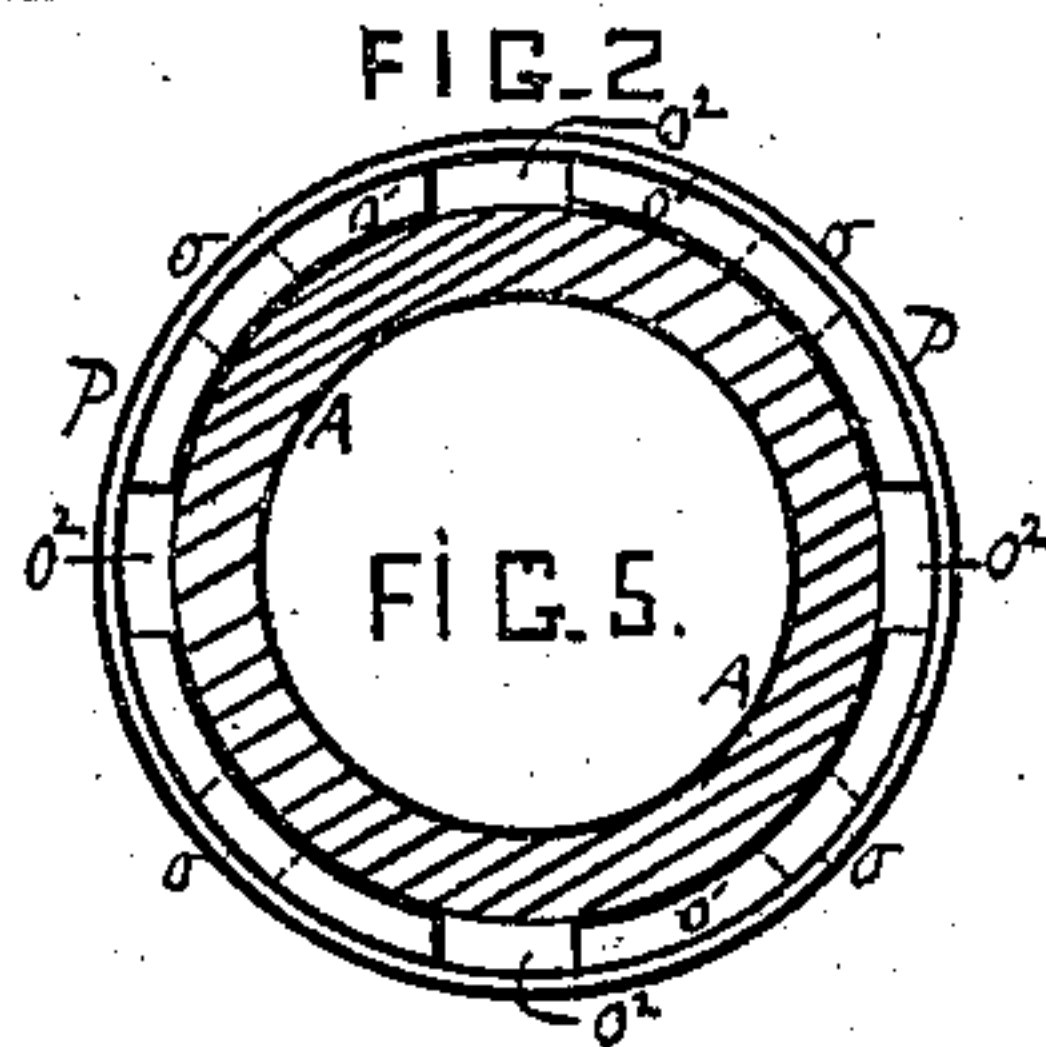
