Nov. 4, 1924. 1,514,065

M. O LEARY

SANITARY CLOSET CONNECTION

Filed March 8, 1921

Fig. 1.

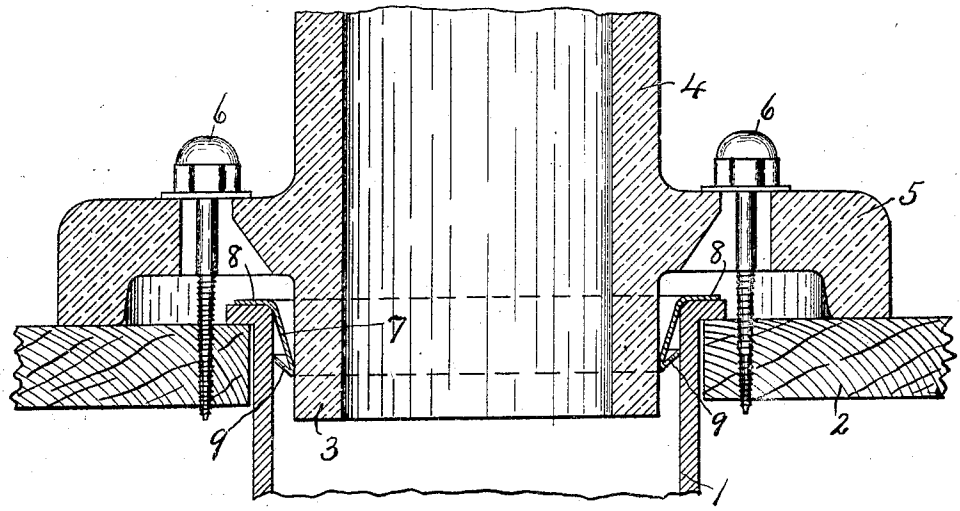
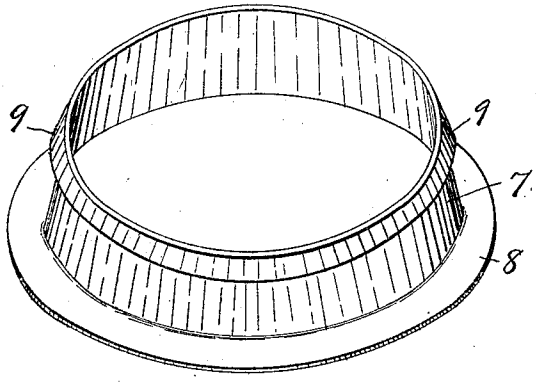


Fig. 2.



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UNITED STATES PATENT OFFICE.

MICHAEL O LEARY, OF CLEVELAND, OHIO.

SANITARY CLOSET CONNECTION.

Application filed March 8, 1921. Serial No. 450,597.

To all whom it may concern:

Be it known that I, MICHAEL O LEARY, of Cleveland, in the county of Cuyahoga, in the State of Ohio, have invented new and useful Improvements in Sanitary Closet Connections, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to certain improvements in floor connection for closet-bowls and soil-pipes of the class set forth in my Patent #1,206,580 issued November 28, 1916, the main object being to simplify the means for preventing the leakage of gas or moisture at the joint between the horn of the bowl and soil-pipe, and at the same time to facilitate the assembly of the bowl in proper relation to the soil-pipe.

In other words, I have sought to render the joint water and gas pipes by means of a single packing-ring constructed in such manner that the mere act of assembling the parts one within the other will automatically tighten the packing against both parts throughout the peripheries thereof.

Other objects and uses relating to specific parts of the packing-ring will be brought out in the following description.

In the drawings:

Figure 1 is a vertical sectional view of portions of a soil-pipe and closet-bowl with my improved packing-ring in operative position.

Figure 2 is a perspective view of the detached packing ring.

The soil pipe as —1— is flanged at its upper end for support upon the floor —2— to receive the lower end or horn —3— of a closet-bowl —4— or similar fixture, which in turn is provided with a base-flange —5— of considerably greater diameter than that of the soil-pipe —1— and adapted to rest upon the upper face of the floor —2— around the upper end of the soil-pipe where it is secured in place by suitable fastening means as screws —6—.

The external diameter of the horn —3— is appreciably less than the internal diameter of the soil-pipe —1— to allow those parts to be easily assembled one within the other, and at the same time to form sufficient space for the reception of a packing-ring —7—.

