O. Higgins,

Pump.

No. 111,645. Patented Feb. 7. 1871.

Fig. 1.

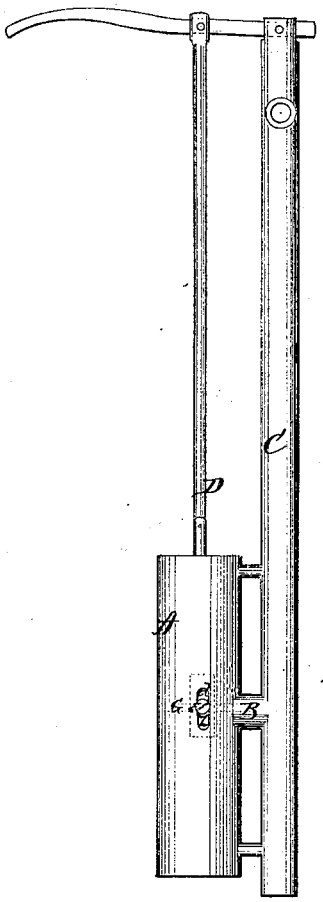


Fig. 2.

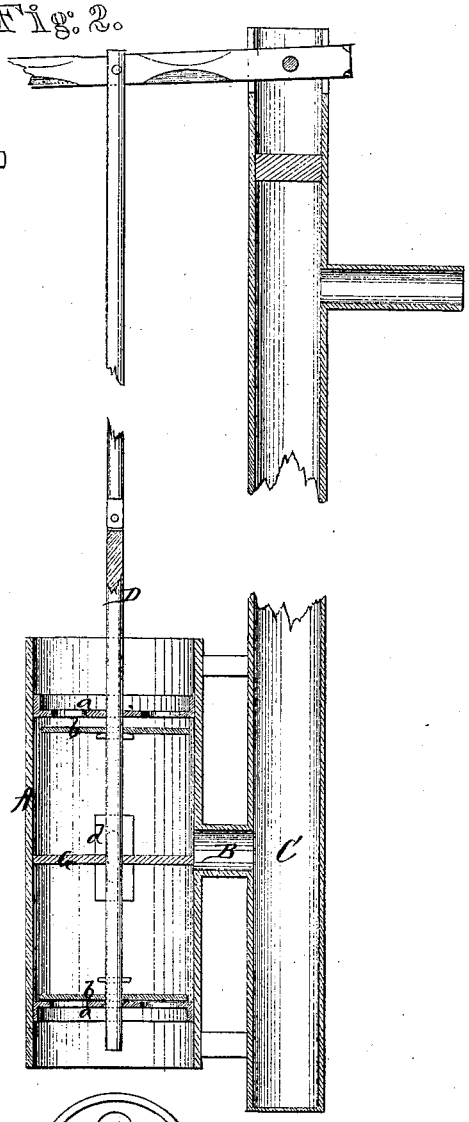
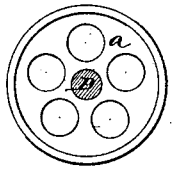


Fig. 3.



Witnesses.
Chas. Kenyon.
Frank Curtis

Inventor.
Oliver Higgins
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Attys,

United States Patent Office.

OLIVER HIGGINS, OF NAPOLEON, OHIO.

Letters Patent No. 111,645, dated February 7, 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, OLIVER HIGGINS, of Napoleon, in the county of Henry and State of Ohio, have invented a new and valuable Improvement in Force-Pumps; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawing making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawing is a representation of my pump in side elevation;

Figure 2 is an enlarged longitudinal vertical section of my pump; and

Figure 3 is a plan view of one of the valves.

The nature of my invention consists in the construction and arrangement of a "double-acting force-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.

A represents the pump-cylinder, which is open at both ends, and connected, at or about its center, by a pipe, B, with the pump-stock C, through which the water is forced upward from the cylinder.

D represents the pump or piston-rod, upon which, at suitable distance apart, are secured the piston-heads *a a*.

These heads are perforated, as shown, and provided with vertically-operating valves *b b*.

The rod D, between the two heads *a a*, passes through a cut-off or plate, G, provided on two sides with rectangular plates *d*, extending above and below the same.

In the center of the cylinder A are two vertical slots, through each of which passes a screw, *e*, into the corresponding plate on the cut-off.

The movement of the cut-off G corresponds nearly with the diameter of the connecting-tube B.

As the piston-heads move up and down they will, in turn, or rather the valves will, come in contact with the ends of the plates *d d*, and move the cut-off either up or down, as the case may be, the length of the slots in the cylinder, when the screws *e e* stop the motion.

The plates *d d* extend above and below the cut-off far enough, so that, at whatever position the cut-off is, the slots in the cylinder will be covered.

Having thus fully described my invention,

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

In combination with the cylinder A, slotted vertically at *z z*, the automatic cut-off G, provided with the guard-plates *d d* and the guide-screws *e e*, and the double-headed piston-rod D, substantially as specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

OLIVER HIGGINS.

Witnesses:

W. F. DOZZETT,

E. A. CARROLL.