(No Model.)

J. J. RICKETTS.

COUPLING FOR WATER CLOSETS.

No. 434,116. Patented Aug. 12, 1890.

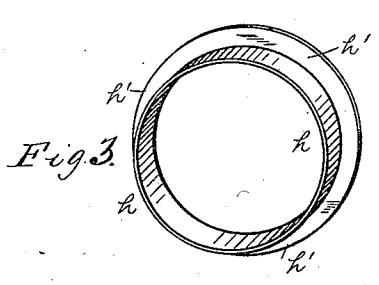


Fig. 3.

Fig. 1.

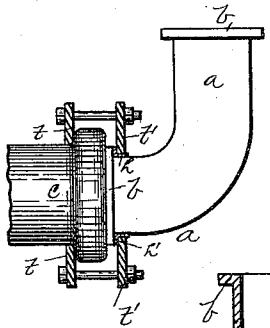


Fig. 4.

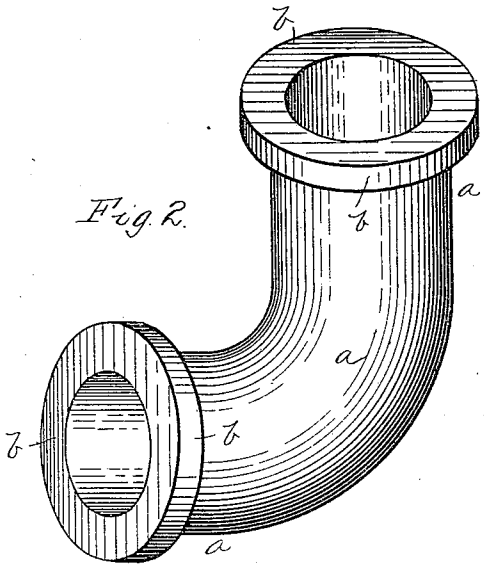


Fig. 2.

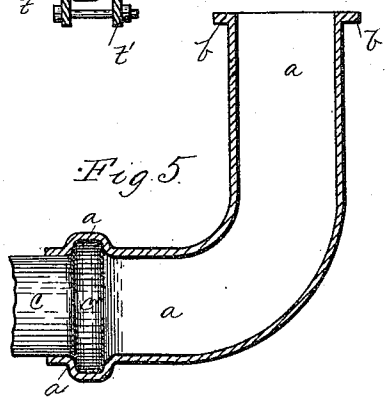


Fig. 5.

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UNITED STATES PATENT OFFICE.

JAMES J. RICKETTS, OF PITTSBURG, PENNSYLVANIA.

COUPLING FOR WATER-CLOSETS.

SPECIFICATION forming part of Letters Patent No. 434,116, dated August 12, 1890.

Application filed July 30, 1889. Serial No. 319,156. (No model.)

To all whom it may concern:

Be it known that I, JAMES J. RICKETTS, a resident of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Couplings for Water-Closets, &c.; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to joints or couplings, the joint embodying the same having special advantages in connecting pipes to water-closets, urinals, basins, and other vessels formed of earthenware or like material which can be easily broken. It is well known to those skilled in the art that in order to connect the supply-pipes to water-closet bowls a rigid elbow-joint has been employed and that the neck extending out from the bowl was weak and extremely liable to fracture, while in case of such accident the entire bowl was rendered useless. Such fracture usually occurred while connecting the pipes to the bowl, on account of the rigid elbow-joint employed, or subsequent thereto, on account of transverse strain brought upon the joint because of imperfect work, or from other causes—such as settling of the building—in which case, as the neck of the bowl was weak or the metal tubing or the elbow connecting it thereto, it generally broke under the strain. By my invention I provide a joint by which this difficulty is entirely overcome.

It consists, generally stated, in the combination, with the water-closet or like bowl, of a connecting-elbow, of rubber or like flexible water-tight material, molded to shape and having at one end a flange integral with the body and extending up at right angles therefrom, and at the other end an enlargement of greater diameter than the body of the elbow at the base of the flange.

To enable others skilled in the art to make and use my invention, I will describe the same more fully, referring to the accompanying drawings, in which—

Figure 1 is a sectional view of a water-closet bowl having my invention applied thereto. Fig. 2 is a perspective view of the flexible water-tight elbow. Fig. 3 is a like view of the thimble employed with the elbow, and Figs. 4 and 5 are sectional views of other forms embodying my invention.

