United States Patent

Cuschera

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[54] DRAIN CONNECTION

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[51] **Int. Cl.** **E03c 1/26**

[58] **Field of Search** 4/145, 146, 191, 197, 286, 4/288; 285/56, 57, 58, 59, 60

[56] **References Cited**

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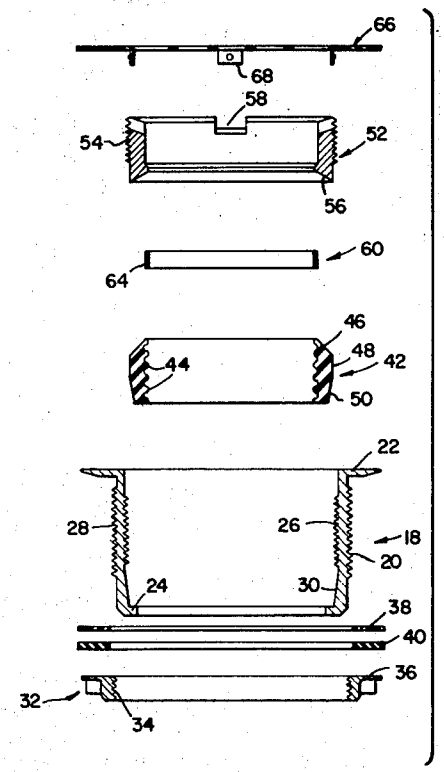
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Attorney—Harris Zimmerman

[57] **ABSTRACT**

A drain for showers or the like which eliminates the need for conventional caulking materials. An internally and externally threaded member found in most drains is modified adjacent its lower internal end, and between such member and a drain pipe there is provided a specially designed gasket. The internal threads of the member adjacent its upper end receive a nut, the latter bearing on the upper end of the gasket, urging the latter into sealing engagement between the pipe and drain member.

