No. 800,664

W. McCLINTOCK. PATENTED OCT. 3, 1905.

FLOOR FLANGE FOR WATER CLOSETS.

APPLICATION FILED JAN. 30, 1905.

Fig. 1.

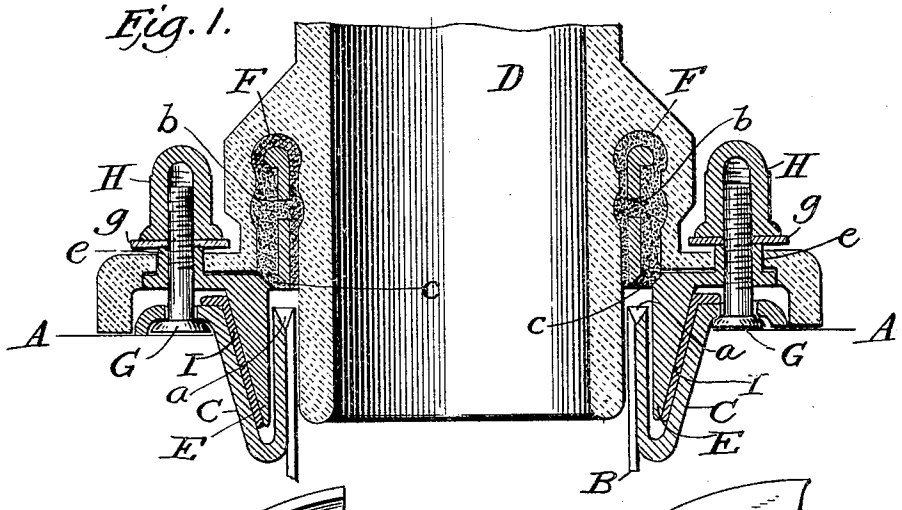


Fig. 2.

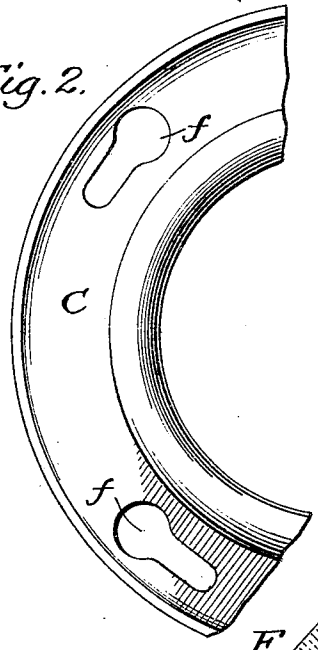


Fig. 3.

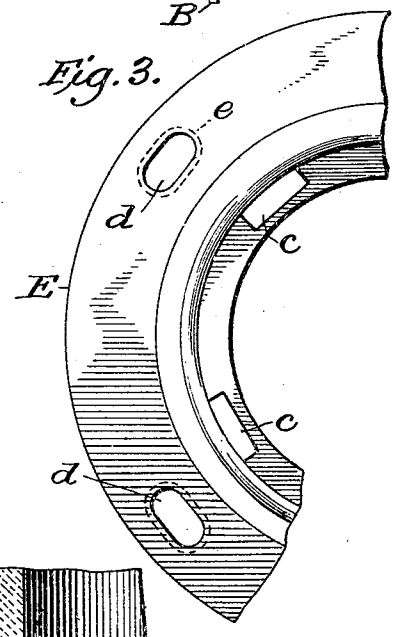
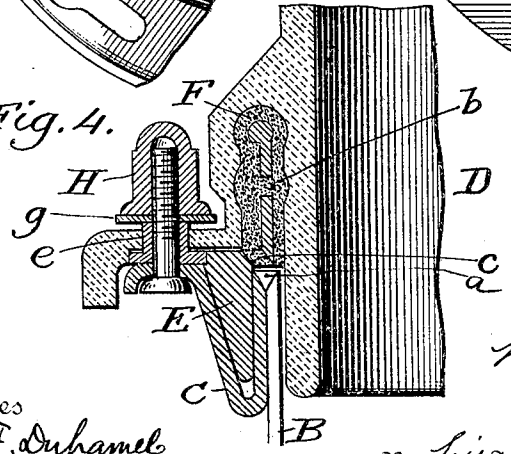


Fig. 4.



Witnesses
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UNITED STATES PATENT OFFICE.

WILLIAM McCLINTOCK, OF NEW YORK, N. Y.

FLOOR-FLANGE FOR WATER-CLOSETS.

No. 800,664. Specification of Letters Patent. Patented Oct. 3, 1905.

Application filed January 30, 1905. Serial No. 243,168.

