

No. 608,174.

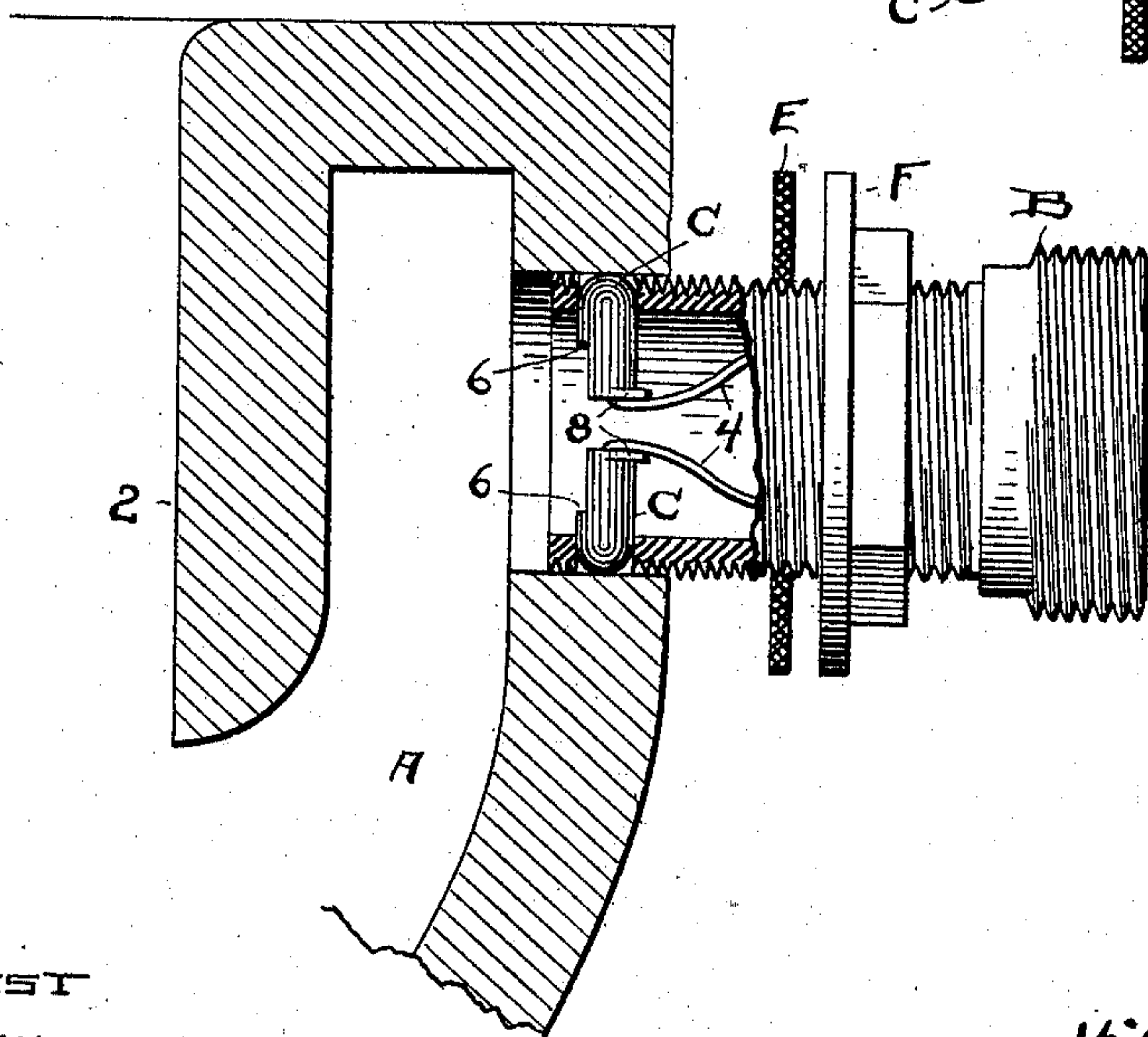
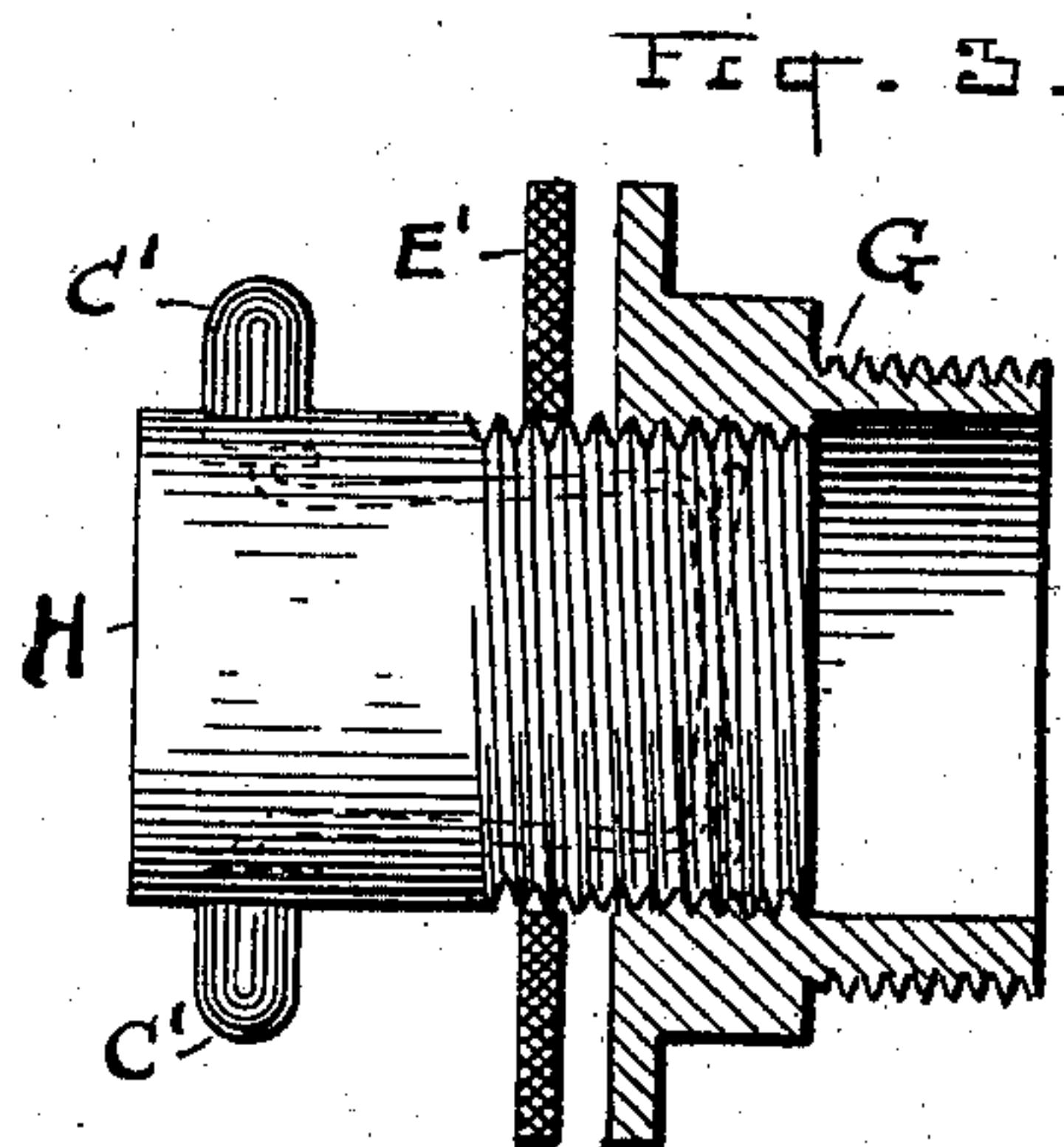
