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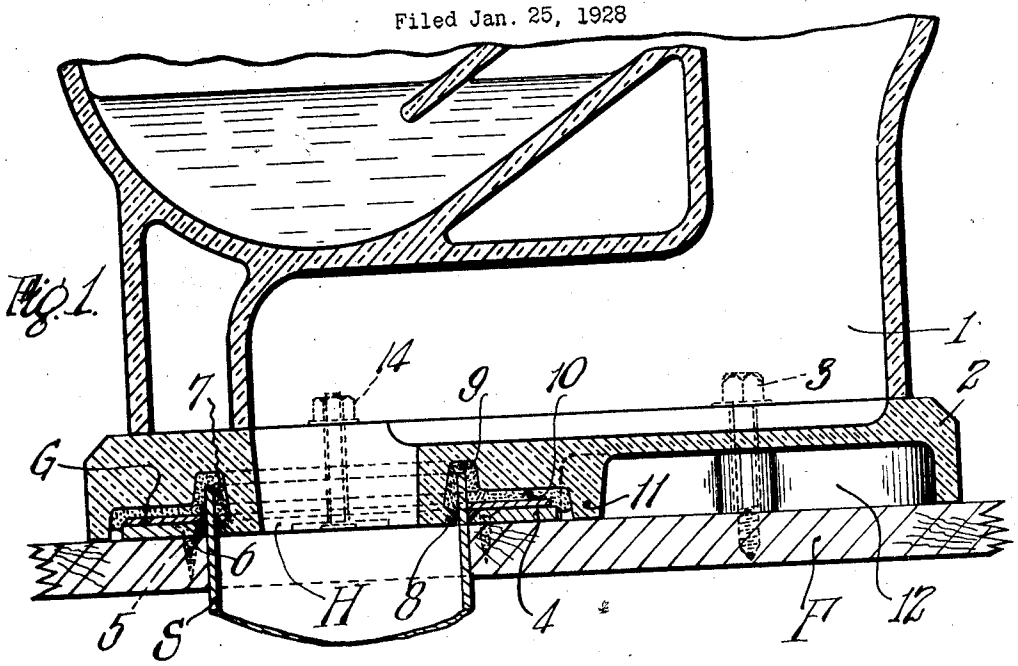



Fig. 1.

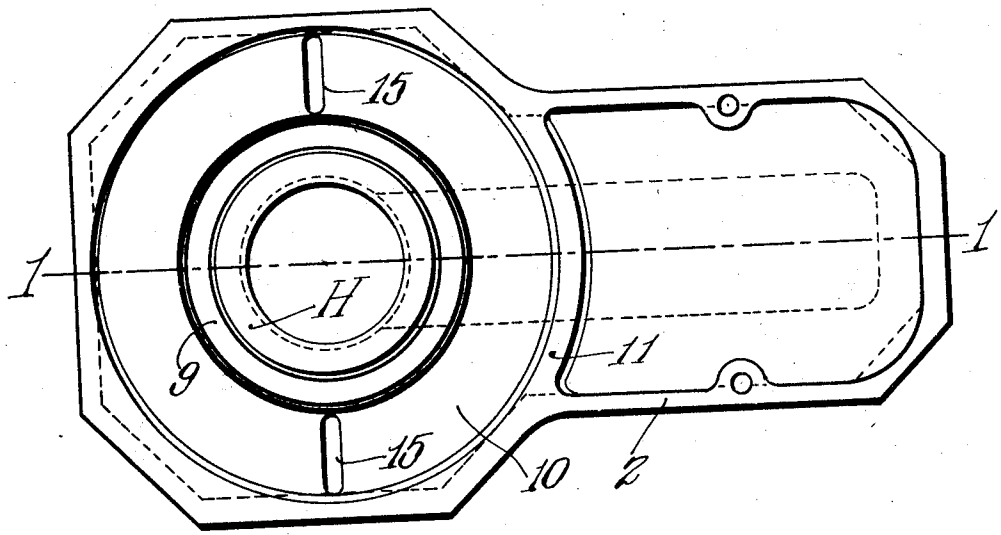



Fig. 2.

