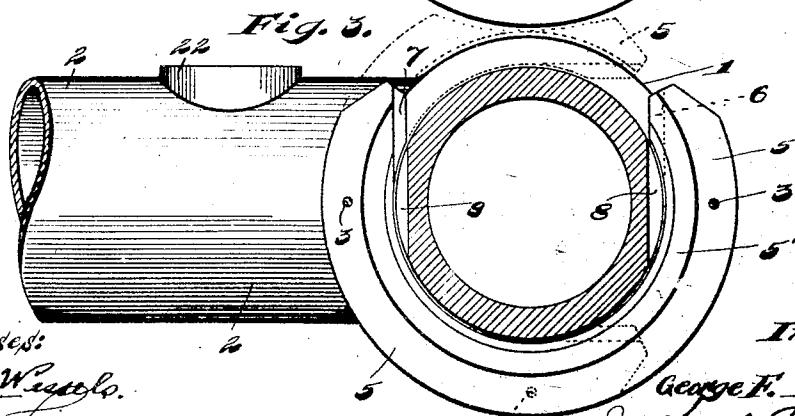
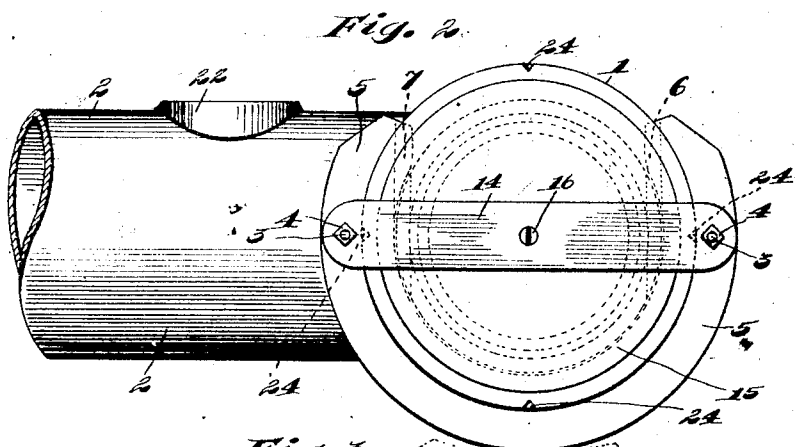
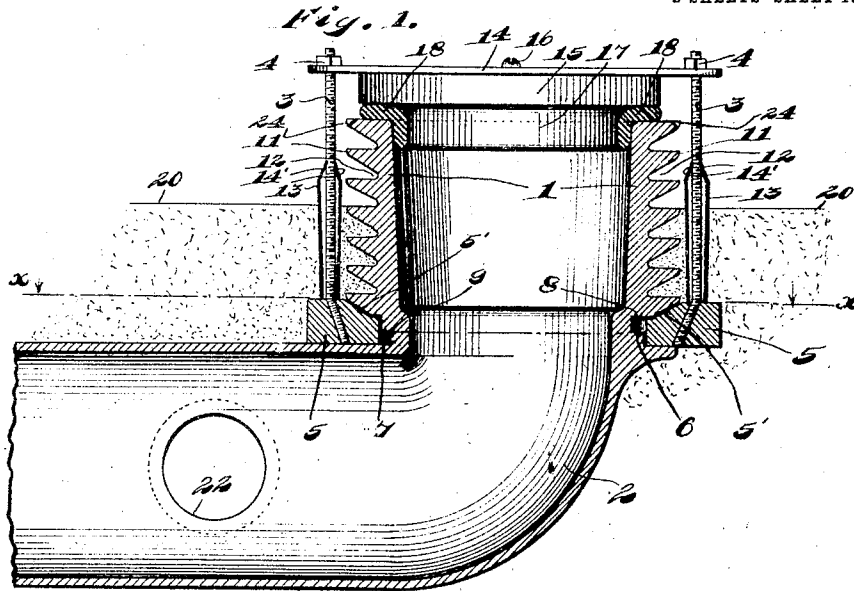


G. F. TONG.
WATER CLOSET CONNECTION.
APPLICATION FILED OCT. 28, 1911.

1,041,905.

Patented Oct. 22, 1912.

2 SHEETS—SHEET 1.



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2 SHEETS-SHEET 2.

Fig. 1.

