Sept. 20, 1932. M. A. SISK 1,878,195

PLUMBING FITTING

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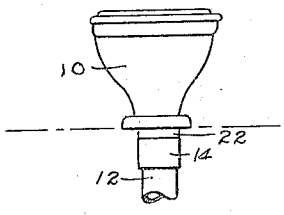


FIG. 1

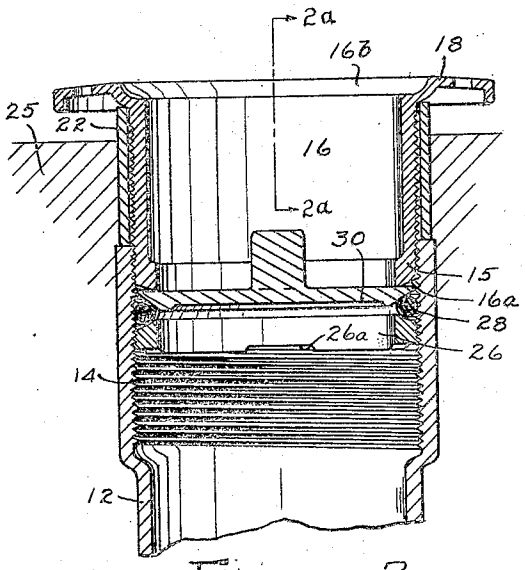
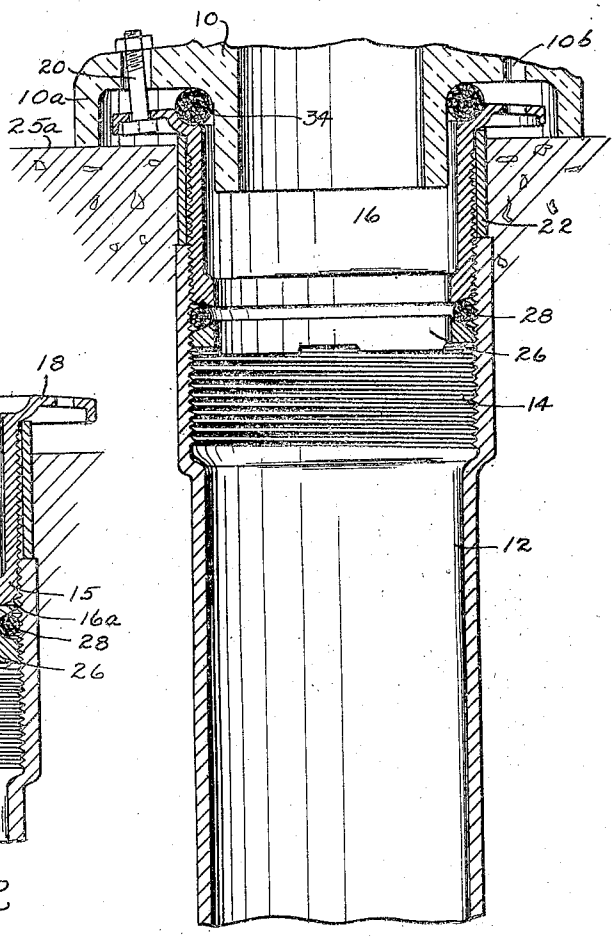


