

J. Myers,

Hydrant.

No. 102698.

Patented May 3, 1870.

FIG. 1.

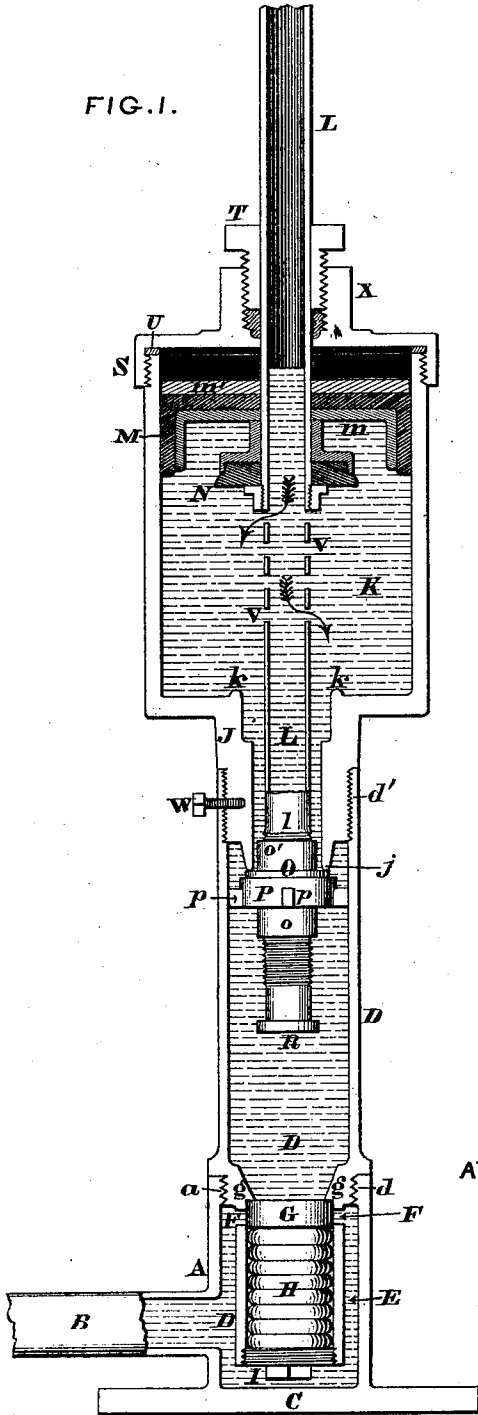
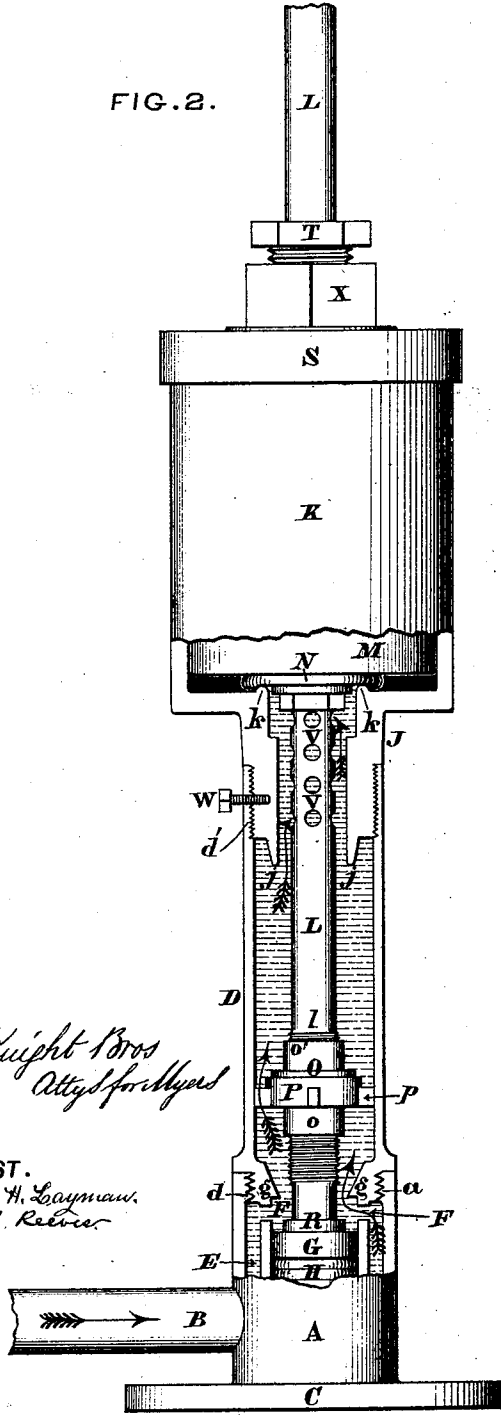


FIG. 2.



*Sluight Bros
Attyd for Myers*

ATTEST.
 *Jas. H. Layman,
 F. J. Reiver*

United States Patent Office.

JOHN MYERS, OF CINCINNATI, OHIO.

Letters Patent No. 102,698, dated May 3, 1870.

IMPROVEMENT IN HYDRANTS.

The Schedule referred to in these Letters Patent and making part of the same.

