

Feb. 26, 1963

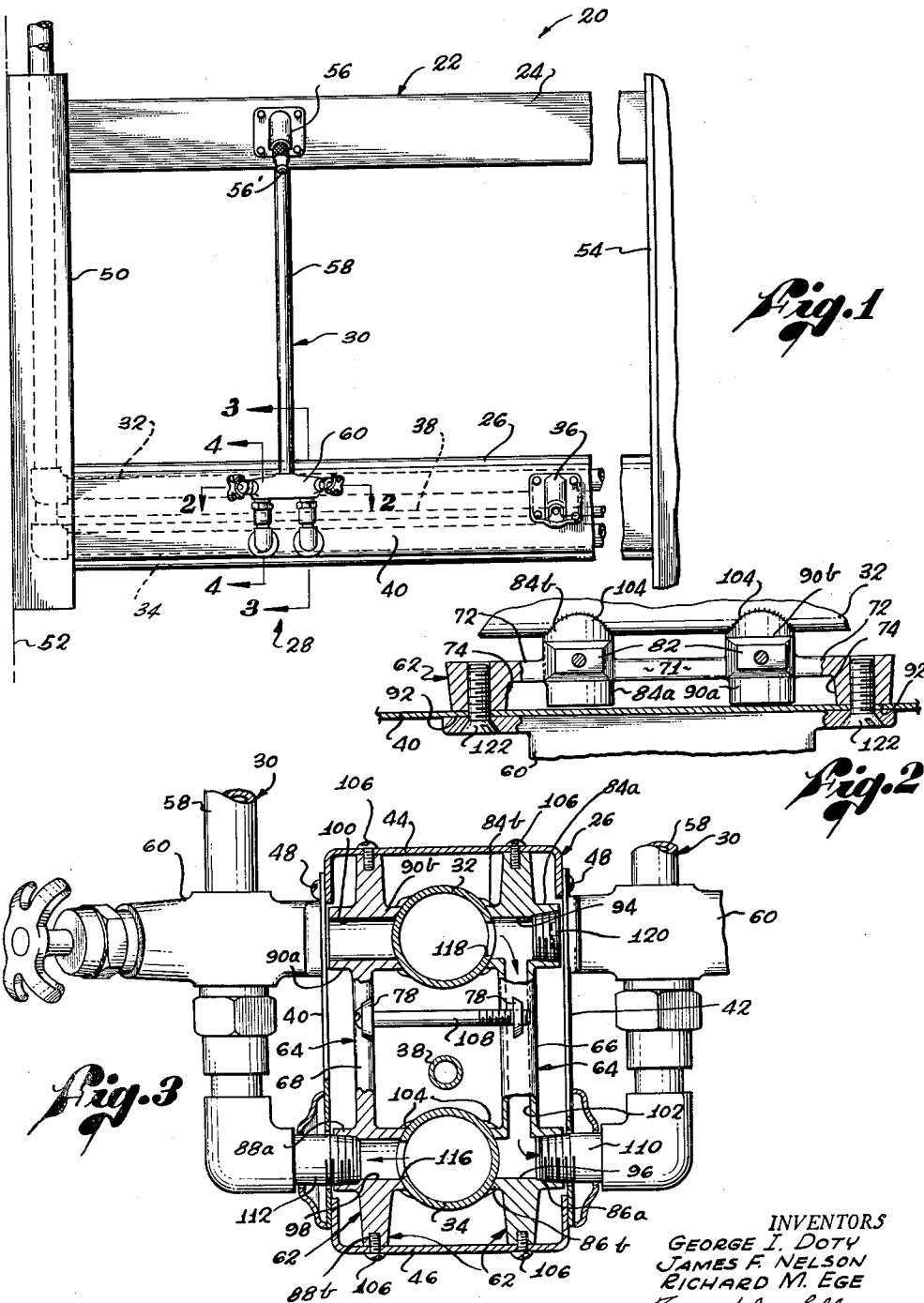
G. I. DOTY ETAL

3,078,476

MULTI-STATION PLUMBING FIXTURE AND OUTLET MANIFOLD THEREFOR

Filed Dec. 30, 1958

2 Sheets-Sheet 1



INVENTORS
GEORGE I. DOTY
JAMES F. NELSON
RICHARD M. EGE
BY *Forrest J. Lilly*
ATTORNEY

Feb. 26, 1963

G. I. DOTY ET AL

3,078,476

MULTI-STATION PLUMBING FIXTURE AND OUTLET MANIFOLD THEREFOR

Filed Dec. 30, 1958

2 Sheets-Sheet 2

Fig. 4

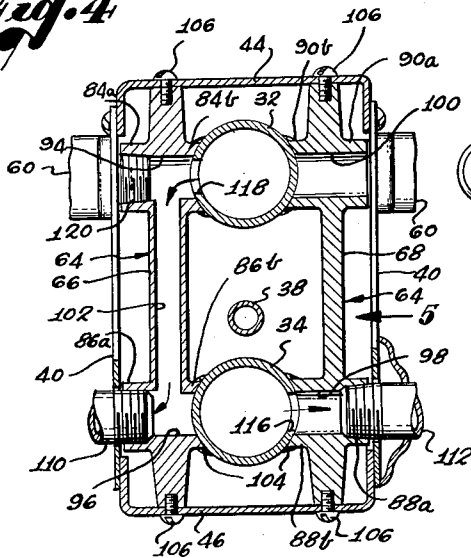


Fig. 5

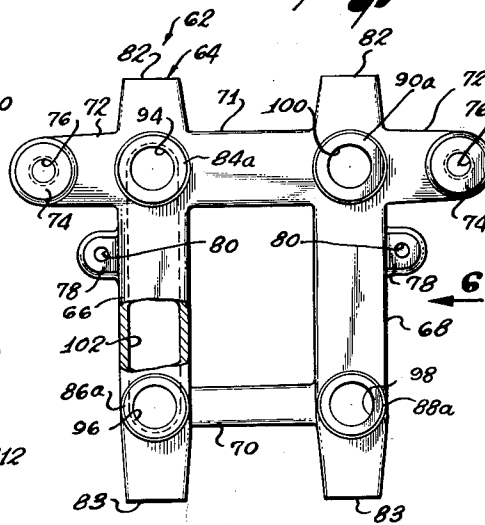
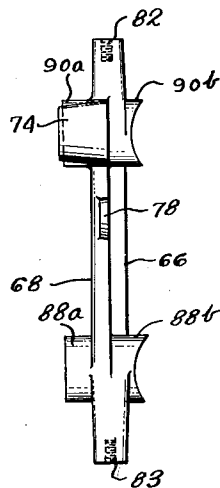


Fig. 6

INVENTORS
GEORGE I. DOTY
JAMES F. NELSON
RICHARD M. EGE
By *Forrest J. Lilly*
ATTORNEY

1

3,078,476

MULTI-STATION PLUMBING FIXTURE AND OUTLET MANIFOLD THEREFOR

George I. Doty, La Canada, James F. Nelson, Woodland Hills, and Richard M. Ege, Burbank, Calif., assignors to Logan Manufacturing Company, Glendale, Calif., a corporation of California

Filed Dec. 30, 1958, Ser. No. 783,732
8 Claims. (Cl. 4—192)

This invention deals generally with plumbing fixtures, and more particularly with a prefabricated, multi-station plumbing fixture.

The present invention provides a prefabricated, multi-station plumbing fixture equipped with a horizontally extending housing to be mounted at opposite ends on a pair of stationary building supports in such a way as to render both sides of the housing accessible. Each side of this housing mounts one or more groups of fittings, each forming a station of the multi-station fixture. The present fixture has certain unique features of design and construction which provide the latter with a simple and inexpensive open type construction. One of the foremost of these features resides in a novel outlet manifold through which each station of the fixture is supplied with hot and cold water from main hot and cold water headers in the fixture housing.

With the foregoing brief preliminary discussion in mind, a broad object of the present invention may be stated as being the provision of an improved prefabricated, multi-station plumbing fixture of the character described.

A more specific object of the invention is to provide a prefabricated, multi-station plumbing fixture of the character described which possesses certain unique features of construction and design that result in a relatively simple and inexpensive open type fixture.

Another object of the invention is to provide a prefabricated, multi-station plumbing fixture of the character described in which each station of the fixture is supplied with water through a novel outlet manifold.

A further object of the invention is to provide a novel outlet manifold for a multi-station plumbing fixture of the character described, which manifold is simple in construction, inexpensive to manufacture, and designed in such a way as to permit connection of the outlet fittings of each station of the fixture to the main water headers of the fixture with maximum simplicity and minimum time consumption and cost.

Yet a further object of the invention is to provide a multi-station plumbing fixture of the character described which is simple in design, inexpensive to manufacture, and otherwise especially well suited to its intended purpose.

Other objects, advantages and features of the invention will become readily apparent as the description proceeds.

