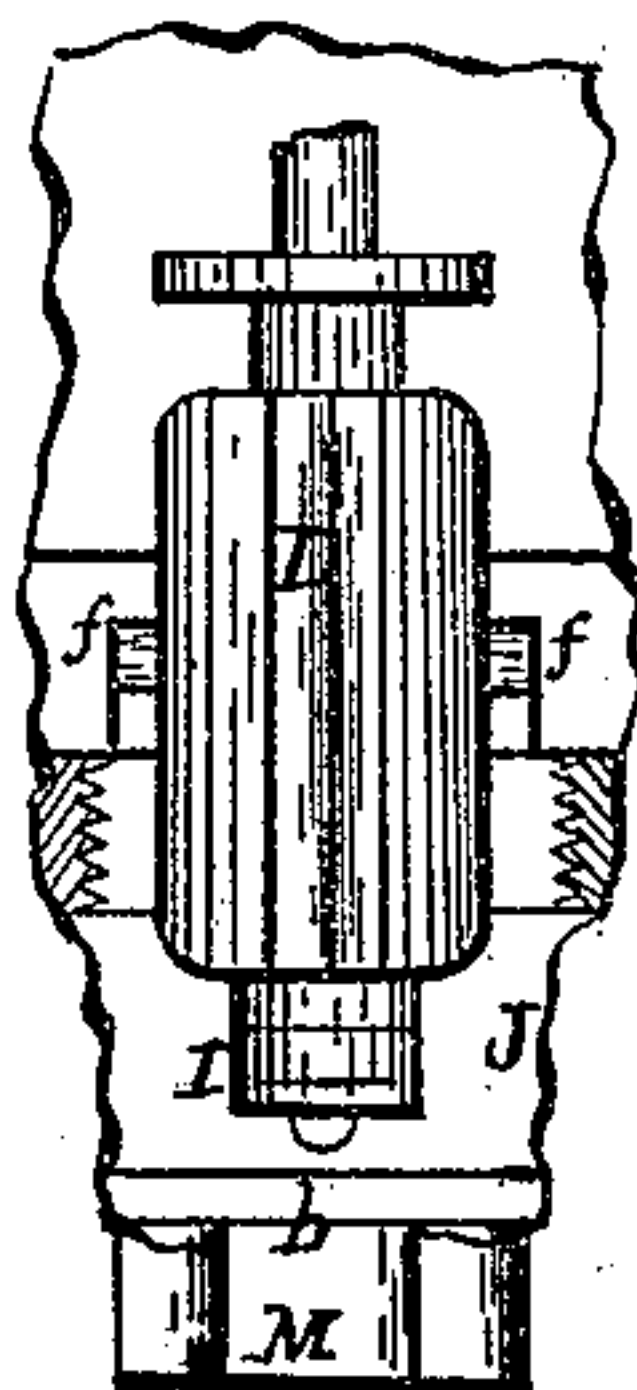
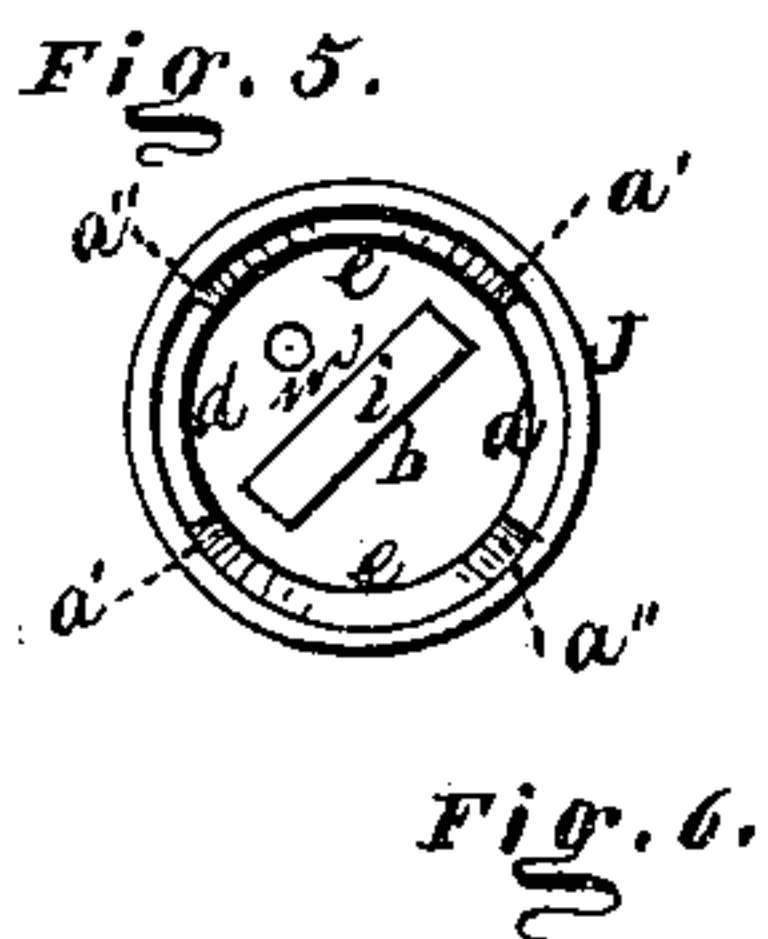
