A. Sluthour,

Rotary Pump.

No. 102,057. Patented Apr. 19. 1870.

Fig. 1.

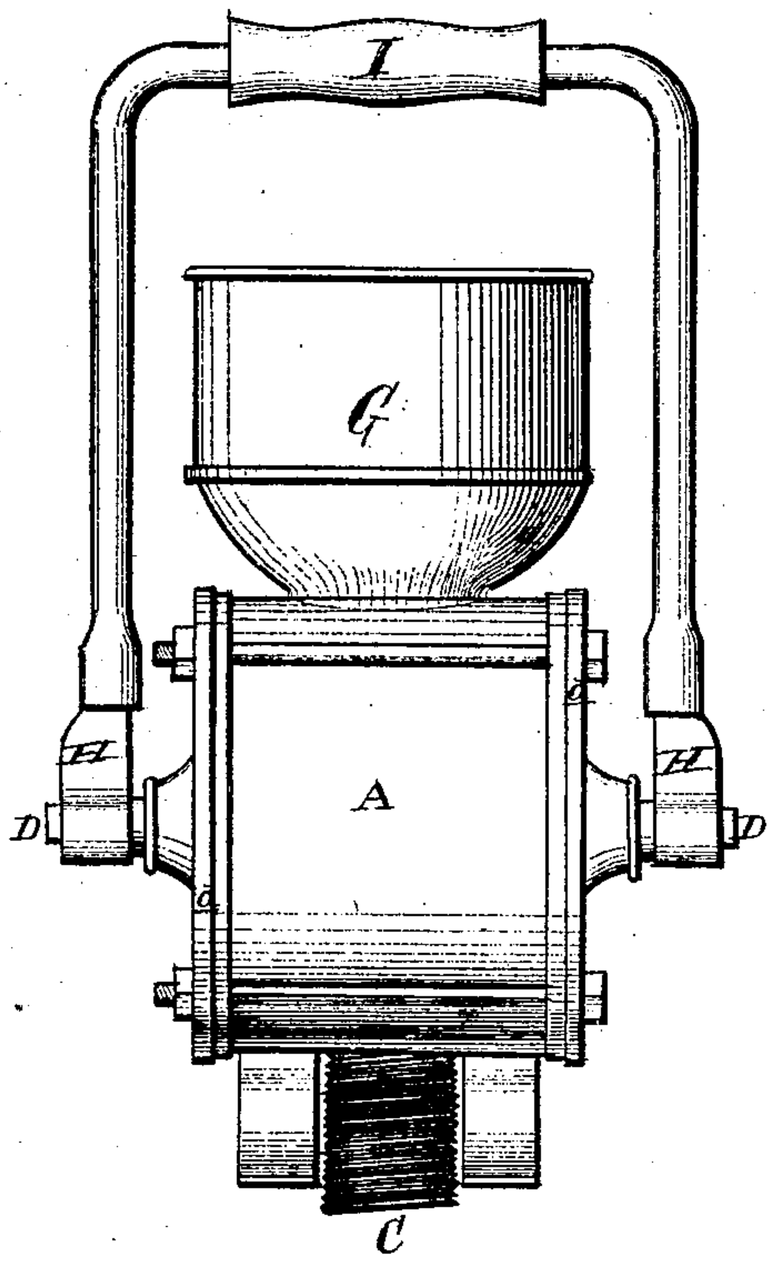


Fig. 2.

