Dec. 8, 1942. J. D. STOKES 2,304,609

PIPE FITTING

Filed Dec. 1, 1941

Fig. 1.

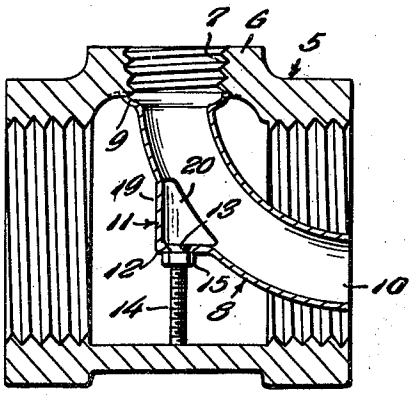


Fig. 2.

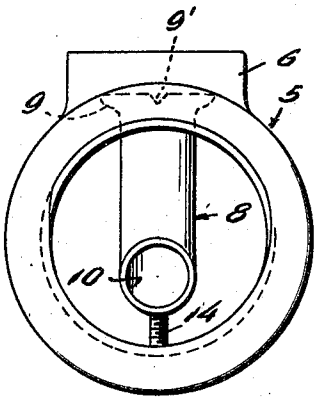


Fig. 3.

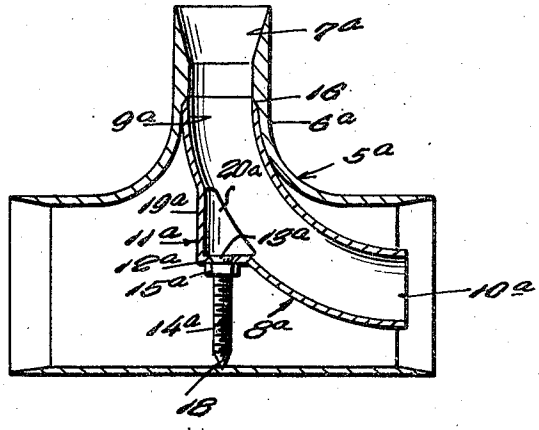
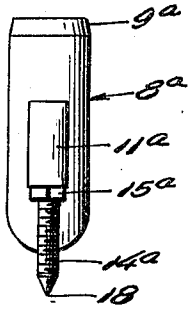


Fig. 4.



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Patented Dec. 8, 1942 2,304,609

UNITED STATES PATENT OFFICE

2,304,609

PIPE FITTING

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Application December 1, 1941, Serial No. 421,209

5 Claims. (Cl. 138—37)

My invention relates to improvements in pipe fittings, such as used to shunt a portion of the fluid in a pipe of a heating or cooling system, to divert a portion of the water or the like to individual radiators or coolers, and the primary object of my invention is to provide fittings of this type which are characterized by low cost and ease of construction without sacrifice of mechanical or structural efficiency.

Other important objects and advantages of my invention will be apparent from a reading of the following description taken in connection with the appended drawing, wherein for purposes of illustration I have shown preferred embodiments of my invention.

In the drawing:

Figure 1 is a general longitudinal vertical sectional view taken through the preferred form of the invention.

Figure 2 is a right hand end elevational view of Figure 1.

Figure 3 is a longitudinal vertical sectional view taken through another embodiment of the invention.

Figure 4 is a left hand end elevational view of the diverting tube before installation.

Referring in detail to the drawing, and first to the embodiment of the invention shown in Figures 1 and 2, the numeral 5 generally designates the body of the fitting which in this case is elongated substantially cylindrical in form and has a boss 6 at one side through which is formed a diametrical internally threaded opening 7, the opening 7 being arranged substantially at right angles to the axis of the fitting body 5. Instead of forming the diverting tube 8 integral with the box 6 or providing some other similarly expensive and difficultly constructed arrangement, I provide a relatively light weight and inexpensive metal tube with a flaring bell-shaped terminal 9 to surround the inner end of the opening 7 and engage the inside of the body 5 around such opening, as illustrated in Figure 1 of the drawing. Notches 9' to receive the interior ridge (not shown) characteristic of castings of this type are provided in the lip of the bell-shaped terminal 9 to enable the terminal to fit snugly and comfortably. The tube 8 is curved so that its unflared end 10 opens substantially at right angles with respect to its flared end, and is situated as may be desired at one end of the fitting 5. At a point intermediate the length of the tube 8 a substantially triangular outset pocket 11 is formed in a suitable manner on the convex side of the tube 8 to provide a flat buttress wall 12 substantially parallel with the side of the fitting 5, the said buttress wall having formed therein a beveled opening receiving the beveled head 13 of a screw 14, the screw being threaded through a nut 15 which is sweated or otherwise suitably secured to the buttress wall 12. The space between the buttress wall 12 and the right angular companion curved wall 19 and the side walls of the pocket affords access to the head of the screw 13 through the opening 20 communicating with the tube 8 to enable passing a screw driver through the tube end 9 into engagement with the screw head 13 to thread the screw downwardly to engage its lower end with the interior of the fitting 5 and thereby press the bell-shaped portion 9 upwardly into engagement with the opposite side of the interior of the fitting and in registry with the inner end of the opening 7, and to lock the tube 8 as a whole in this position.