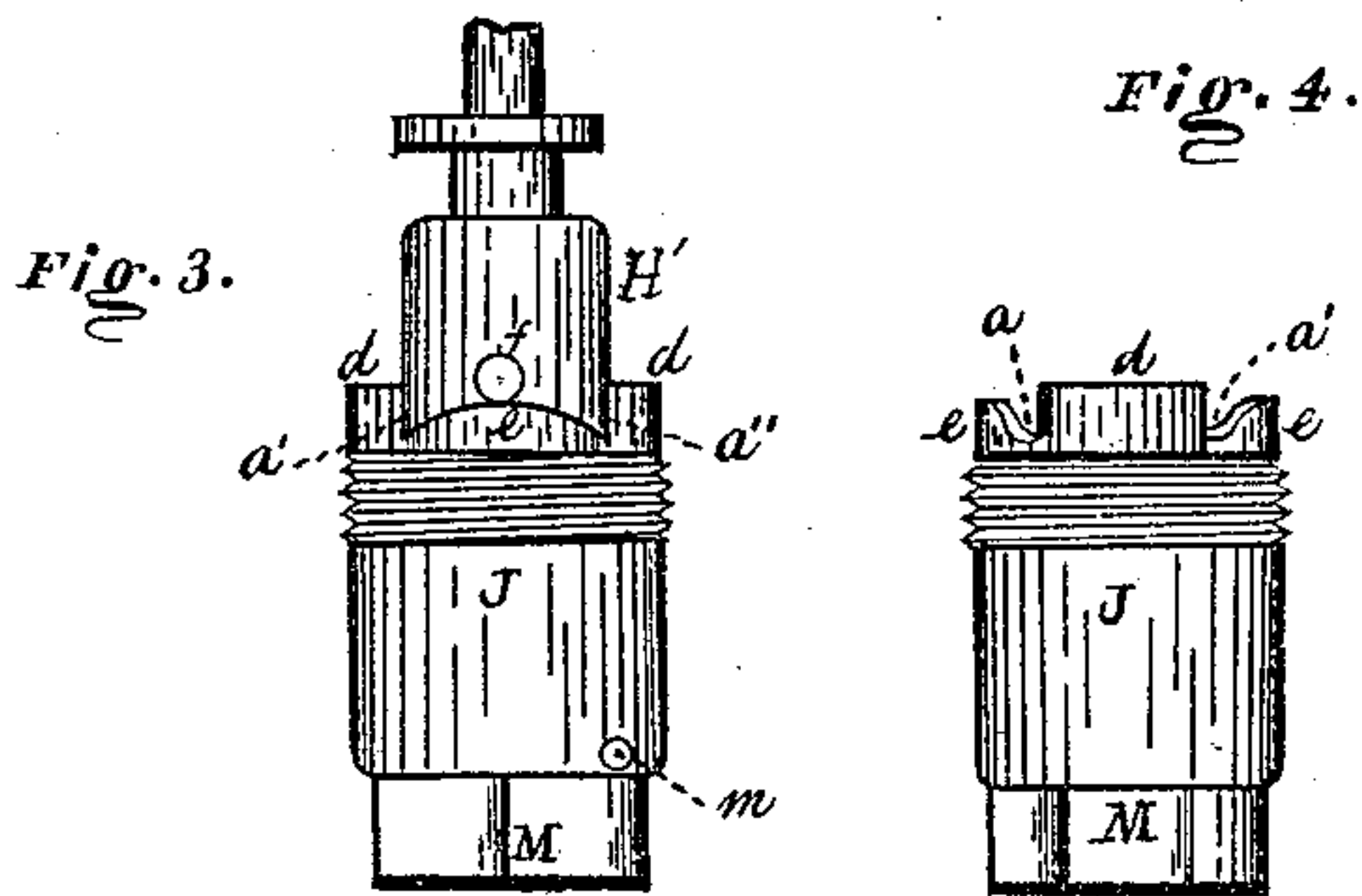
