

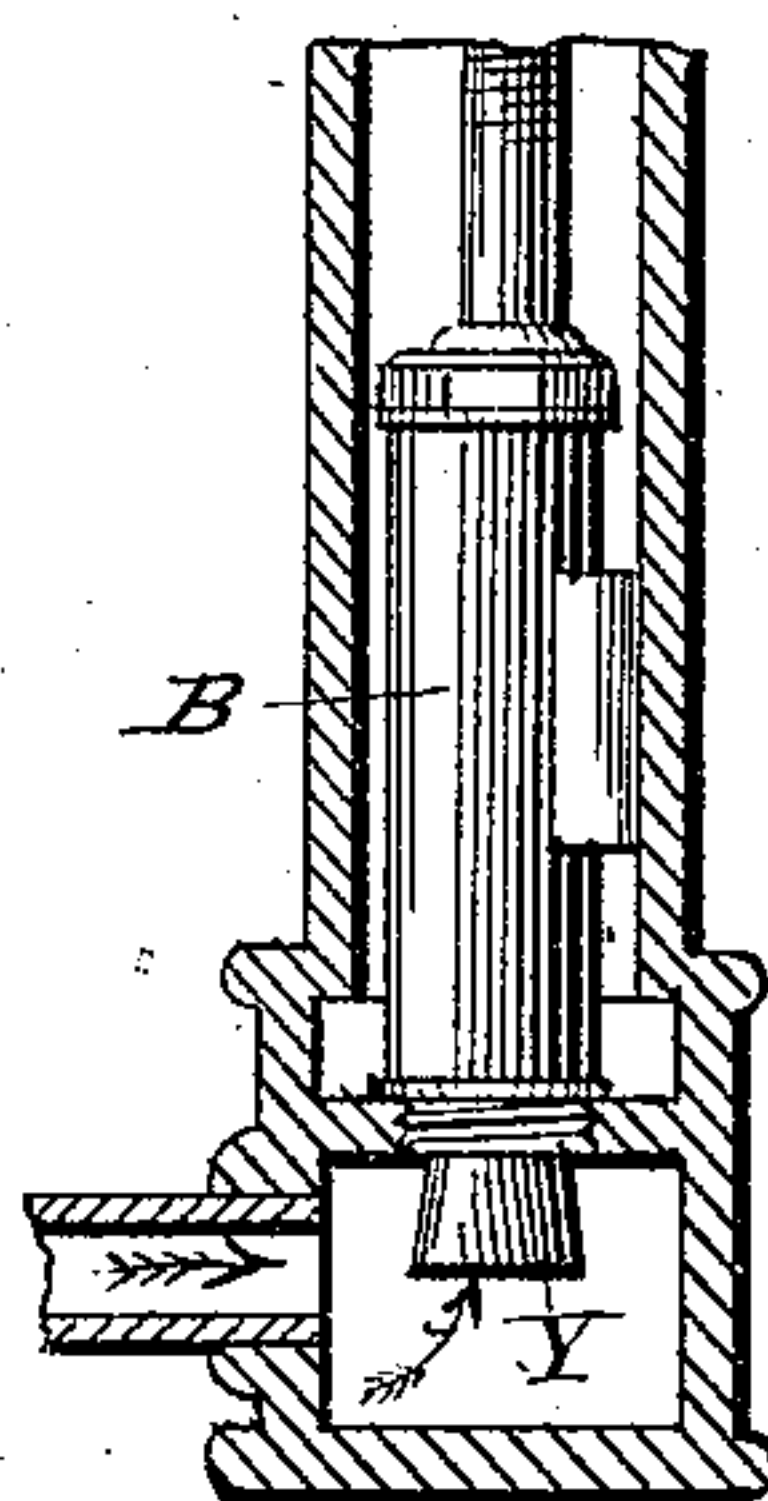
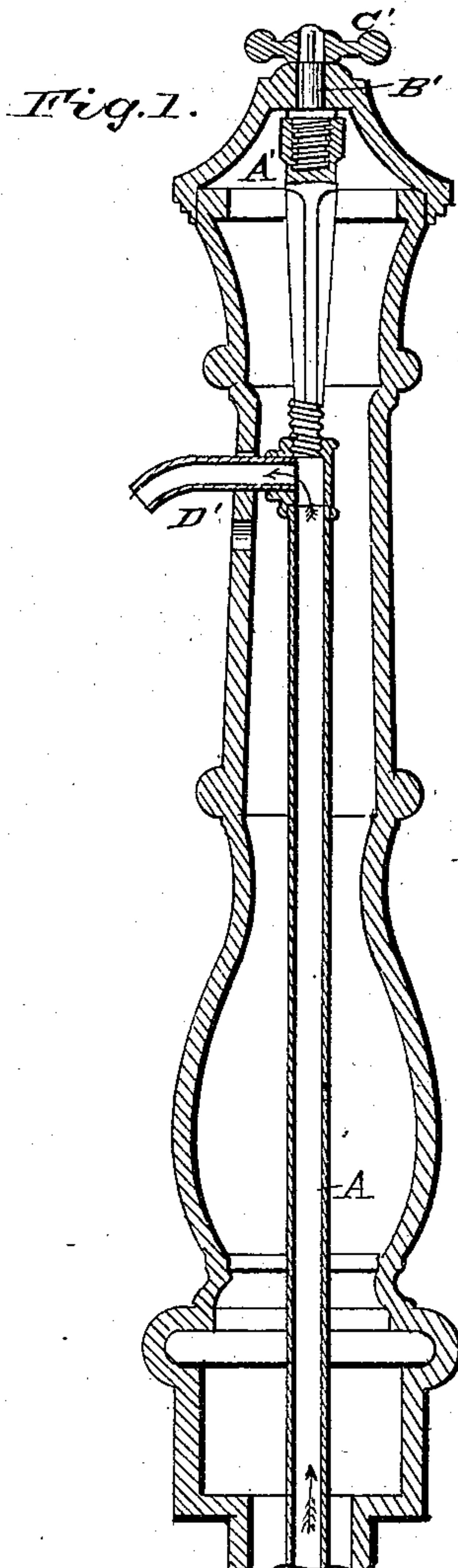