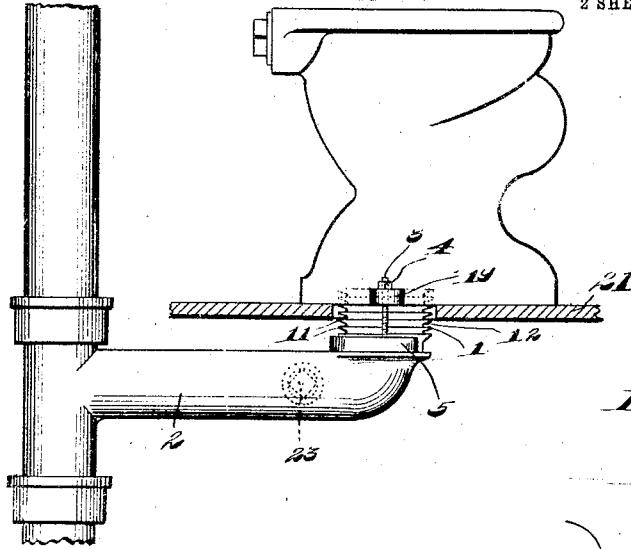


Fig. 5.

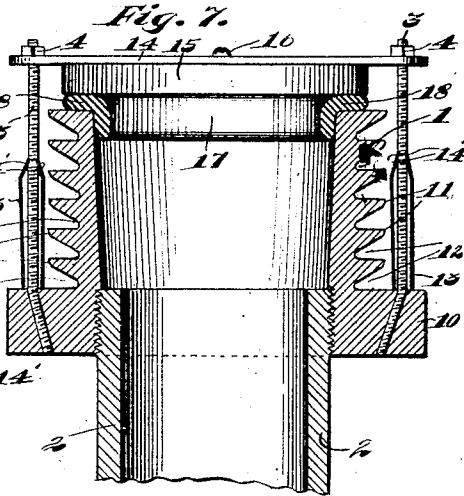
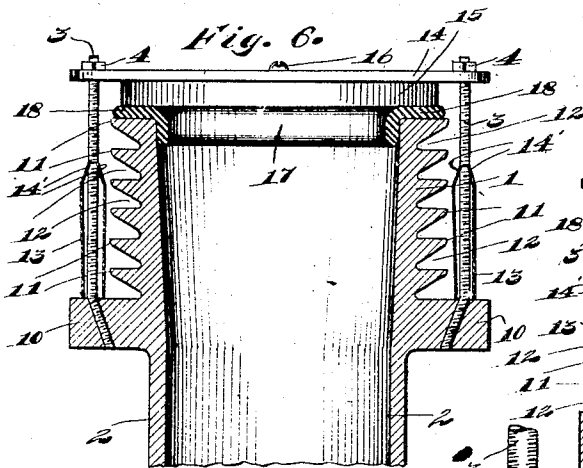
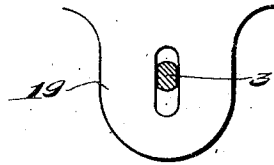
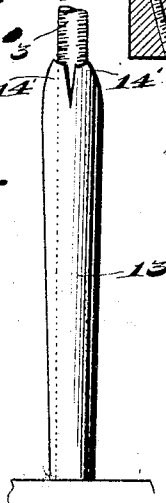


Fig. 8.



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UNITED STATES PATENT OFFICE.

GEORGE FRANCIS TONG, OF CHICAGO, ILLINOIS.

WATER-CLOSET CONNECTION.

1,041,907.

Specification of Letters Patent.

Patented Oct. 22, 1912.

Application filed October 28, 1911. Serial No. 657,291.

To all whom it may concern:

Be it known that I, GEORGE F. TONG, a citizen of the United States, and a resident of the city of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Water-Closet Connections, of which the following is a specification.

My invention relates to water closet connections, and has special reference to connections adapted to be cut off at substantially the floor level after the connection and floor are in place.

The principal object of my invention is to improve the construction and efficiency of water closet connections.

A specific object is to render water closets more sanitary by improving the joint between the water closet and the so-called connection, and to prevent the rocking of the closet after the same is in place.

A very important object is to provide a construction which will permit the closet bowl to be fastened upon the floor in any desired horizontal direction, irrespective of the direction of the soil pipe leading thereto.

Another object is to provide a connection which will be easily and certainly cut off at a given elevation thereon.

Another object is to improve the fastening means of said connections.

Still further objects will appear hereinafter.

My invention consists generally speaking in a water closet connection having annular flanges of a beveled or tapering cross section. The invention resides further in such a connection having gradually increasing thickness from the upper to the lower of said annular flanges.