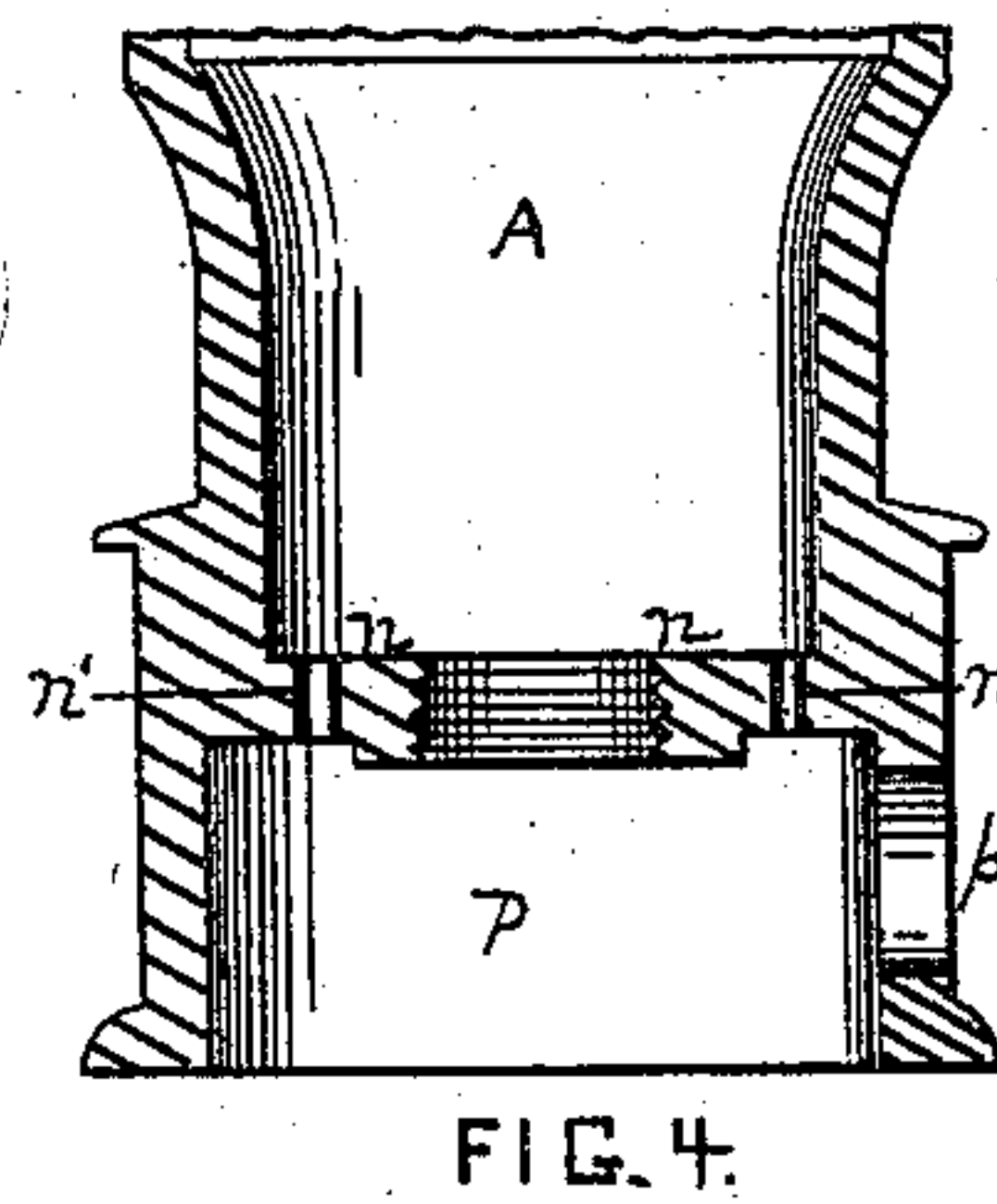
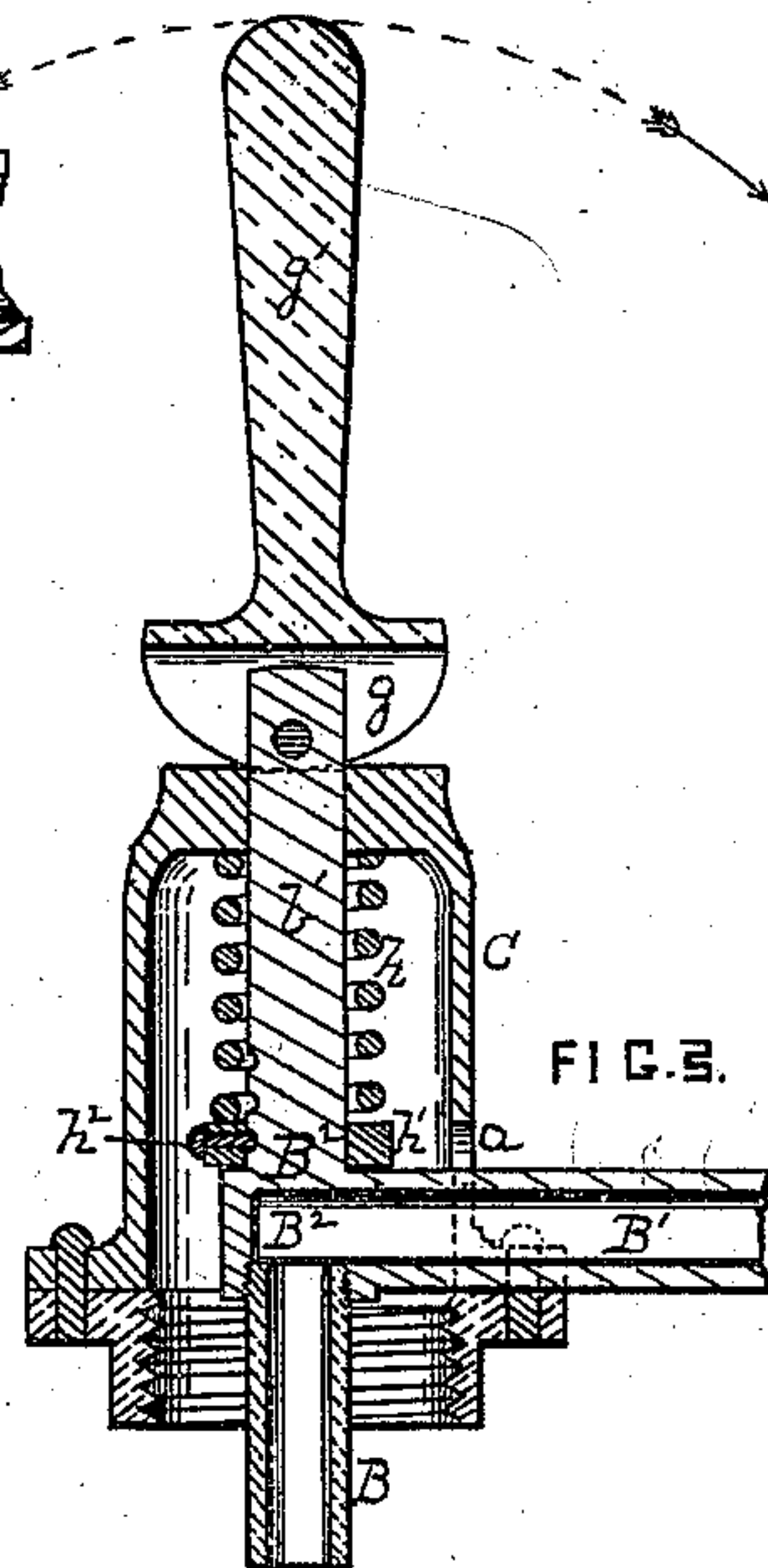
