

F. T. FORBES.

PUMPS.

No. 172,265.

Patented Jan. 18, 1876.

Fig. 1.

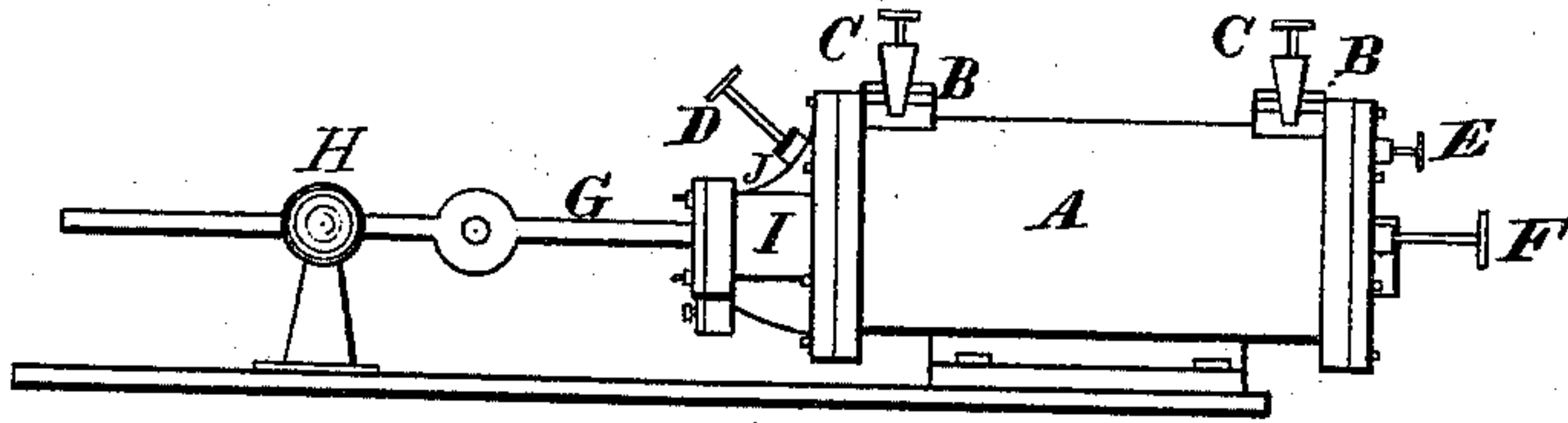


Fig. 2.

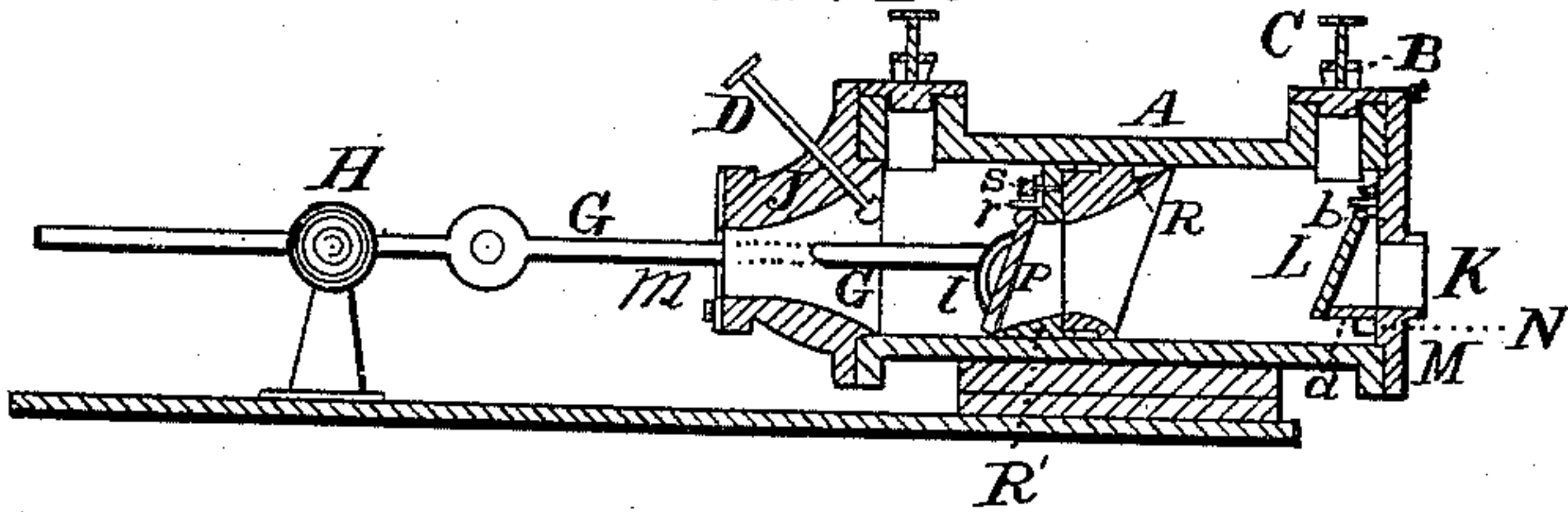


Fig. 3.