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# UNITED STATES PATENT OFFICE.

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## CONNECTION FOR WATER-CLOSET BOWLS.

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This invention relates to improvements in water closet outlet connections and more particularly to connections for joining an unthreaded soil pipe to a water closet bowl.

According to the prior art practice, the water closet is usually provided with a depending outlet pipe or horn which, when the closet bowl is set on the floor, extends downwardly therefrom and fits loosely within the upper end of a soil pipe, elbow spud, or other pipe fitting connected to a soil pipe system. The space between the outer side of the horn and inner side of the pipe is filled or sealed up with a sealing medium such as putty, wax or some other plastic material. This practice is objectionable because as the putty or sealing material dries out or hardens, it not only shrinks and cracks but splinters as well, so that pieces thereof fall into the soil pipe, which not only tends to obstruct the same but produces crevices in the sealing medium so that gases and the like from the soil pipe system leak by the jointure of the horn and pipe.

According to the novel features of my invention, I overcome these objections and disadvantages by providing a structure wherein the sealing medium is held or confined in a chamber between the soil pipe floor and the lower side of the closet bowl which is formed by the parts which cooperate to embrace or confine the sealing medium. By embracing or confining the sealing medium, its tendency to crack and fall into the soil pipe is obviated and a tight joint between the closet bowl and pipe is provided through which gases cannot pass.

The novel features of the invention and mode of operation will be described in connection with the accompanying drawings which for illustrative purposes show a modification of the invention at present preferred.

In the drawings:

Fig. 1 is a longitudinal sectional elevational view taken through a closet bowl on the line 1—1 of Fig. 2 and shows the soil pipe and the novel features of the invention; and

Fig. 2 is a plan view of the lower side of the closet bowl shown in Fig. 1.

Referring to the drawings in detail, 1 represents the lower portion of a closet bowl of well known form which may be integral with a base or flange 2 or it may be separable from said flange and secured thereto in some ordinary and convenient manner either before or after the flange is connected to a soil pipe and secured to the floor.

The base is adapted to rest upon a floor F and when in proper position and connected to the soil pipe it may be secured in place by lag bolts or screws 3, as shown, which pass therethrough and into the floor.

S represents the upper open end of a soil pipe or the upper end of an elbow or other fitting which may be connected to a soil pipe system to which the closet bowl is connected. This upper end of the soil pipe or fitting is preferably disposed at some distance above the floor so as to be adapted to cooperate with and be connected to the base 2, as will presently appear.

A flange 4, which may be of metal and called a floor flange, is provided which has a central opening therethrough for fitting around the soil pipe S. This flange may be secured to the floor by any suitable means such as screws 5, and the periphery of its central opening is preferably soldered or otherwise secured to the soil pipe as at 6 so that the pipe and flange are united.

A hollow horn or downwardly extending outlet pipe portion H is provided on the lower side of the base for conducting waste to the soil pipe, and the normal outside diameter thereof is preferably less than the inner diameter of the soil pipe so as to provide an annular space or channel 7 therebetween. The lower end of the horn may be provided with a circumferential bead or flange 8 which is somewhat larger than the normal diameter of the horn and is adapted to fit loosely within the soil pipe, as shown. This flange serves to close up the space or channel between the horn and pipe and restricts the passage of sealing medium from the channel downwardly into the soil pipe S, and serves to back up the pressure applied to the sealing medium when the base is being set in place.

An annular depression or recess 9 is provided in the base and surrounds the horn. This recess has a width considerably in excess of the thickness of the wall of the pipe S and is adapted to receive but not to con-

tact with the open end of the pipe. A substantially flat seat portion 10 is provided in the base around the recess 9, which is enclosed by a circular rib or flange 11 which extends downwardly from the body of the base and which has its lower side flush with the bottom or lower side of the base so as to be adapted to abut the floor. Thus it will be seen that there is provided a seat 10 which is disposed concentrically with respect to the horn and an annular depression 9 also disposed in a concentric relation therewith which are located above the lower side of the base so that the rib 11 encircles the same and forms, when the base is placed on a support such as a floor, a compartment or chamber for receiving a sealing medium which is separated from a chamber or hollowed out portion 12 at the forward end of the base.

