

(No Model.)

2 Sheets—Sheet 1.

E. L. DAVIS.
WATER CLOSET JOINT.

No. 571,471.

Patented Nov. 17, 1896.

Fig. 1.

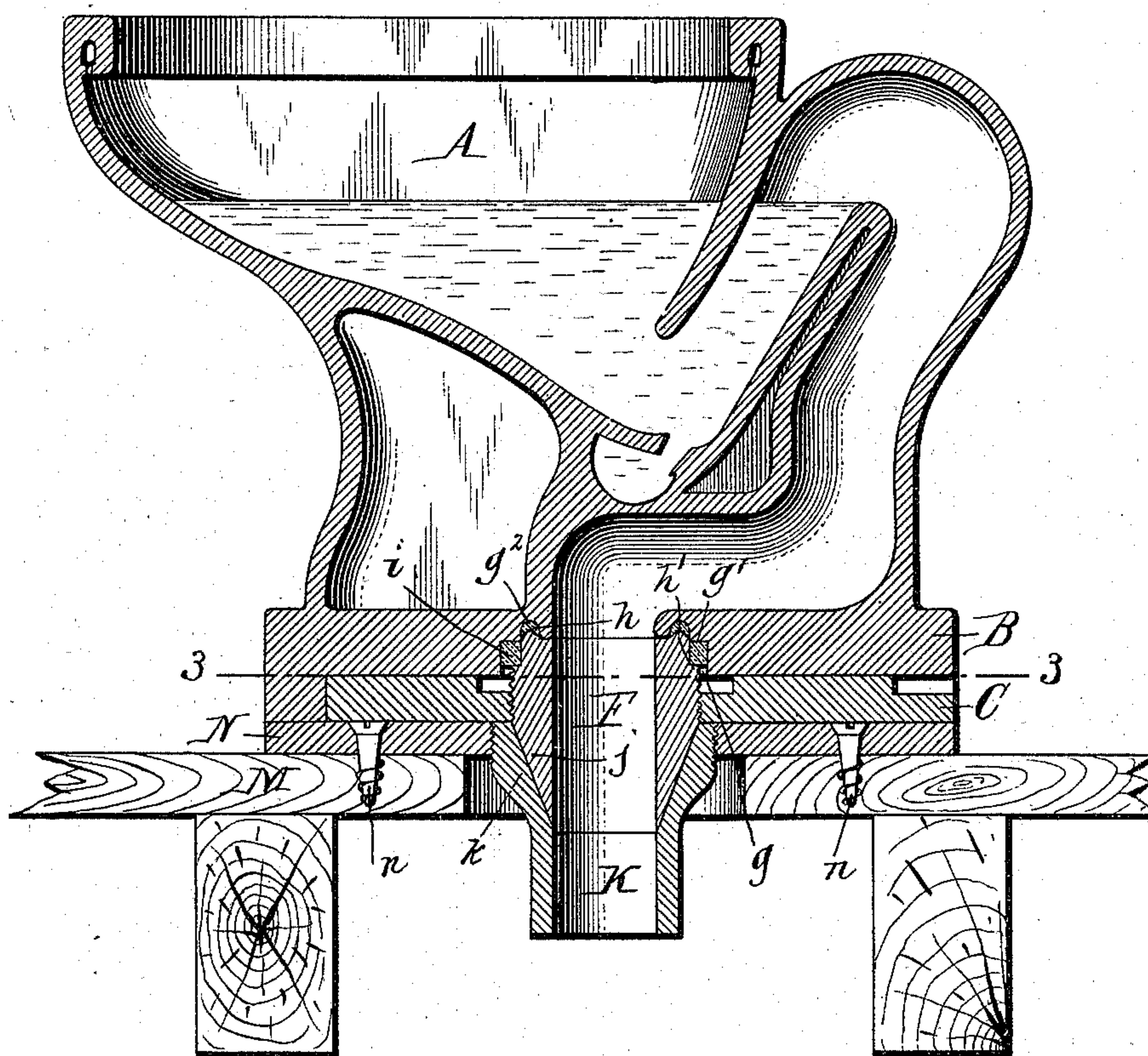
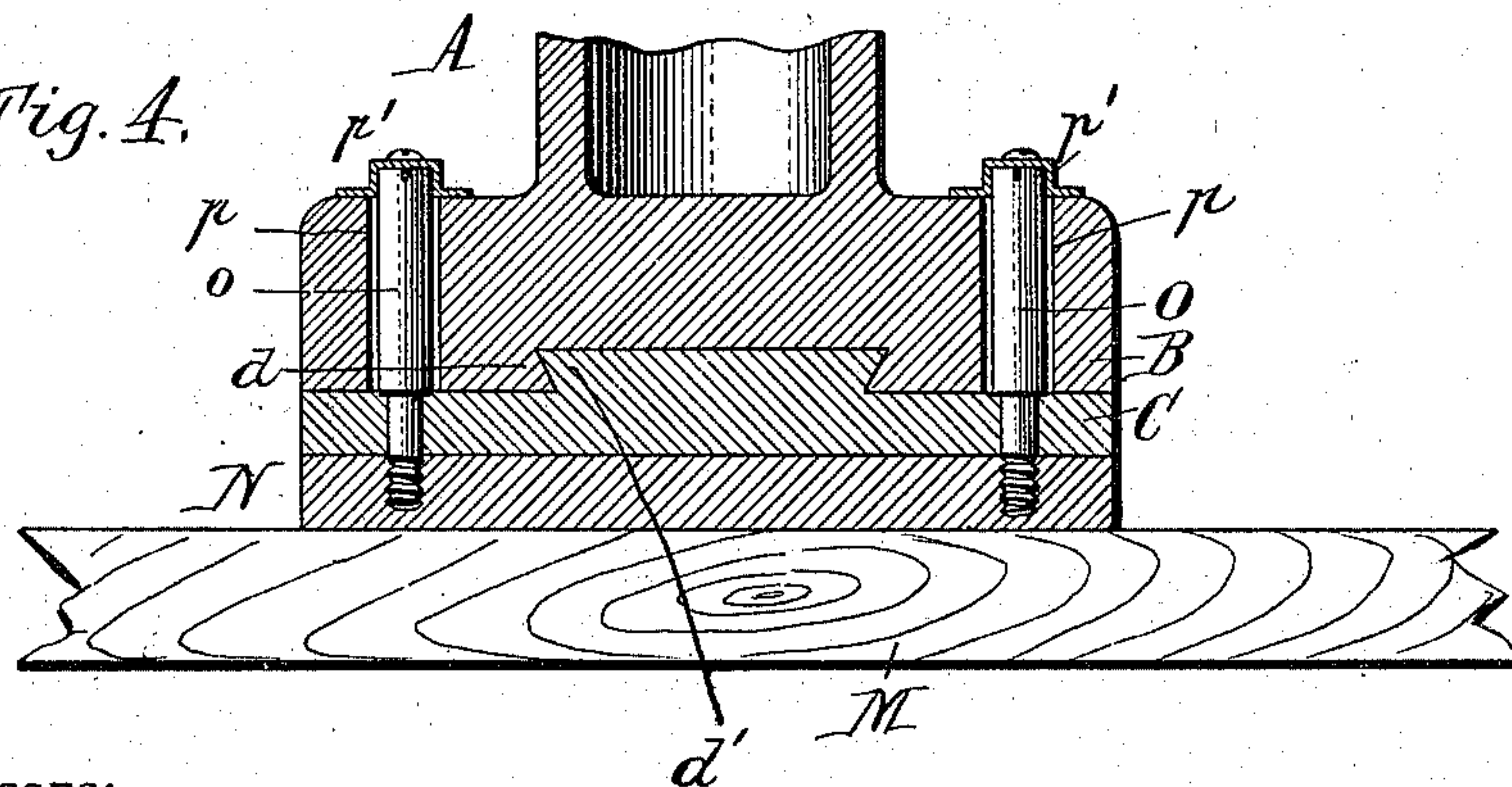


Fig. 2.