7 Claims, 3 Drawing Figures



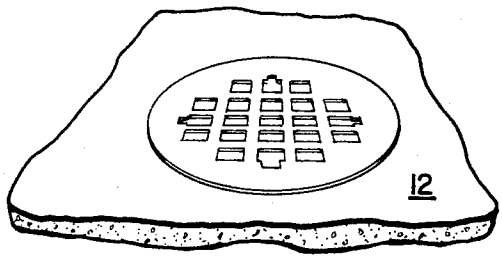


FIG_1

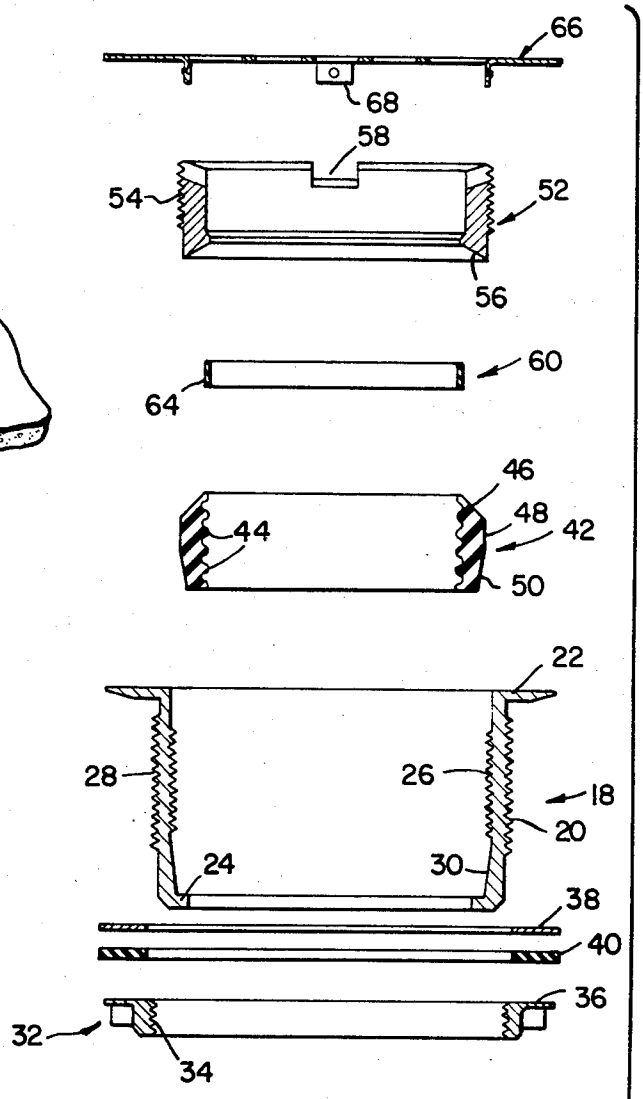


FIG_3

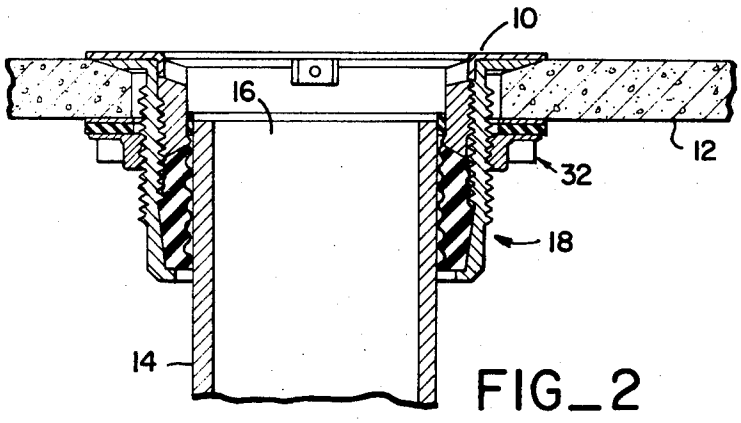


FIG_2

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DRAIN CONNECTION

BACKGROUND OF THE INVENTION

In connection with the installation of drains in prefabricated shower receptors and the like, it is generally accepted practice to attach the drain fitting to an opening in the receptor and in alignment with the drain pipe. In order to provide an effective seal between the drain and the pipe, the services of a skilled plumber have been required to caulk the joint with molten lead or like caulking material. This procedure is both time consuming and expensive.

In accordance with the teachings of the present invention, the caulking operation has been eliminated, and an effective seal is provided with the use of a novel gasket and nut which cooperate with the main drain to seal the same to the pipe.

While the invention will be described in connection with shower drains for prefabricated receptors, the teachings are likewise applicable to other drains, such as toilets, where conventional practice has utilized caulking material to effect a seal between a fitting and a drain or discharge pipe.

THE DRAWING

FIG. 1 is a perspective view of a portion of a shower receptor equipped with the drain fitting of the present invention;

FIG. 2 is a vertical cross-sectional view of the drain fitting of this invention; and

FIG. 3 is an exploded view of the parts shown in FIG. 2.

DESCRIPTION

In broad terms, the drain of the present invention is adapted for installation in an opening **10** provided in the base of a shower receptor **12** and in alignment with a discharge pipe **14**. It is, of course, essential that water in the receptor will find its way to the upper open end **16** of the pipe without leakage of any kind.

The present apparatus may best be described as the same is installed on the receptor. First, a fitting **18** is inserted in the opening **10**. Fitting **18** is normally referred to as the drain and includes a generally cylindrical body **20** with an outwardly directed peripheral flange **22** engageable with the receptor **12** adjacent the opening **10**. As indicated, the lower surface of the flange **22** is beveled to engage a corresponding bevel or taper on the upper receptor surface. It will also be noted that the internal bore of the body **20** is spaced from the outer peripheral surface of pipe **14** for a purpose presently to be described. The lower distal end of the body is provided with a radially, inwardly directed flange **24**, and the inner and outer surfaces of the body are threaded as indicated at **26** and **28** respectively. The threads terminate upwardly from flange **24**, and it is important to note that the lower inner end portion of the body tapers inwardly or converges toward flange **24**, such taper being designated by the numeral **30**.