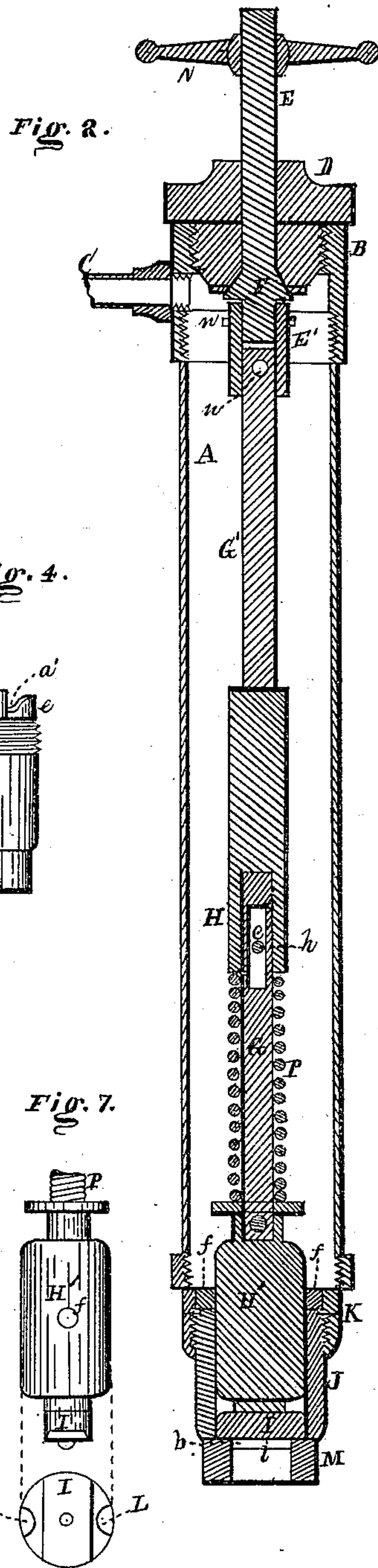
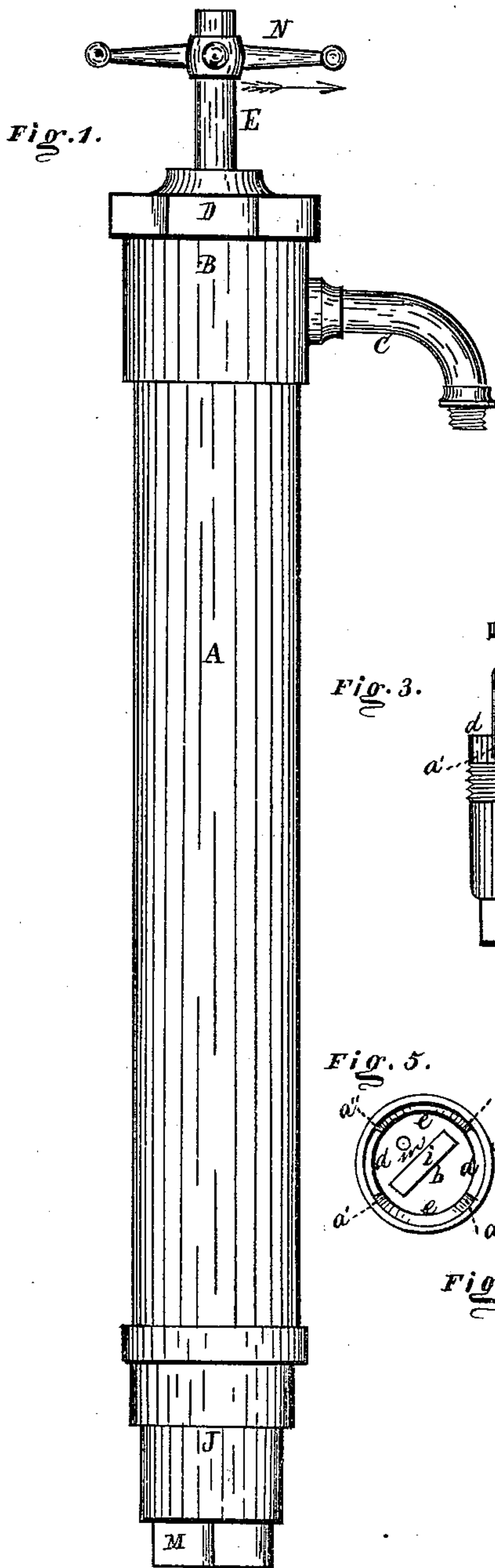