FIG. 2

FIG. 3



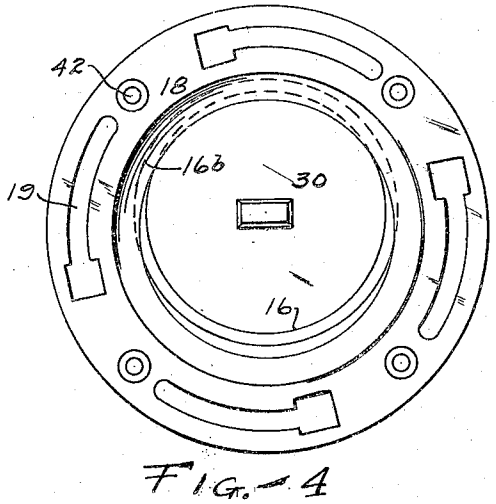


FIG. 4

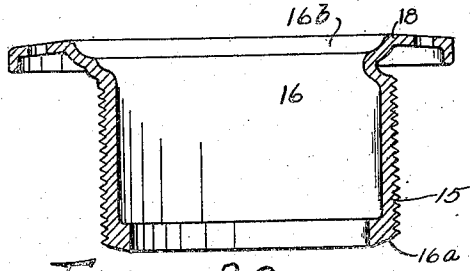


FIG. 2a

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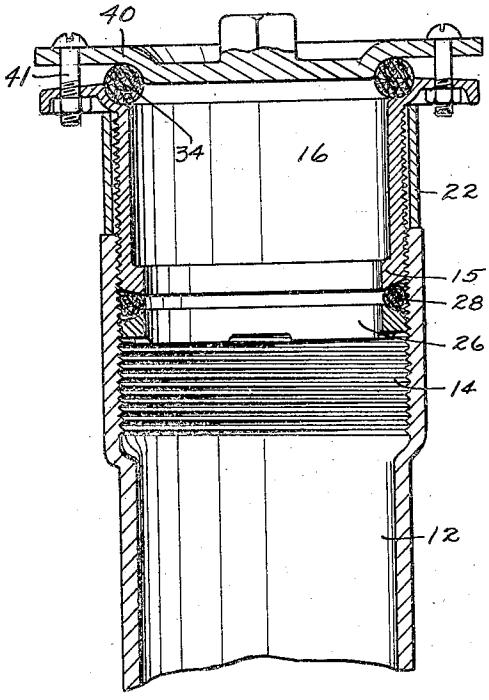
Attorneys

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PLUMBING FITTING

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FIG. 5



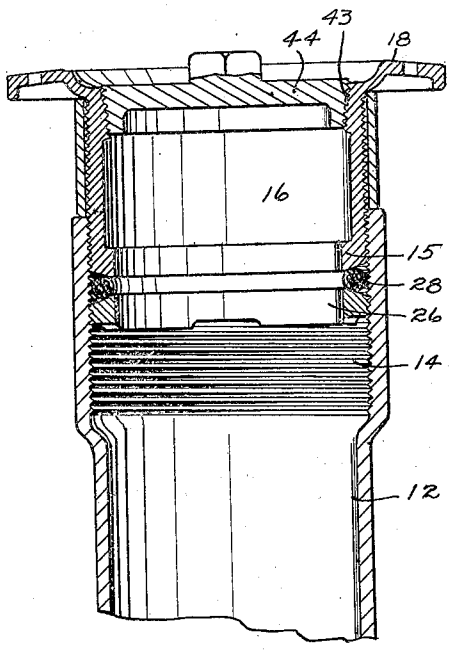


FIG. 7

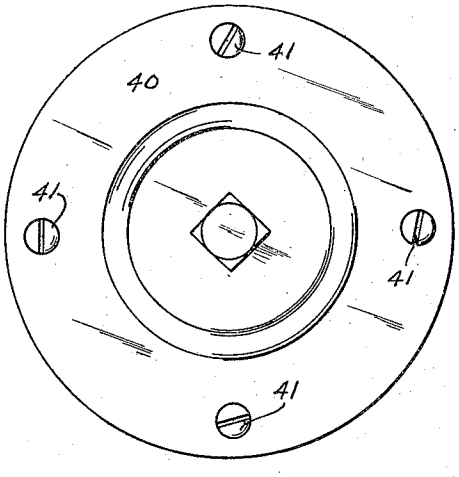


FIG. 6

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Patented Sept. 20, 1932

1,878,195

UNITED STATES PATENT OFFICE

MARTIN A. SISK, OF PITTSBURGH, PENNSYLVANIA

PLUMBING FITTING

Application filed July 9, 1928. Serial No. 291,244.

This invention is concerned with plumbing fittings, and more particularly with fittings known as closet bowl connections, and the general object of my invention is the provision of a combination fitting which may be merchandised in an installable assembly and which will have the characteristic of adaptability and adjustability for permitting the ready, accurate and convenient connection of a closet bowl to a soil pipe line.

More specifically, my invention is concerned with the provision of a connection for a closet bowl or a plumbing fixture of other sort such as a urinal which connection may comprise a sealed terminus of a soil pipe line when the plumbing work is "roughed" into the building structure and which will serve to seal the soil pipe line for inspection and test purposes in an approved manner, and thereafter be adaptable to meet variations in floor levels, characteristic of floor constructions comprising tile and concrete, and variations of the soil pipe line installation relative to the floor level.

A still further object of my invention is the provision of a combined soil pipe sealer and adjustable flanged connecting member for a closet bowl horn which will necessitate no sawing or cutting of the metal part of the fitting after the line has been tested or inspected.

Other objects of my invention will hereinafter be set forth in the following description which refers to the accompanying drawings illustrating various embodiments thereof. The essential characteristics are summarized in the claims.

In the drawings, Fig. 1 is a front elevational view of my fitting connected to a closet bowl and soil pipe line; Fig. 2 is an enlarged cross-sectional view taken through the fitting and floor structure of the building in which the fitting is installed and showing the manser of sealing the terminating end of the soil pipe line for inspection test purposes; Fig. 2*a* is a cross sectional view as indicated by the line 2*a*—2*a* on Fig. 2; Fig. 3 is a view similar to Fig. 2, but showing the relation of the various parts comprising the bowl horn, fitting and soil pipe line after the line has been inspected and tested and the bowl permanently installed; Fig. 4 is a plan view of the fitting as illustrated in cross-section in Fig. 2; Fig. 5 is a cross-sectional view showing a modified manner of sealing my fitting; Fig. 6 is a plan view of the construction shown in Fig. 5; and Fig. 7 is a third form of fitting closure embodying the features of my invention.