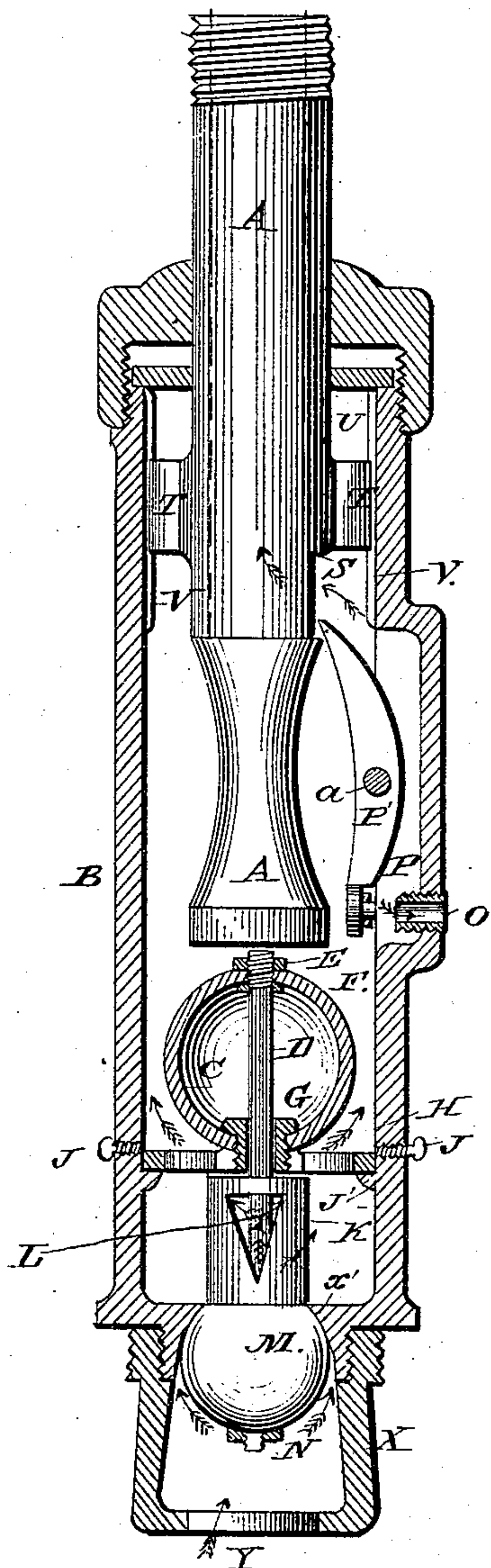
(No Model.)

