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W. L. GADDY

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WATER CLOSET CONNECTION

Filed April 6, 1966

Fig. 1

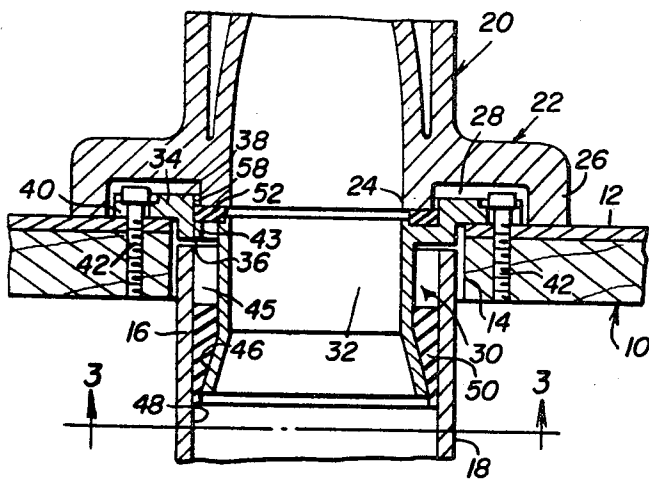


Fig. 4

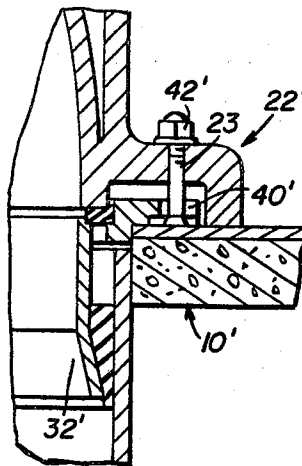


Fig. 2

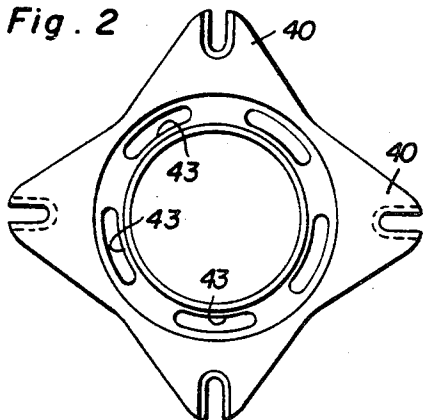


Fig. 3

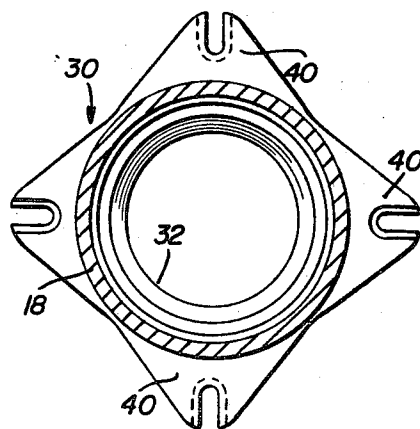
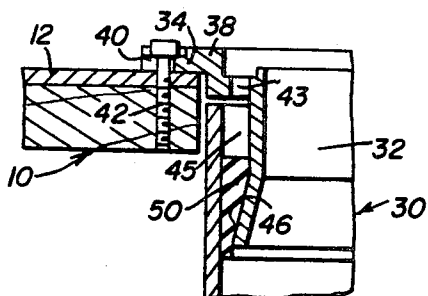


Fig. 5



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3,409,918

WATER CLOSET CONNECTION
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ABSTRACT OF THE DISCLOSURE

A closet bowl connector defining a tubular fitting having a radially outwardly projecting flange on one end and adapted to extend through an opening in a floor with the flange abutting the upper surface of the floor and the other end of the connector telescoped within the inlet end portion of the soil pipe. The inner periphery of the radially outwardly projecting flange defines an upwardly opening circumferential groove disposed outwardly of the tubular portion of the connector and the outer peripheral portions of the flange include means for securing the flange to the floor and a closet bowl down over the flange. The groove has a resilient annular seal disposed therein against which the outlet horn of the associated closet bowl may be tightly engaged upon installation of the closet bowl and the inner peripheral portions of the flange have circumferentially spaced openings formed therethrough disposed outwardly of the tubular portion of the connector and which open upwardly into the bottom of the groove through which sealing material may be passed for forming a seal between the telescoped portions of the soil pipe and the tubular portion of the connector prior to disposition of the annular seal within the groove and securement of the associated closet bowl over the connector.

This invention relates to a closet anchor seal and more specifically to a connection or connector between a vitreous china water closet bowl waste outlet or horn and the inlet end of an associated soil pipe or the like opening through a floor or wall structure.

