W. D. GREANELLE.

HYDRANT.

No. 169,538. Patented Nov. 2, 1875.

Fig. 1.

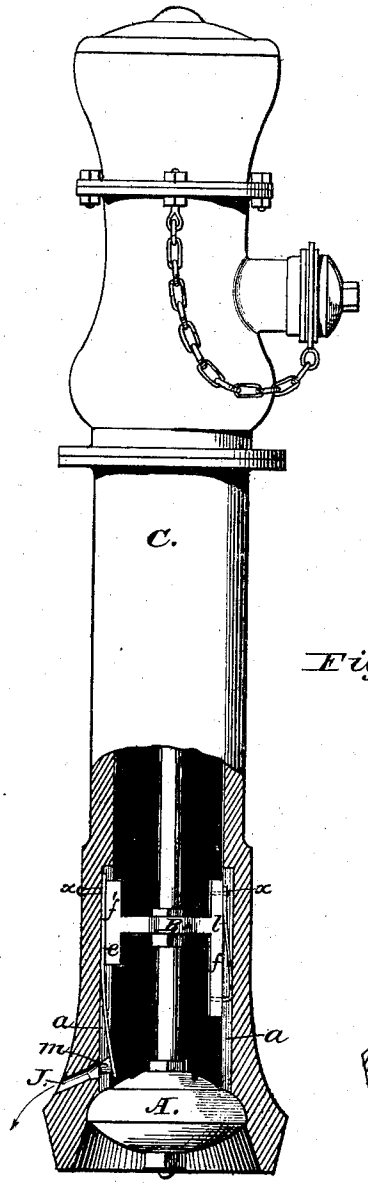



Fig. 3.

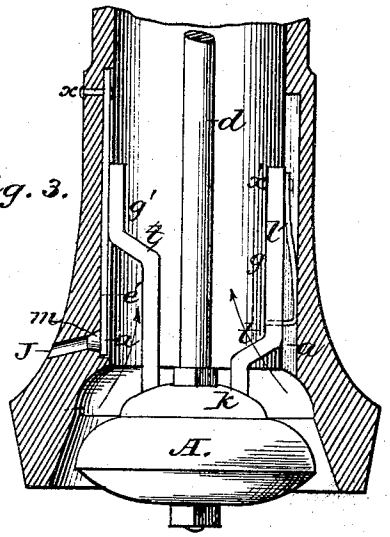



Fig. 2.

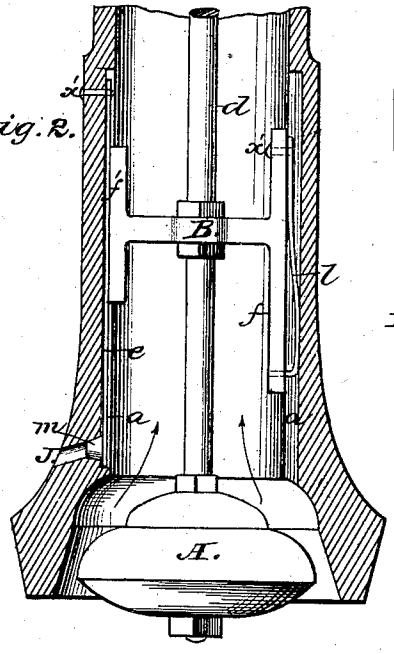
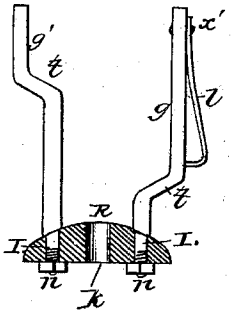



Fig. 4.

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# UNITED STATES PATENT OFFICE.

WALLING D. GREANELLE, OF NEW YORK, N. Y., ASSIGNOR TO JAMES D. KEEGAN, JR., AND EMMA J. GREANELLE, OF SAME PLACE.

## IMPROVEMENT IN HYDRANTS.

Specification forming part of Letters Patent No. **169,538**, dated November 2, 1875; application filed September 14, 1875.

*To all whom it may concern:*

Be it known that I, WALLING D. GREANELLE, of New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Waste-Valves for Hydrants, of which the following is a specification:

This invention relates to certain improvements in waste-valves for hydrants, its object being to allow the water remaining in the hydrant after use to run off and prevent injury to the hydrant from freezing in cold weather.

My invention consists in the combination, with the valve-rod or valve of a hydrant, of a plate or bar attached to the same, and operating a spring-bar, provided with a conical valve for closing the waste aperture, and a sliding bar and spring bearing against the inside of the hydrant on the side opposite the spring-bar and its valve, substantially as described.

In the accompanying drawings, Figure 1 represents a view of a hydrant, partly in section, showing my improvements. Fig. 2 represents a vertical section of the hydrant. Fig. 3 represents a view of a modification of my improvement; and Fig. 4 represents a detached view of the main valve and the sliding bar attached thereto.

The letter C represents the hydrant-shell, which may be of any approved form or construction, and A the main valve, attached to a valve-rod, *d*, extending upward, and terminating with the usual devices for elevating and depressing the same. Near the bottom of the shell C, at a point just above the main valve, is an opening, J, extending entirely through the shell. The inner end of said opening is reamed conically to form a seat for the conical valve *m*, which is secured to the end of a flat spring, *e*, attached by means of a screw to the interior of the hydrant-shell, and setting in a groove, *a*, formed therein for the purpose. The letter *f* represents a bar or plate adapted to slide in the groove *a*, and bear against the spring therein, in such a manner as to force the valve *m* in its seat and close the opening J, when the piston is depressed to open the main valve, or release it when raised to close said valve, and allow the valve *m* to fall back from its seat, and allow the water retained in the shell C to escape through the opening J. The bar or plate *f* forms part of or is attached to a cross-bar, B, secured to the piston of the hydrant, and to the other end of said bar is attached, or formed thereon, a corresponding plate or bar, *l*, which slides in a groove, *a'*, similar to the groove *a* on the opposite side of the casing. Said plate or bar has attached to its upper end a flat spring, which presses outward against the bottom of the groove *a'*, the whole serving to guide the valve-rod and increase the pressure of the bar or plate *f*, and keep it in proper position.

Figs. 3 and 4 show a modification of my invention, in which rods *g* and *g'*, bent as shown at *t*, and connected to the main valve, are substituted for the cross-bar and its sliding rods or plates attached to the valve-rod.

The bent rods or bars *g* and *g'* are provided with screw-threaded shanks at their lower ends, which are set into the apertures I and I through the main valve, and are secured therein by means of the nuts N. Other means of attachment may be used, however, without departing from my invention.

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

In combination with the valve-rod or valve of a hydrant a plate or bar attached to the same, and operating a spring-bar, provided with a conical valve for closing the waste-aperture, and a sliding bar and spring bearing against the inside of the hydrant-cylinder on the side opposite the spring-bar and its valve, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand in the presence of the subscribing witnesses.

WALLING D. GREANELLE.

Witnesses:

ROBERT B. CONE,

ROBERT M. BOYD.