J. P. FARLEY.
HYDRANT.

No. 289,903.

Patented Dec. 11, 1883.

Fig. 2.



WITNESSES:

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JOHN P. FARLEY, OF KANSAS CITY, MISSOURI.

HYDRANT.

SPECIFICATION forming part of Letters Patent No. 289,903, dated December 11, 1883.

Application filed July 14, 1883. (No model.)

To all whom it may concern:

Be it known that I, JOHN P. FARLEY, of Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Hydrants; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a longitudinal vertical sectional view of a hydrant provided with my improved valve mechanism, and Fig. 2 is a similar view of the casing inclosing my improved valve mechanism.

Similar letters of reference indicate corresponding parts in all the figures.

My invention has relation to valve mechanism for hydrants; and it consists in the improved construction and combination of parts of the same, as will be hereinafter more fully described and claimed.

In the accompanying drawings, B represents the cylindrical casing in which my improved valve mechanism is inclosed, the said casing being provided with an aperture in its top, through which the discharge-pipe A passes. The casing B is secured in the lower part of the hydrant by having its lower end inserted into a screw-threaded aperture in a diaphragm extending across the lower part of the hydrant, so that the water entering from the main or feed pipe into the lower part of the hydrant must enter the casing B before it passes into the discharge-pipe A. In the bottom or lower part of the casing B is located the valve-chamber X, provided with an aperture, Y, in its bottom, through which the water enters, and having at its top an annular shoulder, X', which forms a seat for the valve M.

H indicates a perforated brass plate or diaphragm resting upon an annular rib, J', in the lower part of the casing B, and secured thereon by means of set-screws J J.

M indicates the valve, which consists of a solid rubber ball of such a size as to adapt it to fit closely upon the valve-seat X', and through which passes one end of the valve-stem D, a nut, N, being screwed upon the end

of the valve-stem to prevent the rubber valve from slipping off the said stem. The other end of the valve-stem D passes through a central aperture in the diaphragm H, and has secured upon its end a hollow rubber ball, C, which acts as a spring in opening and closing the valve. The hollow rubber ball C is held upon its seat or diaphragm H by means of a nut, G, while two nuts, E and F, secured upon the upper screw-threaded end of the valve-stem D—one inside and the other upon the outside of the hollow rubber ball C—serve to secure the upper part of the said ball firmly to the upper end of the valve-stem D. Within the space between the top of the valve-chamber X and the perforated diaphragm H is a hollow brass cylinder, K, the lower end of which is firmly secured to the top of the ball-valve M, the cylinder being of exactly the same diameter as the opening filled by the valve when the latter is resting upon its seat. The cylinder K has its top open, its bottom being closed by the valve M, and has on one side a triangular or V-shaped opening, the opening being cut with its smallest end toward the base of the cylinder, its sides diverging as they extend upward, for the purpose hereinafter described.

A represents the discharge-pipe, the top of which is made solid, and is provided with a vertical screw-threaded aperture, A', in which fits the screw-threaded end of a shaft, B', the upper end of which passes through the top of the hydrant, and has affixed upon it a wheel, C'. By turning the wheel C' the discharge-pipe A can be raised or lowered, for the purpose hereinafter described, a slot, D', in the side of the hydrant allowing the discharge-spout to move vertically the required distance. The lower or free end of the discharge-pipe A, which works inside of the casing B, is provided with guiding-lugs T, the ends of which are recessed to adapt them to fit upon vertical ribs or ways V near the top of the casing B. The extreme end of the discharge-pipe A is made solid to adapt it to bear upon the top of the valve-stem D when the discharge-pipe is forced down to open the valve M. The discharge-pipe is provided with an opening, S, near its lower end, through which the water passes into the said pipe.

O' represents a waste-valve chamber, in the outer wall of which is an aperture, O, through which the waste water escapes.

