

J. V. HAYES.
Hydrants.

No. 138,562

Patented May 6, 1873.

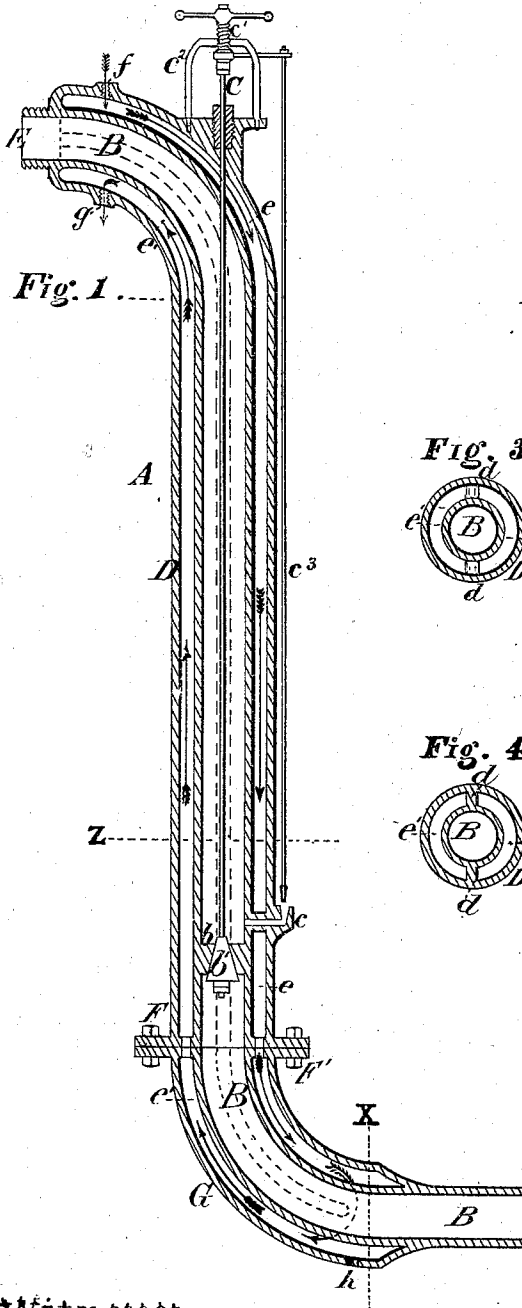


Fig. 1.



Fig. 3.



Fig. 4.

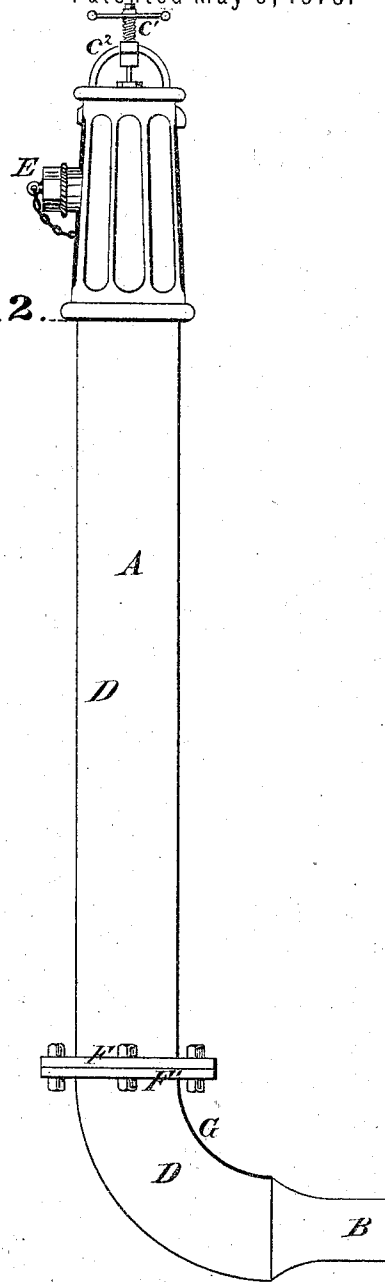


Fig. 2.

Witnesses.

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IMPROVEMENT IN HYDRANTS.

Specification forming part of Letters Patent No. **138,562**, dated May 6, 1873; application filed February 7, 1873.

To all whom it may concern:

Be it known that I, JAMES V. HAYES, of Buffalo, in the county of Erie and State of New York, have invented certain Improvements in Hydrants, of which the following is a specification:

My invention relates to the combination, with a hydrant, of a steam-jacket cast around it from its upper to its lower extremities. The space thus formed is divided into two compartments by vertical diaphragms uniting the outer and inner tubes on opposite sides, and extending down through the elbow into a circular belt, which forms a communication between the two. The object of my invention is to so construct a hydrant that when frozen it may be thawed out upon the arrival of a fire-engine within the shortest possible space of time.

In the accompanying drawing, Figure I is a vertical longitudinal section of a hydrant embodying my improvement. Fig. II shows my improvement applied to another form of hydrant. Fig. III is a section on line X, Fig. I. Fig. IV is a similar section on line Z, Fig. I.

Like letters of reference designate like parts in each of the figures.

A is the hydrant. B is the pipe for conveying the water, having a valve-seat cast therein at *b*, to which is fitted a valve, *b'*. The opening and closing of this valve is effected by a rod, C, having a screw, *c'*, attached thereto at its upper end by a swivel-joint, allowing the screw to turn in a stationary frame, *c''*, without a corresponding turning of the rod and valve. A passage, *e*, is cast above the valve-seat, as usual, to permit the escape of such water as may leak through the valve *b'*. This passage is opened and closed by a rod, *c''*, attached to and having a corresponding motion with the screw *c'*. D is the outer casing of the hydrant. It is united to the inner pipe B by two longitudinal diaphragms, *d d*, thus forming two semicircular belts or jackets, *e e'*, as shown in Fig. IV. *f* is an opening communicating with the belt *e* for admitting steam thereto. *g* is the discharge-opening through which the steam escapes after twice traveling the length of the hydrant. Near the upper end of the hydrant

is the usual spout or nozzle E, to which the hose is connected, while at its lower extremity a flange, F, is cast, having the central opening B and the semicircular belts *e e'*. A corresponding flange, F', is cast on an elbow, G, having similar openings to correspond with the central pipe and the two semicircular belts. The diaphragms *d d* are discontinued in this elbow at its lowest point, while the outer casing or tube is continued further, and gradually tapered until it is of a size with the water-tube B, thus leaving a communication between the two belts or jackets, *e e'*. A small hole, *h*, is drilled into the outer shell at the lowest point of the elbow through which the water formed by the condensation of the steam is discharged, or a valve may be arranged and operated similar to that for passage *e*.

The operation of my improved hydrant is as follows: Upon a fire-engine arriving at a hydrant which is found in a frozen condition, (this not unfrequently happens in cold climates,) a pipe which is carried for the purpose is connected to the boiler and the opening *f* in the hydrant. Steam is admitted to the belt *e*, passes down its entire length, through the flanges F and F' to the ends of the diaphragms *h h*; thence up through the belt *e'* in the direction shown by the arrows, Fig. I, and exhausting through the opening *g* into the atmosphere.

As the belts *e* and *e'* completely surround the water-pipe B, the entire area of the pipe is exposed to the thawing action of the steam, which will very soon loosen the ice and allow the water to pass around it.

Casting the diaphragms *d d* in the manner above described adds greatly to the strength of the hydrant.

Claim.

The combination of the passage B, steam-passages *e* and *e'* divided by diaphragms *d d*, and having the inlet and outlet openings *f* and *g*, substantially as and for the purpose described.

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Witnesses:

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