To all whom it may concern:

Be it known that I, WILLIAM McCLINTOCK, a citizen of the United States, residing at New York city, in the county and State of New York, have invented certain new and useful Improvements in Floor-Flanges for Water-Closets, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact specification.

My present invention has relation to means for mounting and securing hoppers of water-closets in place upon a floor and in connection with soil-pipes. These means of whatever character they may be have come to be denominated "floor-flanges."

The principal object of my present invention is to provide or produce a simple, durable, and efficient floor-flange for water-closets, by use of which the closets may be easily, quickly, and accurately mounted in place and there held immovable while in position for use and without danger of leakage of sewer-gas around or through the floor connection. Subordinate objects are to insure accuracy of fit between the parts, to obviate liability of breakage of the joints, and to secure facility of detachment and replacement, as may be required.

To accomplish the foregoing objects and to secure other and further advantages in the matters of construction, operation, and use, my improvements involve certain novel and useful arrangements or combinations of parts, peculiarities of construction, and principles of operation, as will be herein first fully described and then pointed out in the claims.

In the accompanying drawings, forming part of this specification, Figure 1 is an axial section and elevation showing the lower part of a hopper mounted and sustained in position in connection with the upper extremity of a soil-pipe and on a floor in accordance with my invention, the parts being shown as ready to be screwed up to their final bearing position. Fig. 2 is a plan view of the under side of a fragment of the circular piece which is to be let into the floor and connected with the upper end of the soil-pipe, showing the preferred manner of perforating this piece to admit the application of the adjusting and locking bolts after the piece has been properly located and to admit of the removal of these bolts, as occasion may require, without disturbing the piece itself. Fig. 3 is a plan view of the under side of a fragment of the circular piece which is immovably connected with the material of the hopper and intended to maintain a fixed and definite relation to the axis of the hopper. Fig. 4 is a sectional elevation of a fragment corresponding with Fig. 1, but omitting the elongated washer or gasket shown in that figure and showing the parts in final bearing position.

In all the figures like letters of reference, wherever they occur, indicate corresponding parts.

A A represents the floor-line or the upper surface of the floor on which it may be desired to erect the hopper. The floor may be of any material. It is suitably opened around the position of the projecting end of the soil-pipe to admit of the insertion of the floor-flange.

B represents the soil-pipe, which usually projects a little above the floor-line, but not necessarily so.

C is a circular flange-piece of general **U** shape or **V** shape, its inner portion intended to fit more or less snugly around the soil-pipe and having a horizontal portion sufficiently broad to accommodate the openings for the locking-bolts. The soil-pipe is properly anchored in place, and the flange-piece C is secured thereon by soldering or brazing entirely around the upper ends of the two contacting parts, as shown at *a a*, the horizontal portion of the flange-piece being first brought down to its desired location with respect to the floor-line. The joint between these parts is made quite substantial, so as to insure the immovability of one with respect to the other and to avoid the possibility of escape of gas between the two parts.

D represents the lower part of the hopper, which may be of any suitable material. It is preferably cast or molded, and most generally it is made of pottery or porcelain, which is afterward baked and hardened and then perhaps glazed.

E is a circular metallic piece which is to be firmly fixed in connection with the material of the hopper and intended to enter the recess in the floor-piece. This piece is cast or otherwise suitably formed and properly tooled or trued up, so that it will easily and accurately enter the floor-piece.

To receive the upwardly-extended neck of the piece E, the material of the hopper is suitably formed so as to leave a pocket, as at F F, all around and of ample dimensions to accommodate the neck and the cement by which the latter is securely fastened in place.

The inner surfaces of the pocket are preferably made irregular or indented substan-

tially as indicated, so that the cement will when set have a firm hold on the material of the hopper to prevent displacement or disarrangement of the piece E, and the latter is preferably perforated at suitable points, as at *b b* and *c c*, for the passage of cement through it to further facilitate the making of the desired joint, and the upper portion of the neck may also be enlarged, as at *d d*, to assist in making the joint secure; but it is obvious that these details of formation may be considerably varied so long as provision is made for the proper union of the metallic part with the clay or porcelain part. The horizontal flange of piece E is also perforated, as at *d d*, to admit the coupling-bolts, these perforations being slightly larger than the bolts, so as to provide for such slight adjustments as may be necessary in practice, and each of these perforations is surrounded by a neck, as *e e*, intended to pass through openings in the horizontal flange of the hopper and preferably to project slightly beyond the upper surface of this horizontal flange.