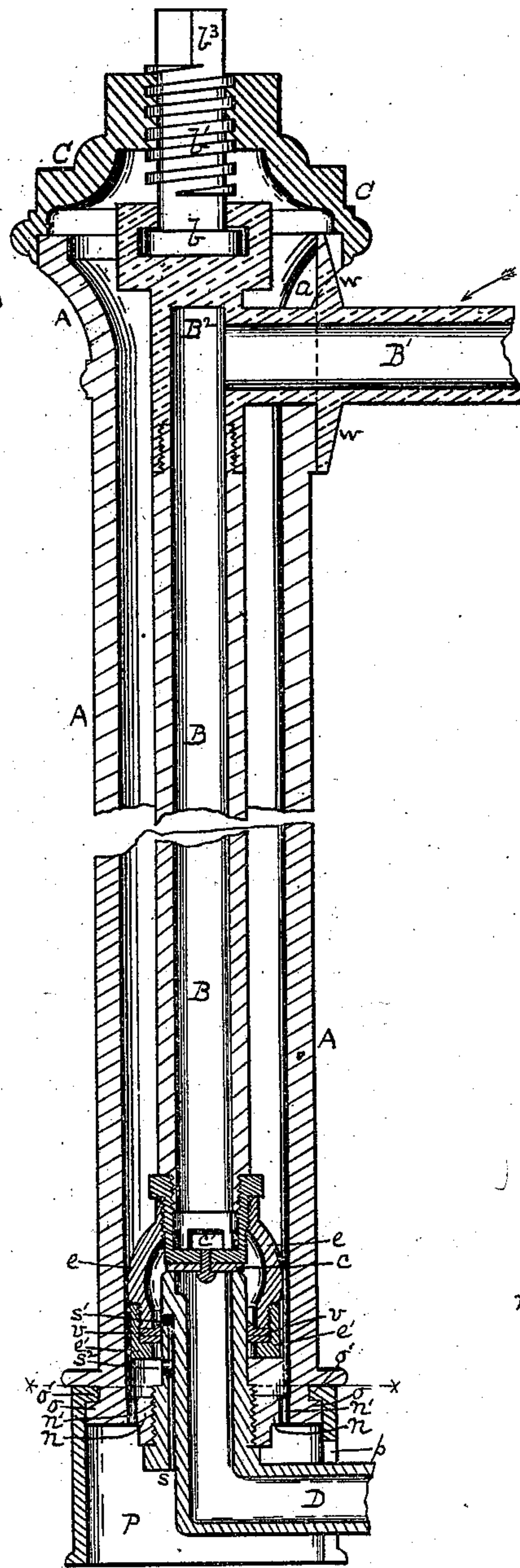