Briefly, the objects of the invention are attained by providing a plumbing fixture in which the housing has opposite side panels between which the hot and cold water header pipes are located one over the other. Within the housing, at each station of the fixture, and located between the respective side panel of the housing and the header pipes is an outlet manifold of the invention.

Each manifold comprises a body, which may be cast or otherwise made, having at one side concave seats for seating against the pipes and at the other side surfaces for seating against the respective side panel. These manifolds are brazed or otherwise joined to the pipes about the pipe seats of the respective manifolds and are attached to the side panels of the housing. In the illustrative embodiment of the invention, the manifolds are

2

also attached to top and bottom panels of the housing. The pipes are thereby supported in the housing by the supply manifolds.

Extending through each manifold are hot and cold water passages which open at one end through a hot water pipe seat and a cold water pipe seat, respectively, to the hot and cold water pipes, respectively, of the manifold and at their other ends through the opposite side of the body. The control valve means for each station are mounted on the respective side panel and have hot and cold water inlets connected with the latter ends, respectively, of the water passages in the adjacent manifold.

One unique feature of the invention resides in the arrangement of the water passages in the outlet manifolds, whereby holes may be drilled in the pipes, to communicate the water passages in each manifold with the water passages in the pipes, respectively, after the manifolds have been joined to the pipes. Another unique feature of the invention resides in the manner in which the manifolds seat against the pipes and are held in position on the pipes prior to brazing. Various other unique features of the invention will become evident as the description proceeds.

The illustrative embodiment of the invention comprises a multi-station shower fixture in which the housing also contains a liquid soap supply or header pipe and the housing side panels also mount soap dispensers at the several stations of the fixture. The shower heads of the fixture are mounted on an upper horizontal frame member which is vertically spaced above the fixture housing proper to provide the fixture with an open type construction which requires a minimum amount of material and may be made at minimum cost.

A better understanding of the invention may be had from the following detailed description thereof taken in connection with the annexed drawings, wherein:

FIG. 1 is a side elevation, partially broken away, of a multi-station shower fixture constructed in accordance with the invention.

FIG. 2 is an enlarged section taken along line 2—2 of FIG. 1;

FIG. 3 is an enlarged section taken along line 3—3 of FIG. 1;

FIG. 4 is an enlarged section taken along line 4—4 of FIG. 1;

FIG. 5 is a front elevation of the outlet manifold which is used in the fixture; and

FIG. 6 is a view looking in the direction of arrow 6 in FIG. 5.

The illustrated multi-station shower fixture 20 is prefabricated and equipped with a supporting structure 22 including an upper horizontal frame member 24 and a lower hollow rectangular housing 26. Frame member 24 and housing 26 are vertically spaced, as shown, so as to provide the structure 22 with an open construction which requires a minimum amount of material in its fabrication and may be made at minimum cost.

Each side of the housing 26 is provided with several shower stations 28 (only one shown on each side). Each shower station, in turn, comprises a water outlet assembly 30 which is made up of a group of fittings to be presently described and receives water from a pair of hot and cold water header pipes 32 and 34 located within and extending lengthwise of the housing 26. Located between each pair of adjacent shower stations 28 is a liquid soap dispenser 36. The several soap dispensers on the unit 20 are supplied with liquid soap through a soap header pipe 38 which is also located within and extends lengthwise of the housing 26.

The housing 26 comprises a hollow sheet metal structure made from relatively heavy gauge stainless steel,

for example. As shown in FIGS. 3 and 4, the housing 26 is generally rectangular in transverse cross-section and comprises a pair of relatively narrow, normally vertical side walls or panels 40 and 42. The upper and lower sides of the housing 26 are formed by a pair of channels 44 and 46, the flanges of which are secured to the upper and lower edges of the side panels 40 and 42, by screws 48 to form a unitary structure.

Extending between and rigidly fixed to the left-hand ends of the frame member 24 and housing 26, as the fixture 20 is viewed in FIG. 1, is a hollow, normally vertical frame part 50. The water headers 32 and 34 and the soap header 38 extend beyond the left end of the housing 26 into the vertical frame part 50 and then upwardly through the latter. The upper ends of the headers are open and exposed through an opening in the upper end of the vertical frame part 50 for connection to the water and soap supply piping in the building in which the fixture is installed.

