G. R. McCRUM.

PUMP.

No. 186,358. Patented Jan. 16, 1877.

Fig.1

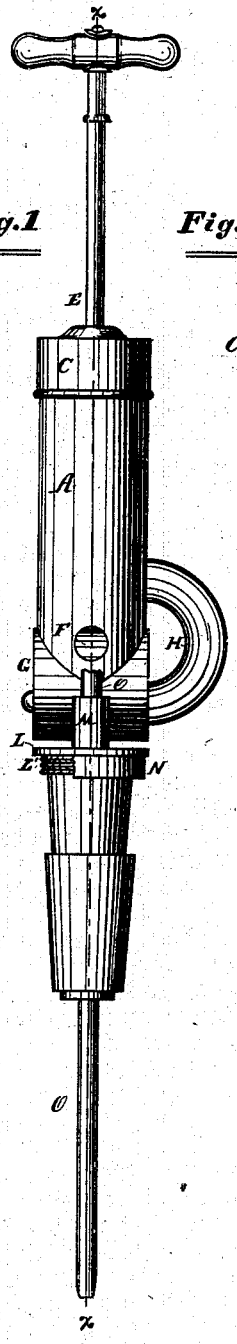

Fig.2

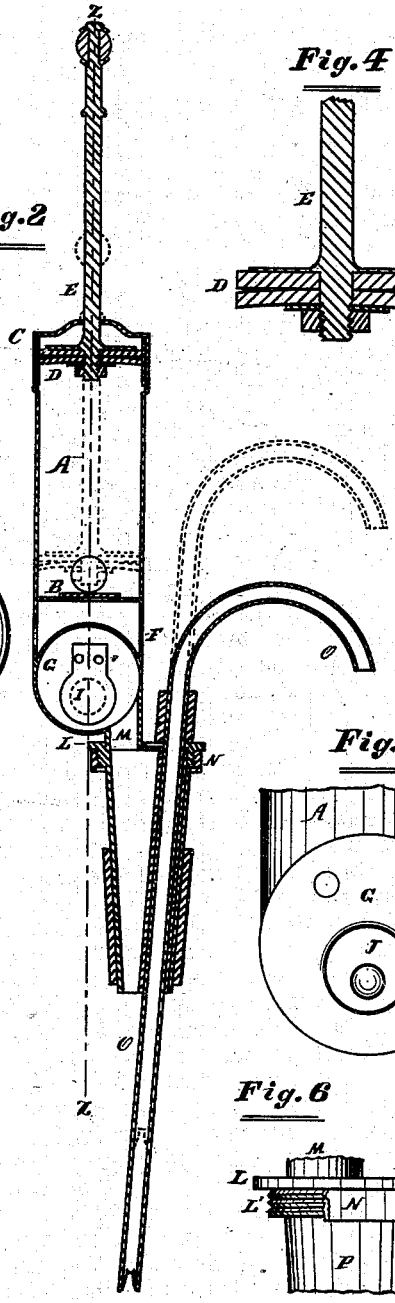

Fig.4

Fig.3

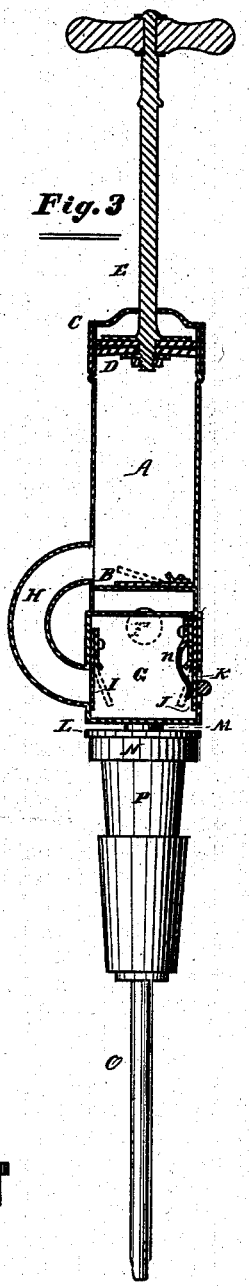

Fig.5

Fig.6

Attest

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UNITED STATES PATENT OFFICE.

GEORGE R. McCRUM, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN PUMPS.

Specification forming part of Letters Patent No. **186,358**, dated January 16, 1877; application filed December 12, 1876.

