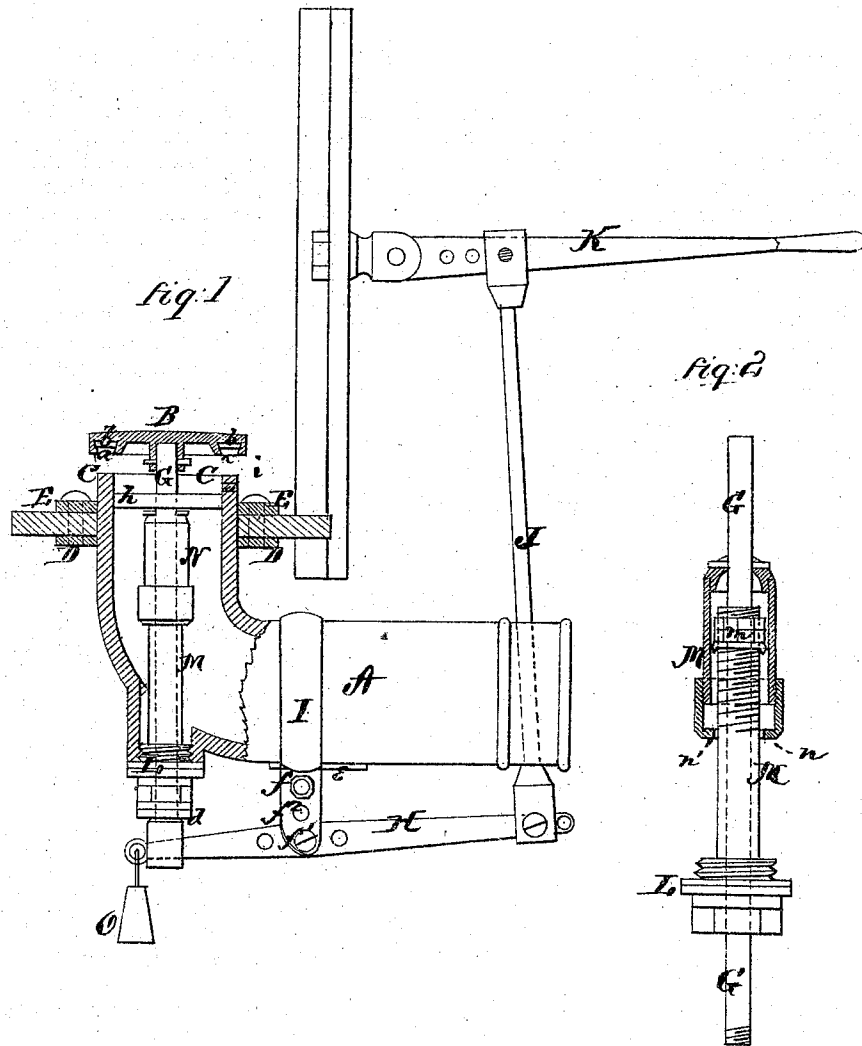


JOHN H. DORST.
Improvement in Tank Valves.

No. 122,583.

Patented Jan. 9, 1872.



Witnesses
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UNITED STATES PATENT OFFICE.

JOHN H. DORST, OF NEW ALBANY, INDIANA.

IMPROVEMENT IN TANK-VALVES.

Specification forming part of Letters Patent No. 122,583, dated January 9, 1872.

To all whom it may concern:

Be it known that I, JOHN H. DORST, of New Albany, in the county of Floyd and in the State of Indiana, have invented certain new and useful Improvements in Tank-Valve; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon making a part of this specification.

The nature of my invention consists in the construction and arrangement of a tank-valve for railroad water-station tanks and other purposes, 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 vertical section of the valve, and Fig. 2 is an enlarged view of the valve-stem and its attachments.