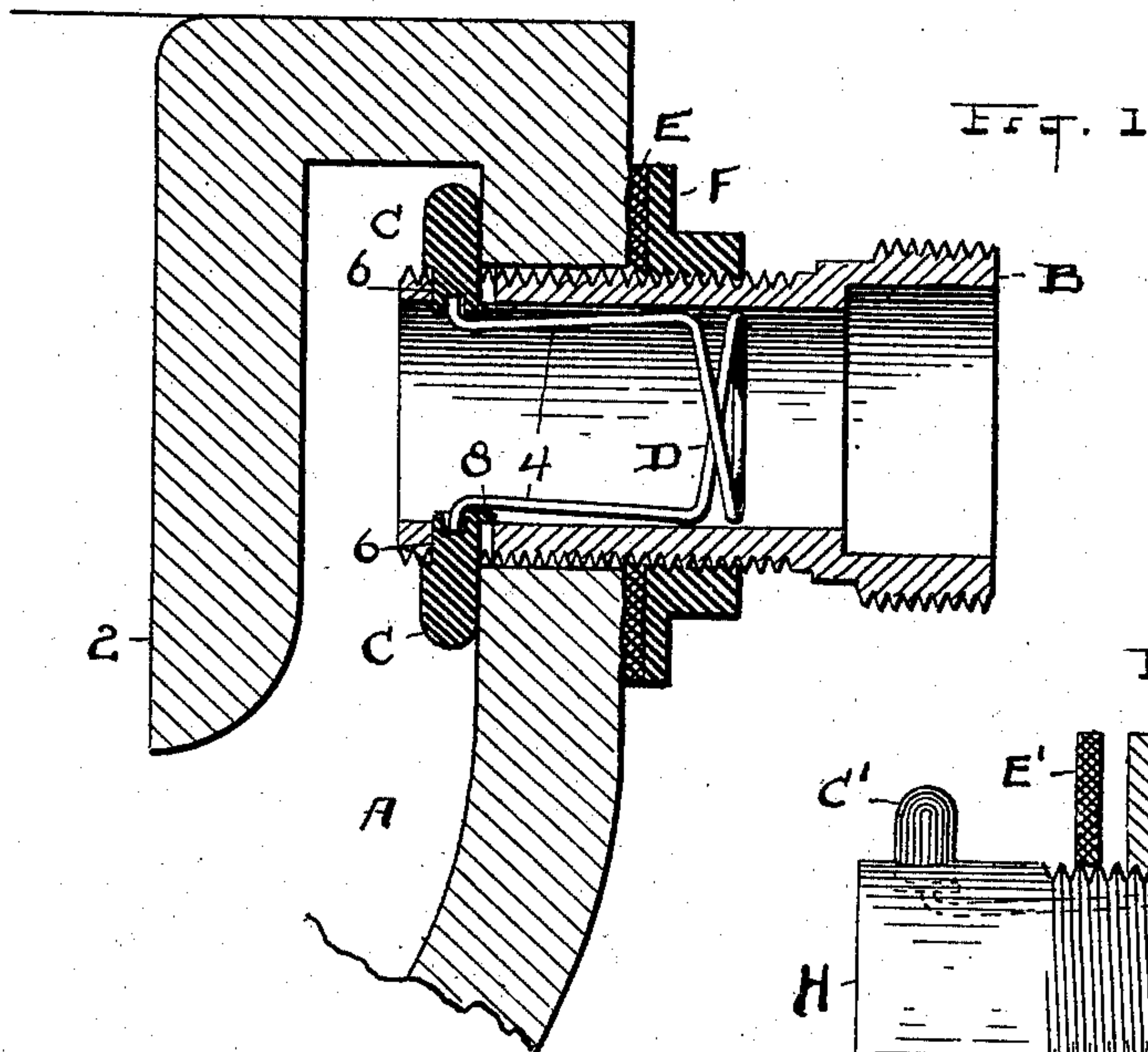
Patented Aug. 2, 1898.

