

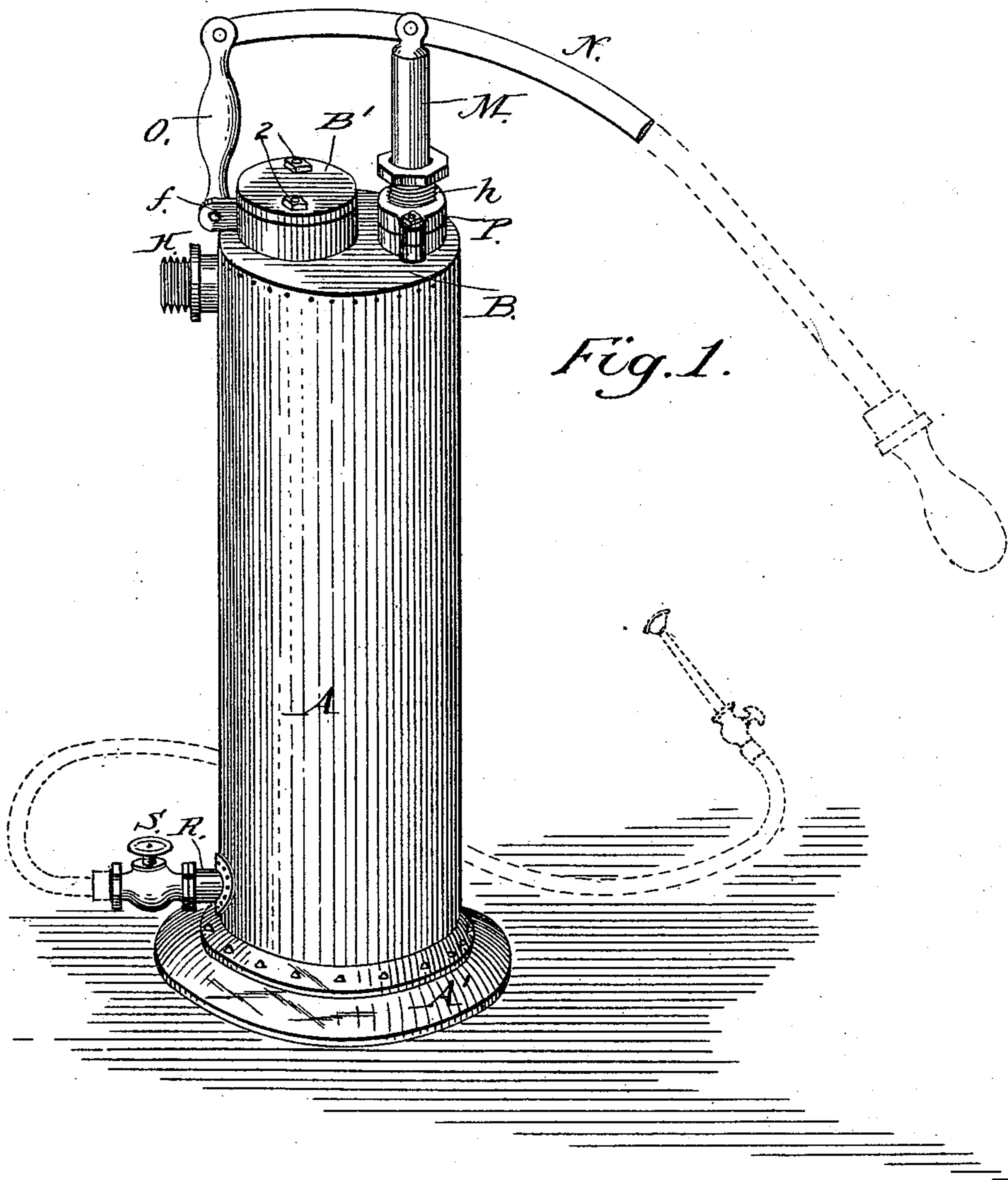
(No Model.)

3 Sheets—Sheet 1.

A. W. WHITE.
PUMP.

No. 459,529.

Patented Sept. 15, 1891.