To all whom it may concern:

Be it known that I, GEORGE R. McCRUM, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Pumps; and I do hereby declare the following to be a full, clear, and exact description thereof, which will enable others skilled in the art to which my invention appertains to apply my improvements to use, reference being had to the accompanying drawing, forming a part hereof, and in which—

Figure 1 is a side elevation of a pump embodying my improvements; Fig. 2, a section in the plane of the line *x x;* Fig. 3, a section in the plane of the line *z z;* Fig. 4, a like representation of the piston-head; Fig. 5, a side elevation of the escape-valve; and Fig. 6, a like representation of the base or stopper applied to the lower end of the air-chamber.

Like letters of reference indicate like parts.

My invention relates to that class of pumps usually employed to draw off the fluid contents of casks, barrels, and smaller vessels; and consists in certain novel features, substantially as hereinafter described, which I employ for the purpose of facilitating the operation above referred to, and for improving the construction of pumps of this class in various particulars, as will hereinafter more fully appear.

In the drawing, A represents the piston-chamber. B is an upwardly-yielding valve in the bottom of the chamber A, and C is a removable cap applied to the top of the said chamber. D is the piston, and E is the piston-stem. F F are air-ports in the chamber A. These ports are arranged, as shown, below the diaphragm, in which the valve B is arranged. G is an air-chamber, arranged below the chamber A. H is an air-duct entering the chamber A at a point above the valve-seat of the valve B, and also entering the chamber G. I is an inwardly-opening valve arranged over the port, through which the duct H communicates with the chamber G. J is also an inwardly-opening valve, arranged to cover a vent or port, K, in the chamber G. L is a base or bung connected to the chamber G by means of the duct M, which enters the said chamber and passes through the part L. The periphery of the part L is screw-threaded, as represented at L′, and N is a correspondingly-threaded part run upon the part L′, and intended to serve as a bush for the bung-hole when the pump is applied, for example, to a barrel, with the intention of having it remain there for a considerable time. O is an eduction-tube passing through the part L, and vertically adjustable therein.

In order to adapt the pump for frequent removals or transfers from vessel to vessel, I apply to the part L the hollow tapering plug P, preferably covered with rubber or other yielding material, and when this plug is employed the tube O should pass through it. The plug P, however, is only essential for the purpose set forth.

The operation of the pump is as follows: During the upstroke of the piston air is sucked in through the ports F F, and passes thence through the valve B into the chamber or cylinder A. The valve B is closed by the downstroke of the piston, and the air in the cylinder A is forced out through the tube H into the chamber G, holding both valves therein firmly against their seats. From the chamber G the air is forced through the tube M into the vessel, to which the pump is applied. This pressure of air in the vessel causes the contents to flow out through the tube O. I deem it best to have a small spring, *n*, rest on the valve J, so that the latter will not be opened accidentally. This valve or vent J, however, may be opened at any time by pressing it inwardly. In this manner all or any part of the contents of the vessel may be drawn off, and, owing to the elastic pressure exerted by the air within the vessel, the flow will continue for some time after the action of the piston ceases. If it is desirable that this flow should be stopped suddenly the valve J should be pressed, so that the air may thus escape.

By constructing the pump in this manner it not only properly performs the work for which it is intended in a satisfactory manner, but is compact, simple in construction, and readily portable. The tube O, by being vertically adjustable, admits of the pump being applied with facility to casks or vessels of various depths.

Having thus described my invention, what

I claim as new, and desire to secure by Letters Patent, is—

1. An air-pump provided with a base or bung, adapted for insertion into the bung-hole, bush, or opening of a vessel for containing liquids, and for closing the same, the said base having therein an air-port communicating with the air-chamber of the pump, and for communication with the interior of the vessel, to which the pump may be applied, in combination with the vertically-adjustable discharge-pipe O passing through the said base, substantially as and for the purposes specified.

2. The combination of the hollow plug P, the vertically-adjustable discharge-pipe O, and an air-pump attached to and communicating with the said plug, substantially as and for the purposes specified.

3. The combination, in connection with an air-pump, of the vent or valve J, and the hollow plug communicating with the said vent, substantially as and for the purposes specified.

GEORGE R. McCRUM.

Witnesses:
F. F. WARNER,
ULLMAN STRONG.