

March 16, 1954

W. J. McDONALD
COMBINED SUPPORT AND CAULKED DRAIN
FITTING FOR SHOWER RECEPTORS
Filed Aug. 5, 1950

2,672,205

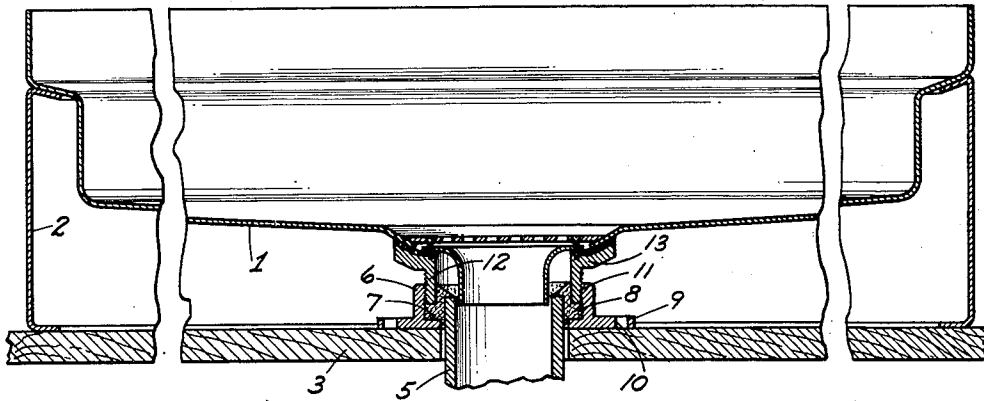


Fig. 1

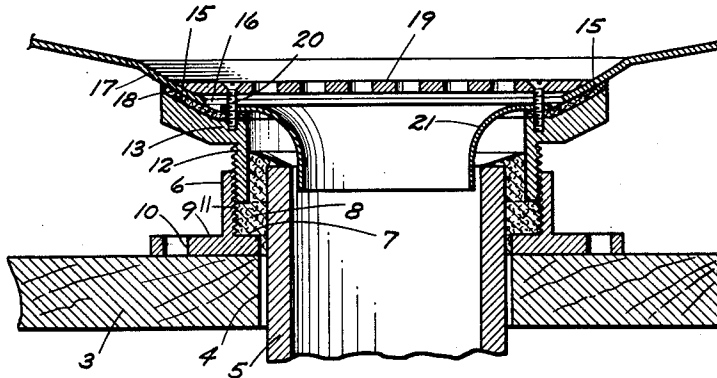


Fig. 2

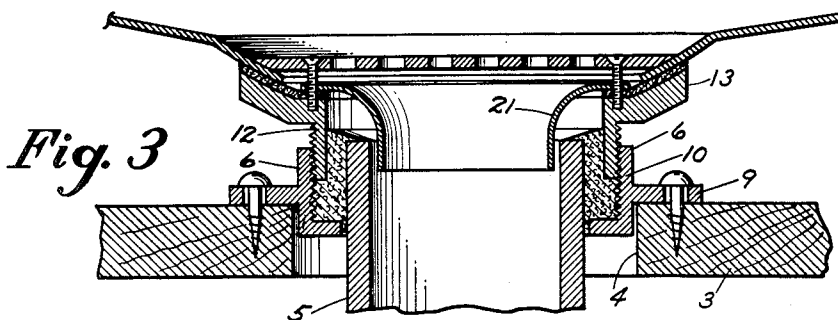


Fig. 3

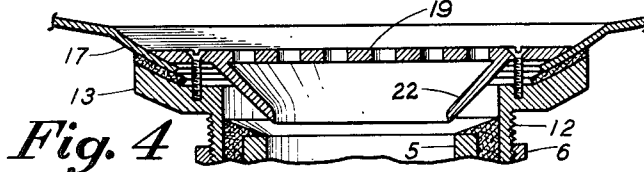


Fig. 4

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2,672,205

COMBINED SUPPORT AND CAULKED DRAIN
FITTING FOR SHOWER RECEPTORSWilliam J. McDonald, Louisville, Ky., assignor to
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Application August 5, 1950, Serial No. 177,888

3 Claims. (Cl. 182—31)

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This invention relates to a combined alignment support and caulked drain fitting for a shower receptor.

