J. PORTEOUS.
Hydrants.

No. 196,384. Patented Oct. 23, 1877.

Fig. 1

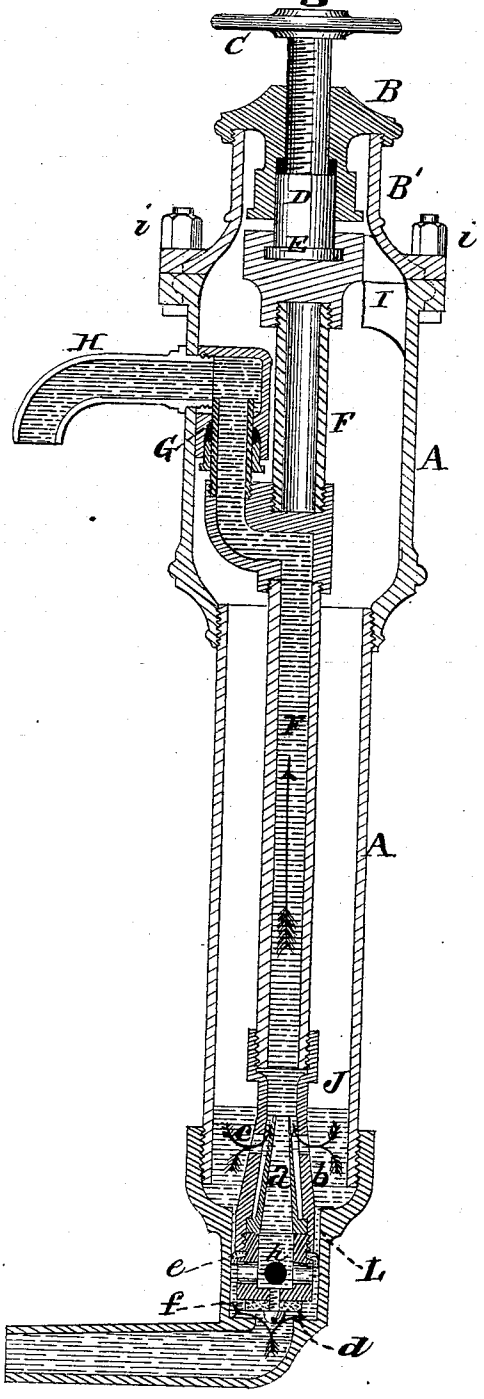
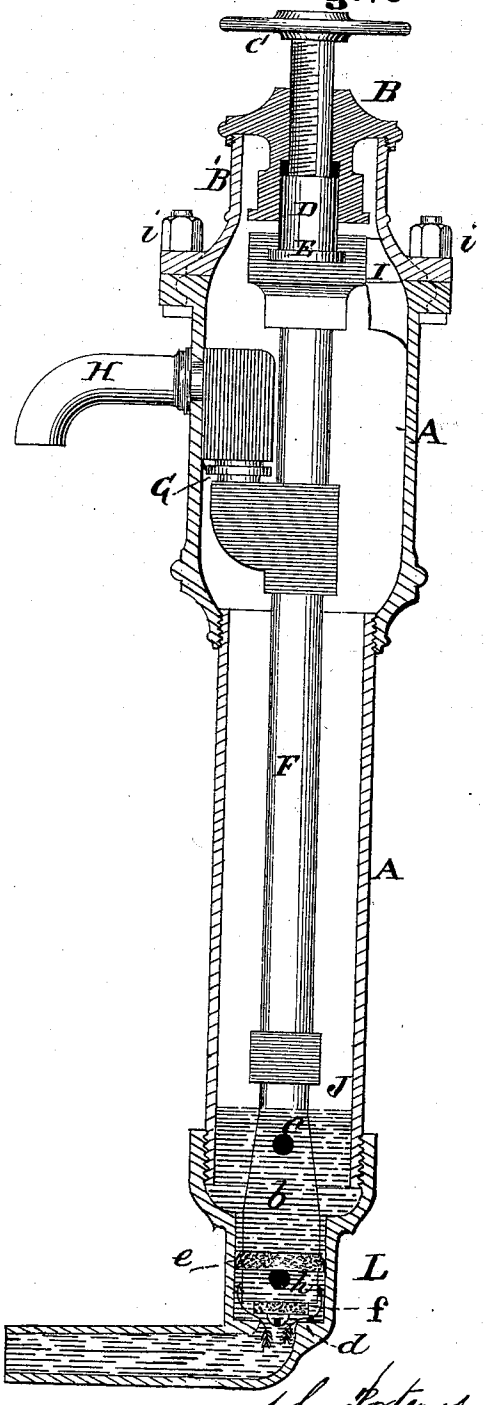


Fig. 2



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UNITED STATES PATENT OFFICE.

