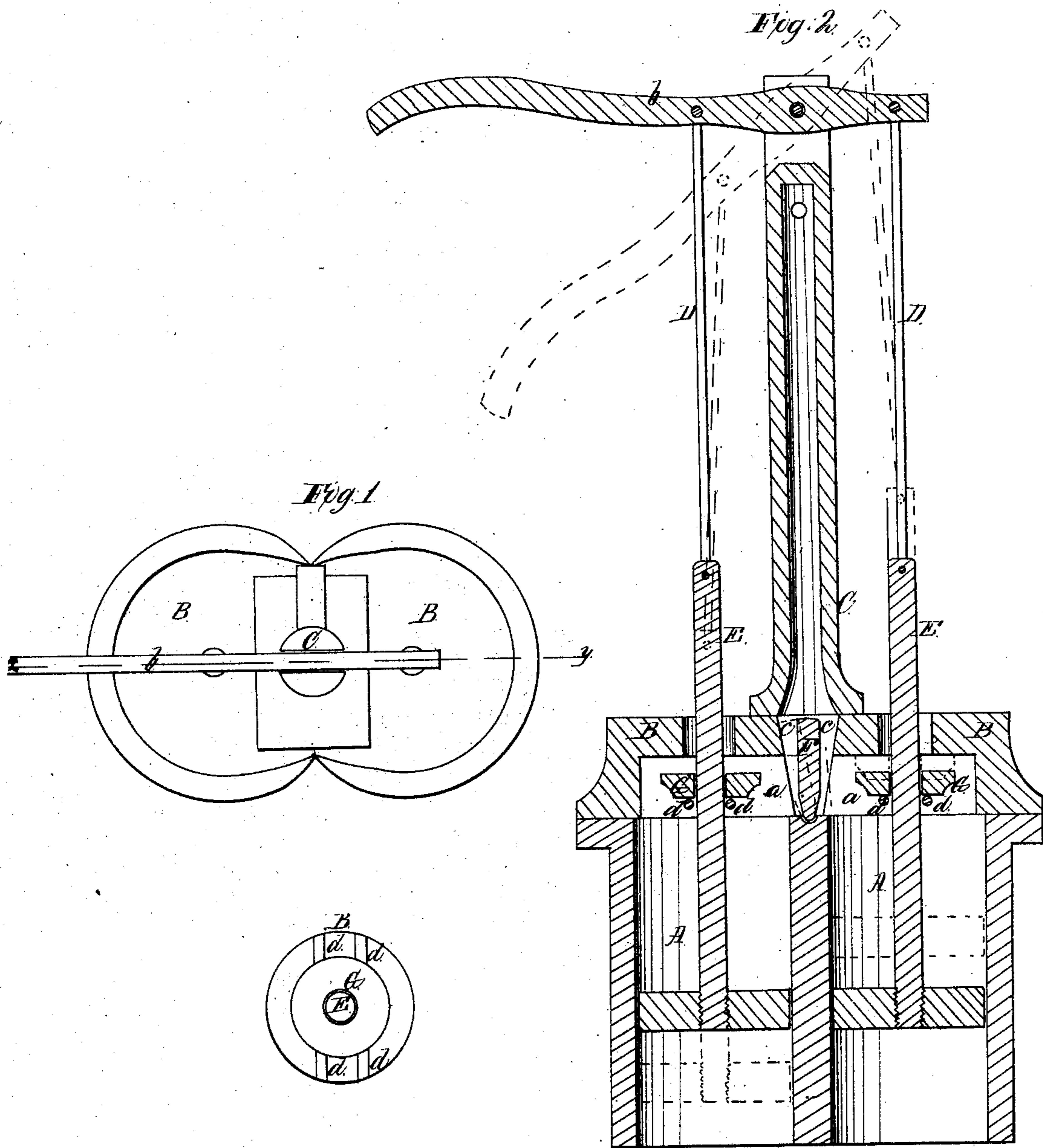


F. J. Underwood,
Double-Acting Pump,
Nº 69,595. *Patented Oct. 8, 1867.*



Witnesses:
James R. Hatch
Robert C. Poff

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United States Patent Office.

FLAVIUS J. UNDERWOOD, OF ROCK ISLAND, ILLINOIS.

Letters Patent No. 69,595, dated October 8, 1867; antedated September 21, 1867.

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, FLAVIUS J. UNDERWOOD, of Rock Island, county of Rock Island, and State of Illinois, have invented a new and useful Improvement in Double Anti-Freezing 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 accompanying drawings making a part of this specification, in which—

Figure 1 is a top view of my improved force-pump.

Figure 2 a vertical section, taken in the plane $x-y$ of fig. 1.

Like letters in the figures of the drawings indicate like parts.

The nature of my invention consists in the arrangement of two pump-barrels or cylinders, and a top chamber-plate, in combination with a discharge-tube, so that by means of a trap valve, centrally arranged in the chamber, between the barrels and piston-rod valves and valve-support rods, I am enabled to force the water alternately from the barrels into the discharge-tube.

To enable any one skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A are the two pump-barrels, with open ends at the bottom, properly joined together, and having a flange around the top, to which is attached the top plate B, constructed with a chamber, a . Attached to this plate is the discharge-tube C, at the upper end of which is a handle or lever, b . D are rods connecting the piston-rods E with the lever. F is the trap-valve, slightly tapering toward the edge, rounded off and fitting transversely into a curved groove over the central partition of the barrels. The ends of the valve fit into recesses c , inclined up to the enlarged orifice of the tube, so that when the pump is in operation the valve vibrates alternately against the sides of the recesses. G are circular valves surrounding the piston-rods, and are supported by the stops d , attached transversely to the sides of the chamber. (See representation of the same in detail.)

Operation: The lever, on being brought down, as indicated in red lines, the follower of one piston-rod is raised above, whilst the follower of the other is carried below, (see also red lines,) consequently this action forcing the water up, the circular valve of the piston-rod of the upper follower is necessarily curved to close the orifice in the top chamber plate around the piston-rod, and the trap valve, likewise that part of the chamber over the adjacent barrel. The water then freely ascends the discharge tube and out at the spout for use, (see red arrow.) The same operation attends the adjacent barrel, when the lever is carried up. By the open ends of the barrels of my pump it may be used for mining purposes, the action of the piston-follower being thus enabled to agitate the sediment at the bottom. When used for ordinary well purposes the ends are closed.

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

The cylinders A, top chamber-plate B, and discharge-tube C, in combination with the trap-valve F, substantially in the manner and for the purpose as herein set forth.

FLAVIUS J. UNDERWOOD.

Witnesses:

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