One manner of installing the fixture 20 in a building is by attaching the vertical frame part 50 to a building wall 52, in any convenient manner, and attaching the right hand ends of the frame member 24 and housing 26 in any suitable manner to a vertical building column 54. The fixture, when installed, thus extends outwardly from and generally perpendicular to the wall 52 so as to permit access to the shower stations 28 on both sides of the fixture.

The outlet assembly 30 of each shower station 28 comprises a shower head 56 which is mounted on the frame member 24. Shower head 56 is connected through a vertical riser 58 to a hot and cold water valve fitting 60, mounted in the manner to be presently described, on a side panel of the housing 26. Each outlet assembly 30 is completed by an outlet manifold 62 located within the housing 26. As will now be described, the manifold 62 is of unique design and affords a simple and inexpensive means for connecting each outlet assembly 30 to the hot and cold water headers 32 and 34.

Referring to FIGS. 2-5, manifold 62 will be seen to comprise a relatively flat, generally rectangular body 64 which may be, for example, a single integral casting. This body includes a pair of approximately parallel and generally flat bars 66 and 68 which are bridged, adjacent their ends, by cross bars 70 and 71. Projecting from opposite sides of the bars 66 and 68, in alignment with cross bar 71, are a pair of extensions 72 having cylindrical bosses 74 on their forward sides, as the manifold is viewed in FIG. 5.

These bosses extend normal to the plane of the manifold body 64 and have central threaded holes 76.

Projecting from the outer edges of the bars 66 and 68 are lugs 78. These lugs have holes 80 extending therethrough also normal to the plane of the body 64. The opposite ends of the bars 66 and 68 are ground off flat to provide flat, seating faces 82 and 83 on the upper and lower ends of the manifold body 64.

Projecting from opposite sides of the manifold body, approximately at the intersections of the center lines of the bars 66 and 68 and the cross bars 70 and 71, are pairs of coaxial cylindrical bosses 84a, 84b through 90a, 90b. Those of the latter bosses which bear the suffix *a* are located on the forward side of the manifold body as the latter is viewed in FIG. 5, while those bosses identified by the numerals bearing the suffix *b* are located on the rear side of the manifold body. The end faces of the forward bosses 84a through 90a are approximately coplanar with or spaced slightly to the rear of the end faces 92 of the lugs 74, as may be best observed in FIG. 2.

The rear set of bosses 84b through 90b have concave cylindrically curved end faces corresponding approximately in curvature to the outer surfaces of the water headers 32 and 34. As will shortly be seen, the concave end faces of the rear set of bosses 84b through 90b pro-

vide concave seats on the manifold body, centered on two parallel axes spaced from one side of the body, for engaging against the outer surfaces of the hot and cold water headers.

To this end, it will be observed in the drawings that the concave end faces on the two upper bosses 84b and 90b and the concave end faces on the two lower bosses 86b and 88b have common, approximately parallel center lines of curvature which extend transversely of the bars 66 and 68 of the manifold body.

Extending axially through the respective pairs of coaxial bosses 84a, 84b through 90a, 90b are water passages or bores 94 through 100. These bores open at one end through the forward ends of the forward bosses and at their other ends through the concave end faces on the rear bosses 84b through 90b. The bores 94 and 96, extending through the two pairs of coaxial bosses 84a, 84b and 86a, 86b are in communication via a branch passage 102 within the left hand bar 66.

Referring now to FIGS. 2-4, it will be observed that the manifold body 64 at each shower station 28 is located within the housing 26 and disposed in a normally vertical plane between and paralleling the plane of the hot and cold water headers 32 and 34. As previously mentioned, and as may be readily observed in FIGS. 3 and 4, the concave end faces on the upper rear bosses 84b and 90b seat against the outer surface of the hot water header pipe 32. Similarly, the concave end faces on the lower rear bosses 86b and 88b seat against the outer surface of the cold water header pipe 34. The rear bosses are then brazed or otherwise joined to their respective headers as indicated at 104, to provide water-tight seals between the bosses and headers.

The vertical spacing between the planes of the upper and lower seating faces 82 and 83 on the manifold body 64 is such that when the latter is in position in the housing 26, these seating faces seat against the webs of the upper and lower channels 44 and 46 of the housing, as shown in the drawings. The manifold body is then secured to the housing by screws 106 which pass through the webs of the channels and are threaded in the upper and lower ends of the manifold body.

It will be observed that the shower stations on one side of the fixture 20 are exactly opposite the shower stations on the opposite side of the fixture. Thus, in the completed fixture, the manifolds 62 of the opposing shower stations will be located directly opposite one another. These opposing manifolds are held together, so as to clamp the hot and cold water headers 32 and 34 therebetween, by bolts 108 which pass through the apertured lugs 78 on the manifold bodies.