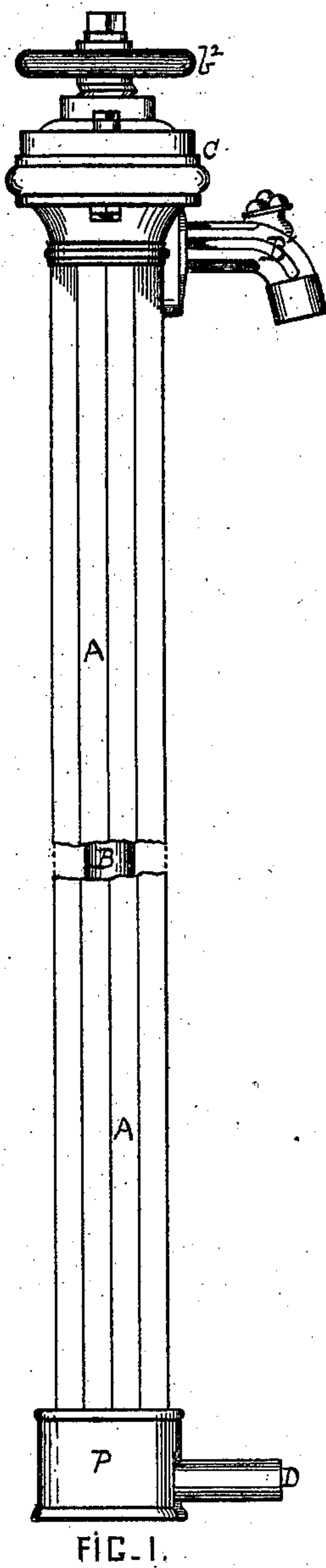


