W. H. McMILLAN.

Hydrant.

No. 164,856. Patented June 22, 1875.

FIG. 1.

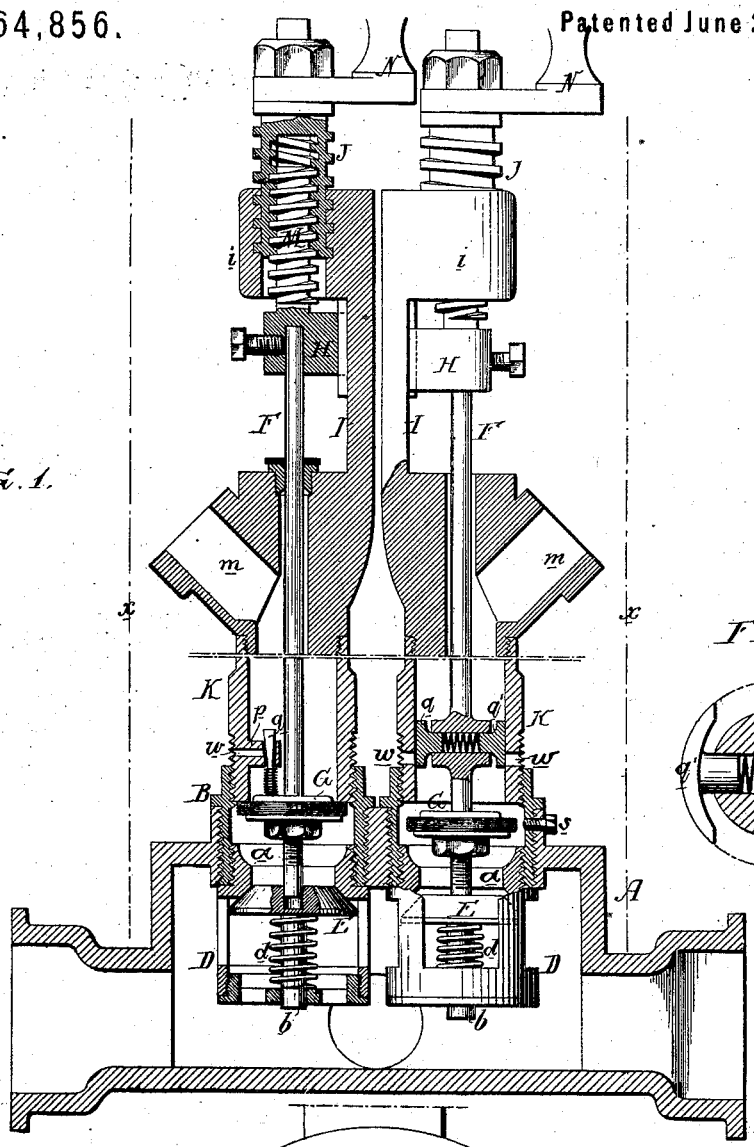



FIG. 3.

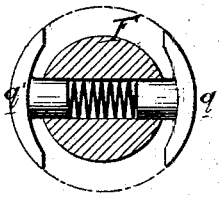
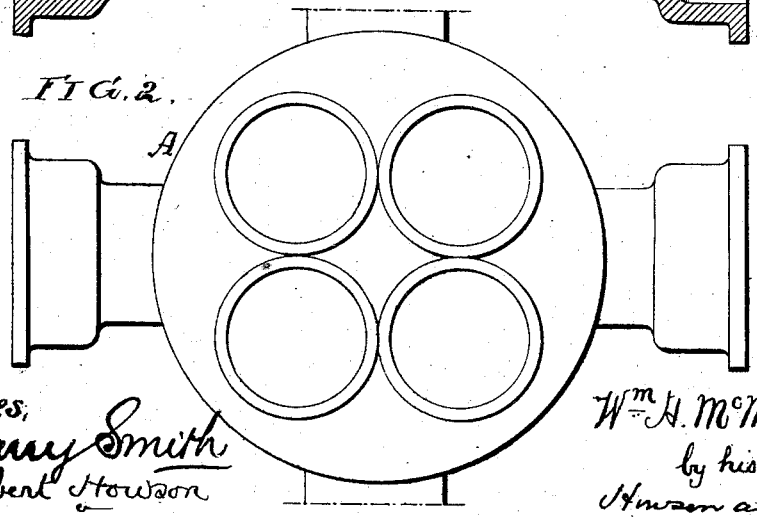



FIG. 2.




Witnesses,
Harry Smith
Hubert Howson

Wm H. McMillan
by his Attorneys,
Howson and Sons

THE GRAPHIC CO. PHOTO-LITH. 39 & 41 PARK PLACE, N.Y.