Of course, the closet anchor seal of the instant invention may be utilized to form a fluid-tight seal between a water closet bowl horn outlet end and an existing inlet end of a soil pipe either when the water closet bowl is being initially installed to roughed in plumbing or when the water closet bowl is being reinstalled or replaced and connected to previously established plumbing.

The main object of this invention is to provide a closet anchor seal that is applicable to both floor mounted and wall hung china water closet bowls.

Another object of this invention is to provide a closet anchor seal which will be capable of forming a long lasting seal between a water closet bowl and a soil pipe.

Yet another object of this invention is to provide a water closet anchor seal that may be utilized when a wide margin of tolerance is required to meet various job conditions while still being capable of maintaining a full and complete long lasting seal between the associated water closet bowl and soil pipe.

Still another object of this invention is to provide a water closet anchor seal in accordance with the preceding objects that will be capable of withstanding internal pressures resulting from flushing the water closet and the use of force cups should stoppages occur in the water closet bowl or associated soil pipe.

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Another object of this invention is to provide an anchor closet seal capable of withstanding pressures from normal expansion, contraction and vibration without being broken and causing leakage of water and/or gas.

Another important object of this invention is to provide a closet anchor seal that will permit the associated floor or wall to have substantially all finishing work thereon completed prior to the anchor closet seal and associated water closet bowl being installed when the closet seal is utilized in new construction projects.

A final object of this invention to be specifically enumerated herein is to provide a closet anchor seal in accordance with the preceding objects which will conform to conventional forms of manufacture, be of simple construction and easy to install so as to provide a device that will be economically feasible, long lasting and relatively trouble free in operation.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIGURE 1 is a fragmentary vertical sectional view of a typical water closet bowl installation utilizing the anchor closet seal of the instant invention and taken substantially upon a plane passing through the center of the seal.

FIGURE 2 is a top plan view of the tubular core which is utilized to form the seal more clearly illustrating its mounting lugs;

FIGURE 3 is a horizontal sectional view taken substantially upon a plane indicated by the section line 3-3 of FIGURE 1 and with the floor and closet bowl removed;

FIGURE 4 is a fragmentary sectional view similar to that of FIGURE 1 but illustrating the manner in which the seal may be utilized in conjunction with a concrete floor sealed to the associated soil pipe; and

FIGURE 5 is a fragmentary sectional view again illustrating the lefthand portion of the assemblage of FIGURE 1 but with the water closet bowl and sealing ring of the seal of the instant invention removed.

Referring now more specifically to the drawings the reference numeral 10 generally designates a wooden floor construction over which a surface material 12 has been applied. An opening 14 extends through the floor structure and has the inlet end 16 of a soil pipe 18 disposed therein and slightly recessed below the upper surface of the floor structure 10.

It is to be noted that although the floor structure 10 has been illustrated and specifically described as such, it could represent a vertical wall structure with which a wall hung water closet bowl could be then associated. In such an instance, the soil pipe inlet end 16 would, of course, be generally horizontally disposed as opposed to vertically disposed.

A conventional floor mounted water closet bowl is generally referred to by the reference numeral 20 and includes a base portion generally referred to by the reference numeral 22 including an inner annular and depending neck 24 enclosed within an outer peripheral support flange 26, an annular area 28 being defined between the neck 24 and the flange 26.

The water closet connection of the instant invention is generally designated by the reference numeral 30 and

includes an elongated tubular core 32 including a radially outwardly projecting and circumferentially extend- flange 34 on its inlet end portion. The flange 34 includes an inner peripheral portion in which an annular groove 36 is formed, the groove 36 opening from the outlet end of the core 32. In addition, the flange 34 includes an outer portion which defines an annular projection 38 disposed radially outwardly of the groove 36 and projecting away from the outlet end of the core 32, the inner peripheral portions of the projection 38 defining the radial outermost extremities of the groove 36. Still further, the flange 34 additionally includes slotted mounting lug portions 40 disposed radially outwardly of the projection 38 through which suitable fasteners 42 are secured to secure the flange 34 to the floor structure 10.

It will be noted from FIGURE 1 of the drawings that the side of the flange 34 remote from the projection 38 opposes the end edges of the inlet end 16 of the soil pipe 18 in spaced relation thereto and that the portions of the flange 34 in which the groove 36 is formed has a plurality of circumferentially spaced arcuate slots or openings 43 formed therethrough. The ends of the slots or openings 43 which open into the groove 36 are spaced from the inner and outer walls of the groove 36 and are in axial alignment with the annular area 45 disposed between the inlet end 16 of the soil pipe 18 and the portions of the core 32 projecting below the flange 34, the lower end portion of the core 32 being telescoped into the upper end of the soil pipe 18 and having a precast lead seal 50 thereon.