In installing a sheet metal receptor for a shower, difficulty heretofore has been experienced in properly supporting the sheet metal floor and in preventing leakage at the drain. In the drain connectors heretofore employed which utilized a caulked joint, if the weight of the person using the shower were carried by the caulked joint, the joint would be liable to fail because of the strain placed thereon. To reduce the weight carried by the joint, an intermediate support for the receptor between the drain and outer periphery has been employed. However, this required an accurate adjustment of the intermediate support, as well as accurate alignment of the drain with the center of the receptor, which added greatly to the labor and cost of making the installation. Moreover, in such an arrangement, the development of a crack in the caulking would allow leakage, which was expensive to repair and could cause considerable damage to the building in which the shower was installed.

It is an object of the present invention to provide a caulked drain coupling for a shower receptor in which the load on the receptor is carried by the coupling but in which the caulking is not subject to any part of the load.

A further object is the provision of a caulked drain coupling for a shower receptor wherein the coupling is joined to and carries the receptor without danger of leakage between the receptor and drain.

Another object is the provision of a caulked drain coupling which does not require accurate alignment between the receptor drain opening and coupling, and in which the coupling carries the receptor without danger of leakage therebetween.

The foregoing and other objects of the invention will be apparent upon consideration of the following description taken in connection with the accompanying drawings illustrating preferred embodiments of the invention by way of example, and wherein:

Figure 1 is a cross-sectional view illustrating an installation embodying the invention;

Figure 2 is an enlarged sectional view of a part of Figure 1;

Figure 3 is a view similar to Figure 2 of a modification; and

Figure 4 is a view similar to Figure 2 of a further modification.

Referring to the drawing, Figure 1, the recep-

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tor 1 for a shower stall is supported at its outer periphery on a suitable support 2 resting on the floor 3 of a building. The floor 3 has an opening 4 through which extends a drain pipe 5. Drain pipe 5 is surrounded by a sleeve 6 which has an internal flange 7 at its bottom, and the flange has a relatively loose fit with the drain pipe and provides a caulking chamber 8 between the drain pipe and sleeve. The sleeve 6 also has an external flange or foot 9 with holes 10 therein, and the sleeve may be secured to the floor by bolts or screws extending through the holes into the floor. If desired, flange 9 may be discontinuous, that is, formed as a series of lugs extending from the sleeve.

Sleeve 6 is internally screw threaded at 11 and receives an externally screw threaded sleeve 12 in telescopic engagement therewith. The threads on sleeves 6 and 12 are preferably running or parallel threads so as to provide for an adjustment in height of flange 13 carried by sleeve 12, by turning sleeve 12. Flange 13 is apertured and has an upper surface 15, which in the form shown in Figure 1 slopes upwardly from the aperture, and preferably the upper surface 15 is formed on a sphere of suitable diameter surrounding the aperture. The floor of the receptor has a drain opening or aperture 16 and has a flange or apron 17 sloping upwardly from the drain opening and which is formed on a sphere of the same radius as surface 15. Thus, the apron 17 closely fits surface 15 even though the axis of sleeve 12 may not be vertical, or may not be centered with respect to opening 16. A gasket 18 of suitable material may be interposed, if desired, between apron 17 and surface 15 and the apron is held in contact with surface 15 (or gasket 18 thereon) by a retaining member 19 (which may be the perforate drain plate), clamped to rim 13 by screws 20. A deflector 21 may be provided to overlie the caulked joint to normally prevent water reaching the joint. This deflector may be fastened in place against the gasket 18 in any desired manner, as by screws (not shown).