W. E. BYRNES.

REPAIR CONNECTION FOR WATER CLOSET BOWLS.

(Application filed Nov. 9, 1897.)

(No Model.)



ATTEST
R. B. Moore
H. C. Hendon

INVENTOR
William E. Byrnes

By H. F. Fisher ATTORNEY

UNITED STATES PATENT OFFICE.

WILLIAM E. BYRNES, OF CLEVELAND, OHIO.

REPAIR CONNECTION FOR WATER-CLOSET BOWLS.

SPECIFICATION forming part of Letters Patent No. 608,174, dated August 2, 1898.

Application filed November 9, 1897. Serial No. 657,936. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM E. BYRNES, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Repair Connections for Water-Closet Bowls; and I do declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to repair connections for water-closet bowls.

It is now generally known to plumbers, as well as to all who handle water-closet appliances, that it is a very common occurrence for the horns of closet-bowls to get cracked, so that they will leak, or to be entirely broken off after having been coupled up in use. This is liable to occur from any one of many causes, and so delicately are these horns generally secured to the bowl that a crack or a break will appear when no cause whatever can be discovered or known. When such injury does occur, the broken horn necessarily is removed and connection is made through the broken opening with the interior of the bowl. I am of course aware that I am not the first to discover the need of means to make repairs of this kind nor the first to endeavor to supply convenient devices for this purpose; but I am not aware that the construction and combination of parts constituting my invention have ever before been known or used, and so far as I am aware they are entirely novel and original with me.