As previously mentioned and as is readily apparent from the drawings, the manifolds 62 serve to support the hot and cold water headers 32 and 34 in the housing 26. The opposing manifolds are clamped together by bolts 108 in the manner just mentioned, primarily to permit proper positioning of the manifolds and to then hold the manifold bodies and water headers in position for brazing of the manifold bodies to the headers during fabrication of the unit.

The manifolds 62 serve also as a connection between the outlet assemblies 30 of the several shower stations and the hot and cold water headers. To this end, each valve fitting 60 has a pair of hot and cold water inlet extensions 110 and 112, respectively. These extensions project through openings in the side panels 40 and 42 of the housing 26 and are threaded into the lower bores 96 and 98 in the adjacent manifold bodies 64. The wall of the cold water header 34 has an opening 116 aligned with the inner end of the bore 98 in each of the manifold bodies 64. Similarly, the hot water header 32 has an opening 118 aligned with the inner end of the bore 94 in each of the manifold bodies. The outer end of the latter bore on each manifold body is closed by a plug 120. From this description, it will be seen that hot water may flow from the hot water

header 32 to each shower station 28 through the adjacent opening 118 in the hot water header, and thence through bore 94, passage 102, and bore 96 in the adjacent manifold body to the hot water side of the valve fitting 60 of the station. Similarly, cold water may flow from the cold water header 34 to each shower station through the adjacent opening 116 in the wall of the cold water header, and bore 98 in the adjacent manifold body to the cold water side of the valve fitting 60 of the station. When the valves of a given station are open, hot and cold water flows upwardly through the passage in the riser 58 to the adjacent shower head 56 from whence it issues through the discharge opening 56' of the shower head.

When fabricating the fixture 20, the several pairs of opposing manifold bodies 64 are first brazed to the hot and cold water headers 32 and 34 in the manner already mentioned. The headers are then drilled to provide the openings 116 and 118 by inserting drills through the bores 94 and 98 in each manifold body. The outer end of the bore 94 in each body is then closed by a seal or plug 120. Finally, the housing 26 is assembled by attaching the lower and upper channels 44 and 46 to the several manifold bodies by the screws 106 and then attaching the side panels 40 and 42 to the flanges of the channels by the screws 48.

After the housing has thus been assembled about the headers and manifolds, the inlet extensions 110 and 112 of each valve fitting 60 are threaded into the bores 96 and 98 of the respective manifold bodies. The valve fittings are secured to the housing by means of screws 122 which extend through apertured flanges on the respective valve fittings and the side panels 40 or 42 of the housing, and are threaded into the lugs 74 on the adjacent manifold body. The end faces 92 of these lugs provide seating faces which seat against the inner surface of the side panels 40 and 42 of the housing, as shown in FIG. 2.

While the fixture has been illustrated as being supplied with water and liquid soap through exposed piping, it will be apparent that the fixture may, as well, be supplied through concealed piping. In this case, the frame part 50 and the vertical headers therein may be omitted and the left hand ends of the frame member 24 and housing 26 attached directly to the wall.

It will be apparent, therefore, that there has been described and illustrated a multi-station shower fixture and an outlet manifold therefor which are fully capable of attaining the several objects and advantages preliminarily set forth.

While certain preferred embodiments of the invention have been disclosed for illustrative purposes, it will be apparent that numerous modifications in the design and arrangement of parts of the invention are possible within the scope of the following claims.

We claim:

1. An outlet manifold for a plumbing fixture including a pair of horizontal, vertically spaced pipes extending through a hollow housing having a vertical front panel, said manifold comprising a body having at one side concave, cylindrically curved seat means for engaging against the outside of said pipes the opposite side of said body having seating faces in a common plane for seating against said front panel, there being bores opening through said seating faces to receive mounting screws for attaching said body to said front panel, and there being water passage means through said body opening at one end through said seat means and at the other end through said opposite side of said body.

2. An outlet manifold for a plumbing fixture including a pair of horizontal, vertically spaced pipes extending through a hollow, rectangular housing having a vertical front panel and horizontal top and bottom panels, said manifold comprising a body having at one side concave, cylindrically curved seat means for engaging against the outside of said pipes, the opposite side of the body having seating faces in a common plane for seating against said front panel, said body having normally upper and lower

seating faces for seating against said upper and lower panels, respectively, there being bores opening through said faces to receive mounting screws for attaching the body to said panels, and there being water passage means in the body opening through said seat means and said opposite side of the body.