A gasket G in the form of a ring and having an opening for fitting over the soil pipe is provided for resting on the floor flange 4 and may be, if desired, of some yieldable or resilient material such as rubber, asbestos or the like, or it may be of corrugated metal such as copper or the like.

It will be noted that the seat 10 of the base is disposed in a plane at a distance above the gasket so as to provide a space therebetween for receiving a sealing medium.

Bolts 14 are provided which have their head ends movable in circumferential slots of the floor flange 4, while their upper ends pass through slots 15 in the base and are adapted to clamp the base securely to the flange and floor in the well known manner. With this arrangement, the base may be swung about the soil pipe into various angular positions and then secured in place so that the base may be disposed at a desired angle.

In setting the bowl and connecting it to the soil pipe, the floor flange 4 is secured to the floor and soldered to the soil pipe S as described, and the gasket G is slipped over the soil pipe onto the flange 4, as shown. A sealing medium which may be of any suitable plastic material in a somewhat doughy condition is placed in the recess 9 and on the seat 10 of the base, after which the base 2 is placed on the floor with its horn H inserted in the end of the soil pipe. With the base thus set in place, the bolts 14 and their nuts are utilized to pull the base down onto the floor and according to the amount of sealing material put into the recess and on the seat, the pulling action will tend to compact the material to some degree and to force it into the space between the pipe S and horn H and between the pipe and recess 9 as well as between the gasket and seat. Since the sealing medium is confined in a chamber formed by the flange 8 of the horn H and by the rib 11, the space between the parts may be filled solid with the sealing material and compacted to a considerable degree so that a non-leakable joint is provided between the base and its horn and soil pipe.

Not only does the rib 8 of the horn prevent sealing material falling down the pipe should particles become loosened, but it fits sufficiently snug within the pipe to provide a minimum of space therebetween and reduces the tendency of gases passing upwardly between the horn and pipe.

It will be observed that the upper end of the soil pipe is embedded in a mass of sealing material and that the sealing material is confined within a chamber formed between the lower side of the base and the gasket G so that as the base is urged towards the floor flange and floor the sealing medium is compacted so as to fill up the spaces between the parts and provide a non-leakable seal or joint between the base and pipe.

It will be readily apparent that the horn may be lengthened or shortened as may be desired in connection with various soil pipe fittings and that the recess 9 and seat 10 may be raised or lowered in order to adapt the features of the invention to various conditions.

I am aware that many changes may be made in the form of the invention without departing from the scope thereof and I prefer therefore to be limited if at all by the following claims rather than by the foregoing description.

What I claim is:

1. A connection between a soil pipe and a water closet bowl comprising, a ring around said soil pipe, a base for said bowl provided with a flange for resting on a floor around said ring, an annular seat disposed above the plane of the face of said ring and spaced from said ring, a hollow horn depending downwardly from said base into said soil pipe which is smaller than said pipe to provide an annular space therebetween, the said base being provided with an annular depression around said horn to provide a space around the end of said soil pipe, a sealing medium in the spaces between the soil pipe and said horn and said depression and between said seat and said ring, and means for forcing said bowl axially of said soil pipe to compact said sealing medium and thereby provide a non-leakable joint between said pipe and base.

2. The combination of a coil pipe having an upper open end extending above a floor and a water closet bowl for resting on said floor with means for connecting the same comprising, a ring on said pipe below the open upper end thereof for resting on said floor, the said bowl having a depression and an annular groove in the lower side thereof circumscribed by a flange for resting on a floor to space the said depression and groove at a distance from said pipe and ring, a horn depending downwardly from said bowl into

said pipe which is circumscribed by the groove thereof and being of less diameter than the pipe to provide a space therebetween, a flange on the lower end of said horn for fitting loosely within said pipe, a sealing medium between said horn and pipe and between said bowl and said pipe and ring and means for securing the bowl to a floor whereby the sealing medium is pressed between the bowl and pipe and ring.

In testimony whereof I have affixed my signature.

EDWARD H. MILLER.