at 10 in the drawing. Between the bell end 16 and the internal threading 17 the spout is sleeve-like in character so as to become axially aligned with the nipple to which it is to be connected. Beyond the threading 17 the spout 10 has an elbow-like terminus 19 the open end 20 of which is at right angles (90°) with respect to the axis of the sleeve-like portion of the spout for deflecting water emitting from the nipple downwardly into the tub 14.

As previously stated, under the most ideal conditions the threaded open end of the nipple will be so spaced from the finished wall F to make connection with the internal threading 17 in the spout. However, this seldom ever occurs and then more by accident rather than by intent. Consider for example the many factors that have a bearing on the exact location of the threaded outer end of a nipple:

X—the distance between the vertical plane of the riser pipes H and C and the rough edge of the wall studding.

Y—the variations in finished wall thickness.

Z—the length of the nipple and the relative position of its threaded outer end with respect to the finished wall F.

These factors are of no consequence when the adapter 25 of the present invention is employed as now to be explained.

Referring to FIGS. 2 and 3 the adapter 25 comprises a gauging collar 26, a nipple sleeve 27 and sealing means 28 cooperatively related for interconnection with the nipple 11 and spout 10 to afford a snug fit between the open edge 18 of the bell 16 of the latter and the finished wall F.

As previously stated during the rough plumbing the nipple must be threaded for capping during pressure tests by the plumbing inspector. However, after approval and after the finished wall F has been applied and its outer surface O established, the nipple does not have to be changed and no threading at its open end is necessary when the adapter of the present invention is employed. All that is required is that the nipple terminate approximately short of 3 inches from the outer surface O of the finished wall F. If the nipple is too long it can be cut off anywhere from 3 inches to 1½ inches from the outer surface O of the finished wall F.

The gauging collar 26 has a center bore which has sliding fit over the standard pipe size of the nipple 11. The collar 26 has an internal annular seat 29 adapted to receive an O-ring constituting the sealing means 28 previously mentioned. This O-ring bears circumferentially against the nipple 11 as well as the annular seat 29. Beyond the seat 29 the collar is provided with internal threading 30 having threaded connection with external threading 31 provided on the inner end of the nipple sleeve 27. As this threaded connection is secured the inner end of the sleeve nipple 27 bears against the O-ring 28 distorting the latter to spread both inward and outward to effect a water tight seal between the nipple 11 and the nipple sleeve 27.

As best seen in FIG. 2 the nipple sleeve 27 has a sleeve portion 32 dimensioned for sliding fit upon the nipple 11 and regardless of the disposition of the terminal end 33 of the latter, there being a possible variance of up to 1½ inches betweeen the location of the terminal end 33 and the base end 34 of the sleeve portion 32, any water seeping between the sleeve portion 32 and the nipple 11 will be checked at the sealing ring 28.

Beyond the base end of the sleeve portion 32 the

nipple sleeve 27 becomes reduced in size down to a neck section 35 comparable to a section of the nipple 11 in size. This neck section has an outside thread 36 and terminates at a constant dimension from that end 37 of the gauging collar 26 which abuts and lies flush up against the outer surface O of the finished wall F. This constant dimension is comparable to that predetermined dimension D (FIG. 2) previously explained as the distance between the internal threading 17 and the outer edge 18 of the bell end 16 of the pouring spout 10. It will thus be seen that regardless of any variance in length of the nipple 11 (within the range explained) the thread 36 on the neck end 35 of the adapter is correctly placed to have threaded connection with the internal threading 17 in the spout 10 to assure snug fit (abutting relation) between the edge 18 of the bell end 16 of the spout and the outer surface O of the finished wall F.

Moreover, it will be seen that should any longitudinal adjustment be required, the entire adapter 25 (sleeve portion 32 of the nipple sleeve 27) can be shifted longitudinally relative to the nipple 11. It should also be noted that in event the 90° elbow 19 on the spout may end up other than downwardly disposed due to the disposition of the threading 35 on the neck end of the nipple sleeve, the entire adapter 25 can be adjusted circumferentially relative to the fixed nipple 11 to assure correct positioning of the pouring spout 10. With these two factors established the gauging collar is secured to the nipple 11 by a set screw 38 so that anyone pulling on the spout 10 cannot pull it clear off of the nipple 11.

It should here be noted that the entire operation of installing the pouring spout 10 can be accomplished in as little as 10 seconds thus eliminating the labor and expense entailed in changing nipples and the trial and error of obtaining correct positioning and snug fitting of the spout relative to the wall F.

Having thus described my new adapter in specific detail it will be appreciated by those skilled in the art that it may be susceptible to variations, alterations and/or modifications without departing from the spirit of my invention therein. I therefore desire to avail myself of all variations, alterations and/or modifications as fairly come within the purview of the appended claims.

What I claim as new and desire to protect by Letters Patent is:

1. In combination a right angular spout and an adjustable multi-part adapter to be mounted on a water pipe extending horizontally from and installed as a part of the rough plumbing within a building wall, the location of the final finished surface of which wall is indeterminate relative to the open end of the roughed in water pipe, said spout having a right angled discharge end downwardly extending when its perpendicular opposite open end is in engagement with the said finished surface of such wall, and which spout has adjacent its discharge end internal threading the terminus of which nearest said discharge opening is at a standard constant dimension from the said perpendicular opposite open end of said spout, said adapter comprising a mounting ring slidable upon said water pipe and having its after end disposed to engage the said finished surface of such wall and having at its opposite end internal threading terminating in an internal annular seat, a sealing ring in said annular seat engaging said water pipe, a nipple sleeve slidable over said water pipe and having one end threadedly connected to the internal threading in said mounting ring and its opposite end threaded into the internal threads of said spout to a position where said threaded sleeve end is in substantial vertical alignment with said terminal end of the internal spout threads, the assembled length of said nipple, sealing ring and mounting ring corresponding to that standard constant dimension between the internal threading in said spout and the wall engaging open end of said spout, and friction means for securing said mounting ring to said water pipe with its after end en-

gaging said finished surface of such wall, said friction means permitting slight angular adjustment of said mounting ring on said water pipe but resisting relative axial movement along said pipe.

2. The device in accordance with claim 1 in which the friction means is a set screw mounted in a threaded bore formed radially in said mounting ring for securing the latter to said water pipe with its after end engaging said finished surface of such wall and for resisting axial movement of said mounting ring along said pipe but permitting circumferential angular adjustment of said mounting ring on said water pipe for presetting the threaded end of said nipple sleeve to receive the internal threading of said spout in such a manner that when the opposite open end of said spout engages the finished surface of said wall the right angled discharge end of said spout extends vertically downward.

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