It consists also in a locking and adjustable yoke containing fastening means upon said connection.

The invention comprises also flattened fastening bolts rigidly secured in an annular flange of said adjustable yoke or in an integral part of the connection; and also comprises means for keeping said bolts free from cement or cinders during the operation of installation.

My invention consists also in the several improvements, the various constructions and the arrangement of parts hereinafter described and specifically pointed out in the appended claims.

Referring to the accompanying draw-

ings, which form a part of this specification, Figure 1 is a vertical transverse section through a water closet connection embodying my invention in its preferred form; Fig. 2 is a top plan view of the same; Fig. 3 is a sectional plan view on the line $x-x$ of Fig. 1 looking in the direction of the arrows, showing the clamping yoke in full lines, the dotted lines indicating the same in a locked position; Fig. 4 is a side elevation illustrating the application of my improved invention to a water closet, the dotted lines indicating a portion of the connection cut off; Fig. 5 is an enlarged detail plan view of the usual fastening ear or extension on the bottom of a water closet, and shows in section a flattened securing bolt; Fig. 6 is a central vertical section of a modified form of my improved connection showing an annular flange in which the securing bolts are held; Fig. 7 is a similar view showing the application of a threaded pipe to a detachable connection; and Fig. 8 is a side elevation of a light metal shield upon one of the clamping bolts.

Referring further to the drawings 1 indicates my improved connection upon a soil pipe 2 of the usual cast iron construction. In its preferred form the connection is integrally cast with the pipe, although in many cases I find it advantageous to apply the same to the end of a pipe by means of threads as illustrated in Fig. 7.

3 indicates a pair of stay-bolts continuously threaded and provided with nuts 4.

5 is a horse-shoe like yoke or collar preferably made of cast iron adapted to interfit and turn within an annular recess 5' on the connection 1. This clamping member 5 is provided with an upper projection 6 and a lower projection 7 at the open ends thereof respectively, the inside distance between the two lugs being somewhat less than the diameter of the bottom surface of the annular recess 5'; these two oppositely disposed lugs interfitting in upper and lower grooves 8 and 9 respectively in the peripheral surface of said annular recess. These two oppositely disposed grooves are on lines parallel with each other and are comparatively short, their ends terminating in the peripheral surface of said annular recess and their depth being only sufficient to permit the insertion of the lugs 6 and 7 therein. It will thus be seen that when the yoke 5 is inserted in the annular recess 5', the lugs

6 and 7 passing through the grooves 8 and 9 respectively and said member 5 is then turned, even slightly, the yoke is firmly locked upon the connection. Should the yoke be given an exact half-turn it would still be locked for the reason that the upper and lower lugs on the member 5 fail to register with the lower and upper grooves respectively adjacent thereto. It is thus seen that the yoke is locked in all positions upon the connection with the exception of the one in which it was inserted thereon and even in that position its effect as a clamping or holding yoke for the bolts 3 is not impaired.

In Figs. 6 and 7 I have shown an annular integrally formed ring 10 at the bottom of the connection which may take the place of my novel adjustable and movable ring like member 5. In both forms the bolts 3 are preferably threaded into the retaining member at an angle to the top surface thereof and the bolts are then bent into a perpendicular direction. By this arrangement it will be seen that the bolts are securely fastened and prevented from unscrewing when the nuts 4 are removed. Heretofore loose bolts have been used which have resulted in great loss of time and inconvenience through their dropping out and being lost under the floor while a portion of the connection is being cut off.

In practice the soil pipe 2 with its upstanding connection 1 is first put into permanent position and afterward a floor is laid over the soil pipe, a portion of the connection projecting upward from or through the floor. But, as it is impossible for the plumber to determine just how high the floor will be with respect to the connection I provide my improved connection with a plurality of integrally formed annular flanges 11, the under side of which taper downwardly and terminate in a somewhat rounded surface at their point of juncture with the substantially horizontal top surface of the next lower flange.

In order that the joint between the closet and the connection may be tight, the connection should be cut off on substantially the plane of the floor, and this is accomplished in my connection by means of a cold chisel inserted in the groove 12 corresponding with the surface of the floor.

It will be seen that the substantially V-shaped recess 12 provides a distinct line of breakage or cleavage, and, when the chisel is struck several times sharply with a sledge the upper part of the connection breaks away leaving a clean substantially horizontal top surface to the remaining portion. The V-shape of the grooves permits the chisel to be inserted readily and at the proper angle even though the groove in which the cutting takes place is somewhat

below the surface of the floor, as is sometimes the case. In order that the break or cleavage may be confined to any particular groove I sometimes thicken the body of the connection in a gradual manner from the top to the bottom thereof, as shown in the drawings.