G. C. BAILEY.

HYDRANT.

No. 174,181.

Patented Feb. 29, 1876.



WITNESSES.
Claudius L. Parker
J. E. Boggs

INVENTOR.
George C. Bailey,
by George N. Christy
his Atty.

UNITED STATES PATENT OFFICE.

GEORGE C. BAILEY, OF PITTSBURG, PENNSYLVANIA.

IMPROVEMENT IN HYDRANTS.

Specification forming part of Letters Patent No. 174,181, dated February 29, 1876; application filed August 26, 1875.

To all whom it may concern:

Be it known that I, GEORGE C. BAILEY, of Pittsburg, county of Allegheny, State of Pennsylvania, have invented or discovered a new and useful Improvement in Hydrants; and I do hereby declare the following to be a full, clear, concise, and exact description thereof, reference being had to the accompanying drawing making a part of this specification, in which—like letters indicating like parts—

Figure 1 is an outside elevation of my improved hydrant. Fig. 2 is a vertical sectional view thereof, somewhat enlarged. Fig. 3 shows an improvement in the devices for operating the moving water-way. Fig. 4 shows a water-waste box, cast in one piece with the hydrant-case; and Fig. 5 is a sectional view through $x x$, of Fig. 2, but showing only the hydrant-case and waste-box.

My invention relates to certain improvements in the manufacture of hydrants, street-washers, &c., whereby the construction is cheapened and facilitated and the operation simplified and improved; and the nature of it consists in the features of construction and combination hereinafter described and claimed.

The hydrant-case A is, except as hereinafter specified, of the ordinary or any known construction, as also the tubular pipe B, which constitutes a part of the moving water-way and the supply-pipe D. At the upper end of the case A I make a slot, a , extending down the desired distance for allowing the spout B' to have the length of vertical motion required, or, as indicated at a in Fig. 3, this slot may be made in the lower end of the cap C. It is only important that it be made at the transverse joint of the cap and case, or at the extremity of one, or at a transverse joint in one or the other, though obviously such slot may be made partly in one and partly in the other. One object in making this slot with an open end is, that I may be the better enabled to introduce or insert the spout B', which, with the flange w , I cast in one piece with the head B², by which construction I save the expense of a lock-nut and of forming any threads on the spout and head, except the connection for the pipe B; and I also prevent the removal of the spout from the hydrant unless the hydrant-top be first removed. The head-piece B², at

its lower end, connects with the pipe B, and at its upper end provision is made for the raising and depressing of the moving water-way and valve. For this latter purpose the ordinary swiveled head and socket b may be employed, with a screw-stem, b^1 , playing through a tapped hole in the cap C, and turned by a hand-wheel, b^2 , as in Fig. 1, or a wrench applied to the square head b^3 , as in Fig. 2, or on other suitable known way; but for this purpose I prefer to employ the devices shown in Fig. 3, where the head B² is made rigid with the spout B' and stem b^1 . To the upper end of this stem b^1 , above the cap C, I pivot or hinge an eccentric or cam head, g , the periphery of which, as it is shifted to one side by the arm g' , will bear on top of the cap, and, acting on the principle of a bent lever or bell-crank, (which are mechanical equivalents thereof,) will impart an upward movement to the moving water-way and valve, so as to open or otherwise operate the latter. The reverse stroke may be effected by means of a spiral spring, h , arranged on the stem b^1 , bearing at one end against the cap or spout, and at the other end against a collar, h^1 , adjustable up and down on the stem by means of a set-screw, h^2 , whereby the elastic force of the spring may be regulated according to the resistance encountered in the reverse or closing motion of the valve. The lower end of the hydrant-case A is made with a transverse diaphragm, n , cast therewith, but with a central tapped hole for the insertion of the supply-pipe D, and one or more waste-holes, n' , for the escape of any water which may waste into or otherwise enter the case A above such diaphragm. As illustrated in Figs. 2 and 5, a water-waste box or chamber, P, open at its lower end, and, with a lateral slot, p , for the insertion of the supply-pipe D, is attached to the lower end of the case A by means of radial lugs o on the lower end of the case, and inwardly-projecting ribs or flanges o^1 on the box, the lugs o passing down the spaces o^2 between the ends of the flanges o^1 and the box P then being partially rotated, so that the lugs o shall pass under the flanges. With this construction the box P is rotated continuously along with the supply-pipe D, as the latter is screwed into the diaphragm n , but I have found it, in some respects, a preferable con-

