T. AHRENS.

HYDRANT.

No. 184,128. Patented Nov. 7, 1876.

Fig. 1

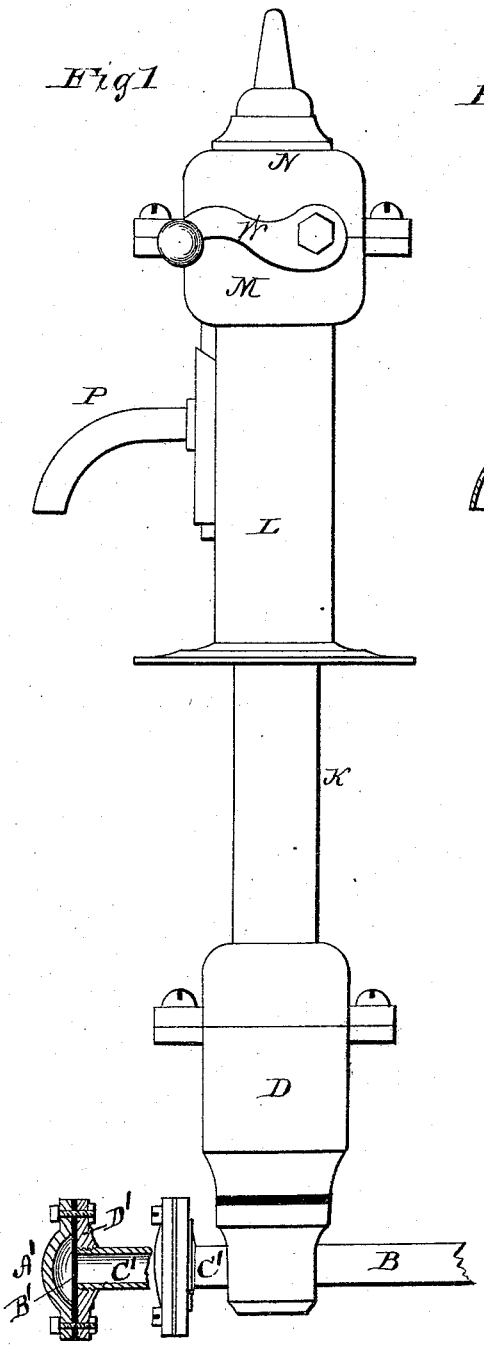
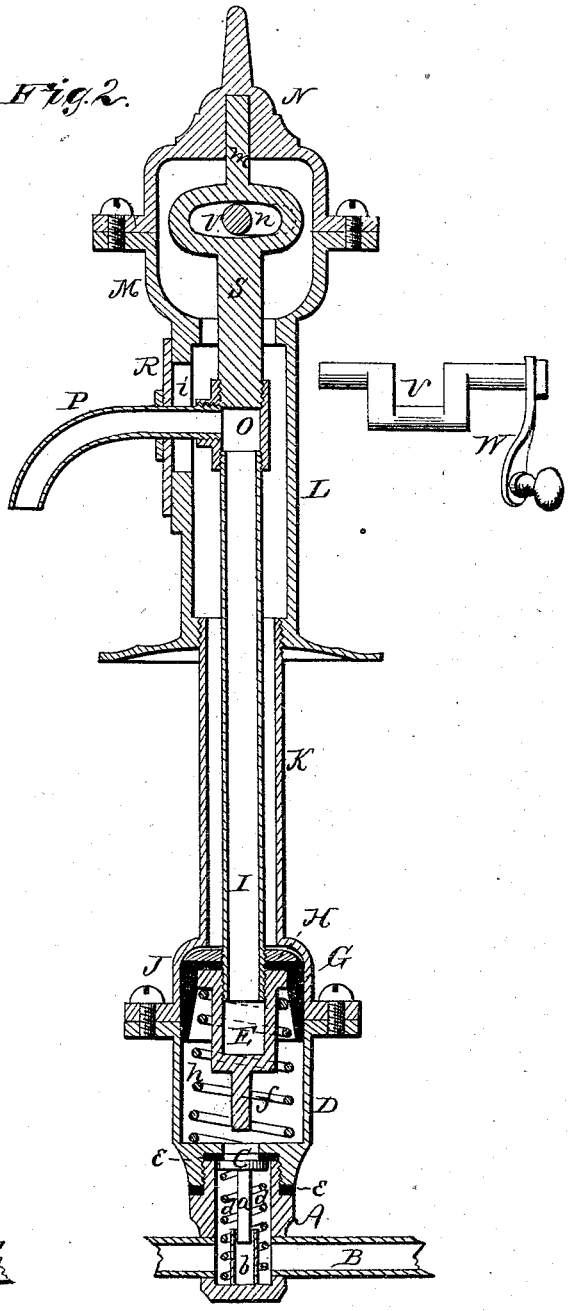


Fig. 2.



