C. C. MASON & J. F. BRACKET.

FORCE-PUMP.

No. 186,144. Patented Jan. 9, 1877.

Fig. 1.

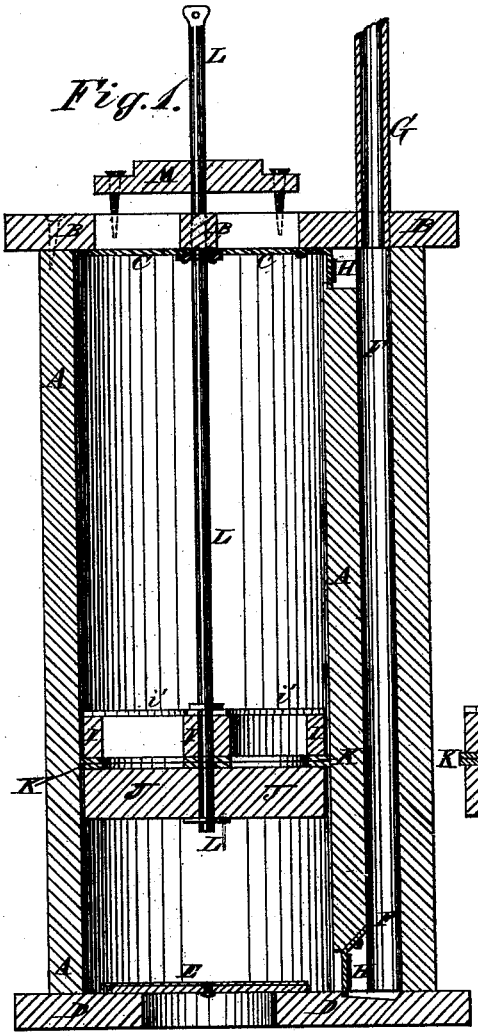


Fig. 4

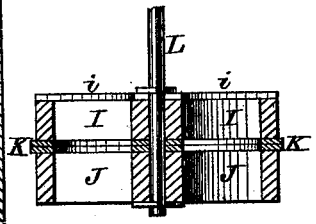


Fig. 3.

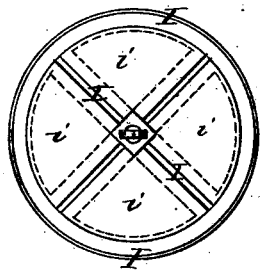
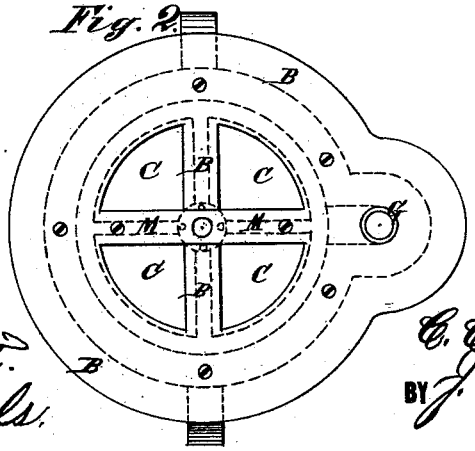


Fig. 2.



WITNESSES:

H. Ridgwitt.

John Gotthals.

INVENTOR:

C. C. Mason.

BY J. F. Bracket

Munn & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

CHRISTOPHER C. MASON AND JOHN F. BRACKET, OF MOUNT PULASKI, ILLINOIS, ASSIGNORS TO THEMSELVES AND PETER BALDWIN.

IMPROVEMENT IN FORCE-PUMPS.

Specification forming part of Letters Patent No. **186,144**, dated January 9, 1877; application filed July 22, 1876.

To all whom it may concern:

Be it known that we, CHRISTOPHER C. MASON and JOHN F. BRACKET, of Mount Pulaski, in the county of Logan and State of Illinois, have invented a new and Improved Combined Single and Double Acting Force-Pump, of which the following is a specification:

Figure 1 is a vertical longitudinal section of our improved pump. Fig. 2 is a top view of the same. Figs. 3 and 4 are detail views of the plunger.

The object of this invention is to furnish an improved force-pump, simple in construction and effective in operation, and which shall be so constructed that it may be readily adjusted for use as a single-acting or a double-acting pump, as may be required.

The invention will first be described in connection with the drawing, and then pointed out in the claim.

A is a hollow cylinder or tube, which is designed to be secured beneath the surface of the water, and near the bottom of the well.

To the top of the cylinder A is secured a cap or head, B, in openings in which around its center are secured valves C, opening inward.

To the bottom of the cylinder A is secured a cap or head, D, in an opening in which is secured a valve, E, opening inward.

To one side of the cylinder A is attached, or in it is formed, a water-chamber, F, with the upper end of which is connected the pipe G, through which the water is discharged.

From the upper and lower parts of the water-chamber F openings lead into the cylinder A, in which openings are placed valves H, opening toward the said water-chamber F. In the cylinder A works the plunger, which is made in two parts, I J, so as to clamp the packing K between them. The upper part I is made in the form of a frame, in the openings of which are secured valves *i'*, opening upward. The lower part J is made solid when a double-acting pump is to be formed. When a single-acting pump is to be formed the lower part J should be a frame similar to the frame I, but without valves, as shown in Fig. 4.

To the center of the plunger I J is attached the lower end of a rod, L, which passes up through the center of the cap B, and through a guide-bar, M, attached to said cap B.

To the upper end of the rod L is jointed a rod, passing up to the top of the well, and provided with a lever, crank, or eccentric, for operating the plunger I J.

The pump may be run by steam, wind, horse, or hand power.

In using the device as a double pump, as the plunger I J moves upward the water above it closes the valves C, opens the upper valve H, enters the chamber F, and is forced out through the discharge-pipe G, and at the same time the water opens the valve E, and follows the plunger, filling the lower part of the cylinder A. As the plunger I J moves downward, the water closes the valve E, opens the lower valve H, enters the chamber F, and is forced out through the discharge-pipe G. When a single-acting pump is to be formed the bottom cap D is detached, and the solid lower part J of the plunger is replaced by a frame.

We are aware that pump-cylinders having a valve at each end, and a solid piston working therein, are not new, and these we disclaim. Our invention consists in taking this old cylinder, and forming the piston that works therein of two parts, and providing it with a valve, whereby we are enabled to convert the pump into a single or a double acting one, as may be preferred.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

In a pump, the combination of the cylinder A, provided with the four valves C E H H, with the piston I J, made in two parts, and provided with a valve, *i'*, whereby the pump can be changed from a double-acting to a single-acting one, and vice versa, substantially as shown and described.

CHRISTOPHER C. MASON.
JOHN F. BRACKET.

Witnesses:
CHARLES R. LANGDALE,
CHAS. S. LANDIS.