

J. WALSH.

Improvement in Non-Freezing Hydrants.

No. 130,166.

Patented Aug. 6, 1872.

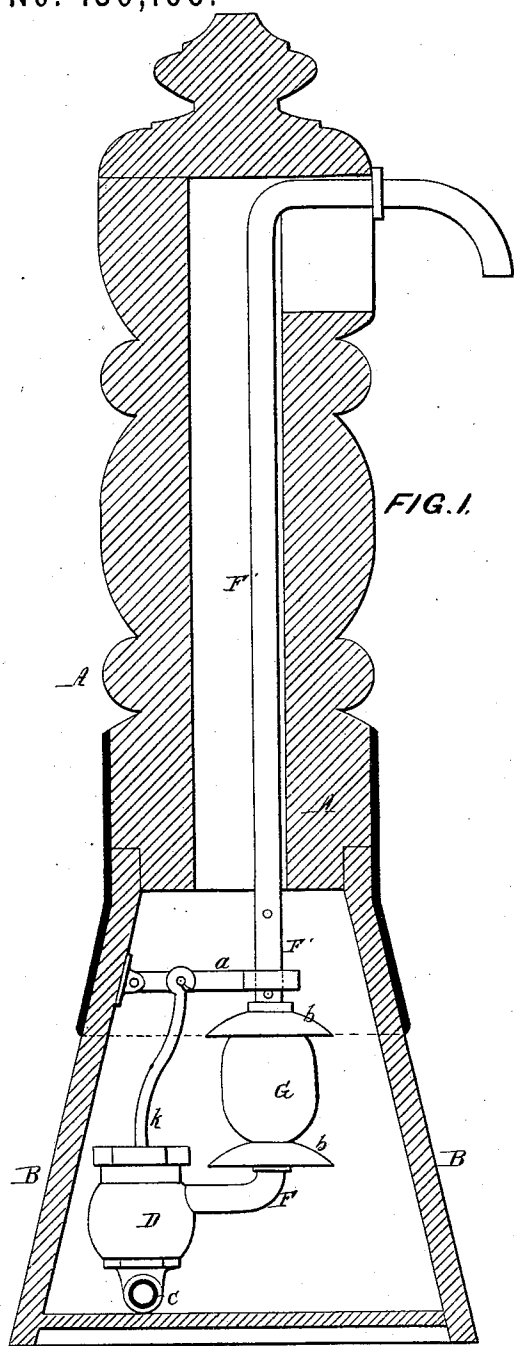


FIG. 2.

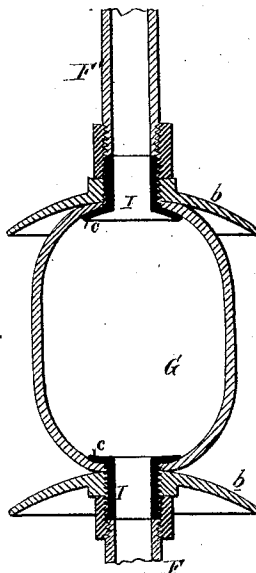
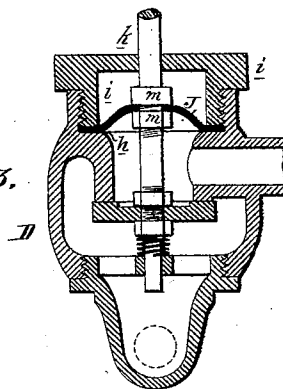


FIG. 3.



WITNESSES,
Harry Smith
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UNITED STATES PATENT OFFICE.

JAMES WALSH, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN NON-FREEZING HYDRANTS.

Specification forming part of Letters Patent No. 130,166, dated August 6, 1872.

Specification describing certain Improvements in Hydrants, invented by JAMES WALSH, of Philadelphia, Pennsylvania.

Improvements in Hydrants.

My invention consists of certain improvements in hydrants, fully described hereafter, whereby I am enabled to dispense with the usual rod and lever for operating the valve or cock, and to render the "upright pipe" available for this purpose, as well as for the purpose of compressing and expanding a receiver into which the waste water from the said upright pipe is discharged.

In the accompanying drawing, Figure 1 is a vertical section of a hydrant with my improvements; Fig. 2, an enlarged sectional view of a portion of the upright pipe and waste-water receiver; Fig. 3, an enlarged sectional view of the valve-cock.

A represents the body of the hydrant; B, the box at the bottom of the same; C, the service-pipe; and D, the casing of the valve-cock, through which the said service-pipe and "upright pipe" F' communicate with each other. The usual rod and lever for opening and closing the valve are dispensed with, and the latter is operated through the medium of a lever, *a*, by the upper section F of the upright pipe, to which a vertical sliding movement can be imparted. (See Fig. 1.) This upper movable section is attached to the lower fixed section F by a flexible connection G, which, in the present instance, is enlarged so as to form a receiver for the waste water, which, after the closing of the cock, would otherwise remain in the upright pipe, and, by freezing therein in severe winter weather, would be very apt to burst the same.

The operation of the upright pipe with its elastic receiver is as follows: On depressing the upright, the receiver will be compressed and the water forced out of the same into the pipe simultaneously with or before the opening of the valve D by the latter; and when the movable section of the upright pipe is again raised and the valve closed, the receiver will also be raised and expanded, and will again become filled with the waste water

from the upright pipe. The receiver is composed of rubber, and is of an elliptical or elongated form, with an opening at each end, as best observed in Fig. 2, which enables it to be more readily molded than if spherical.

The upper end of this receiver is clamped between a concavo-convex disk, *b*, at the extremity of the movable section of the upright pipe and the flange *c* of a tube, I, which is screwed into the said pipe, and the lower end of the said receiver is secured in a precisely similar manner to the lower fixed portion of the upright pipe. This forms a ready method of connecting the receiver with the two sections, and insures perfectly tight joints, as the clamped edges of the receiver form in themselves a packing which will prevent leakage.

It will be observed that the concavo-convex disk *b* of the movable section of the upright is made of the same shape as and arranged to fit snugly over the disk of the lower fixed portion of the pipe, so that when the said disks are forced together, the receiver shall be so squeezed between them as to be entirely emptied of its contents.

Another feature of my invention is illustrated in Fig. 3; and consists of an elastic diaphragm, J, arranged within the valve-cock between a ledge, *h*, of the casing and the lower edge of the screw-cap *i*, so as to form a packing for the latter, and pierced in the center to permit the passage of the valve-rod *k*, to which it is clamped above and below by nuts or nut and shoulder *m m*. This diaphragm will yield to either the upward or downward pressure of the valve-rod, so as not to interfere with the free operation of the same, and it will answer quite as effectually in preventing leakage as the usual expensive stuffing-box.

Reservoirs of pliable material have been used in connection with hydrants having special valves and valve-casings, so as to receive the waste water on the elevation of the upright pipe. I therefore make no claim to the use of such reservoirs, my invention relating to the devices whereby the reservoir may be applied to hydrants having the usual

valves, which are thus converted into non-freezing hydrants.

I claim as my invention—

The combination of the valve-case D, its rod *k*, the sliding pipe F', lever *a*, connected to the rod *k* and operated by the pipe, the flexible reservoir G, communicating with the valve-case, and the disks *b* and *b'*, all substantially as described.

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

JAMES WALSH.

Witnesses:

WM. A. STEEL,
HARRY SMITH.