The metallic piece E being suitably constructed and finished, the hopper is inverted and the pocket F filled with the cement in plastic form, the cement being of any suitable kind or composition which will afford the desired permanent union, which union must also be impervious to gas and not liable to deterioration. Then the neck of piece E is forced to its final position in the pocket, the surplus of cement finding an escape through the openings *c* from one side of the neck and from the other side through the space between the metallic neck and the neck of the hopper. Tamping of the cement in the pocket may be resorted to, if necessary. After the setting of the cement the hopper, with its attachment, is ready to be mounted in place as indicated in Figs. 1 and 4, in which figures the cement is conventionally represented.

G G are the locking-bolts the heads of which are intended to engage with the horizontal flange of the piece C. This flange is perforated substantially as shown in Fig. 2, as at *f f*—that is, so that the heads of the bolts may be entered in the larger portions of the perforations and then the bolts moved along so as to occupy a position in the smaller portions of the perforations, where they are finally located and ready to pass through the necks *e e*.

H H are the locking-nuts upon the projecting ends of the bolts, and these nuts may be of any desired kind. They are shown as closed at top; but this is not essential. Between the nuts and the necks *e e* suitable washers, as at *g g*, are preferably interposed.

The parts being in position to be finally locked in place, the turning down of the nuts will effect the desired locking, the necks *e* preventing direct bearing of the washers on the flange of the hopper to obviate possible breaking of the latter.

It is important to prevent leakage of gas around the connection with the floor-piece. For this purpose I preferably employ between the two parts C and E an elongated washer or gasket in the general form of a truncated cone, as indicated at I I, Fig. 1. When employed, this gasket should be quite durable and indestructible and should be compressible at least to a slight degree, and I therefore prefer to make this washer of a compound of asbestos and plumbago, which is found to answer all the desired purposes and when properly compressed in place to effectively insure against the passage of gas through it or through the joints between it and the adjacent metallic pieces; but the employment of this washer is not always necessary and when used it may be of other suitable material. If the parts are accurately formed, so that they may be brought into close union, the elongated washer or gasket may be omitted, as shown in Fig. 4.

On screwing up the nuts H, as in Fig. 1, the outer portion of the flange-piece C will be drawn up, and thus the gasket suitably compressed and the joints between it and the contacting parts made quite secure, and at the same time the hopper will be rigidly locked in position. Without the gasket the turning up of the nuts H, as in Fig. 4, will bring the parts together, metal to metal, and thus secure the desired tight joint as well as the desired stability of the mounting of the hopper upon the floor.

The metallic parts are made amply strong and durable for the purposes intended and yet they will yield sufficiently under the action of the locking nuts and bolts so that they will be drawn or forced into proper union.

In the event that it be desirable to detach the hopper it is only necessary to unturn the locking-nuts sufficiently to relieve the strain on the locking-bolts and then turn the hopper so as to move the heads of the locking-bolts to the larger portions of the perforations *f*, when the hopper may be easily lifted up and out of place. The joints are, as will be apparent, amply strong and durable and not liable to be broken or damaged.

The improved device will be found in practice to admirably answer all the purposes or objects of the invention previously alluded to.

Having now fully described my invention, what I claim as new herein, and desire to secure by Letters Patent, is—

1. In a floor-flange for water-closets, the combination with the U-shaped flange-piece adapted to be connected with the soil-pipe, of the entering piece secured upon the hopper, and the locking-bolts arranged to draw the parts into final position in order to secure a tight joint between the two and insure the immovability of the hopper, substantially as set forth.

2. In a floor-flange for water-closets, the

U-shaped flange-piece arranged to be connected with the soil-pipe and provided with a horizontal rim for receiving the locking-bolts, said rim being perforated to receive and hold the heads of the locking-bolts after the said flange-piece has been finally located in position, substantially as and for the purposes set forth.

3. In a floor-flange for water-closets, the U-shaped flange-piece arranged to be connected with the soil-pipe and provided with a horizontal rim for receiving the locking-bolts, said rim being perforated to receive and hold the heads of the locking-bolts and provided with projecting necks surrounding the openings for the bolts, substantially as and for the purposes set forth.

4. The combination with the U-shaped flange-piece adapted to be connected with the soil-pipe, of the entering piece connected with the hopper, an elongated washer or gasket located between the two metallic pieces, and locking-bolts for compressing the gasket, substantially as and for the purposes set forth.

5. The herein-described floor-flange for water-closets, the same comprising the U-shape flanged piece applied on and secured to the soil-pipe and perforated to receive the locking-bolts, the entering piece applied to the material of the hopper, and the locking bolts and nuts, the parts being constructed and arranged, substantially as shown and described.

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

WILLIAM McCLINTOCK.

Witnesses:

C. SEDGWICK,

WORTH OSGOOD.