13 indicates a tube like shield made of tin or similar sheet metal adapted to be placed upon the bolts 3 and held there by engagement of the bent end 14 in the top portion 13 with the threads of the bolts. These shields prevent cinders or cement from clogging the threads of the bolts while the floor is being laid. To remove them finally I merely crush the sides thereof and withdraw the tubes with a pair of pliers.

14 indicates a flat bar, preferably of metal, with openings therein to receive the bolts 3 and secured to the cap member 15 by a screw 16. The cap member 15 is made preferably of wood and consists of a circular cover part having a circular depending projection 17 of less diameter than the inside of the connection. A gasket 18 is disposed between the cap member and the top and inside of the connection. It will be readily understood that when the cap member and gasket are in position as shown in the drawings and the nuts 4 applied to the bar 14 the opening at the top of the connection will be effectually sealed against water pressure. This cap member or test plug is used only for testing the pipes while the plumbing work in the building is yet in the rough, as is fully understood by those skilled in the art. After the test the cap member is discarded.

The bolts 3 serve the further purpose of permanent means for securing the water closet to the connection, as shown in Fig. 4, passing through the lug 19 on the lower edge of the closet bowl and held by the nuts 4. As the bolt openings in these lugs are usually oblong, as shown in Fig. 5, I preferably flatten two opposite sides of the bolts 3 to the width of these openings, thus being enabled to use heavier bolts for holding the closet in place.

It will now be clearly understood that by turning the upstanding bolts 3, together with the yoke member 5 therewith, the water closet may be positioned in any desired horizontal direction, without regard to the direction of the soil pipe leading thereto. The importance of this feature of my invention will be readily appreciated by those skilled in the art.

In order that the closet may be more certainly adjusted in a desired position I provide guiding marks consisting of notches 24 in the top surface of the connection. Fig. 2 illustrates how by the use of these notches the closet may be set at exact right angles to the soil pipe. To set the closet at an angle

of forty-five degrees thereto the yoke 5 would be turned until the bolts 3 are midway between two of the said marks.

In Fig. 1 I have illustrated a cement floor, 20 indicating the top surface thereof. In Fig. 4 the floor 21 is of wood; 22 indicates a vent opening in the soil pipe and in Fig. 4 the same is shown in dotted lines as closed by a plug 23.

10 While I have illustrated and described the preferred and modified forms of my invention it is obvious that the construction shown may be varied without departing from the spirit of my invention. I therefore do not limit myself to the precise details of construction set forth, but desire to avail myself of such variations and modifications as come within the scope of the appended claims.

20 Having described my invention what I claim as new and desire to secure by Letters Patent is:

1. In a water closet connection, a soil pipe having an annular groove therein; a yoke 25 arranged to be inserted in said groove; interlocking elements on said yoke and pipe arranged to interlock upon turning of said yoke; and securing bolts on said yoke, substantially as described.

30 2. A water closet connection comprising a cylindrical member having a plurality of integrally formed annular flanges thereon and an annular groove therein, a horse-shoe like yoke in said annular groove and adapted to turn therein; locking means in said 35 groove to prevent withdrawal of the yoke, together with upstanding bolts rigidly se-

cured to said yoke and adapted to hold a water closet on said connection, substantially as described.

3. A water closet connection comprising a 40 cylindrical portion provided with a plurality of integrally formed annular flanges and an annular groove therein, a yoke-like member in said groove and adapted to be turned 45 therein and thereby locked, a pair of bolts upstanding from said yoke adapted to hold a water closet upon said connection, substantially as described.

4. A water closet connection comprising a 50 cylindrical portion, a plurality of integrally formed annular flanges thereon and an annular recess therein, a pair of parallel grooves diametrically oppositely disposed within said recess; a yoke-like member in 55 said recess having lugs thereon adapted to interfit with said grooves, and upstanding bolts on said yoke-like member, substantially as described.

5. In a water closet connection, a cylindrical portion provided with a plurality of 60 integrally formed annular flanges and an annular recess therein; a yoke-like member in said recess; bolts in said yoke-like member and removable shields on said bolts, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEORGE FRANCIS TONG.

Witnesses:

JOSHUA R. H. POTTS,
HELEN F. LILLIS.