3. A plumbing fixture comprising a hollow, rectangular housing having horizontal upper and lower panels and a vertical side panel, a pair of horizontal, vertically spaced hot and cold water header pipes extending longitudinally through said housing, an outlet manifold in said housing between said pipes and side panel comprising a body including four circular horizontal bosses at the side of the body facing said pipes, means securing said housing to said manifold, one pair of said bosses having their axes located in the horizontal plane of one pipe and concave, cylindrically curved end faces which seat against the wall of said one pipe, the other pair of said bosses having their axes located in the horizontal plane of the other pipe and concave, cylindrically curved end faces which seat against the wall of said other pipe, means securing said bosses to their adjacent pipes, said body having a first relatively straight water passage extending axially through a boss of one of said pairs and opening at one end through the concave face of the respective boss and at the other end through the opposite side of the body, and second relatively straight water passages extending through said body on the axes, respectively, of the bosses of the other pair and opening at one end through said opposite side of the body, one of said second passages opening at its other end through the concave face of its respective boss, said one pipe having a wall opening communicating with said first passage and the other pipe having a wall opening communicating with said one second passage, means sealing said other end of the first passage, there being a branch passage communicating the other second passage with said first passage, and valve means mounted on said side panel having hot and cold water inlets communicating with said one end of said second passages, respectively.

4. In a plumbing fixture, the combination of two parallel pipes, a pair of outlet manifolds located at opposite sides of the plane of said pipes, each fitting comprising a body having at one side concave, cylindrically curved seats engaging against the pipes, respectively, means connecting said bodies for urging the latter together whereby to clamp the bodies to said pipes, each body having a first water passage opening through one concave seat opposite one pipe and through the opposite side of the respective body and a second water passage opening through another concave seat opposite the other pipe and through said opposite side of the respective body, and said pipes having wall openings communicating with the adjacent passages.

5. An outlet manifold for a plumbing fixture, comprising a body having at one side two concave, generally cylindrical curved pipe seats, there being a first relatively straight water passage opening at one end through one of said seats and at the other end through the opposite side of the body and a second relatively straight water passage opening at one end through the other seat and at the other end through said opposite side of the body, a seal for closing said other end of said first passage, and there being a branch water passage in the body communicating at one end with said first passage and opening at its other end through said opposite side of the body at a distance from said other end of said second passage.

6. An outlet manifold for a plumbing fixture, comprising a body having at one side two concave, generally cylindrically curved pipe seats centered on approximately parallel axes of curvature, said body having a first relatively straight water passage opening at one end through one of said seats and at the other end through the opposite side of the body, said body having a second relatively straight water passage opening at one end through the

other seat and at the other end through said opposite side of the body, and a seal for closing said other end of the first passage, there being a branch passage in the body communicating at one end with said first passage and opening at its other end through said opposite side of the body parallel to said other end of said second passage, said other ends of the branch passage and said second passage being approximately parallel and located in a common plane parallel to the axis of curvature of said other seat.

7. An outlet manifold for a plumbing fixture, comprising a body including at one side four parallel cylindrical bosses arranged at the corners of a rectangle, one pair of said bosses having concave, generally cylindrically curved pipe seats centered on a first common axis, the other pair of bosses having concave, generally cylindrically curved pipe seats centered on a second common axis parallel to said first axis, said body having water passages extending axially through said bosses and opening at one end through the pipe seats of the respective bosses and at the other end through the other side of the body, there being a branch passage in the body communicating the water passage through a boss of one of said pairs and the water passage through a boss of the other

of said pairs, and a seal for closing said other end of one of said last two mentioned passages.

8. An outlet manifold for a plumbing fixture, comprising a body having at one side two laterally offset concave, generally cylindrically curved pipe seats with spaced, approximately parallel axes of curvature, there being a first water passage in said body opening at one end through one of said seats and at the other end through the opposite side of said body and a second water passage opening at one end through the other seat and at the other end through said opposite side of said body, said other ends of said passages being spaced in the lengthwise direction of said axes and having approximately parallel axes disposed in a common plane approximately parallel to said axes of curvature.

References Cited in the file of this patent

UNITED STATES PATENTS

900,485	Cook	Oct. 6, 1908
2,239,651	McMurray et al.	Apr. 22, 1941
2,512,009	Bober	June 20, 1950
2,672,152	Mustee	Mar. 16, 1954
2,740,130	Stone	Apr. 3, 1956