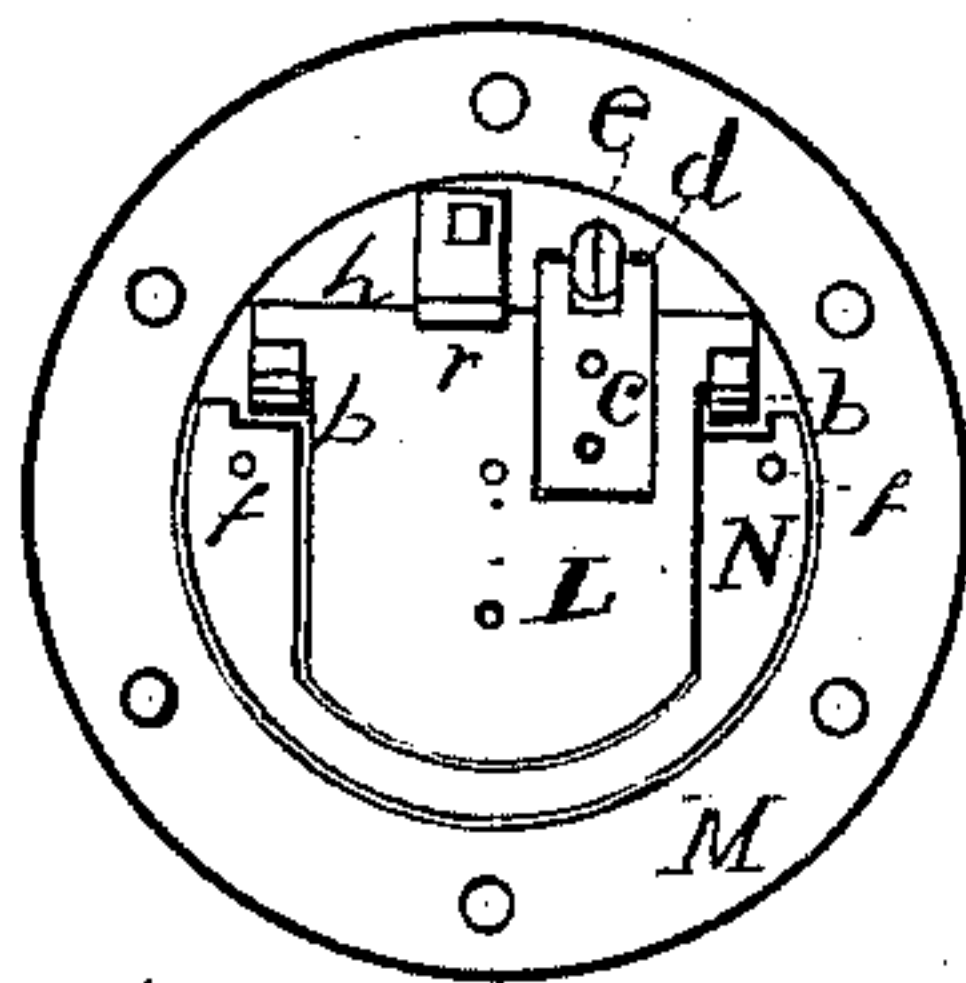


Fig. 4.

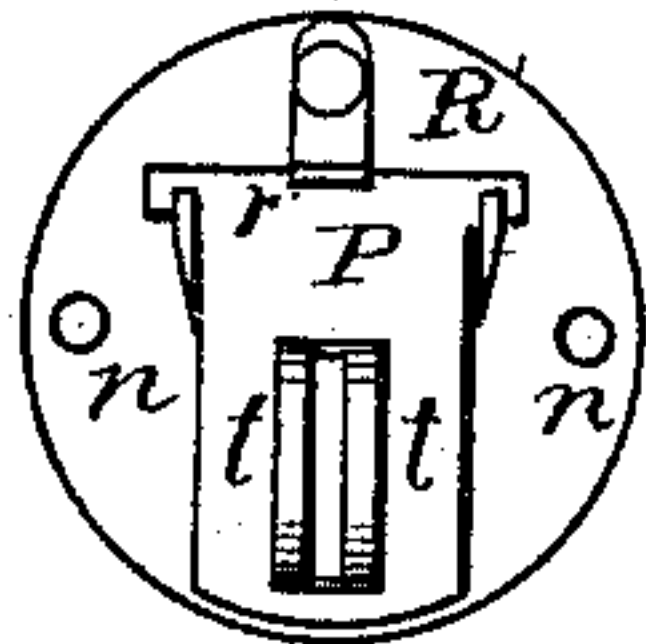
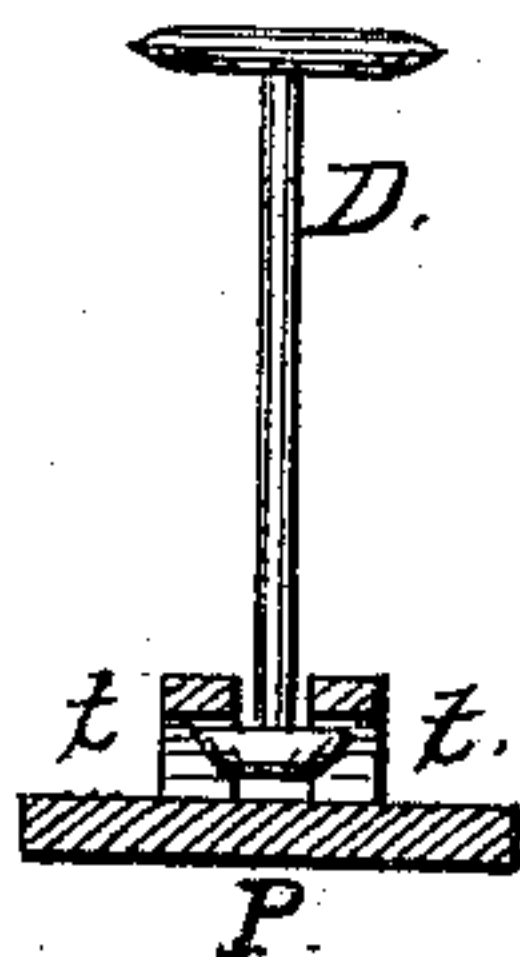


