H. SMITH.

STAND PIPES FOR SUPPLYING LOCOMOTIVES WITH WATER.

No. 189,665. Patented April 17, 1877.

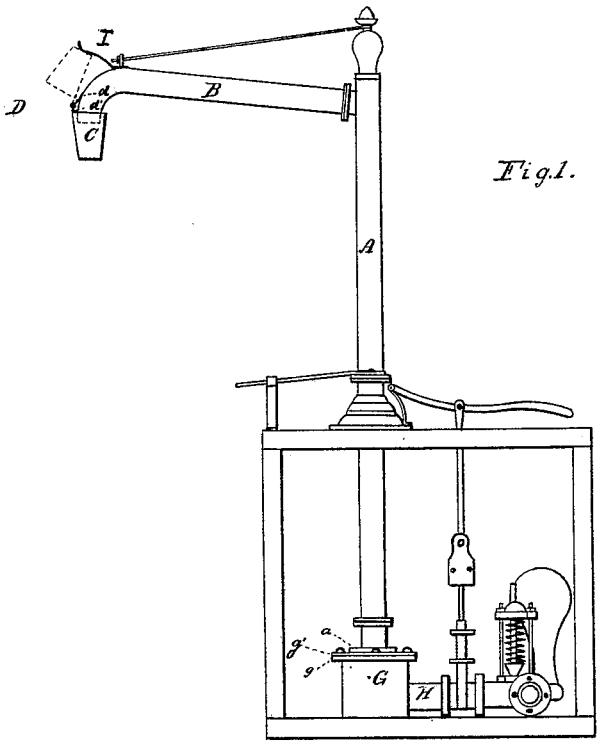


Fig. 1.

Fig. 2.

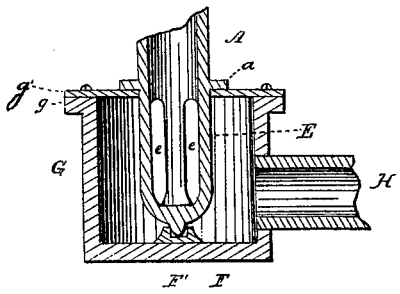


Fig. 3.

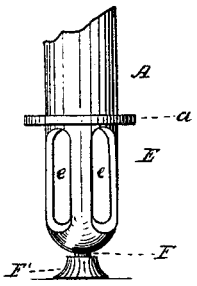
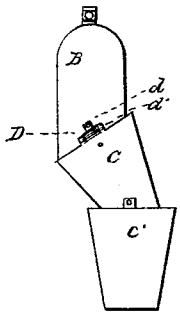


Fig. 4.



WITNESSES

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UNITED STATES PATENT OFFICE.

HIRAM SMITH, OF NORWALK, OHIO.

IMPROVEMENT IN STAND-PIPES FOR SUPPLYING LOCOMOTIVES WITH WATER.

Specification forming part of Letters Patent No. **189,665**, dated April 17, 1877; application filed March 3, 1877.

To all whom it may concern:

Be it known that I, HIRAM SMITH, of Norwalk, in the county of Huron, and State of Ohio, have invented certain new and useful Improvements in Stand-Pipes for Supplying Locomotives with Water; and I do hereby declare that the following is a full, clear, and exact description thereof, 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, and to the letters of reference marked thereon, which form a part of this specification:

My invention consists, first, in an improved device for directing the flow of water from the mouth of the delivery-pipe of a stand-pipe to the receiving-aperture of a locomotive-engine tender, which said device is intended as a substitute for the canvas hose or sack ordinarily used for the same purpose; second, in an improved manner of pivoting a rotating stand-pipe, and of forming a water-joint at its base.

In the drawing, Figure 1 is a view of a rotating stand-pipe constructed according to my invention. Fig. 2 is a vertical central section below dotted line *x x*, Fig. 1. Fig. 3 is a perspective view of the base-chamber and pivot. Fig. 4 shows a modification.

A is the stand-pipe or water-column, and B is the delivery-pipe. C is a sheet-metal tube hinged at one side of the mouth of the delivery-pipe by means of a pivoted hinge, D, which is composed of the part *d* pivoted at one side and a short distance above the mouth of delivery-pipe, and the part *d'*, which is firmly attached to tube C. This tube C is somewhat larger in diameter than the mouth of the delivery-pipe, and, when thrown down for use, as in Fig. 1, projects some distance above the said mouth and entirely surrounds the end of the pipe. The object of this arrangement is to permit the tube C to be inclined either backward or forward with respect to the position of the tender on the track, and thus obviate loss of time in bringing the tender into any one invariable position, as would be necessary were the tube C not adjustable. Said tube being larger than and projecting above the mouth of the delivery-pipe when hanging straight downward, will, it will be seen, still fully surround said pipe, and prevent the escape of any water when it is inclined either way on the pivoted hinge. The tube C may also be inclined toward either side of the track to suit the cant given to a tender by the upheaval of one side of the track by frost, or its depression from any cause.