WITNESSES:

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E. L. Davis INVENTOR.
By Wilhelm D. Bomer. ATTORNEYS.

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Fig. 2.

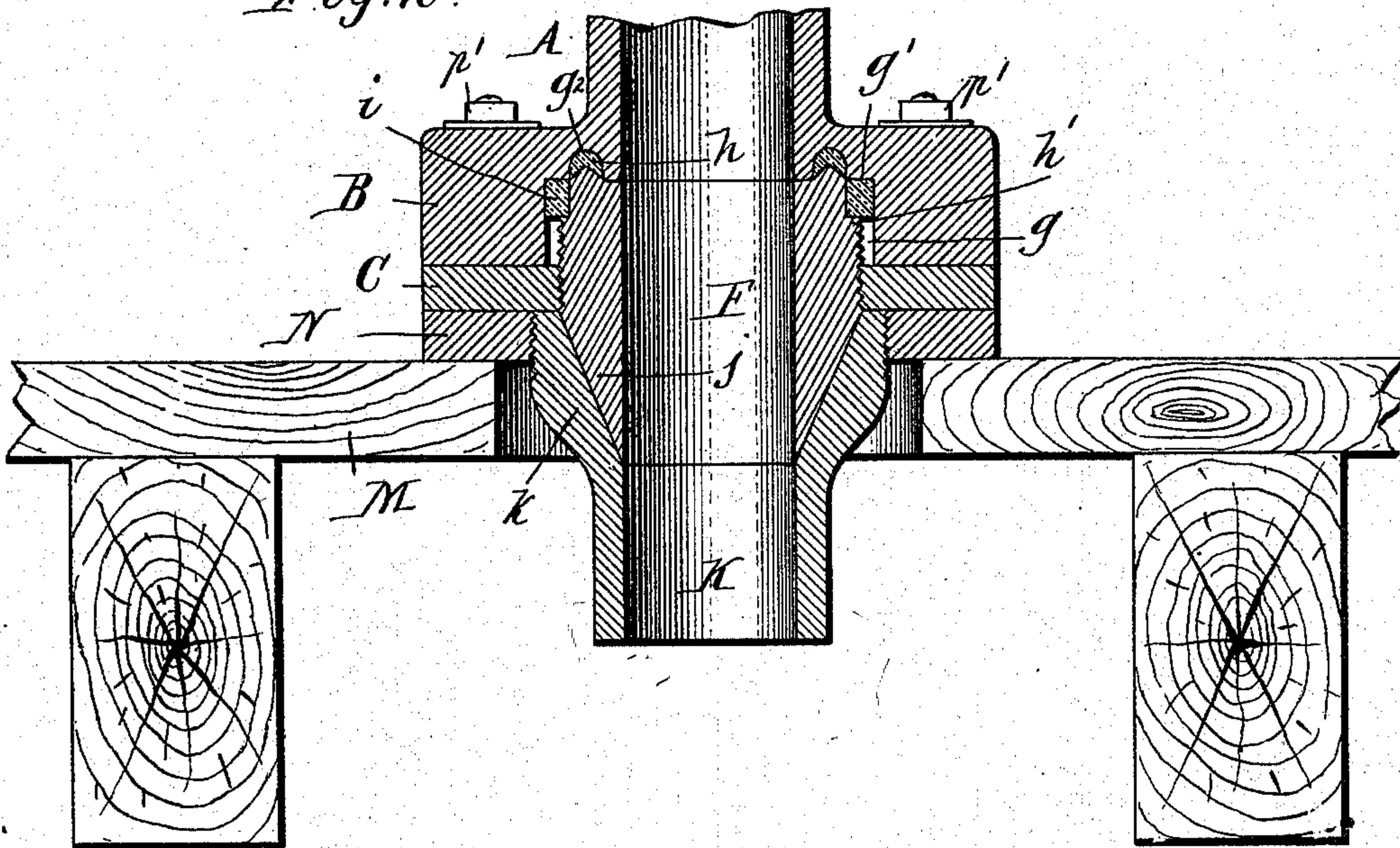
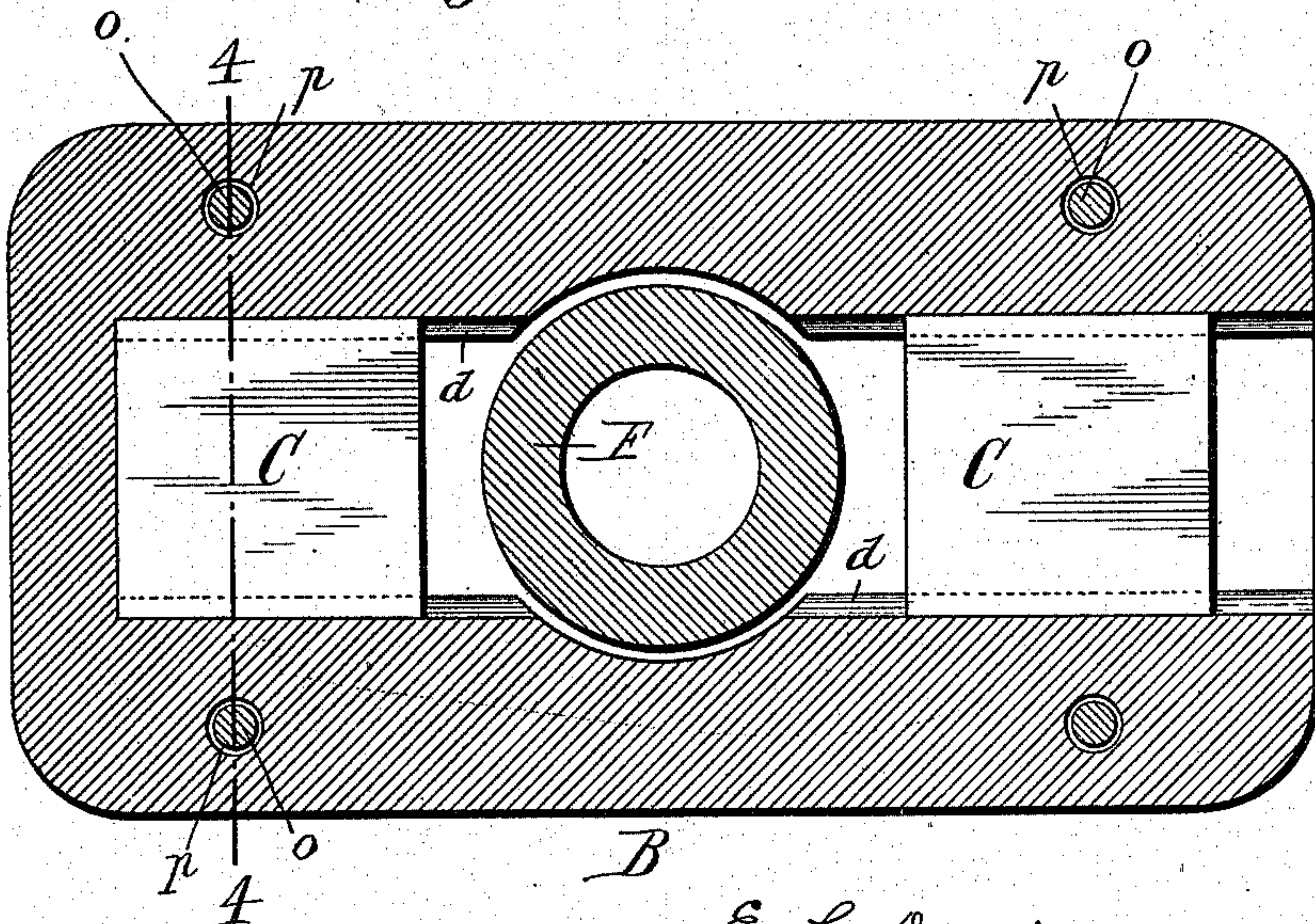


