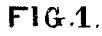


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D. Fisher
H. Cunningham
By Knighthead
Thornley

United States Patent Office.

DANIEL FISHER AND WILLIAM CUMMING, OF OIL CITY,
PENNSYLVANIA.

Letters Patent No. 113,153, dated March 28, 1871.

IMPROVEMENT IN VALVES FOR OIL-TANKS.

The Schedule referred to in these Letters Patent and making part of the same.

We, DANIEL FISHER and WILLIAM CUMMING, both of Oil City, in the county of Venango, Pennsylvania, have invented an Improved Valve for Oil-Tanks, of which the following is a specification.

Nature and Objects of the Invention.

Our invention relates to valves for oil-tanks, especially railway-car tanks, and has for its primary objects the adaptation of the same for the application of steam or hot water to thaw them loose in winter, and their adaptation further to be lifted through ice without danger of breakage.

The features of novelty are—

First, a tubular valve and valve-stem, forming, in connection with the valve-seat, a continuous channel through which steam or hot water may be passed.

Second, a combined valve and valve-stem with plane vertical sides, so that it may be drawn through any ice which may cover the oil.

Third, a seat for such tubular valve, constructed with guides to support the same against lateral deflection.

Fourth, a threaded sleeve, provided with a hand-wheel, and working between a pair of adjustable collars on the valve or valve-stem, in a combined nut and stop, as means for operating such valve.

Description of the Accompanying Drawing.

The several figures are views of a cylindrical oil-tank provided with our improved valve.

Figure 1 is a vertical transverse section on the lines *z z*, figs. 2 and 3.

Figure 2 is a plan view.

Figure 3 is a horizontal section on the line *y y*.

Like reference letters indicate corresponding parts in the several figures.

General Description.

In the bottom of the tank *A* we form an aperture, *a*, and over the same another, *b*, which may be larger than the first, strengthening the two by external rims, *B C*, attached by set-screws *c*.

In the lower hole *a* a valve-seat, *D*, is arranged, the same being secured by a threaded tubular stem, *d*, and constructed with the marginal fingers or "wings" *e*, to serve as guides.

In the upper hole *b* a nut, *E*, is secured in like manner, its lower surface being adapted to form a stop.

A cylindrical tube, *F*, a little longer than the depth

of the tank, constitutes the valve or valve and stem, its end being suitably fitted and ground to the seat *D*.

The valve *F* is threaded at its upper end, and has attached thereto a loose sleeve, *G*, by collars *H I* on said threaded portion, the lower or both of said collars being locked by keys *f*.

The lower end of said sleeve *G* is threaded for engagement with the nut *E*, and its upper end provided with a hand-wheel, *g*.

A recess, *h*, in the lower surface of the nut *E*, receives the lower collar *I* to stop the lift of the valve.

This and other details of construction may obviously be varied.

In applying the valve, the lower collar *I* is first applied, then the sleeve *G*, with the nut *E* thereon, and, lastly, the collar *H*.

The nut *E* is then screwed home and the valve closed by turning the hand-wheel *g*.

Operation and Advantages.

The valve being closed, the tank is filled through another passage. The valve is thus always empty.

To withdraw oil, the hand-wheel *g* is turned and the valve lifted by a straight and powerful pull imparted by the screw-sleeve *G* through the collar *H*.

The collar *I*, abutting against the nut *E*, stops this motion while the lower end of the valve is still within the guide-fingers *e*, which thus preclude its lateral deflection.

A pipe may be attached to the stem *d* of the valve-seat *D*, to conduct the oil where required.

Should the valve be frozen, a continuous and clear channel is furnished by the valve and its seat, and, by passing steam or hot water through this, the ice may be instantly melted and the valve opened with little additional difficulty; whereas, with the valve now in use, the valve can only be thawed with great difficulty and at considerable expense in time and labor, heating the oil being sometimes resorted to.

Should there be ice in the car, the smooth sides of the valve will readily break loose therefrom, and there is nothing to be broken in the act, while the valves now in use are often broken or pulled from their stems in attempting this.

When the valve is lifted a clear outlet is furnished, which may be of such large area that the oil may be drawn off thereby in as many minutes as in said common valves hours are required.

Claims.

We claim as our invention—

1. The tubular valve F, constructed substantially as herein described, permitting the passage of steam or hot water within it when closed upon its seat, for the purpose specified.

2. The combined hollow valve and valve-stem F, constructed with plane parallel sides, as herein set forth, for the purpose stated.

3. The valve-seat D, constructed with guide-fingers or wings e, as and for the purpose set forth.

4. The sleeve G, collars H I, combined nut and stop E, and hand-wheel g, in combination with a valve, F, of substantially the form herein described, as means for operating the said valve, the same being constructed and arranged to operate as set forth.

DANIEL FISHER.

WILLIAM CUMMING.

Witnesses:

JOHN H. PATERFIELD,

O. J. GREER.