My invention contemplates the provision of a fitting for a closet bowl which will serve first to seal the terminating end of the soil pipe line whereby the line may be hydraulically tested or inspected; second, to comprise as extension of the soil pipe line which will be vertically adjustable to meet variations in the floor level of the room in which the bowl is to be disposed and to meet variations in the soil line installation; third, to incorporate these utilities in the fitting in such manner as to avoid interference with and to facilitate neatly laying the floor about the fitting, and fourth, to incorporate the sealing member in the fitting in such manner that no sawing, chiseling or cutting of any metal need be resorted to by the plumber in removing the sealing member, and to utilizing the means for holding the sealing member after the utility of the latter has been fulfilled to lock an adjustable flanged bowl connecting member in sealed and adjusted position relative to the soil pipe line to thereby prevent a future dislocation of the bowl after having been installed, and all of these features I incorporate in a combined plumbing fitting which may be economically manufactured.

In Fig. 1 of the drawings, I show in front elevation a closet bowl 10 connected to a soil pipe 12, the end 12 of the soil pipe comprising a pre-assembled part of my fitting, and this end may be an elbow or a straight extension of the soil pipe line and connected at its lower end (not shown) to the soil pipe line in the usual manner. The upper end of the fitting member 12 is formed to have an internal thread 14 cut therein, of a substantial length to receive an externally threaded cylindrical portion 15 of a flanged closet bowl horn connecting member, generally indicated at 16 in Fig. 2. The member 16 is provided with an annular flange 18 with suitable arcu-

ate slots 19 formed therein for the reception of bolts 20 which extend upwardly therethrough to engage the horn 10*a* of the closet bowl 10 by passing through apertures 10*b* formed in the horn. The length of the cylindrical portion 15 of the flanged member 16 may be of such extent in relation to the length of the threaded portion 14 of the soil pipe fitting member 12, whereby the flanged member 16 is vertically adjustable relative to the fitting 12 a considerable distance (about 2 inches), and I provide a cylindrical, readily destructible thread shielding member 22, which may be disposed between the underside of the flange 18 of the member 16 and the upper end of the fitting 12 to protect the external threads formed on the member 16 during shipping, and also to prevent cement or concrete 25 comprising the floor structure from flowing into contact with the threads thereof. As shown in Fig. 2, this thread shielding member 22 serves as an annular mold member to form a recess in the floor structure, thus permitting ready vertical adjustment of the flange member 16, relative to the floor surface and the soil pipe fitting 12, the thread shielding member 22 being preferably formed of corrugated paper, whereby any surplus extension thereof above the floor level or surface 25*a* may be easily and quickly severed to permit this vertical adjustment of the flange member 16.

I provide a sealing means disposed within the internally threaded portion of the soil pipe fitting member 12 for preventing any escape of foul gases from the soil pipe line along the threaded surfaces of the flange member 16 and the fitting member 12, and I also form the inner end 16*a* of the fitting 16 in such manner that a substantial bevel surface may be provided thereon whereby the sealing means may be expanded and packed against the internal threads 14 of the fitting 12. As shown in Fig. 2, I provide an adjustable locking ring 26, beveled on its upper side as shown, and having notches 26*a* to facilitate its adjustment, which ring may support a packing means, such as graphite threaded fibre 28 in annular form, and I interpose a sealing disk 30 between the inner end of the flange fitting 16 and the packing ring 28 whereby the flange fitting 16 may be screwed down to cause the sealing disk 30 to be pressed into air tight seal with the packing ring 28. The under side of the sealing disk 30 and the upper side of the locking ring 26 may also be formed each with a substantial bevel surface to engage the packing ring 28, whereby said packing ring may be expanded and packed against the internal threads 14 of the fitting 12. The arrangement of bevel surfaces for packing the sealing means against the internal threads 14 of the fitting 12 may be modified, as for instance, it is not essential to form a bevel surface on the inner end 16*a* of the fitting 16 and also on the upper side of the adjustable locking ring 26. If preferred, either one of these surfaces may be substantially flat provided the other one of these surfaces is bevelled. Similarly the sealing disk 30 need not be bevelled if the locking ring 26 is bevelled.