# UNITED STATES PATENT OFFICE.

WILLIAM H. McMILLAN, OF PHILADELPHIA, PENNSYLVANIA.

## IMPROVEMENT IN HYDRANTS.

Specification forming part of Letters Patent No. **164,856**, dated June 22, 1875; application filed May 14, 1875.

*To all whom it may concern:*

Be it known that I, WILLIAM H. McMILLAN, of Philadelphia, Pennsylvania, have invented certain Improvements in Hydrants and Fire-Plugs, of which the following is a specification:

The main object of my invention is to so construct a fire-plug or hydrant, and so apply it to a chest communicating with a main distributing pipe or pipes, that the plug can be readily removed and replaced without cutting off the water from the said chest, and without interfering with the flow of water to adjoining plugs, other features of the invention relating to a device for draining the barrels of the plugs and for operating the main valves of the same.

In the accompanying drawing, Figure 1 is a vertical section, showing two fire-plugs made according to my invention; and Fig. 2, a plan view of the chest to which the plugs are applied.

In the present instance the plugs are illustrated as applied to a chest, A, with four branches adapted to the intersection of two main distributing-pipes, the chest being arranged for the reception of four plugs, two of which appear in Fig. 1. In the top of the chest are four flanged openings, into each of which is screwed, or in which is otherwise secured, a tube, B, and to the latter is secured the upper end, *a*, of a chest, D, containing the foot-valve E, the stem *b* of which passes through and is guided by the bottom of the said chest, a spring, *d*, tending to maintain the valve in contact with its seat. Each chest D has openings at the sides and bottom for the free access of water from the chest A. Into the upper end of each tube B is screwed the lower end of the barrel K of the plug, through a stuffing-box at the top of which passes the spindle F of the main valve G, the latter being adapted to a seat on the lower end of the barrel, and the upper end of the spindle being attached to a slide, H, adapted to guides on a projection, I, of the barrel, this projection terminating in a hub, *i*, which is threaded internally for the reception of the externally-threaded tube J, the latter being also threaded internally for the reception of the threaded stem M of the slide H.

It will be observed that the screw-thread of the tube J is left-handed and that of the stem M right-handed, so that by a comparatively slight effort exerted on the operating-handle N of the tube J, and by a comparatively limited movement of the tube, an extended movement of the slide H, valve-spindle F, and its valve G may be obtained.

On each barrel K is a branch, *m*, furnished with the usual detachable screw-plug.

The spindle F is continued below the valve G, and enters a central orifice in the foot-valve E, and the two valves are so arranged and adjusted that the foot-valve E will not be opened until the valve G is slightly depressed and the valve *q* closed, but will be the first to reach its seat in closing the valve.

The waste-valve is applied to the spindle F in the manner shown at the right-hand side of Fig. 1, and in the sectional plan, Fig. 3, an enlargement of the spindle in this case carrying two segmental valves, *q'*, adapted to openings in the barrel K, and having stems adapted to an opening in the enlarged portion of the spindle, and acted upon by a spring contained in said opening, which spring, in connection with the pressure of the water on the backs of the valves, maintains the latter in contact with their seats.

Each plug with its spindle and valve can be readily detached from the chest A, in doing which the foot-valve immediately below that plug which is being thus detached must necessarily be closed to its seat by the pressure of the water and by its spring, so that the flow of water to the other plugs of the group is in no way interrupted, and the usual shut-off valves are dispensed with.

In order to prevent the tube B from being withdrawn with the barrel K, I secure the said tube to the chest A by means of a set-screw, *s*, or other means which will prevent its turning.

Although I have shown a group of four plugs applied to one chest, A, the latter may be adapted to one plug only, or to any desired number of plugs which circumstances may demand.

It will be evident that my invention may be applied to hydrants in a manner which will be readily understood without description.

A suitable casing (indicated by dotted lines *x*,) should surround the plug or group of plugs.

I claim as my invention—

1. The chest A at the intersection of two or more street-mains, combined with two or more

hydrant or plug barrels, K, communicating with said chest and provided with valves, all as set forth.

2. The combination of the chest A, barrels K, and valves E, arranged to be closed upon the removal of the barrels from the chest.

3. The combination of the valve-spindle with the openings *w* in the barrel K, and with segmental spring-valves *q q'*, for closing or unclosing the said openings.

4. The combination of the valve-spindle F of a fire-plug or hydrant with the externally and internally threaded tube J, adapted to the threaded projection *i*, and to the threaded stem M of the guided slide H, attached to the said spindle, all substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM H. McMILLAN.

Witnesses:
HUBERT HOWSON,
HARRY SMITH.