struction to cast the box P along with the case A, as illustrated in Fig. 4, but when such construction is adopted the supply-pipe D must be inserted in two parts—first, the vertical part must be screwed into the diaphragm *n*, and then the horizontal part inserted through the lateral hole *p'*, and united to the lower end of the vertical part by an ordinary screw. The upper end of the supply-pipe D constitutes the valve-seat for the valve *c*, which latter is attached to the lower end of the pipe B, but with the usual ports *c'* for the in and up flow of water. In the side of the vertical part of the supply-pipe D I make a waste-port, *s*, which, preferably, has three openings, one below the diaphragm *n* in the box P, and two, *s*¹ *s*², above such diaphragm. An open-mouthed sleeve, *e*, is screwed onto the moving water-way above the ports *c'*, and its lower open end comes down around the supply-pipe D. By means of an inwardly-flanged screw-ring, *e'*, which screws onto the outside of the lower open end of the sleeve *e*, I attach a cup leather or piston packing, *v*, packed to fit the supply-pipe D, and packed as against a water-pressure acting from above. These parts are so proportioned and arranged, as shown in Fig. 2, as that, when the valve *c* is seated and the supply cut off or closed, the packing *v* will come between the ports *s*¹ and *s*², so that the water in the pipe B will waste away through the ports *c'* and *s*¹, either through *s* into the box P, or, if by accident or design that escape should be closed, through *s*² and *n'*, or if the ports *n'* should be closed any waste or surplus water above the diaphragm could escape through *s*² and *s*, and as the valve *c* is raised for opening the supply the packing *v* is raised to cover or cut off the waste-port *s*¹. It will be observed that the sleeve *e* gives an annular space, as shown, around the valve-seat for the water to flow up and down through the ports, as described.

My object in screwing the flanged ring *e'* onto the outside of the head *e* instead of the inside, as has heretofore been done, is that I

am thereby enabled to make the head so much the shorter, thereby saving material and making the device more compact and less cumbersome. Also, in fitting up this part of the devices the packing-rings *v* are pressed to shape and inserted in the cup-shaped cavity of the screw-ring *e'*, so that in case of inspection or repairs they are removable with the screw-ring, and, being thereby more accessible, can be more readily examined and repaired or renewed than if inserted in way formerly practiced.

No claim is made herein to a moving water-way and spout made in one piece, nor to the devices for raising and lowering the moving water-way shown in Figs. 1 and 2.

I claim herein as my invention—

1. The stem *b*¹, connecting with the head *B*², projecting vertically through the head of the hydrant-case, in combination with a spring and collar arranged thereon inside the case, and an eccentric, *g*, connected to the stem *b*¹, bearing on top of the cap, and operated by a lever, *g'*, substantially as set forth.

2. The diaphragm *n*, cast in, and as a part of, the hydrant-case A, and transversely thereto, and having a tapped hole in the axial line of the moving water-way for the insertion of the vertical part of the supply-pipe D, substantially as set forth.

3. The flanged or cup-shaped screw-ring *e'*, screwing onto the outer surface of the sleeve *e*, and in combination therewith, and with suitable interposed packing *v*, substantially as and for the purposes set forth.

4. A waste-port, *s*, having three openings, two above and one below the diaphragm *n*, substantially as and for the purposes set forth.

In testimony whereof I have hereunto set my hand.

GEORGE C. BAILEY.

Witnesses:

JAS. S. YOUNG,
MAGNUS PFLAUM.