This sealing is shown as being circular in cross-section for convenience, but when subjected to pressure it takes the bevelled form of the compressing surfaces of the disk 30 and the locking ring 26 and subsequently conforming to the bevelled ends of the fitting 16 and locking ring 26 after the soil pipe line has been tested and the disk 30 removed. The removal of the disk 30 is accomplished by first completely removing the fitting 16 from engagement with the soil pipe fitting 12, and the disk may then be lifted out of the fitting.

It will be noted that the enlarged inner end 15 of the fitting 16 and the cross section of the ring 26 may be the same, whereby during manufacture, the ring may comprise part of the fitting 16 until threaded, and then severed therefrom by a cut-off tool.

In Fig. 3, I show the flanged member 16, locking ring 26 and packing ring 28 in adjusted position to bring the horn flange 10*a* of the closet bowl into juxtaposition to the floor surface 25*a*. It will be noted in this figure that I provide a second packing ring 34 between the bowl horn and an annularly shaped groove 16*b* formed around the inner edge of the flange fitting 16, thus affording an accurate seal between the flange fitting and the closet bowl, which seal is independent of the seal which I provide between the soil pipe line fitting 12 and the flange fitting 16. The advantages, adaptability and economy of installation of this arrangement will be quite obvious to those skilled in the art.

In Fig. 2*a*, it will be noted that the flange 18 of the fitting 16 is offset or eccentric to the threaded body thereof, wherefore the position of the bowl may be altered in any lateral direction with reference to the soil pipe. The recesses 16*b* for packing are concentric with the flange, wherefore the horn of the bowl may be evenly sealed by packing, such as 34, previously described.

In Fig. 5 I show a modified manner of sealing the combined fitting disclosed in Fig. 2, all parts of the fitting remaining the same, with the exception of the sealing disk 30 and in lieu thereof, I provide a cap member 40 which may be sealed to the flange member 16 by bolts 41 extending through openings 42 (see Fig. 4) formed in the flange 18 of the fitting 16, the cap being formed to engage the sealing ring 34, and the locking ring 26 serving to compress the packing ring 28 against the inner end 15 of the fitting 16, while at the same time the bevelled surface or surfaces will expand and compress the packing ring 28 against the internal threads of

the fitting 12, for test purposes. After the line is tested the cap 40 is removed and the ring 26 and flange member 16, adjusted relative to floor level for connection and installation of the bowl 10.

In Fig. 7, I show still another manner of sealing the fitting for testing purposes, and in this construction the flange member 16 is provided with an internal pipe thread 43 into which is screwed a sealing plug 44 which may be removed after the soil pipe line has been tested.

The feature of having the flanged bowl engaging member threaded to engage complementary threads on a second fitting member which comprises a vertical extension of the soil pipe line, whereby a locking and sealing means may be disposed entirely within the soil pipe line without undue restriction of the drainage capacity thereof has a distinct advantage over the general practice of securing the end of the soil pipe line to the flange member. Further, by reason of this arrangement, the fitting may be equipped at the source of manufacture with a soil pipe line sealing means in a very simple, economical manner without in any way increasing the installation cost of the fitting nor introducing any new problems of installation, while affording ready adjustability of the combined fitting to extreme variations in the "roughed in" plumbing and variation in floor level construction. The above features are such that the line may be readily sealed for testing, and thereafter all joints thereof readily sealed in a permanent manner to prevent escape of foul gases from the soil line.

I claim:

1. A plumbing fitting, for use in connecting a plumbing fixture to a pipe system, wherein it is desirable to test the system before the fixture is permanently attached, comprising a fixture-connecting nipple externally threaded to adapt it to be screwed into a pipe section of the system, an externally threaded stop ring screwed into the pipe section to provide a seat for a gasket and adapted to temporarily receive a testing cap, a gasket placed upon the ring, said ring and fixture nipple being so constructed and arranged that after the removal of the testing cap, the nipple can be adjusted to accommodate variations in floor thicknesses and said ring can be positioned to firmly clamp the gasket against the end of the nipple when the nipple is thus adjusted.

2. A plumbing fitting, for use in connecting a plumbing fixture to a pipe system, wherein it is desirable to test the system before the fixture is permanently attached, comprising a flanged fixture-connecting nipple externally threaded to adapt it to be adjustably connected to the floor terminus of a pipe section of the system, an externally threaded stop ring screwed into the pipe end, to provide a seat for a gasket and a closure-testing cap, a gasket placed on the ring and clamped between the ring and the inner end of the fixture nipple, said ring and fixture nipple being so constructed and arranged that after removal of the closure-testing cap the nipple and the gasket can be adjusted to accommodate variations in floor thicknesses and variations in the distance between the end of the said pipe section and floor surface, and said ring being positioned to firmly clamp the gasket against the end of the nipple and against the internal threads of the pipe section when the flange of the nipple is disposed in contact with the floor surface.

In testimony whereof, I hereunto affix my signature.

MARTIN A. SISK.