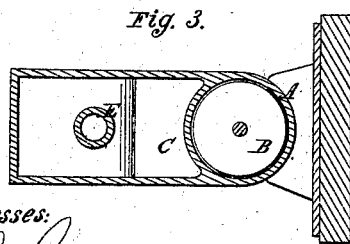
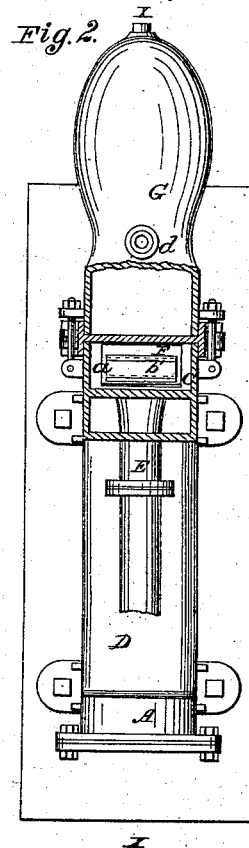
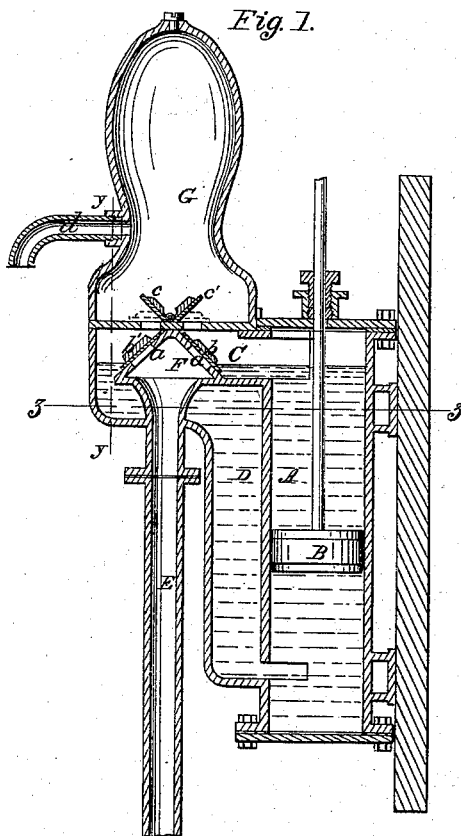


T. Hansbrow,
Force Pump.

N^o 54719.

Patented May 15, 1866.



Witnesses:
Wm. E. Lyon
Wm. E. Lyon

Inventor
T. Hansbrow
per Munroe & Co
Attorneys

UNITED STATES PATENT OFFICE.

THOMAS HANSBROW, OF SACRAMENTO, CALIFORNIA.

IMPROVEMENT IN PUMPS.

Specification forming part of Letters Patent No. 54,719, dated May 15, 1866.

To all whom it may concern:

Be it known that I, THOMAS HANSBROW, of Sacramento, in the county of Sacramento and State of California, have invented a new and useful Improvement in Pumps; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side sectional view of my invention, taken in the line *x x*, Fig. 2; Fig. 2, a vertical section of the same, taken in the line *y y*, Fig. 1; Fig. 3, a horizontal section of the same, taken in the line *z z*, Fig. 1.

Similar letters of reference indicate corresponding parts.

This invention relates to a new and useful improvement in upright reciprocating pumps; and it consists in running the suction-pipe up through the side pipe communicating with the cylinder, substantially as hereinafter set forth, whereby the pump-cylinder cannot lose its priming—that is to say, said cylinder will be kept supplied with water even though the valves should leak.

A represents the cylinder of the pump, and B the piston which works therein. C is a side pipe, which projects laterally from the upper end of the cylinder A, and communicates with the lower part of the cylinder A by means of a passage, D, as shown clearly in Fig. 1.

E is the suction-pipe, which passes up into the side pipe, C, and communicates with a valve-chest, F, therein, the upper part of which has two inclined surfaces, *a a*, provided, respectively, with valves *b b'*, opening outward. The water that is forced through the valve *b* passes directly into the cylinder above the piston B,

and the water that is forced through valve *b'* passes down the passage D into the cylinder below the piston.

When the piston is drawn upward the water above it is forced into the air-vessel G and out through the nozzle *d*, the valve *b*, of course, being kept closed under pressure, and during this upward movement of the piston the valve *b'* opens and the water passes down the passage D into the cylinder underneath the piston. During the descent of the piston the water underneath the piston is forced up through passage D into the air-vessel, while the water is drawn into the cylinder above the piston through valve *b*, suitable valves *c c'* being placed in the base of the chamber G to prevent the return of the water into the cylinder A or passage D.

When the pump is stopped it will be seen that the pump-cylinder A will be retained full of water, or nearly so, even if the valve *b b'* should leak. This will be fully understood by referring to Fig. 1, in which the lowest water-level is shown.

By this simple arrangement the time usually employed in pumping to fill an empty cylinder is saved. The pump will be always ready for action, and the cost of construction is not augmented.

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

The arrangement of the air-vessel G, nozzle *d*, side pipe C, valve-chest F, valves *b b' c c'*, passage D, and cylinder A, operating in the manner and for the purpose herein described.

THOS. HANSBROW.

Witnesses:

B. B. REDDING,
SAMUEL CROSS.