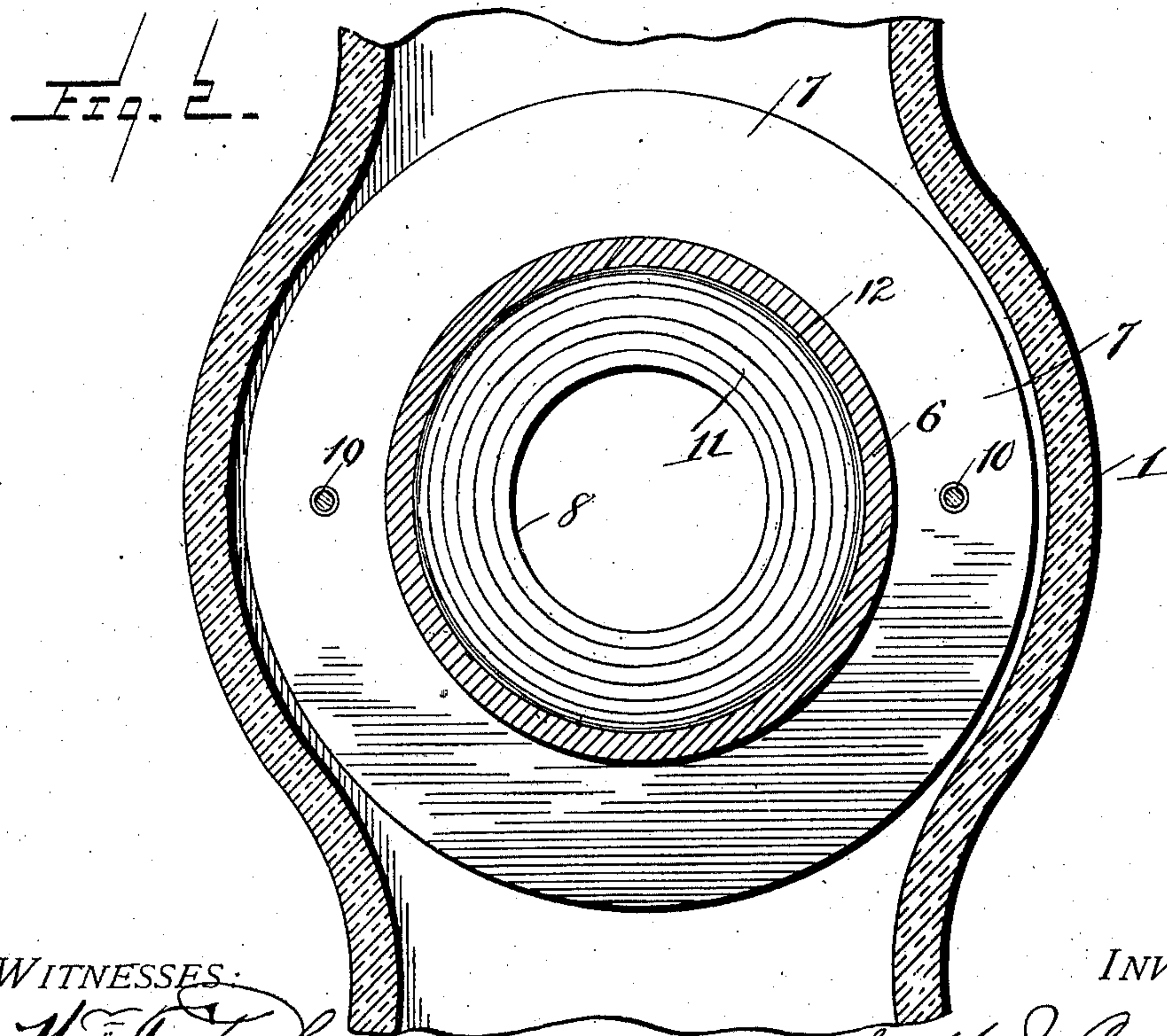
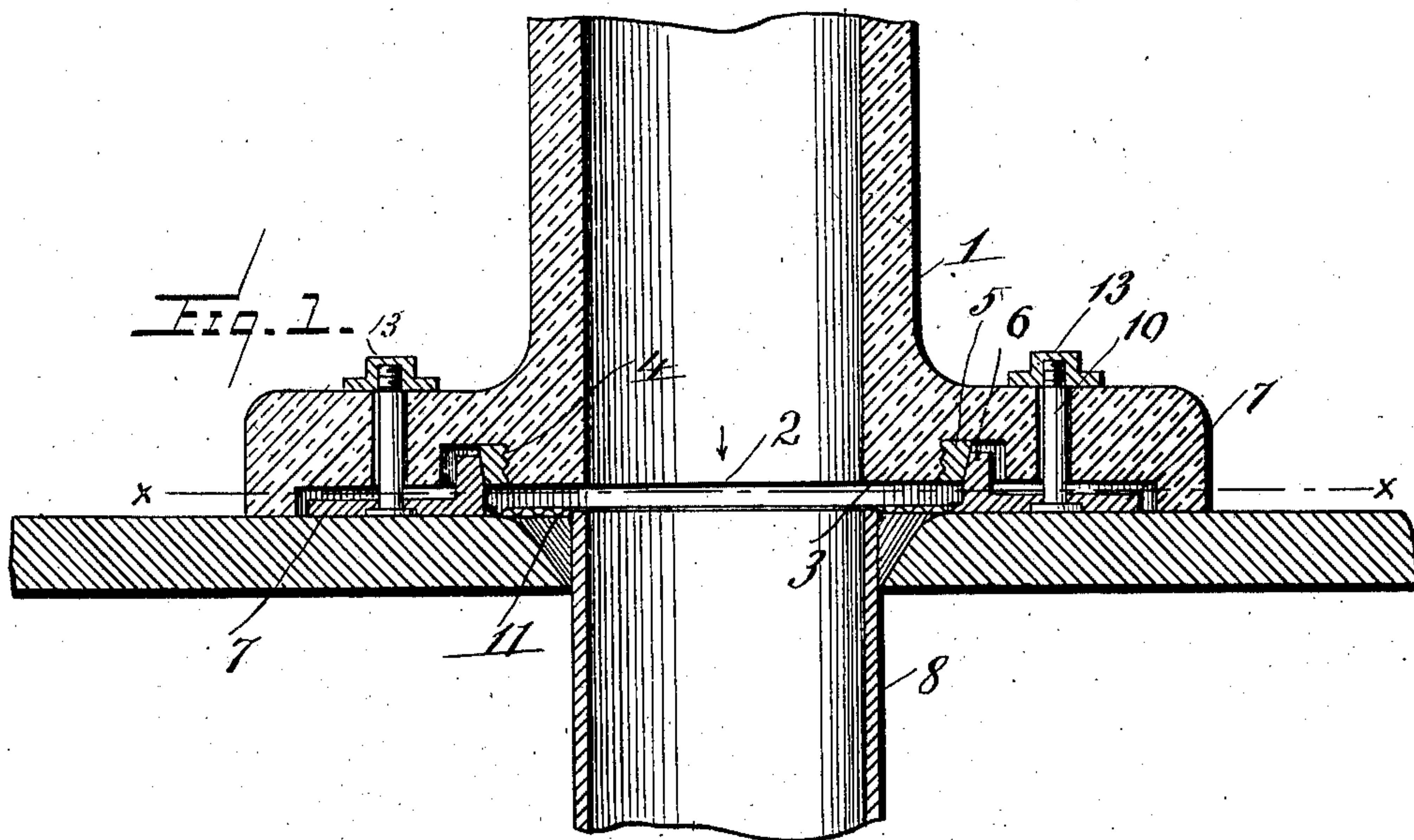


