S. B. ELZEY.

Pump.

No. 200,185. Patented Feb. 12, 1878.

Fig. 1.

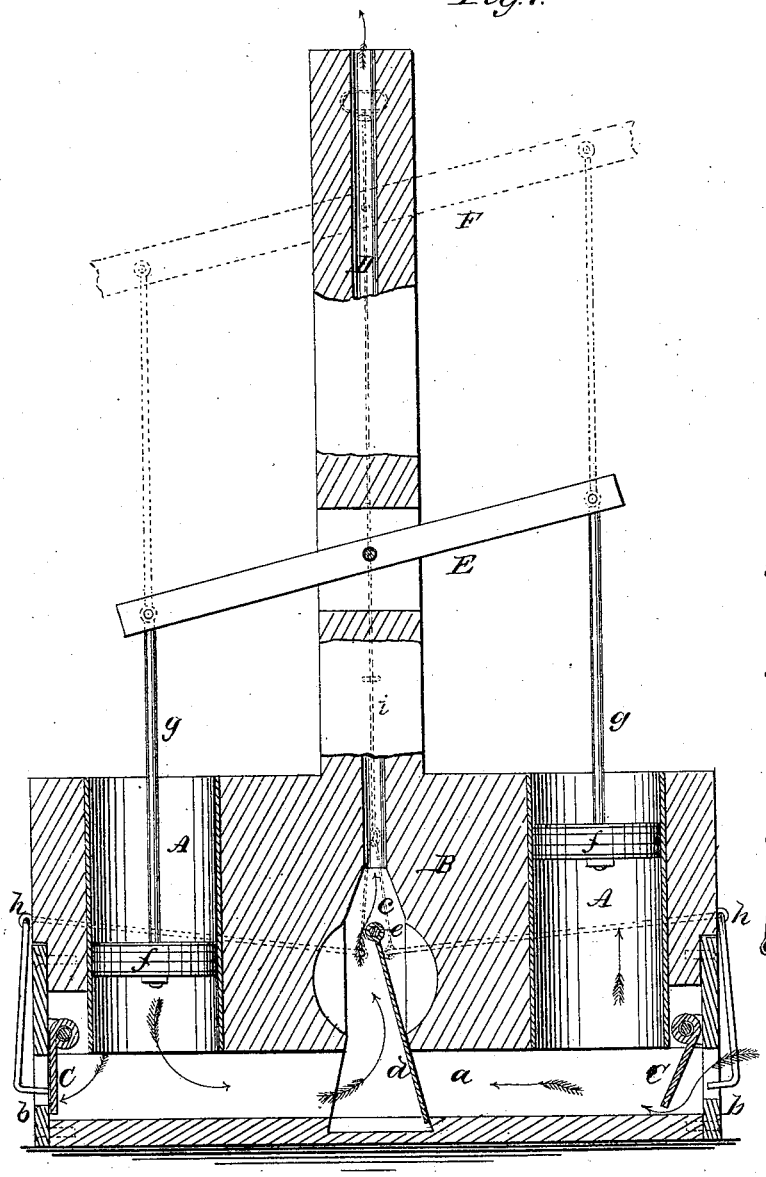
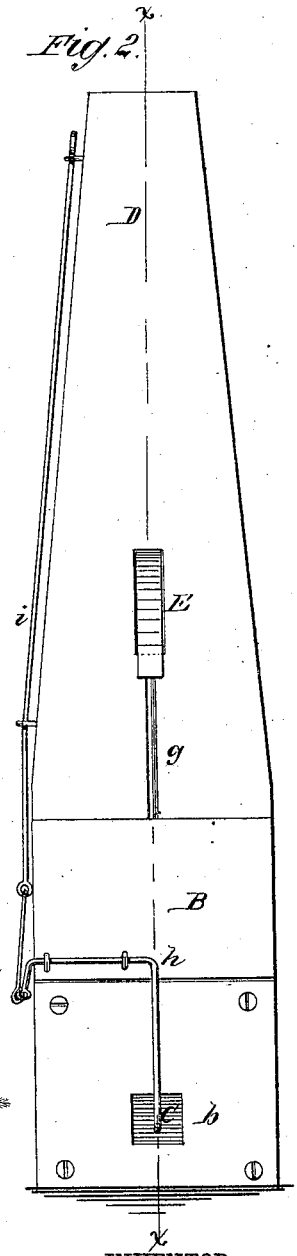