J. H. KENNEDY.

HYDRANT AND STREET WASHER COMBINED.

No. 181,580.

Patented Aug. 29, 1876.



Witnesses.
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UNITED STATES PATENT OFFICE.

JOHN H. KENNEDY, OF CLEVELAND, OHIO.

IMPROVEMENT IN HYDRANT AND STREET-WASHER COMBINED.

Specification forming part of Letters Patent No. **181,580**, dated August 29, 1876; application filed July 28, 1876.

To all whom it may concern:

Be it known that I, JOHN H. KENNEDY, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented new and useful Improvements in Hydrant and Street-Washer Combined, of which the following is a description, reference being had to the accompanying drawing, making a part of this specification, in which—

Figure 1 is a side view of the hydrant. Fig. 2 is a transverse vertical section. The other figures are detached sections.

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

The nature of this invention relates to a hydrant, and which consists of a peculiar mode of opening and closing the valve thereof; the construction of which and the operation of the same are substantially as follows:

The hydrant referred to consists of an outer shell, A, to the upper end of which is screwed a collar, B, wherefrom projects the spout C. Into said collar is screwed a nut, D, through which passes a valve-stem, E. The lower end of the nut is a seat for the valve F. Said valve forms an integral part of the stem, as will be seen in Fig. 2. The stem E is attached to a valve-stem, G, by a link, G', in the end of which is formed a socket, H, wherein the end of the valve-stem G is inserted, and therein secured by a pin, h, and slot c in the end of the rod G, for the pin to move in, as will be seen in Fig. 2. The upper end of the link G' is attached to the valve-stem E by a sleeve, E'. The connections of the stem and link to each other is a little loose, to allow the adjustment of the valve F to its seat. The pins n pass through the sleeve at right angles to each other, thereby making a free connection, for the purpose aforesaid.

To the end of the rod G is secured a head, H, to the lower end of which is attached a valve, I. A detached view of the head and valve, showing another side thereof, is represented in Fig. 7. The bottom of the thimble J forms a seat, b, for the valve I. Said thimble is attached to the shell A by a nut-collar, K, into which it is screwed, said collar being, in turn, screwed onto the end of the shell A, as shown in Fig. 2. Detached views of the thim-

ble are shown in Figs. 3 and 4. An inside view of the same is shown in Fig. 5.