Like letters of reference indicate like parts in each.

The elbow *a* is made of flexible water-tight material—such as india-rubber—and of sufficient strength and thickness to sustain the internal pressure to which it may be subjected, that pressure being low in the ordinary closet, as the pipe has a free discharge, and the fall from an ordinary tank is seldom over ten feet. The elbow is cast in a mold of suitable shape, according to the bend, size, and thickness desired. It is principally employed in the supply-pipe, which leads down from the tank, turns to one side, and opens into the closet-bowl. The elbow has the annular flanges *b*, formed integral therewith at the ends thereof, these flanges extending out at right angles from the body of the elbow and forming washers, and forming tight joints when pressed against the parts connected by the elbow, and at the same time acting as faces against which the swivel-nuts or other connecting devices may press.

In employing the flexible elbow it may be connected to the bowl and pipe in any suitable way, those shown being well adapted for the purpose.

In Fig. 1 the horn *c* of the water-closet bowl *a* has at the end thereof sectional flanges or lips *e*, with which lugs *f'* on the nipple *f* engage, and a tight joint is formed with this neck by means of the washer *g* and the nut *g'* screwing onto the nipple. Fitting around the flexible elbow *a* is the short thimble *h*, which has the annular flange *h'* fitting against the flange *b* of the coupling, and fitting around the coupling is the swivel-nut *k*, its inwardly-projecting lip *k'* fitting against the flange *h'* of the nipple, and the nut screwing onto the nipple *f* and pressing the flange or washer *b* of the flexible elbow against the end of the nipple, so forming a tight joint. The other end of the elbow is shown as connected to the nipple *l* in the same manner, this nipple being secured to the vertical pipe by soldering or in other suitable way. The flanges of the flexible elbow may of course be connected up and compressed against the bowl, tube, or nipple by any suitable confining device.

In Fig. 4 the same flexible elbow is shown as connected to the horn *c* of the bowl by clamps, one clamp *t* fitting around the head

c' of the horn and one clamp t' fitting against the flange b of the flexible elbow, and the two clamps compressing the flange b against the end of the horn. By this form of rubber elbow having the two flanges—one at each end—extending out therefrom I am enabled to make joints both with the supply-pipe and with the bowl in which the flange acts as a washer against which the connecting mechanism may press, so reducing the number of joints, while the swivel-nuts or like parts for connecting up the rubber elbow can be passed over the flanges of the same by compressing the elbow and inserting it through such swivel-nuts.

In Fig. 5 I have shown the rubber elbow as connected without the employment of the nipple or clamps, the elbow having at one end the flange b and having at the other end the enlargement n thereon, corresponding in shape to the head e' of the horn of the bowl, but of smaller diameter, and to secure it in place, the enlargement being expanded over the horn, as shown, this being rendered possible by the elasticity of the rubber composing the elbow, which then contracts and binds upon the horn of the bowl. The joint formed is sufficiently tight to withstand the pressure to which such joints are subjected. It will be seen that this enlargement n is of greater diameter than the body of the elbow, so that in order to place the swivel-nut or like part for connecting the rubber elbow around the same the elbow must be compressed and inserted through the swivel-nut. I am thus enabled to connect the bowl and the supply or other pipe by means of an elbow-joint which is flexible, and so relieves the bowl or or other earthenware articles of all such strains from the pipe-connections as might cause the fracture thereof either during setting up or when in use, overcoming entirely the objection before referred to in this regard.

The flexible elbow is cheap and easily applied, and when in use the flanges by acting as washers reduce the number of joints liable to leakage. The rubber joint, having the flanges formed integral therewith, can also be used to advantage in making other connections.

What I claim as my invention, and desire to secure by Letters Patent, is—

In combination with a closet or like bowl, a connecting-elbow of rubber or like flexible water-tight material, molded to shape and having a flange at one end integral with the body and extending out at right angles therefrom, and having an enlargement at the other end of greater diameter than the body of the elbow at the base of the flange, substantially as and for the purposes set forth.

In testimony whereof I, the said JAMES J. RICKETTS, have hereunto set my hand.

JAMES J. RICKETTS.

Witnesses:

J. N. COOKE,

ROBT. D. TOTTEN.