P' indicates a curved lever, which is pivoted at about its center *a* in the waste-valve chamber O', and has upon its lower end a valve, P, which closes the aperture O.

U indicates a partition or washer secured in the upper part of the casing B, near its head, the space between the head of the casing and the said partition forming a stuffing-box, in which the packing W is placed.

The manner in which my improved hydrant is operated is as follows: When the hydrant is in its normal position, the discharge-pipe A is raised to its highest point, so as to leave a space between the lower end of the said pipe and the top of the valve-stem D, when the pressure of the water from the main or feed pipe will hold the valve M upon its seat, and thereby prevent the passage of any water from the main or feed pipe into the hydrant. To open the valve M the operator turns the wheel C', and thereby forces the discharge-pipe A down, so that its lower solid end bears upon the top of the valve-stem D, and thereby forces the valve M off of its seat, and at the same time forces the hollow cylinder K, which is fastened to the top of the valve M, down until the lower end of the V-shaped opening in its side comes below the water-line, when the water passes through the said opening into the hollow cylinder K, out through its open top and through the perforations in the diaphragm H, when it enters the discharge-pipe through the opening S in its lower end and flows through the discharge-pipe and the discharge-spout in the usual manner. By constructing the opening L in the side of the cylinder K V-shaped, with its smallest end placed at the lowest point, the water will be admitted into the cylinder K and the casing B in any desired quantity, the volume of the stream of water passing through said opening increasing in a direct ratio as the cylinder is immersed beneath the water-line. The upper and lower edges of the opening S in the discharge-pipe A serve as shoulders to operate the waste-valve, as follows: When the discharge-pipe is forced down to open the valve M, as previously described, the upper edge of the opening S presses down upon the upper end of the curved lever P', so as to force the valve P upon the lower end of said lever against the aperture O, so as to thereby close the said aperture and prevent the escape of any water from the casing B, except through the discharge-pipe A. When the discharge-pipe is raised and the valve M closes, the lower edge of the opening S raises up the upper end of the curved lever P', and thereby swings the valve P away from the waste-aperture O, so as to allow the water remaining in the casing after the valve M is closed to escape from the said casing through the outlet O.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of my improved hydrant will readily be understood without requiring further explanation.

By constructing the waste-valve P in the manner described, the water will be withdrawn from the discharge-pipe A and the upper part of the casing B when the hydrant is not being used, so as to prevent the discharge-pipe from being frozen during cold weather.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. The combination of the lever P', pivoted in a recessed chamber in one side of the casing B, having upon its lower end the waste-valve P, adapted to close the waste port or aperture O, with the movable discharge-pipe A, having opening S, the upper and lower edges of which form shoulders which serve to operate the lever P', as and for the purpose shown and set forth.
2. The combination, with a hydrant-case forming a valve-seat, X', of a solid ball-valve adapted to fit upon said seat, and having secured upon its top the hollow cylinder K, which is provided with a V-shaped opening, L, in one of its sides, and means by which the valve is operated, as and for the purposes shown and set forth.
3. The combination of a hydrant-casing forming a valve-seat, X', a solid ball-valve fitting upon said seat, and having upon its top a hollow cylinder, K, which is provided with a V-shaped aperture, L, in one of its sides, hollow rubber ball C, secured by a nut, G, upon the center of the perforated diaphragm H, and valve-stem D, passing through the hollow rubber ball C, and cylinder K, and ball-valve M, having its upper end secured to the upper side of the hollow rubber ball C by means of nuts E and F, and provided upon its lower end with a nut, N, adapted to prevent the ball-valve M from becoming detached from the valve-stem D, as and for the purposes shown and set forth.
4. The combination of a hydrant-case forming an inverted valve-seat at its lower end, and a perforated diaphragm above the same, a ball-valve fitting upon said seat, and secured upon the lower end of a stem passing upward through it, a discharge-pipe having means for raising and forcing it down, adapted to press the valve-stem down with its closed end when depressed, and means for raising said stem and valve automatically when the pressure of the discharge-pipe is relieved, and for the purpose shown and set forth.

In testimony that I claim the foregoing as my own invention I have hereunto affixed my signature in presence of two witnesses.

JOHN P. FARLEY.

Witnesses:

J. S. HARRISON,
C. B. PLATT.