Referring to the accompanying drawings, Figure 1 is a sectional elevation of the invention shown in operative connection with a section or fragment of a water-closet bowl. Fig. 2 is an elevation of the invention, partly in section, and shown as it appears when being entered into the bowl. Fig. 3 is an elevation, partly in section, of a modification of the invention, as hereinafter fully described.

A represents a section of a water-closet bowl, which may have the form substantially as here shown or any other common form, my improved attachment being adaptable to bowls generally as they are found in use.

B is a coupling adapted to connect at its outer end with a rubber elbow or any other

suitable connection and provided with an exteriorly-threaded neck of a length sufficient to enter the bowl and make engagement with bowls as they may be found and to discharge the water inside, where it was discharged by the horn before breakage occurred.

Now in order that the coupling thus constructed may be secured in the bowl and made water-tight therein, and particularly in bowls having the guard or apron 2 inside over the entrance, as here shown, it is necessary that some sort of mechanism be employed to automatically engage against the inside of the bowl and serve as an anchor when the coupling has been introduced, because it is impracticable to engage or lock said coupling inside in any other way. Hence I provide the coupling with oppositely-projecting locking-bolts C, which are inserted in holes in the extremity of the coupling and are engaged and held by the spring-arms 4 of the wire spring D inserted in the coupling. This spring is bent to form one or more circles to lie closely against the inside of the coupling, and from this circle the arms 4 project along the side of the coupling to the bolts C, where they are shown as bent at right angles to connect with and actuate and sustain said bolts.

When the bolts are to be inserted and engaged, they proceed as seen in Fig. 2, where they are forced inward against the spring, but are in position to be thrown out and engage against the inside of the bowl the instant the wall is passed and the opening is reached. Then they are supported to be in permanent locking position, and in order to make the coupling tight and complete I employ a packing-ring E, which comes against the outside of the bowl about the coupling B, and a lock-nut F to bear against said packing. This makes an effective and simple connection which can be quickly applied and will need no further attention or repairs.

In order that the bolt C shall be kept out in locking position under all circumstances, I have provided them each with a shoulder 6, which engages on the outside of the coupling and prevents their being drawn or forced inward.

In Fig. 3 I show a modification of the invention in which the coupling member G is supplemented by a member H, threaded into

the said member G and serving the same purpose as the neck of the coupling in Figs. 1 and 2. Bolts C', the same as those used in the other forms of the invention, are used
5 here and the same internal spring. (Shown in dotted lines.) In this case the coupling consists of the parts G and H combined, and the part G serves also as a nut which can be tightened up against the packing-ring E', the
10 same as in Fig. 1.

It will be noticed that each of the bolts C has a flange or projection 8 on its inner end, which prevents its dropping or being forced out through the coupling, and the notch 6
15 keeps it from being drawn or forced inward. Hence when said bolts have been thrown out for service they will remain there by reason of their own construction and the spring D can be withdrawn, thus removing all obstruction within the coupling.
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What I claim as new, and desire to secure by Letters Patent, is—

1. A repair connection for water-closet bowls, comprising a coupling to extend
25 through the wall of the bowl, in combination with bolts through the inner end of said coupling to engage against the inside of the bowl and prevent the withdrawal of the coupling, and spring mechanism in said coupling to
30 force said bolts into engaging position, said spring mechanism being removable to leave an unobstructed waterway through said coupling, substantially as described.

2. In repair connections for water-closet
35 bowls, a coupling to enter the bowl, bolts having their axes at right angles to the coupling

and engaged through the same within the wall of the bowl, and a spring to press said bolts to locking position, said bolts having stops to prevent their return when the spring
40 is withdrawn, substantially as described.

3. The connection substantially as described, consisting of an exteriorly-threaded coupling having holes through its inner ends and a nut and packing to bear against the
45 outside of the bowl, in combination with locking-bolts through said holes in the coupling to bear against the inside of the bowl, said bolts each having a projection to engage on each side of the coupling and hold the bolt
50 in locking position.

4. A coupling for water-closet bowls, in combination with straight locking-bolts set at right angles through the inner end of said coupling, and a detachable and removable
55 spring in the coupling having arms bearing against the ends of said bolts to pass them into engaging position, substantially as described.

5. The coupling and the bolts through the
60 inner end thereof having shoulders to prevent their withdrawal from the coupling, and lateral projections on their inner ends to prevent them from passing through the coupling when pressed to engaging position, substan-
65 tially as described.

Witness my hand to the foregoing specification this 29th day of October, 1897.

WILLIAM E. BYRNES.

Witnesses:

R. B. MOSER,

H. T. FISHER.