J. J. COSGROVE.
 WATER CLOSET CONNECTION.
 APPLICATION FILED JAN. 18, 1910.

963,688.

Patented July 5, 1910.



WITNESSES:

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JOSEPH J. COSGROVE, OF PHILADELPHIA, PENNSYLVANIA.

WATER-CLOSET CONNECTION.

963,688.

Specification of Letters Patent.

Patented July 5, 1910.

Application filed January 18, 1910. Serial No. 538,578.

To all whom it may concern:

Be it known that I, JOSEPH J. COSGROVE, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Water-Closet Connections, of which the following is a specification.

This invention has relation to water closet connections and has for its object the provision of novel means for connecting a water-closet or similar article which rests on the floor, with the soil pipe so as to avoid the breaking of the soil pipe or of the floor flange of the closet or the floor flange of the connection or any other damage to the closet or its connections by the settlement of the soil pipe or the sinking or sagging of the floor.

The invention consists in providing a flexible floor plate or flange which has a seat, to receive the collar surrounding the closet outlet, the flexibility of the floor flange being obtained by interposing a metallic ring, preferably corrugated in concentric circles, between a rigid ring resting on the floor and the soil pipe which corrugated ring will support the soil pipe in proper alinement with the closet outlet and yield under strain so as to allow of any required flexure of the soil pipe or impairment of the symmetry of connected parts without breaking the connections or inducing leakage.