Fig. 3.



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UNITED STATES PATENT OFFICE.

EDWARD L. DAVIS, OF BUFFALO, NEW YORK.

WATER-CLOSET JOINT.

SPECIFICATION forming part of Letters Patent No. 571,471, dated November 17, 1896.

Application filed November 22, 1895. Serial No. 569,757. (No model.)

To all whom it may concern:

Be it known that I, EDWARD L. DAVIS, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented new and useful Improvements in Water-Closet Joints, of which the following is a specification.

This invention relates to the joint which connects the water-closet bowl with the trap or the soil-pipe, and more particularly to a joint designed for use in connection with earthenware closet-bowls, although the same is also applicable to closets having metallic bowls.

The object of my invention is to provide a strong and reliable joint of this kind which effectually prevents the escape of sewer-gas and which is not liable to be broken or otherwise rendered imperfect by the settling of the floor, the joists, or the soil or vent pipes.

In the accompanying drawings, consisting of two sheets, Figure 1 is a vertical section of a water-closet provided with my improved joint. Fig. 2 is a fragmentary vertical section at right angles to Fig. 1, on an enlarged scale. Fig. 3 is a horizontal section in line 3 3, Fig. 1, on an enlarged scale. Fig. 4 is a transverse vertical section in line 4 4, Fig. 3.

Like letters of reference refer to like parts in the several figures.

A is a water-closet bowl of any ordinary construction, and B is the base-flange thereof, which is preferably oblong in form.

C is a metallic base-plate, for instance, of brass, which is secured to the under side of the base-flange of the bowl and preferably constructed of the same form and dimensions as the base-flange, as shown. This base-plate may be secured to the bowl-flange by any suitable means, but it is preferably connected therewith by a dovetail groove or recess *d*, formed lengthwise in the under side of the bowl-flange, and corresponding tenons *d'*, arranged on the upper side of the metallic base-plate C and engaging in said groove, as shown in Figs. 3 and 4.

F is a depending nipple or short tube arranged on the base-plate C in line with the outlet of the bowl and preferably made vertically movable in the plate by means of an external screw-thread formed on the nipple and engaging with an internally-threaded

opening of the plate, as shown. The portion of the nipple which extends above the base-plate C is arranged in an annular recess *g*, 55 formed in the wall of the bowl-outlet and extending upwardly from the under side of the bowl-flange. The shoulder *g'*, formed by the inner end of the recess *g*, is provided opposite the upper end of the nipple F with an annular groove *g*², in which is seated a packing or gasket *h*, preferably of rubber. The gasket is clamped in this groove by the nipple F, the upper end of the latter being preferably sharp or V-shaped in cross-section, as 60 shown in Figs. 1 and 2, so as to pinch or indent the rubber gasket and spread the same into tight contact with the sides of its seat, thereby forming a gas-tight joint at this point. If desired, a packing or gasket *i* may also be 65 interposed between the upper portion of the nipple and the surrounding wall of the recess *g*, the nipple being provided with an annular shoulder *h'*, which bears against the lower edge of the gasket, so that upon screwing the 70 nipple upward in the base-plate said gasket is compressed, forming a tight joint between the nipple and the bowl.

Lengthwise displacement of the metallic base-plate on the flange of the water-closet 80 bowl is prevented by the portion of the nipple extending upwardly into the recess of said flange. The nipple extends below the base-plate, and this projecting portion is provided with a conical or tapering outer surface *j*, which fits snugly into a correspondingly-shaped seat or socket *k*, formed in the upper end of a short tube K, extending through the floor M of the bath-room or other apartment. This tube depends from a floor-plate 85 or flange N, preferably of brass, which is secured to the upper side of the floor by screws *n* or other fastenings. The tube K may be formed in one piece with the floor-plate, but is preferably separate therefrom and secured 90 in a central opening of said plate by a screw-threaded joint, as shown in the drawings.

The base-plate C of the bowl and the floor-plate are firmly secured together by screws or bolts *o*, which pass through openings formed 100 on the margins of these parts. The upper portions of these bolts are preferably arranged in openings *p*, formed in the base-flange of the bowl, and their heads are covered by caps

p' , which exclude dust from these openings. These bolts simply project into the openings p and do not bear against or upon the base-flange of the bowl.