Fig. 5.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

FRANCIS T. FORBES, OF CHICAGO, ILLINOIS, ASSIGNOR TO GEORGE LANDER, OF SAME PLACE.

## IMPROVEMENT IN PUMPS.

Specification forming part of Letters Patent No. **172,265**, dated January 18, 1876; application filed November 11, 1875.

*To all whom it may concern:*

Be it known that I, FRANCIS T. FORBES, of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Pumps, of which the following is a specification:

The object of my invention is to provide more convenient means for removing the contents of sinks, cess-pools, and water-closets.

The nature of my invention consists, first, in a check-valve hinged water-tight to the head of cylinder, in combination with half-ear hangers and a removable lug, for controlling the position of the valve; second, in a check-valve provided with forked lifters, in combination with a rod extending through the cylinder for operating the valve to clean it; third, in a scraper, which fits round the check-valve, in combination with rods for operating it from the outside of cylinder, so as to clean the valve; fourth, in the combination of a suction-valve with slotted lugs and rod, for operating the valve, so as to clean it, and with a lug for controlling the position of the valve.

In the drawings, Figure 1 is a side elevation, showing the exterior of my improvement. Fig. 2 is a longitudinal section of a pump provided with my improvement; Fig. 3, an enlarged inside view of the check-valve and attachments; Fig. 4, an enlarged inside view of the piston-valve and attachments. Fig. 5 shows the means for engaging the rod with slotted lugs on the suction-valve.

A represents the pump-cylinder, which is provided with man-holes at its ends, which are closed by clamps and covers C B, in the ordinary manner. M represents the head of the pump, to which the check-valve L is attached. This valve is provided with a ground hinge, water-tight against the head, and bearing against half-ears *b*, projecting out from the head M, and it is held in place by a removable dog, *r*, fastened by a screw put through it and into the said head.

To remove the valve the screw is to be taken out to remove the dog, after which the valve can be lifted through the man-hole above.

The top part of the valve is provided with a forked lifter, *c*, Fig. 3, that a notched rod, E, may be turned, so as to lock into the lifter and pull the valve open. Surrounding the sides and bottom of this valve is a closely-fitting scraper, N, which is rigidly fastened to two rods, F, put through the head M.

By drawing out and pushing in on the rods F the valve will have removed from it any accumulation thereon.

The induction-pipe K communicates with the valve L, and, in practice, a flexible pipe is to be attached to it, and extended into the vault or the place to be cleaned. The seat R' of the piston is attached to a scoop-shaped conductor, R, for guiding the material elevated into the piston. The valve P is hinged in the same manner and by similar means as the valve L, and above it is placed a dog, *r*, to prevent it from rising too high to enable the valve to be removed through a man-hole above, in the same manner as the valve L is removed. To the face of the valve P is attached a slotted lug, *t*, in which a rod, D, may be locked, to open and close the valve for cleaning it, and for allowing material to be turned back into a vault, if an overload be taken up.

The pump, in use, is to be mounted on wheels, and a pipe is to be attached to it at *m* for conveying the material elevated into a portable tank or box for removal.

The rods D E are to be locked into the lifter *c* and lug *t* by being pushed into the cylinder A, with the flat sides of their blades in vertical position, and then turned one-fourth round.

The releasing is done by a reverse movement.

For the convenience of using the rod D, I employ two piston-rods, G, secured to the piston R' at *n n*, Fig. 4.

I claim and desire to secure by Letters Patent—

1. The valve L, with its hinge fitting the head M water-tight, in combination with half-ears *b b* and removable dog *r*, as and for the purpose set forth.

2. The valve L provided with forked lifter *c*, in combination with the rod E, as specified.

3. The scraper N, surrounding the edges and bottom of the check-valve, in combination with rods F, extending through the head of cylinder, for operating the scraper to clean the valve, as specified.

4. The combination of the valve P, slotted lug *t t*, and rod D, and dog *r*, substantially as and for the purpose set forth.

FRANCIS T. FORBES.

Witnesses:

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OTTO ADEX.