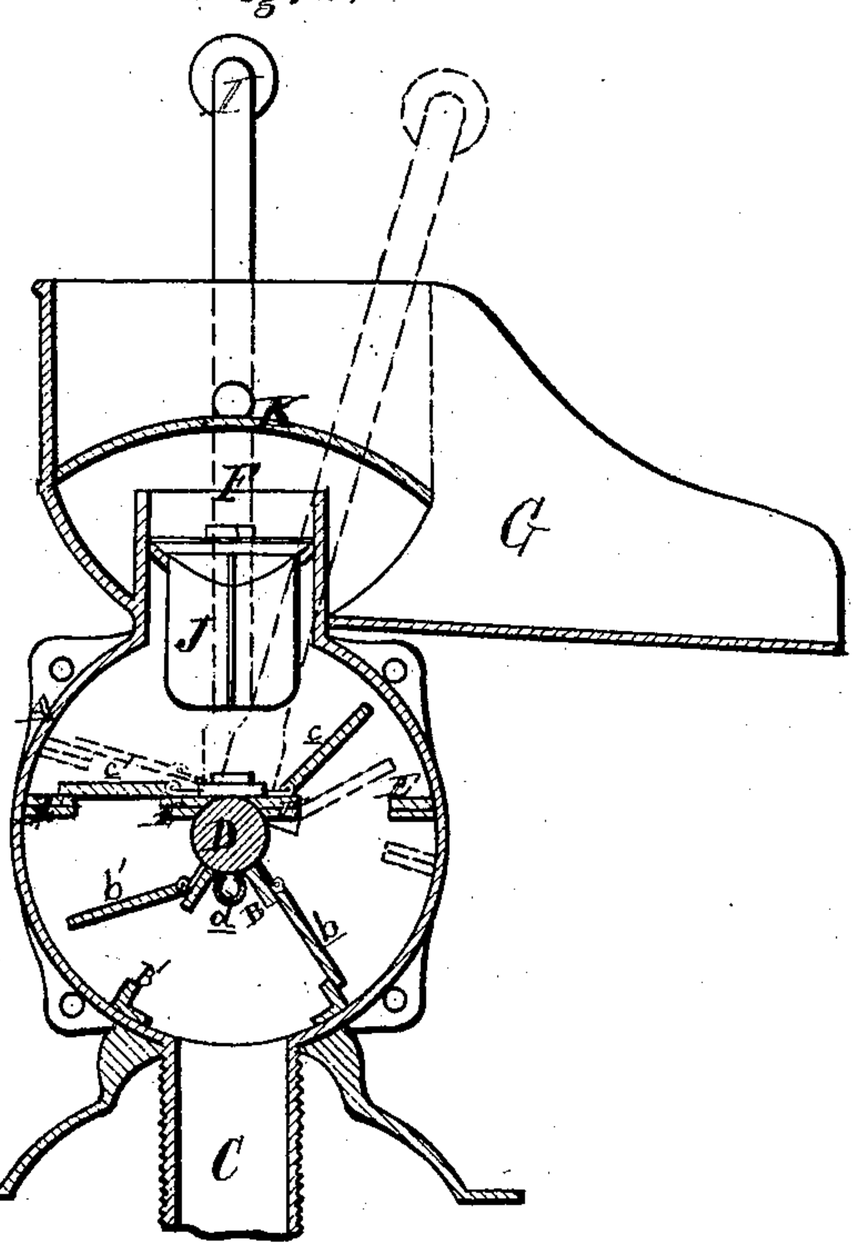
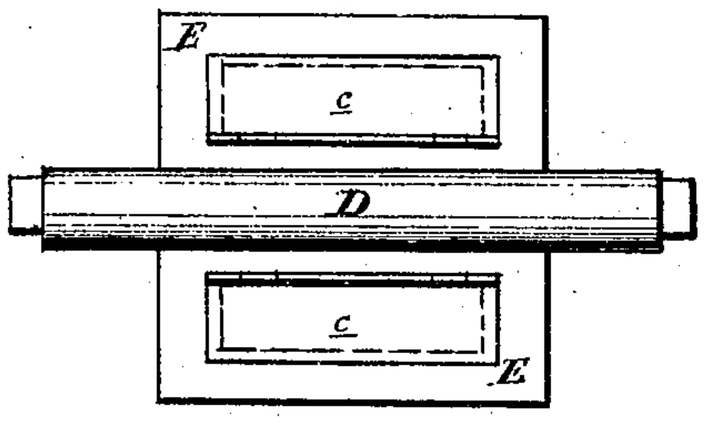


Fig. 3.