Two opposite edges of the rim of the thimble are formed into an arc of a circle, as will be seen at e in Fig. 3, making a kind of a cam on the two sides of the thimble. The other two quartering sides or edges of the thimble are left square, as will be seen at d, the purpose of which will presently be shown. From two sides of the head H, referred to, project studs f. In each side of said head, quartering the studs, is made a groove, L, Figs. 6 and 7.

It will be seen that the valve I, terminating the head H, alluded to, is of a length equal to the diameter of the head, but much narrower, it being only wide enough to cover the opening i, Fig. 5, made in the valve-seat. By the side of said opening is a small aperture or vent, m, leading to the outside of the thimble, as will be seen in Fig. 3, the purpose of which will hereinafter be explained.

The practical operation of the hydrant above described is as follows: By means of the nut M, forming the end of the thimble, the hydrant is attached to the water-main by a pipe or otherwise, the hydrant being set in the ground for that purpose. The position of the valve I, as shown in Fig. 2, is such as when down upon its seat, closing the opening i; hence water is shut off from the hydrant. In this position of the valve the studs f referred to are lodged in the notches a', Figs. 3 and 5, at the foot of the cam or inclines e of the thimble.

In order to open the valve to fill the hydrant, the valve is turned in direction of the arrow, Fig. 1, by the handle N. This turning of the valve causes the lugs f to ascend the curve or cam e to the position thereon as shown in Fig. 3, thereby lifting the valve from its seat while being turned by the handle to the position shown in Fig. 6. Water will now flow into the hydrant through the opening i, filling it to the spout C, from which it flows, it being unable to pass up around the stem E, through the nut D, in consequence of the valve F, which is continued in its seat by the spring P. Said spring not only keeps the valve F in place, but it also forces down

the valve I when the rod is turned for closing it. The valve I, when closed, covers only the opening *i*; hence the water left in the hydrant will flow therefrom through the waste-vent *m* to the outside, so that no water remains in the hydrant when shut off to freeze up in cold weather. The purpose of the grooves L, referred to, is to allow the water to pass up above the head H into the hydrant, the head being too closely fitted in the thimble to permit water to flow freely up around it; hence the necessity of the grooves. On turning the valve a quarter of the way around, (practically the proper distance it should be turned for charging the hydrant,) the lugs *f* will slide from the crown of the cam (their position shown in Fig. 3) into the notches *a''*, Figs. 3 and 5. This will place the valve transversely across the opening *i*, and at the same time allowing it again to rest down on its seat, so that it may cover the waste-vent *m*, and thus prevent water from flowing back through it, while it is flowing into the hydrant through the opening *i*. The water passes directly up the grooves L, which, on turning the valve a quarter around, as aforesaid, brings them in direct and open relation with the opening *i*, and when the valve is again closed it leaves the waste-vent open for the water left in the hydrant to escape therefrom. The object of

raising the valve I by the inclines or cams *e* on opening it is to prevent the wearing of the valve-packing, which, if the valve were turned while upon its seat, it would wear away and eventually the valve would become leaky. Obviously, this is avoided by lifting the valve while it is being opened. The valve, when needing repairs, or for other purposes, can be easily and readily taken from the case by unscrewing the nut D, which will allow its withdrawal from the case for that purpose.

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

1. In combination with the case A, the thimble J, provided with inclines or cams *e* and valve-seat *b*, in the manner substantially as described, and for the purpose set forth.
2. The valve-head H', studs *f*, and valve I, in combination with the thimble J and shell or case A, in the manner substantially as described, and for the purpose specified.
3. The valve-head H', stem G, spring P, and link G', in combination with the valve I, nut D, and case A, substantially in the manner as described, and for the purpose specified.

JOHN H. KENNEDY.

Witnesses:

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