Fig. 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

SAMUEL B. ELZEY, OF HOPE, ARKANSAS.

IMPROVEMENT IN PUMPS.

Specification forming part of Letters Patent No. **200,185**, dated February 12, 1878; application filed December 1, 1877.

To all whom it may concern:

Be it known that I, SAMUEL B. ELZEY, of Hope, in the county of Hempstead and State of Arkansas, have invented a new and Improved Pump, of which the following is a specification:

Referring to the accompanying drawings, forming part of this specification, Figure 1 is a sectional elevation taken on line *x x* in Fig. 2. Fig. 2 is a side elevation.

Similar letters of reference indicate corresponding parts.

The object of my invention is to provide a double-acting force-pump for elevating water from mines, wells, &c.

The invention consists in a pump having two cylinders, connected by a single passage, in which there are two suction-valves and a single discharge-valve, which is common to both cylinders.

It also consists in an arrangement of levers for opening the suction-valves, to permit the water contained in the cylinder and discharge-pipe to escape, so as to prevent freezing and stagnation in the pump.

Referring to the drawings, A A are vertical cylinders, formed in the single block of wood or casting B, and connected by a horizontal passage, *a*, which extends longitudinally through the lower portion of the block or casting B, and has at each end a valve-seat, *b*, upon which is seated a valve, C, that is hinged at the upper side of the passage *a*.

Between the cylinders A a vertical passage, *c*, is formed, which communicates with the discharge-pipe D. In the passage *c* a flap-valve, *d*, is suspended from a pivot, *e*, and is capable of closing the passage *a* at either side of the passage *c*.

The cylinders A are provided with pistons *f*, whose rods *g* are pivoted to opposite ends of the equal-armed lever E, which is fulcrumed in the hollow standard F, which also forms the base of the discharge-pipe. The lever E is connected with a similar lever, F, fulcrumed at the upper end of the discharge-pipe, and provided with handles at its ends for working the pump.

At the ends of the block or casting in which the cylinders are formed right-angled levers *h* are fulcrumed. The shorter arms of the levers project downward, and are bent inward toward the valve C. The longer arms extend horizontally along the side of the cylinders, are connected with a rod, *i*, that runs through guides at the side of the discharge-pipe to the top of the well, and is provided with a handle by which it may be moved.

By moving the lever F the pistons are reciprocated, and the water is drawn into the cylinders in alternation through the valves C, and discharged through the passage *c*.

The valve *d* serves as a check-valve for both cylinders, by closing the passage *a* at opposite sides of the passage *c*, as it is moved by the water thrown forward by the downward stroke of one or the other of the pistons.

When it is desired to let all of the water out of the pump, the rod *i* is drawn upward, throwing the shorter ends of the levers *h* against the valves C, which are thus opened, permitting the water to escape.

The pump is to be partly or wholly submerged. It is particularly applicable to shallow water, as it may be placed on the bottom, on which the water rests.

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

1. A pump having two cylinders, A, connected with the passage *a*, said passage having at each end a suction-valve, C, and in the middle a discharge-valve, *d*, which is common to both cylinders, as herein specified.

2. The right-angled levers *h*, connected with the rod *i*, and having their lower ends bent inwardly, as described, in combination with the pump, having suction-valves C, as and for the purpose specified.

SAMUEL BELL ELZEY.

Witnesses:

REUBEN E. CORNELIUS,

SAML. W. WHITE.