In the accompanying drawings illustrating my invention as applied to an earthenware water-closet and its soil pipe: Figure 1 is a vertical sectional view of a portion of a water closet and a portion of a vertically arranged soil pipe with my improved connection applied thereto. Fig. 2 is a horizontal section on the line $x-x$ of Fig. 1, looking downward.

The bowl or closet designated 1, is of the usual or any desired type and is formed with the outlet passage 2, terminating in a flange or projection 3 which is threaded on the outside as shown at 4, to receive a correspondingly threaded collar 5, which latter is slightly tapered either conically or on curved lines toward its lower end, so as to rest in a correspondingly tapered seat formed in the upright ring flange 6 of the horizontal floor plate 7, of the soil pipe 8. The rigid flange ring 7, is secured to the base 9 of the closet bowl by bolts 10 in the usual manner.

The rigid floor flange ring 7, is a separate structure from the soil pipe 8, which is in the usual form of a section of lead tubing of an interior diameter corresponding to the diameter of the outlet passage of the closet. The rigid section 7 is a cast metal ring with an opening considerably larger in diameter than the outside diameter of the soil pipe and said pipe and rigid section 7 are connected together by means of the ring 11, which is preferably made from sheet copper of suitable thickness, and is corrugated with concentric corrugations 12, which impart to the ring the required flexibility. The edges of the corrugated ring are secured to the rigid floor plate section 7, and to the soil pipe by soldering.

In fitting the soil pipe to its proper position with relation to the closet, the rigid section 7, with the bolts 10 passed through it, is first laid on the floor so as to surround the opening in the floor through which the soil pipe is to pass. The soil pipe is then passed through the floor opening to about the level of the floor line and the corrugated ring 11 is then slipped over the end of the pipe and its edges soldered to the pipe and if separate from the section 7, to the inner edge of the section 7. The rigid section 7, and the flexible ring 11 may be soldered together before being placed in position on the floor. The closet bowl carrying the threaded collar 5, is now placed in position, with the collar 5 resting on the tapered seat of the flange 6, and the bolts 10 which pass upward through holes 12 in the closet base, are tightened up by means of the threaded cap nuts 13.

As will be seen, none of the weight of the closet is supported by the soil pipe, nor is any part of the closet connection brought into such contact with or relation to the soil pipe as to affect or be affected by any change in the position of the soil pipe with reference to its alinement with the closet outlet opening. Any unevenness in the floor or abnormal condition or relation of the soil pipe to the closet is compensated for by the flexible corrugated ring, which yields under slight strain without breaking or rupturing the parts connected thereto or opening up any seams or subjecting the parts forming the closet connection to the soil pipe to strain or other injurious effects.

The application of the corrugated flexible ring embodies the novel desideratum of a

metal to metal flexible connection between the closet and soil pipe, which will enable the closet, soil pipe and joint elements to be installed and maintained in satisfactory relation and insure a water tight joint under the varying conditions which are encountered in the first installation of the closet and after lapse of time.

The corrugation in concentric circles of the flexible ring is suggested as the best form in which the ring may be made but other forms may be adopted without departure from the invention. The tapered collar 5, and correspondingly tapered seat of the floor plate are not essential elements in the structure, as it is obvious that the flexible ring 11 may be applied to closets in which the bowl is otherwise supported than as herein described and shown.

Having described my invention, I claim and desire to secure by Letters Patent:

1. The combination with the soil pipe of a water-closet, of a flexible metallic floor plate.
2. The combination of a water-closet, a soil pipe and flexible floor plate secured to the soil pipe.

3. The combination with a water-closet and a soil pipe of a floor plate composed of a rigid metallic ring upon which the closet is supported and a flexible metallic ring which is connected to the soil pipe and to said rigid metallic ring.

4. The combination with a soil pipe of a floor plate comprising a flexible, metallic, corrugated ring.

5. The combination with a soil pipe of a floor plate comprising a flexible, corrugated metallic ring secured to the pipe and a rigid ring surrounding and secured to the flexible ring.

6. The combination with a water-closet having a tapered metallic ring surrounding its outlet opening, of a soil pipe and a flexible floor plate secured to the soil pipe, and having a tapered seat to receive the tapered ring of the closet.

In testimony whereof I have affixed my signature, in presence of two witnesses.

JOSEPH J. COSGROVE.

Witnesses:

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