This packing-ring is preferably made of thin sheet copper or equivalent material having more or less resiliency and flexibility to enable it to fit tightly against the adjacent walls of the horn —3— and soil-pipe —1—, as will be hereinafter more fully explained.

The main body of the packing-ring —7— is made in the form of a truncated cone arranged in an inverted position within the upper end of the soil-pipe —1— and having its base provided with an out-turn annular flange —8— and its lower end provided with an outwardly and upwardly deflected annular flange —9—.

The base flange —8— is of considerably larger diameter than the inner diameter of the soil-pipe —1— and is adapted to rest upon the upper end thereof to support the packing-ring in operative position against downwardly displacement, the inner diameter of the base of said ring being of considerably greater diameter than the external diameter of the horn —3— to enable the latter to readily enter the ring when the parts are being assembled.

The inner diameter of the inner end of the packing-ring —7— is normally slightly less than the external diameter of the horn —3— so that when the horn is inserted therethrough, the inner end of the packing-ring will be slightly expanded and thereby caused to fit snugly against the periphery of the horn throughout its circumference.

The flange —9— is formed integral with the main body of the packing-ring —7— and flares upwardly and outwardly from the lower or smaller end of said ring, the free edge of the flange being of slightly greater diameter than the interior diameter of the soil-pipe —1— so that when the ring —7— is inserted into the soil-pipe, the flange —9— will be slightly contracted against its own resiliency and thereby caused to fit tightly or snugly against the inner walls of the soil-pipe to assure a liquid and gas tight joint, it being understood that this engagement of the free edge of the spring flange —9— with the walls of the soil-pipe —1— also produces inward pressure upon the lower end of the ring —7— to cause the latter to additionally bind or closely hug the periphery of the horn —3—.

In assembling the parts, the soil-pipe is first placed in operative position relatively to the floor —2— after which the packing-ring —7— is placed in operative position upon the upper end of the soil-pipe with its flange —8— resting against the upper end of said pipe and the remaining portions extend-

ing thereinto. The bowl —4— is then placed in operative position upon the floor so that its horn —3— will extend down through the ring —7— with a wedging action against the inner face of the smaller end of the ring, thereby slightly expanding the latter and causing the free edge of the flange —9— to be tightly impinged against the inner face of the soil-pipe —1—, thus forming liquid and gas tight joints between the lower end of the ring and horn —3—, and another gas tight joint between the free edge of the flange —9— and soil-pipe —1—.

The upward and outward flare of the flange —9— permits the smaller end of the packing-ring —7— to be wedged tightly downwardly and inwardly against the inner face of the soil-pipe —1— until limited by the engagement of the flange —8— with the upper end of the soil-pipe. When the ring —7— is thus inserted in the soil-pipe, the interior diameter of the smaller end thereof will be somewhat less than the interior diameter of the horn —3— so that when the horn is inserted therethrough, it will slightly expand the inner end of the ring and cause it to fit closely against the periphery of the horn, while the flange —9— will be tightly impinged against the inner surface of the soil-pipe —1— tending to hold the lower end of the ring against the horn.

What I claim is:

1. In a floor connection for closet-bowls and soil-pipes, the combination of a soil-pipe, a closet-bowl having a horn inserted into the soil-pipe, and a packing-ring of sheet metal having its main body tapered from one end toward its opposite end and inserted in the space between the horn and soil-pipe with its smaller end in close engagement with the periphery of the horn, said lower end having an out-turned annular flange engaging the inner face of the soil-pipe.

2. In a floor connection for closet bowls and soil pipes, the combination of a soil pipe extending through an opening in the floor and having its upper end flanged outwardly to rest upon the upper surface of the floor, a closet bowl having its base resting on the floor over and around the outer end of the soil pipe and provided with a horn extending coaxially into the soil pipe in spaced relation thereto, and a sheet metal packing ring extended into the space between the horn and soil pipe and having its outer end resting upon the outer end of the soil pipe and its inner end tightly fitted against the periphery of the horn, and an annular portion thereof, tightly fitted against the inner face of the soil pipe.

In witness whereof I have hereunto set my hand this 1st day of March 1921.

MICHAEL O LEARY.

Witnesses:

F. E. RADABAUGH,

A. R. SCHAFER.