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UNITED STATES PATENT OFFICE.

ANTHONY SLUTHOUR, OF CLEVELAND, OHIO.

IMPROVEMENT IN ROTARY PUMPS.

Specification forming part of Letters Patent No. **102,057**, dated April 19, 1870.

To all whom it may concern:

Be it known that I, ANTHONY SLUTHOUR, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented a new and useful Improvement in Pumps; and I do declare that the following is a true and accurate description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, and being a part of this specification.

The nature of this invention relates to an improved construction of lift and force pumps; and consists in the peculiar construction and arrangement, within a horizontal cylinder, of a double channel-plate provided with two foot-valves, and a longitudinal piston provided with corresponding valves attached to and oscillating with an axial shaft, which passes through the heads of said cylinder, and is operated by bails or levers; also, in the arrangement of its various parts, as hereinafter more fully shown and set forth.

Figure 1 is a rear elevation of my pump. Fig. 2 is a vertical longitudinal section of the same, and Fig. 3 is a bottom plan of the horizontal oscillating piston.

Similar letters of reference indicate corresponding parts in each figure.

In the drawings, A represents a horizontal cylinder, mounted on suitable legs, and closed by heads *a*. Within the cylinder, at its bottom, are two longitudinal channel-plates, B B′, inclined toward each other at their tops, and connected there and at their ends by partitions, forming a chamber, which the induction-pipe C enters. *b b′* are foot-valves, longitudinally hinged to the plates B B′, covering their openings.

D is a shaft passing through suitable stuffing-boxes in the heads of the cylinder. E is a rectangular piston, secured to the shaft D, closely fitting the cylinder at its greatest diameter and between the heads. *c c′* are clack-valves, hinged to the upper sides of the piston, and cover longitudinal openings at either side of its axis. F is the eduction-pipe at the top of the cylinder, discharging into a pitcher-spout, G.

H are levers, secured in any convenient manner to the ends of the shaft D, and are, in turn, sleeved in a bail or handle, I, by means of which an oscillating motion may be secured to the shaft D and its piston E. J is a wing-valve, seated in the eduction-pipe, over which is suspended a movable cup to prevent the water from being thrown out of the spout.

To operate the pump, the bail or handle I is moved to and fro, causing the piston to oscillate on its axis, when the valve on the descending side opens, and allows the liquid to pass up through, its pressure closing the foot-valve beneath. At the same time the valve on the ascending side of the piston closes, and the foot-valve beneath it opens, and water rushes in to fill the vacuum, and in the continuation of the movement described a constant upward flow of the liquid will be maintained.

The edges of the piston may be provided with cup-leathers, and the stuffing-boxes packed, if desired; but if the parts be properly fitted all packing may be dispensed with, except a water-joint under the shaft D, which is formed by a groove, *d*, in the connection between the channel-plates; otherwise the vacuum would be destroyed.

By threading the end of the eduction-pipe and removing the cup K, a hose may be coupled on and water forced through the same to any desired point.

The valve J serves to keep the pump primed by retaining the water in the cylinder, but is not essential to the working of the pump. By lifting it the pump is emptied, and thus prevented from freezing up in cold weather.

The pump may be operated by power or by hand, or with any other appropriate forms of levers which will produce an oscillatory motion in the shaft and piston.

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

The cylinder A, provided with heads *a*, channel-plates B B′, valves *b* and *b′*, induction-pipe C, eduction-pipe F, valve J, cup K, shaft D, piston E, valves *c* and *c′*, lever H, handle I, and discharge-spout G, when each of said parts is constructed as described, and all are combined and arranged to operate as and for the purpose set forth.

ANTHONY SLUTHOUR.

Witnesses:

FREDK. HUTCHINS,

JOSEPH ROSS.