Fitting **18** may merely be dropped in position in the opening **10** and is secured to the receptor by a nut **32** having internal threads **34** engageable with threads **28** of fitting **18**. Nut **32** is positioned subjacent the receptor **12** and has an annular flange **36** at its upper edge which engages a washer **38** and gasket **40** to provide a proper seal. This method of attaching a drain to a receptor is well known in the art and no further description or explanation is deemed necessary.

With the drain fitting thus installed, the sealing means of the present invention will now be discussed. First, in the annular space between drain **18** and pipe **14** there is provided a gasket **42** made of neoprene or similar material. The gasket is of generally sleeve-like configuration and has an internal bore provided with radially inwardly directed ribs **44** engageable with the outer peripheral surface of pipe **14**. The outer surface of the gasket has a first portion **46** which extends from the upper end thereof diverging or tapering downwardly and outwardly, a second portion **48** of cylindrical shape, and a third

portion **50** which converges or tapers inwardly towards the lower end of the gasket. The portion **50** matches the taper **30** of the drain fitting.

After the gasket is inserted in the above manner, a nut **52** made from brass or the like and provided with external threads **54**, is threadedly engaged with the internal threads **26** of the drain **18**. The lower end portion **56** of the nut slopes upwardly and inwardly and is intended to engage the tapered portion **46** of gasket **42**. The upper end of the nut is provided with a plurality of downwardly and inwardly directed slots **58** for directing water inwardly and downwardly towards pipe **14**. These slots may also be used to engage a spanner wrench or similar tool for threading the nut downwardly in the drain **18**.

As will be understood, as the nut is tightened, the gasket surface **46** will be engaged by nut surface **56**, urging the gasket downwardly and inwardly. As the gasket is axially compressed it will expand both the pipe and the drain. In this latter connection, it will be understood that the drain tapered portion **30** will likewise force the lower end of the gasket inwardly into sealing engagement with the pipe.

To provide a seal between the upper end of the pipe and the nut **52**, a seal **60** is provided. Seal **60** has an annular skirt **64** positioned between the pipe and the nut. This seal may likewise be formed of neoprene.

To complete the installation, a snap on type of strainer **66** is inserted over the receptor opening, the strainer having depending elements **68** engageable in the nut slots **58**.

From the foregoing description, it will be appreciated that the installation may be rapidly made without requiring caulk material or special tools and by a person having a minimum amount of technical training or ability. Gasket **42**, with its inter-engagement with drain **18** and nut **52** will provide an adequate and acceptable seal around pipe **14** without danger of any leakage.

I claim:

1. A drain connection for a vertical pipe comprising a fitting having a generally cylindrical body with inner and outer surfaces internally and externally threaded, respectively, and with an outwardly directed peripheral flange at the upper end thereof, said internal threads being in annular spaced relation to said pipe, said fitting having an inwardly directed portion adjacent the lower end thereof, a resilient annular gasket interposed between said fitting and said pipe and engageable with said inwardly directed fitting portion, said gasket having its upper portion terminating below at least the upper portion of said fitting threads, and an externally threaded nut engageable with said fitting internal threads and having a lower end portion engageable with the upper end portion of said gasket for urging the gasket downwardly towards said inwardly directed fitting portion.

2. A connection as set forth in claim **1** in which the inner surface of said gasket is provided with radially inwardly directed ribs.

3. A connection as set forth in claim **1** in which said inwardly directed fitting portion includes a taper terminating in a radially inwardly directed flange at the lower end thereof.

4. A connection as set forth in claim **1** in which the outer surface of said gasket has a lower portion tapering downwardly and inwardly.

5. A connection as set forth in claim **1** in which said lower end portion of said nut is provided with an inwardly and upwardly directed taper.

6. A connection as set forth in claim **5** in which said upper end portion of said gasket is provided with a downwardly and outwardly directed taper.

7. A connection as set forth in claim **1** in which a seal is provided between the upper end of said pipe and said nut, said seal having an annular portion overlying the upper end of said pipe, and an external skirt positioned between the exterior surface of said pipe and said nut.

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