5 Upon tightening the screws o the tapering nipple carried by the metallic base-plate of the bowl is forced into the conical seat of the tube carried by the floor-plate, thereby firmly wedging the parts of the joint together and
10 forming a reliable joint which effectually prevents the escape of sewer-gas. The contiguous tapering surfaces of the nipple F and the tube K are ground or turned smooth, so as to form a perfect fit and are made of such
15 relative sizes that they are tightly connected when the base-plate bears upon the floor-plate.

The soil-pipe, which is not shown in the drawings, may be connected with the short pipe K by any suitable or well-known joint.

20 As the two plates which carry the tapering members of the joint are rigid and tightly secured together, they are compelled to move together in case the floor or the pipes connected therewith should settle, thus preserving the joint intact under all conditions, and
25 as the fastening-bolts o do not clamp the flange of the earthenware bowl, the bowl is wholly relieved from strain and all danger of breaking the same is obviated.

30 In assembling the parts the floor-plate with the tube K is first secured to the floor, and the metallic base-plate C is then attached to the bowl-flange by sliding its tenons into the dovetail groove of the flange, the bowl being
35 placed in an inverted position for this purpose. The gaskets h and i are then put in place and the screw-threaded nipple F is screwed into the opening of the base-plate and clamped against the gaskets. The base-
40 plate is then placed upon the floor-plate, so as to fit the tapering nipple into the tapering seat of the tube K , and the metallic base-plate of the bowl is then secured to the floor-plate by the screws or bolts o .

45 It is obvious that my improved joint is also applicable to washbasins, bath-tubs, urinals, and sinks.

If desired, any suitable composition packing may be substituted for the rubber gaskets
50 h and i .

I claim as my invention—

1. The combination with a stationary bowl having a fixed tapering nipple communicating with the outlet of the bowl, of a plate or
55 flange adapted to be secured to the floor and having a stationary tube or conduit provided with a tapering seat which receives said nipple, and fastening-bolts arranged parallel with said nipple, whereby the nipple is drawn

into its seat in the floor-plate upon tightening said bolts, substantially as set forth. 60

2. The combination with a water-closet bowl having a base-flange, of a separate base-plate secured to said base-flange and having a depending nipple communicating with the out- 65
let of the bowl, a plate or flange adapted to be secured to the floor and having a tube or conduit which receives said nipple and fastenings connecting said base-plate with said floor-plate, substantially as set forth. 70

3. The combination with a water-closet bowl having a base-flange provided with a dovetail groove or recess, of a separate base-plate provided with a dovetail tenon engaging in said groove and a depending nipple communicat- 75
ing with the outlet of the bowl, a floor plate or flange having a tube or conduit which receives said nipple, and fastenings connecting said base and floor plates, substantially as set forth. 80

4. The combination with a water-closet bowl having a base-flange provided with a dovetail groove or recess of a separate base-flange having a dovetail tenon engaging in said groove, a nipple or short tube removably secured in 85
said base-plate and extending upwardly into the base-flange of the bowl, whereby the nipple prevents longitudinal displacement of the base-plate on the bowl-flange, and a floor plate or flange having a tube or conduit which receives said nipple, substantially as set forth. 90

5. The combination with a water-closet bowl having an outlet-opening at its lower end and a recess formed in the wall of said opening, of a base-plate secured to the base-flange of 95
the bowl, a vertically-movable nipple arranged in said base-plate and extending into the recess of said outlet-opening, and a packing interposed between said nipple and the opposing wall of said recess, substantially as set forth. 100

6. The combination with a water-closet bowl having an outlet-opening and a recess arranged in the wall of said opening and forming a shoulder, of a base-plate secured to the 105
base-flange of the bowl and having a screw-threaded opening, an externally screw-threaded nipple engaging with said opening and extending into the recess of the bowl-flange, and a packing-gasket interposed between said shoulder and the upper end of said nipple, substantially as set forth. 110

Witness my hand this 9th day of November, 1895.

EDWARD L. DAVIS.

Witnesses:

CARL F. GEYER,
THEO. L. POPP.