A represents the main body of the pipe leading from the tank. B is the valve on the upper end of the pipe A within the tank, said valve being on its under side provided with a dovetailed groove, *a*, for the insertion of the packing *b*, which packing may be of any suitable material. C is simply the upper end or face of the main pipe upon which the valve operates, and which extends above the inside of the tank-floor from four to six inches to allow the mud to settle to the floor and to prevent the valve from freezing fast in winter. D is a flange on the main pipe to fit to the under side of the tank-floor; and E is a loose flange to drop on the bottom or tank-floor around the pipe, and is bolted through the tank-floor to the flange D, thus holding the entire valve in place. G is the valve-stem, provided at its lower end with an adjustable collar or shoulder, *d*, to regulate the lift of the valve, and may be provided with packing, if desired. H is a lever attached to the under side of the main pipe A to raise the valve with. I is a wrought-iron band around the main pipe to form a fulcrum for the lever H, which band can be moved forward or backward on the main pipe to give a long or short leverage, the lever being provided with several holes, as shown, for this purpose. The narrow flange *e* on the pipe, where the ends of the band

meet, is to prevent the band from turning around. The band I that supports the valve-lever, and requires more strain than any other part of the whole valve, is made of wrought-iron for the reason that if made of cast-iron it might break in cold weather. This band is so arranged as to make the end of the valve-lever H at the end of the main pipe range at one side, so as to connect it, with a rod, J, to a hand-lever, K, above. This hand-lever is connected to the tank, and in this way any person can easily open or shut a large valve with ease, for the levers have extra bolt-holes to give long or short leverage, so as to control the valve at all times, and with perfect safety. Between the two bolts, *f* and *f*¹, that clasp the band I and hold the valve-lever H, is a set-screw, *f*², to prevent the lever from being clasped too tight, whereby its working would be prevented. *h* is the ordinary guide for the valve-stem G, which stem is intended to be cast separate and fitted in its place neatly. It will be easily kept in place as there is no upward pressure against it except the sliding of the valve-rod or stem, and then the water rushes in and over it. L is a packed nut screwed into the bottom of the main pipe A as a guide for the valve-stem. To this nut is attached, or rather this nut is formed at the lower end of a tube, M, which surrounds the valve-stem and extends upward a suitable distance. This tube M alone protects the valve-stem from getting water into it below the capping-pipe N, and allows ample space between it and the stem for easily working, and to give vent when the valve is closed. The capping-pipe N is closed and attached to the valve-stem at its upper end, overlapping the inner pipe M one or more inches when the valve is opened, and giving considerable space between the two pipes for shoulders or collars *m n*, and still have plenty room for vent. The shoulder or collar *m* on the pipe M may be fixed or movable, as may be desired, and answers two purposes: first, it prevents the water from dashing up past it before the valve is fully opened; second, it forms a tight joint with the shoulder or collar *n* when the valve is fully opened; and the lift of the valve may be regulated by this collar by a screw in the pipe M to match the collar *m*. The collar *n* on the lower end of the pipe N, to hold the packing-ring that makes a

water-tight joint, when raised with the valve-stem up to and against the collar *m* and the valve, is fully opened, leaving enough play between each collar and the pipe it plays in or around to give free and good vent as soon as the valve is closed. The pipe *M* is stationary in the main pipe *A*, while the capping-pipe *N* is attached to the valve-stem *G*, which stem passes through the stationary pipe *M*.

When the valve is closed the capping-pipe *N* is, by the fall of the stem, moved down upon the pipe *M*, so that there is a free passage for air around the stem up through the pipe *M* over the upper end of the stem and out around the lower end of the capping-pipe *N*. When the valve is opened this passage or vent is closed by the pipe *N* being raised by the upward movement of the valve-stem, so that the shoulders or collars *m n* come in contact, which also prevents the water from coming into the valve-stem.

The lift of the valve-stem *G* may be regulated either by the adjustable collar *d* on its lower end, or by making the collar *m* on the pipe *M* adjustable.

In the back end of the lever *H* is a hole to hang a weight, *O*, if necessary to balance the valve to keep it shut. In the upper end *C* of the main pipe *A* is one or more holes, *i*, closed with plugs of wood or other suitable material,

which holes can be opened when the tank is empty and the valve closed, so that the mud and other matter can be washed through the same, and no grit of any kind can get to the valve or seat.

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

1. The combination of the valve *B*, having an annular dovetailed groove, *a*, the packing *b*, upper end *C* of the main pipe with holes *i*, valve-stem *G*, and adjustable collar *d*, all constructed and arranged substantially as and for the purposes herein set forth.

2. The combination of the wrought-iron band *I* with bolts *f f*¹ and set-screw *f*², the rib *e* on the pipe *A*, the levers *H K*, and rod *J*, all constructed and arranged substantially as and for the purposes herein set forth.

3. The combination of the pipe *M* with collar *m*, and pipe *N* with collar *n*, all constructed and arranged substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 26th day of June, 1871.

JOHN H. DORST. [L. S.]

Witnesses:

M. D. CONDIFF,
D. R. SCOTT.

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