In the modification shown in Fig. 4 the tube C is provided with an additional telescope section, by which its length may be increased or diminished, and a still greater margin allowed for the position of a tender on the track.

The value of this improvement over the old-fashioned canvas sack or hose will be readily recognized by those who have observed that, besides the general sloppiness and inconvenience of said sack or hose in winter, it is extremely unmanageable on account of its freezing, in which condition it is frequently broken off, thereby entailing loss of time, trouble, and expense of replacement.

E is a chamber, which forms the termination of stand-pipe A at its base. This chamber is closed at its bottom, but is provided with vertical openings *e e e e* at its sides. From its bottom there projects downward a pivot, F, which fits into a step, F, which is located in the center of the bottom of a chamber, G. This chamber G is circular, and incloses the chamber E. From the stand-pipe A, at the top of chamber E, there projects outward a circular flange, *a*, and at the top of the chamber G is a circular rim, *g*, to which is bolted an elastic or flexible packing-ring, *g*, the central opening of which is just about large enough to permit the chamber E to pass through it when the parts are placed in proper position, in which position the flange *a* rests against the flexible packing-ring *g'*, and the pivot F rests in step F', said pivot and step supporting the entire weight of the stand-pipe, and, as their adjacent surfaces are as small as practicable, very little friction has to be overcome in turning the stand-pipe.

The packing-ring *g'* may be made of rubber, leather, thin sheet-metal, or other suitable material. In one side of the chamber G is an opening, *h*, to which leads a supply-pipe, H, from a hydraulic ram, or other water-forcing

apparatus, said supply-pipe being provided with a suitable valve for letting on or cutting off the flow of water.

The operation of the first part of my invention is as follows: When the apparatus is not in use the delivery-pipe B is swung away from over the track, and the tube C is turned up and so held by a spring-catch, I, which catches over the edge of the tube, as shown in Fig. 1, in which the tube in this position is shown in dotted lines. When the apparatus is in use, the delivery-pipe B is swung over the tender on the track, and the tube C thrown down, as shown in full lines, Fig. 1, and it may hang straight down, as shown in said figure; or, if the position of the tender requires it, the tube may be inclined either backward or forward, as shown in Fig. 4.

The operation of the second part of my invention is as follows: The stand-pipe being turned in proper position for use, the water is turned on by means of the valve in pipe H, and, entering chamber G, flows through the vertical openings *e e e e* in chamber E, and fills the stand-pipe, the pressure of the water upon the inner side of the bottom of chamber E forcing the stand-pipe downward, so that flange *a* is held firmly in position while the upward pressure of the water in chamber G against the flexible or elastic ring *g'* forces said ring firmly against flange *a*, thus keeping the water-joint snug and close, just when it is necessary that it should be so.

I am aware that in this class of stand-pipes stuffing-boxes have been used for the purpose and in the place of my flexible ring *g'*, which is intended as an improvement upon, and to take the place of, said stuffing-boxes, and thus relieve the stand-pipe of the great degree of resistance to its turning, caused by the constant pressure on the stuffing-box, and this pressure must be considerable, and extended over a considerable surface, in order to produce a water-tight joint.

Instead of constructing the flexible ring *g'* solely of rubber, leather, metal, or any one material, I may use a ring of rubber or leather, and face its upper surface with a ring of metal equal in surface to the under surface of flange *a*, against which it will impinge when water is flowing through the stand-pipe. In this construction it will be understood that the surface of the facing-ring and the under surface of flange *a* must be planed and polished so as to form a close joint.

Having now fully described and explained the operation of my improvement, I claim—

1. The combination of delivery-pipe B and hinged sheet-metal tube C, substantially as described.

2. The combination of delivery-pipe B, pivoted hinge D, and sheet-metal tube C, surrounding and projecting above the mouth of said delivery-pipe, substantially as and for the purpose set forth.

3. The combination of stand-pipe A, pivoted within chamber G, flange *a*, and flexible or elastic ring *g'*, substantially as and for the purpose set forth.

4. The combination of chamber G, having supply-pipe H, base-chamber E of the stand-pipe, having openings *e e e e* and pivot F, step F', flexible or elastic ring *g'*, and flange *a*, substantially as and for the purpose set forth.

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

HIRAM SMITH.

Witnesses:
E. PHILLIPS,
J. M. EMORY.