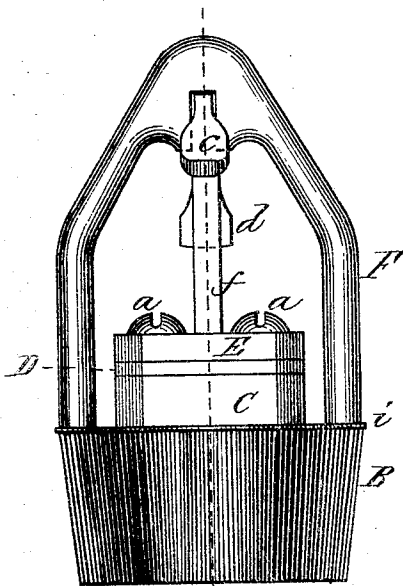


W. A. SPOONER.

Pump-Boxes.

No. 145,133.

Patented Dec. 2, 1873.



A Fig. 1

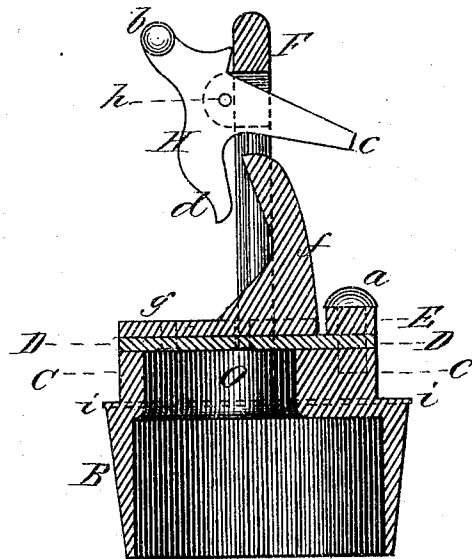


Fig. 2

Witnesses,
C. E. Ruckland,
Leo. Lobitz

Inventor,
William A. Spooner,
By J. H. Curtis,
his Atty.

UNITED STATES PATENT OFFICE.

WILLIAM A. SPOONER, OF SPRINGFIELD, MASSACHUSETTS.

IMPROVEMENT IN PUMP-BOXES.

Specification forming part of Letters Patent No. **145,133**, dated December 2, 1873; application filed August 18, 1873.

To all whom it may concern:

Be it known that I, WILLIAM A. SPOONER, of the city of Springfield, State of Massachusetts, have invented an Improvement in Pump-Boxes, of which the following is a specification:

The object of my invention is to provide a projection upon the upper side of an ordinary pump-box, the top of which projection serves as the valve-seat, which, as it becomes worn or injured, may be filed away and made even again without reducing the thickness of the top of the box, and to the rear part of which projection is secured a metallic stop, which serves to hold the valve securely in place, and also serves as a stop, against which a finger on the valve strikes when the valve opens, which operates to limit the movement of the valve, and prevents it from opening too wide, thereby obviating injury to the valve and its seat by the pounding of the valve in long lifts, caused by the reaction of the water. A pivoted "trip" is so arranged as to leave the valve free to act without interfering with the trip, but which may be used to trip the valve to let down the water when desirable.

In the drawings, Figure 1 is a rear view of the valve-box made according to my invention, and Fig. 2 is a vertical section through line A of Fig. 1.

B represents the valve-box, provided with the bow F; and upon the upper side of the box is made a projection, C, extending up some distance above the top *i* of the box. The top of this projection C, being filed off even, or having a plane and true surface given to it, forms the valve-seat; and *g* is the valve, provided with a projection or finger on top, (represented at *f*;) and the packing-leather D is secured to the valve in the ordinary manner, and projects behind the valve, about even with the rear edge of the part C. The metal stop E, provided with screw-holes, is then screwed down upon the leather D and clamped tightly to the part C by the screws *a*, which pass through the leather and into the part C, the stop E being placed sufficiently near the valve *g* that when the valve is opened to per-

mit the water to pass up through the orifice O the projection or finger *f* on the valve will strike back against the stop E, as shown in dotted lines, and prevents the valve from opening any farther. The trip H is pivoted to the bow at *h*, and is provided with an arm, *b*, a tripping-arm, *d*, and a weight, *c*, so that when not in use the tripping-arm *d* hangs away from the finger *f* on the valve, and when the pump is in use the two do not come in contact and create unnecessary noise, as is the case with many of the ordinary boxes now in use; but when it is desired to let the water out of the pump, the upper box being pressed down upon the arm *b*, by raising the pump-handle the tripping-arm is forced back against the finger *f*, and the valve is raised.

By this construction, when the valve-seat becomes uneven or injured by wear, it may be made true and even again by filing off the top, without reducing the thickness of the top of the box in the least; and the screws *a* only enter the part C a short distance, and do not pass through the top of the box, thereby furnishing orifices for leakage.

In the ordinary boxes now in use the top of the box serves as the valve-seat, and when it becomes worn or uneven it is made true again by filing off the top. This reduces the thickness of the box at the top, and, after being repaired two or three times, the top is made so thin that the action of the valve, particularly in a long lift, soon pounds in the seat again, and the box is entirely unfit for further service.

If the leather packing D should become stretched or moved out of its proper place, it is quite easy to loosen the screws *a* and trim out the holes in the leather and secure it again.

In long lifts, at each end of the stroke of the pump-handle there is usually a reaction of the water passing up and back through the orifice O, which causes a vibratory pounding motion of the valve, creating a disagreeable noise, and injures the box; but the stop E so limits the movement of the valve in its upward motion as to obviate almost entirely

the vibratory motion of the valve, and the consequent noise and injury to the box.

Having thus described my invention, what I claim as new is—

1. The pump-box B, having the projecting part C, which forms the seat of the valve, combined with the stop E, which secures the valve *g* in place, constructed and arranged substantially as herein described.

2. The combination of the valve *g*, finger *f*, and weighted trip H with the stop E, all arranged and operating as set forth.

WILLIAM A. SPOONER.

Witnesses:

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