The lead seal 50 may be then calked or tamped with a suitable calking tool through the openings 43 to form a fluid-tight seal between the soil pipe 18 and the core 32. Further, the openings 43 may be utilized to pour calking lead down into the lower portion of the annular area 45 disposed between the downwardly divergent outer surface portions 46 of the core 32 and the opposing inner surface portions 48 of the soil pipe if the seal is not precast on the core 32, in this instance the core being pre-wrapped with oakum or the like. After the calking lead has been poured into the area 45 through the openings 43 in sufficient quantity to form the fluid-tight seal 50 it is also tamped with a suitable calking tool through the openings 43. After the seal is formed in either manner, an annular resilient seal 52 is then seated in and completely fills the groove 36. In addition, the seal 52 projects slightly upwardly above the upper end of the core 32 but its upper surface is spaced below the upper surface of the projection 38. In this manner, the base 22 of the water closet bowl 20 may have its flange portions 26 telescoped over the outer peripheral portions of the slotted mounting lugs 40 and its neck 24 telescoped within the cylindrical surface portions 58 of the flange 34 that define the outer wall of the groove 36 and the inner periphery of the projection 38. The portions of the cylindrical surface portions 58 which project above the seal 52 of course provide a means whereby the neck 24 may be properly positioned for full fluid sealing engagement with the seal 52. In addition, the seal 52 of course also is disposed in fluid-tight sealing engagement with the bottom of the groove 36 which includes portions thereof completely surrounding the openings 43. Accordingly, it may be seen wherein the closet anchor seal of the instant invention will form not only a fluid-tight seal between core 32 and the soil pipe 18 by means of the seal 50 and also a fluid-tight seal between the core 32 and the neck 24 by means of the seal 52.

In FIGURE 4 of the drawings it may be seen that a slightly modified form of core 32' substantially identical to the core 32 but including slightly modified slotted mounting lugs 40' may be utilized in conjunction with a concrete floor structure generally referred to by the reference numeral 10' and a slightly modified closet bowl base generally referred to by the reference numeral 22' including bores 23 formed therethrough through which suit-

able fasteners 42' may be secured after being anchored to the slotted mounting lugs 40'. Otherwise, the construction illustrated in FIGURE 4 of the drawings may be considered substantially identical to the construction of FIGURE 1.

Of course, the base 22 is secured to the floor 10 by means of fasteners (not shown and similar to fasteners 42) secured through the base 22 and the under recessed and slotted mounting lugs 40 while the fasteners 42 are secured through the over recessed mounting lugs 40 and through the floor 10. It then follows that the core 32' is secured to the floor 10' by means of fasteners (not shown) secured through the over recessed slotted mounting lugs 40' and the floor 10' and similar to the fasteners 42.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. A closet bowl connector for providing a fluid-tight seal between a tubular outlet horn of a closet bowl and the inlet end portion of a soil pipe, said connector comprising an elongated tubular core including one end portion adapted to be loosely telescoped into said inlet end of said soil pipe, the other end portion of said core including a radially outwardly projecting flange extending circumferentially thereabout with the side of said flange facing said one end portion of said core including an inner annular portion spaced radially outwardly of the outer surfaces of said other end portion of said core adapted to oppose the end edges of said inlet end of said soil pipe, the side of said flange facing away from said one end portion of said core including means defining an annular axially outwardly opening groove therein spaced radially outwardly of the inner surfaces of said core at said other end portion thereof, said flange having generally axially extending openings formed therethrough and spaced circumferentially thereabout, said openings, opening through the bottom of said groove and being spaced inwardly of the portions of said flange defining the opposite side walls of said groove, said openings being adapted to have sealing material passed therethrough from the side thereof remote from said one end portion of said core for compacting in the area between the outer and inner surfaces of the telescoped portions of said core and said soil pipe, an annular resilient seal snugly seatable in said groove with said seal projecting slightly axially outwardly of said groove and adapted to be engaged and axially compressed by the outlet end of an associated closet bowl horn abutted thereagainst in fluid-tight sealed engagement therewith and with said seal disposed in fluid-tight sealed engagement with the portions of the bottom of said groove through which said openings open, said flange including outer peripheral portions adapted to overlie one side of a planar member through which the inlet end of said soil pipe opens, said outer peripheral portions also including means adapting said flange to be secured to said planar member and for drawing said closet bowl toward said flange in order to tightly engage said horn with said seal and axially compress the latter in said groove.

2. The combination of claim 1 wherein said outer surfaces of said core include surface portions which diverge outwardly toward the free end of said one end portion.

3. The combination of claim 1 wherein the outer peripheral walls of said groove define an axially outwardly opening socket adapted to receive said horn therein and to properly center said outlet end of said horn relative to said annular seal.

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