To install the receptor, the sleeve 6 is applied over the pipe, and sleeve 12 is threaded into sleeve 6. The receptor 1 then is applied on the support 2 so as to locate the receptor in the desired position, and sleeve 6 is centered as closely as practicable with pipe 5 merely by sighting. Flange 13 then is raised or lowered as required until it uniformly and firmly engages the apron 17 of the receptor. The receptor then is removed and sleeve 6 is fastened in position by screws or the like. The receptor is then reapplied and checked

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for proper adjustment of flange 13 to be sure that the flange surface 15 properly engages the apron 17. The receptor then is removed and the caulking is applied in chamber 8. The receptor then may be permanently placed in position. The support 2 holds the receptor periphery at a predetermined elevation above the floor. It should be pointed out that the space between apron 17 and the periphery of the receptor where it rests on support 2 cannot be accurately maintained through the heat treatments involved in applying a vitreous porcelain coating to the receptor surface. However, the elevation of flange 13 may be adjusted as required to support the middle of the receptor at the proper elevation and provide a leak-proof engagement with the apron 17.

The construction illustrated and described provides a positive leak-proof support for the middle of the receptor floor, and eliminates the need for an intermediate support for the receptor floor between the drain and outer periphery support 2. Because the sleeves 6 and 12 are positively supported by flange 9 from the floor, and the receptor floor bears on flange 13, the receptor floor is positively supported at its middle. The caulking is not subject to strain by the weight of a person standing on the receptor floor because flange 13 is supported by the threads 11, and as the caulking bears no weight the tendency of the caulking to crack or become loose is reduced. By reason of the spherical form of the apron 17 and surface 15 a leak-proof fit can be obtained therebetween even if the axis of the coupling is out of plumb and the hole 16 is off-center from the opening in flange 13, and the caulked joint in the coupling cannot leak to the exterior even should the drain pipe become clogged. It is not necessary that the receptor be in place when the caulking is applied and the easy accessibility of the joint facilitates the caulking operation. The caulking may cover or embed the upper sleeve 12, thus preventing any change in adjustment after the height of the coupling is determined, and insuring against leakage to the exterior, as for example, in case of a clogged drain. Further insurance against leakage is provided by the deflector 21 which is sealed to the gasket and ordinarily prevents water reaching the caulked joint. This construction therefore eliminates careful fitting between the drain and receptor so that even a sloping floor 3 offers no difficulty in obtaining a proper fit.

In the modification shown in Figure 3, wherein like parts are indicated by like reference numerals, the flange 9 is located intermediate the ends of the sleeve 6 and the sleeve lies partly in hole 4, which is made large enough to accommodate the sleeve. This construction is suitable where the space between the floor and the bottom of the receptor is too little to accommodate the full height of sleeve 6. By extending the sleeve 6

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partly into the hole 4 an adequate chamber for caulking is provided, and sleeve 12 may be adjusted as required within sleeve 6 to support the apron 17 at the proper elevation.

In the modification shown in Figure 4, which may be employed in either of the constructions described, a conical deflector 22 is formed integral with drain plate 19 which overlies the caulked joint to prevent water reaching the joint. The drain plate may have a spherical edge so as to form a leak-proof joint with the apron 17.

I claim as my invention:

1. A combined caulking drain coupling and adjustable support for a shower stall base upon a floor comprising: a sleeve member adapted to be supported by the floor and having an internal flange adjacent one end with an aperture therethrough to receive a drain pipe, the space above the flange between the drain pipe and the sleeve member being adapted to receive caulking, and the opposite end of said sleeve member being screw threaded; a second screw threaded sleeve member having adjustable telescopic engagement with the first sleeve member and extending above the first sleeve member, the upper end of the second sleeve member having a flange lying above the upper end of the first sleeve member, the upper surface of said flange sloping upward from the aperture in said first sleeve member to receive and support a sheet metal shower base having an apertured complementary depression adjacent its center; and a clamping member secured to the second sleeve member through said aperture in the shower base to clamp the shower base to said upper surface of the flange on the second sleeve member.

2. A combined caulking drain coupling and adjustable support for a shower stall base as specified in claim 1 wherein the upper surface of the flange of the second sleeve member is spherical.

3. A combined caulking coupling and support for a shower stall base as specified in claim 1 wherein the screw threads of the first sleeve member are on the internal surface, and the screw threads of the second sleeve member are on the external surface.

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