WITNESSES

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THEODOR AHRENS, OF LOUISVILLE, KENTUCKY.

IMPROVEMENT IN HYDRANTS.

Specification forming part of Letters Patent No. **184,128**, dated November 7, 1876; application filed July 17, 1876.

To all whom it may concern:

Be it known that I, THEODOR AHRENS, of Louisville, in the county of Jefferson and State of Kentucky, have invented certain new and useful Improvements in Hydrants; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification.

The nature of my invention consists in the construction and arrangement of a hydrant, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a side elevation, and Fig. 2 a longitudinal section, of my hydrant.

A represents the valve-chamber at the bottom of the hydrant with inlet-pipe B. Within the chamber A is a valve, C, with downward-projecting stem *a*. *b* is a guide for the valve-stem, and *d* is a spiral spring surrounding the same to close the valve by the aid of the water-pressure.

The valve-chamber A is screwed or otherwise fitted to the lower end of the waste-chamber D, so that the valve C will close the opening in said waste-chamber. *e e* are rubber packing-rings at the joint of the two. Within the waste-chamber is a plunger, composed of a flanged cage, E, with a projection, *f*, at its lower end, and a leather cup, G, drawn over the top. A head, H, is placed on top of the cup G, and a pipe, I, is screwed through the head and leather into the top of the cage. The cage E is surrounded by a spiral spring, *h*, which rests on the bottom of the waste-chamber, and forces the plunger upward. J is the cap of the waste-chamber D, which is bolted to said chamber, and provided with a vertical pipe, K, that surrounds the pipe I. L is the outside casing screwed on the upper end of the pipe K, and formed with a chamber, M, on top. N is the cap of said chamber. To the upper end of the pipe I, within the casing L, is screwed a T-joint, O, in which the spout P is also screwed, this spout passing through a slot, *i*, in the casing, and having a slide, R, attached to it for closing said slot. S is a key screwed in the upper end of the T-joint, and extending up into the chamber M, where it is enlarged, and formed with a cross-slot, *n*, and also with a guide-pin, *m*, which extends upward into a hole made for it in the cap N. V is a crank working in the slot *n*, and having its bearings in the sides of the chamber M, one of the journals being provided with a handle or lever, W.

By turning the lever W downward the entire interior mechanism is lowered by the crank V, so that the pin or projection *f* on the plunger in the chamber D will force the valve C downward, opening the same, and admitting the water, which then passes up into the waste-chamber D, through the cage E, and up through the pipe I and spout J. When the lever W is turned upward, or rather when the downward pressure of the lever is removed, the spring *h* at once returns the parts to their former position, while the spring *d*, aided by the water-pressure, closes the valve C, and the water remaining in the pipe I will pass down into the waste-chamber.

Opposite the inlet-pipe B is a short pipe, C′, provided at its end with a circumferential flange, D′, and to this is firmly bolted a flanged bowl or vacuum-chamber, A′, with a rubber diaphragm, B′, placed between them. This diaphragm expands and contracts according to the action of the water, and the chamber A′ is the space allowed for its expansion.

The sudden check of the flow of water, when shutting off the hydrant, causes a reaction of the water in the pipe. This vacuum-chamber being at the end, and the diaphragm being pliable, it gives way, and consequently prevents any expansion of the pipe.

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

1. The combination, in a hydrant, of the valve-chamber A, with inlet B, valve C, with stem, guide, and spring, the waste-chamber D, with cap J, and the plunger E G H, with projection *f*, spring *h*, and pipe I, all construct-

ed and operating substantially as and for the purposes herein set forth.

2. The combination, with the valve-chamber A and inlet B, of the short flanged pipe C′, rubber diaphragm B′, and vacuum-chamber A′, substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

THEODOR AHRENS.

Witnesses:

HENRY OTT,

THOMAS MCNICKELL.