I, JOHN MYERS, of Cincinnati, Hamilton county, Ohio, have invented a new and useful Non-Freezing and Non-Wasting Hydrant, of which the following is a specification.

Nature and Objects of the Invention.

This invention relates to that class of hydraulic apparatus known as non-freezing and non-wasting hydrants; and

My improvement consists in increasing the efficiency of such apparatus by the application to them of two valves, the upper one of which is attached to the tubular piston-rod, and has a positive movement therewith, while the lower one is simply opened by the action of said rod, and is automatically closed by a spring of any approved form or construction.

General Description with Reference to the Drawings.

Figure 1 is an axial section of my improved hydrant in its closed condition.

Figure 2 is a partially-sectionized elevation of said hydrant in its open condition.

A represents a short cylinder, having attached to it the inlet-pipe B, and a base or flange, C, by which these, the fixed portions of the hydrant, are secured to the stock.

The upper portion of this cylinder has an interior screw-thread, *a*, with which is engaged the screw-threaded portion, *a*, of barrel D, whose lower end is made somewhat less in diameter than the interior of cylinder A, so as to afford an annular space, E, for the passage of water around the diminished part of said barrel.

The diminished part of barrel D is pierced with a number of orifices, F, through which water will flow to the interior of said barrel as soon as the valve G has been depressed by the descent of the piston-rod, but this valve prevents the escape of water at any other time, on account of its being held securely to its seat *g* by the elasticity of a number of India-rubber pellets, H, that are confined between the valve and an adjustable screw-threaded plug, I.

The upper end of barrel D is attached to neck J of vacuum-chamber K by screw-threaded connections *k*, and the lower and interior end of said neck constitutes a valve-seat, *j*.

Attached to the tubular piston-rod or delivery-pipe L, and fitting snugly within vacuum-chamber K, is a piston, which is composed of two disks, *m m'*, between which is clamped a cup-leather packing, M.

Secured to delivery-pipe L, immediately below the piston M, is a disk-valve, N, which, when the hydrant is opened, rests upon its seat *k*, as shown in fig. 2.

The pipe or piston-rod L is screw-threaded at *l*, to

permit the attachment of a valve, O, which is confined within an annulus, P, by nuts *o o'*

Said annulus is somewhat less in diameter than barrel D, and is provided with wings *p*, that confine the pipe L to an axial position within said barrel.

The lower end of piston-rod L carries a head, R, which, by impinging against valve G, depresses and opens the latter whenever piston-rod L is forced down to position shown in figure 2.

The top of chamber K is closed by a cap, S, having a stuffing-box, T, through which passes the delivery-pipe L.

U is a gasket interposed between the top of chamber K and its cap S.

The tubular piston-rod L is provided, near its lower end, with a series of apertures, V, through which water flows to or from the interior of said rod.

Previous to insertion of the hydrant in the fixture A, the barrel D is immovably attached to the parts above it by the insertion of a screw, W, in the neck J. This provision enables all that portion of the hydrant above the fixture A to be screwed into or out of said fixture without disturbing the other joints, so as to enable the hydrants to be at any time removed bodily for inspection or repair, and returned to its place without disturbing the ground.

These detached parts of the hydrant are unscrewed by simply grasping the nut X with a suitable wrench that may be inserted from the top of the stock.

Operation.

To open the hydrant, the pipe L is depressed, which may be effected by means of a customary lever or screw at the top of the stock; and this depression of said pipe brings valve N to bear upon its seat *k*, carries valve O away from its seat *j*, and forces valve G down, so as to uncover the orifices F, and thereby afford an uninterrupted flow of water through inlet-pipe B, annular chamber E, orifices F, barrel D, apertures V, and thence out at the delivery end of pipe L. The depression of pipe L also carries the plunger M down to the bottom of vacuum-chamber K.

To shut off the water, pipe L is elevated, thus removing the pressure of head R from the lower valve G, and permitting the closure of the latter by the elastic action of the compressed pellets H, thereby effectually closing the orifices F and stopping the flow of water from below into barrel D.

The elevation of pipe L carries plunger M along with it, which, producing a vacuum in chamber K, causes the water to flow therein from pipe L out of reach of frost, (see arrows in fig. 1.)

When pipe L has completed its upward stroke, valve O is brought to bear upon its seat *j*, thus ren-

dering it impossible for water to escape, even in case the lower valve G should leak.

By simply screwing up the plug I, the pellets H will be compressed accordingly, and the valve G held to its seat with an increased pressure.

It will be seen that the provision of the two valves G and O affords a double security against leakage when the hydrant is closed.

Claims.

I claim herein as new and of my own invention—

1. The combination, substantially as described, of the inlet-cylinder A *a*, barrel D *d d'*, passage E, orifices F, vacuum-chamber K, perforated delivery-pipes

L V, plunger M, seats *j k*, positively-closing valves N O, and automatically-closing valve G *g*, for the purposes set forth.

2. The arrangement and combination of the barrel D with orifices F, at its upper portion, the automatically-closing valve G *g*, springs H, and adjustable screw-threaded plug J, for the object explained.

In testimony of which invention, I hereunto set my hand.

JOHN MYERS.

Witnesses:

GEO. H. KNIGHT,
JAMES H. LAYMAN.