JOHN PORTEOUS, OF CINCINNATI, OHIO, ASSIGNOR TO H. J. BAILEY, OF PITTSBURG, PENNSYLVANIA.

IMPROVEMENT IN HYDRANTS.

Specification forming part of Letters Patent No. **196,384**, dated October 23, 1877; application filed June 6, 1877.

To all whom it may concern:

Be it known that I, JOHN PORTEOUS, of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Hydrants, of which the following is a specification:

My invention relates to a class of hydrants that are non-wasting and non-freezing, by reason of their being constructed with a fluid-chamber at their base, and an ejector applied thereto in such a manner as to transform the fluid-chamber into a vacuum-chamber when the hydrant is open, and thereby cause the water in the rising-pipe to return to the fluid-chamber when the hydrant is closed; and consists in a combination of parts hereinafter more fully described.

In the accompanying drawings, Figure 1 is a sectional elevation of a hydrant of my invention, and Fig. 2 is a partial sectional elevation of the same.

Letters of like character in each of the figures represent corresponding parts.

The casing of the hydrant, A, may be made of any desired shape, and is provided with a cap, B, through which works the operating device, consisting of a hand-wheel, C, to which is riveted the screw D, the bottom of which is provided with a collar, E, working into a groove forming part of the rising-pipe F. Attached to the rising-pipe is the ejector and regulating-valve, so constructed as to move bodily in an upward or downward direction by the turning of the hand-wheel C.

The rising-pipe F is provided with a telescoping joint, G, to permit of its being elevated and depressed, while the spout H, with which it is connected, remains stationary. That part of the pipe F in which the groove is formed for the reception of the collar E is made flat on one of its sides, and moves in a vertical direction over a lug, I, forming part of the casing A, by which means the pipe F is prevented from turning in the operation of opening or closing the valve, and that portion of said pipe in which the telescoping joint G is formed and the spout H connects always occupies the same relative positions.

The ejector is secured to the rising-pipe F, and is located near the bottom of the same, and consists in a nozzle, *a*, projecting into a mouth, *b*, which receives the water from the nozzle *a*, and from the vacuum-chamber J, with which it communicates by means of apertures *c*, and is constructed so as to remove any air or water from chamber J at each draft of water through spout H.

The bottom of the casing A is provided with a cylinder, L, and seat *d*, in and upon which work the cup-packing *e* and valve *f*. The function of the former is to prevent any direct passage of water into the chamber J, and of the latter to regulate the flow of water through the hydrant.

The operation may be briefly described as follows: The hand-wheel C being turned, the screw D, connecting with the pipe F, causes the valve *f* to be raised from its seat *d*, and the water to pass through the apertures *h* into the nozzle *a* and rising-pipe F to spout H, where it is delivered, and at the same time producing a vacuum or partial vacuum in chamber J.

The valve *d* being closed and the supply cut off, the water in the rising-pipe F immediately returns to the chamber J, where it remains until it is ejected at the next succeeding draft of water.

When it become necessary to repair the cup-packing *e* or valve *f*, the screw-bolts *i* and spout H are removed, and the caps B and B′, together with the rising-pipe F, ejector, and other working parts of the hydrant, are drawn out of the casing A in a body, thus obviating the necessity of excavating around the casing of the hydrant.

I do not claim, broadly, the combination of a valved supply-pipe, a vacuum-chamber, an ejector to create the vacuum, and a discharge-pipe, as such is not my invention; but,

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of the valve *f*, pipe F, telescopic joint G, and stationary discharge-spout H, constructed and arranged to operate as and for the purpose described.

2. In combination with the valve *f*, cup-packing *e*, vertical pipe F, and vacuum-chamber J, the ejector attached to and moving with the pipe F, and constructed with the nozzle *a* and mouth *b*, the former having perforations *h* and the latter perforations *c*, as and for the purpose described.

In testimony whereof I have hereunto set my hand this 29th day of March, 1877.

JOHN PORTEOUS.

Witnesses:

HENRY MILLWARD,

SMITH STIMMEL.