The form of the invention shown in Figures 3 and 4 of the drawing is especially adapted to a form of fitting 5a wherein the lateral opening 7a is such as is commonly used in copper fittings without threaded connections, the same opening being formed in a boss 6a formed on the side of the fitting and the inner end of the opening 7a being characterized by a beveled shoulder 16 against which the oppositely beveled outer end 9a of the diverting tube 8a engages to form a flush joint. For convenience and to provide greater access to the head of the screw 13a the adjacent side wall of the tube 8a is deflected outwardly as indicated in Figure 3 of the drawing. In the present embodiment the pocket 11a may be formed integral with or otherwise suitably secured to the wall of the tube 8a and furnish also a buttress wall 12a in which the screw 14a is mounted. In the present form the lower end of the screw is pointed as indicated by the numeral 18 to engage the side wall of the body 5a and to have a better purchase thereon to prevent shifting, the screw 14a being in this case also, forcibly engaged with the wall of the fitting opposite the opening 7a to press the upper end of the tube 8a into position against the shoulder 16 in the lower part of the said opening. As clearly indicated in Figure 4 of the drawing, the pockets 11 and 11a are relatively narrow as compared to the width or diameter of the pipes 8 and 8a. Although the pockets can be made wider than shown, they can also be restricted to a width and cross section no greater than necessary to pass the screw head and screw driver.

Although I have shown and described herein a preferred embodiment of my invention, it is to be

definitely understood that I do not desire to limit the application of the invention thereto except as may be required by the scope of the subjoined claims.

Having described the invention, what is claimed as new is:

1. A pipe fitting of the character described, said fitting comprising a tubular body formed with a substantial radial side opening, the interior of said body around said side opening providing a sealing shoulder, a fluid diverting tube removably mounted within said tubular body, said diverting tube comprising an elbow comprising a first portion extending axially in the interior of said tubular body and a second portion extending radially in said tubular body, said second portion having its terminal end registered with said annular shoulder and in communication with said radial side opening in the tubular body, a screw threaded in an element on the side wall of said elbow to engage the side of the interior of said tubular body opposite said side opening, said screw being extensible to force the said terminal end of the second portion of the elbow into registry with said sealing shoulder.

2. A pipe fitting according to claim 1 wherein said element comprises a pocket outset in the wall of the elbow opposite said radial opening, said pocket providing a wall substantially parallel to the side of said tubular body and formed with a hole accommodating the head of said screw, said hole being substantially in alignment with the radial side opening in said tubular body, and said pocket providing sufficient aperture to permit the head of the screw to be reached for turning the screw by a screw driver passed through said side opening into said pocket.

3. A pipe fitting according to claim 1 wherein said element comprises a pocket outset in the wall of the elbow opposite said radial opening, said pocket providing a wall substantially parallel to the side of said tubular body and formed with a hole accommodating the head of said screw, said hole being substantially in alignment with the radial side opening in said tubular body, and said pocket providing sufficient aperture to permit the head of the screw to be reached for turning the screw by a screw driver passed through said side opening into said pocket, and a nut secured to said wall of the pocket through which said screw threads.

4. A pipe fitting comprising a tubular body having an opening in one side thereof, a fluid diverting tube in said body having one end opposed to said one side of the body and fitting around said opening, said tube curving from said opening toward one end of the body, and means to clamp said one end of said tube against said one side of the body comprising a member carried by the tube in the axis of said opening and operative to thrust the same against the opposite side of said body.

5. A pipe fitting comprising a tubular body having an opening in one side thereof, a fluid diverting tube in said body having one end opposed to said one side of the body and fitting around said opening, said tube curving from said opening toward one end of the body, and means to clamp said one end of said tube against said one side of the body comprising a member carried by the tube in the axis of said opening and operative to thrust the same against the opposite side of said body, said member being accessible for operation through said opening and said one end of the tube.

JASPER D. STOKES.