Z. T. SWEET.

Improvement in Pumps.

No. 114,989. Patented May 16, 1871.

Fig: 1

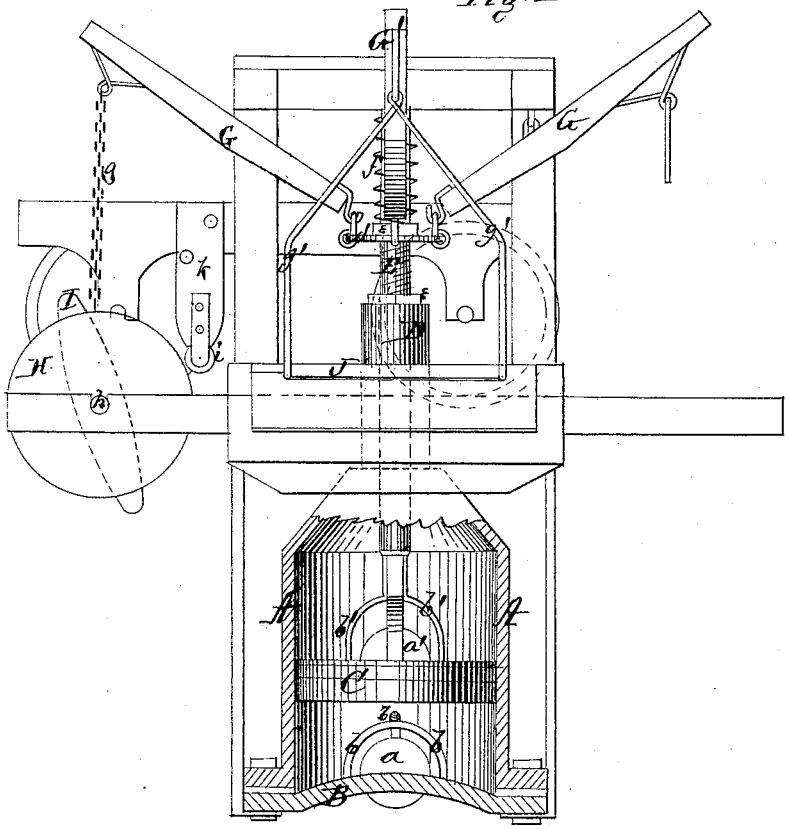
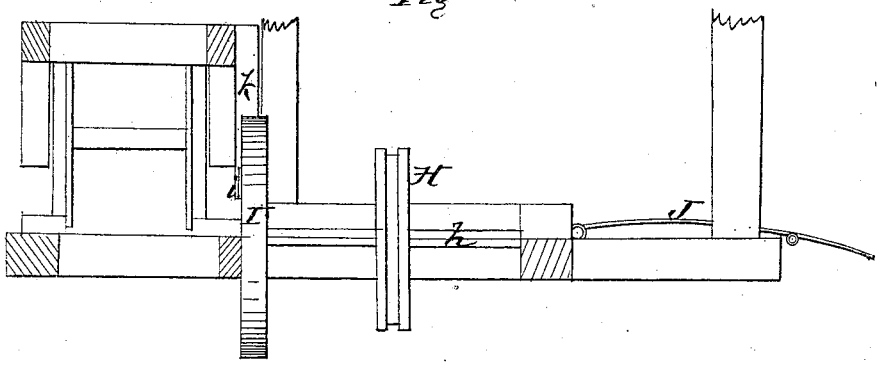


Fig: 2



Witnesses.

C. L. Ewart.

A. A. Seaman

Inventor.

Zara T. Sweet

per Alexander Mason

Atty

United States Patent Office.

ZARA T. SWEET, OF TISKILWA, ILLINOIS.

Letters Patent No. 114,989, dated May 16, 1871; antedated May 12, 1871.

IMPROVEMENT IN PUMPS.

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

To all whom it may concern:

Be it known that I, ZARA T. SWEET, of Tiskilwa, in the county of Bureau and in the State of Illinois, have invented certain new and useful Improvements in Railroad and Stock-Pumps; 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 railroad and stock-pump, as will be hereinafter 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 side view of my pump, the cylinder being in vertical section.

Figure 2 is a section of the same.

A represents the pump-cylinder, provided with a convex bottom, B, in the center of which is a ball-valve, *a*.

Above and around this valve are guides *b b*, to prevent the same from rising too far and getting out of place.

The upper end of the cylinder A is conical-shaped, and from its apex leads a pipe, D, upward, as shown.

Inside of the cylinder A is placed the plunger or piston C, which is also provided with a ball-valve, *a'*, and guides *b'* for the same.

The plunger-rod E extends up through the pipe D, and when the pump is in operation the water is drawn up around said rod through the pipe, and may be made to flow into a reservoir, trough, or any other suitable receptacle.

On the rod E, above the upper end of the pipe D, is placed a loose collar or ring, *d*, which may be adjusted at any height by means of nuts *e e*, one above and one below, this portion of the rod being provided with screw-threads for that purpose.

Above the upper nut *e*, around the rod, is placed a spiral spring, *f*, the upper end of which bears against that portion of the frame-work through which the rod passes, and which acts as a guide for the plunger-rod. The action of this spring *f* is to throw the plunger or piston C down after it has been raised.

The cylinder A is placed in the bottom of a well, and the pump may be operated by hand or by the foot, or by a train of cars passing, or by cattle or other stock, as will be presently described.

To the collar *d* is attached a lever, G, which is suspended or pivoted in the frame-work above the pump, the other end of said lever being, by a chain, *g*, connected with a grooved wheel, H, on a shaft, *h*. On this shaft is a cam, I, placed at the side of a railroad track.

On the side of the cars there is attached a bar, *k*, with a friction-roller, *i*, which strikes the cam I and turns the shaft *h*. This, operating through the lever G raises the pump-plunger, carrying with it a quantity of water. In this manner one train may be made to pump up the water necessary for the next train.

When it is desired to have the pump operated by the cattle coming to drink at troughs or other convenient receptacle placed at the mouth of the well, I propose to have an inclosure around the same. In the opening or passage to said inclosure is a hinged platform, J, connected by chains or rods *g'* with another lever, G', which is also connected with the collar *d*. The cattle or any other stock passing over the platform J will thus pump up water for themselves.

The pump may also be operated or worked by hand, or by a foot-lever, if so desired.

The levers employed may be either straight or elbow-levers, or several combined. I do not confine myself to any particular shape or form of the same.

Having thus fully described my invention,

What I claim as new, and desire to secure by Letters Patent, is—

1. The arrangement of the shaft *h*, cam I, wheel H, chain *g*, and lever G, substantially as shown and described, for operating a pump by a passing train of cars, substantially as herein set forth.

2. In combination with the shaft *h*, cam I, wheel H, chain *g*, and lever G, plunger E, pipe D, and cylinder A with its valves, all constructed to operate substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 7th day of October, 1870.

ZARA T. SWEET.

Witnesses:

CHARLES B. INGALLS,

JOHN COLE.