WITNESSES:

Chapman Fowler,
Fred McKee.

INVENTOR

Archibald W. White.

BY

A. H. Evans & Co

ATTORNEYS

(No Model.)

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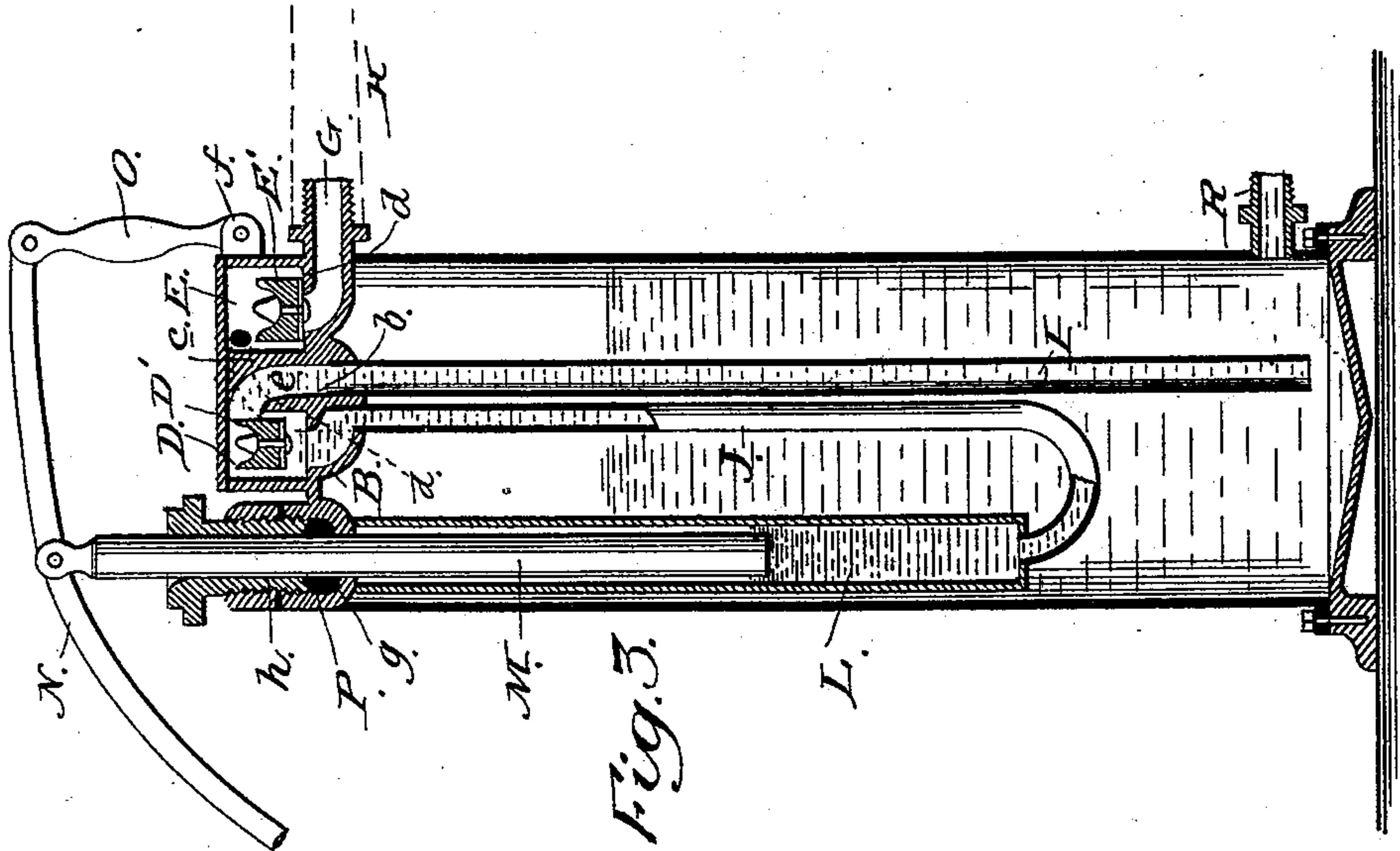


Fig. 3.

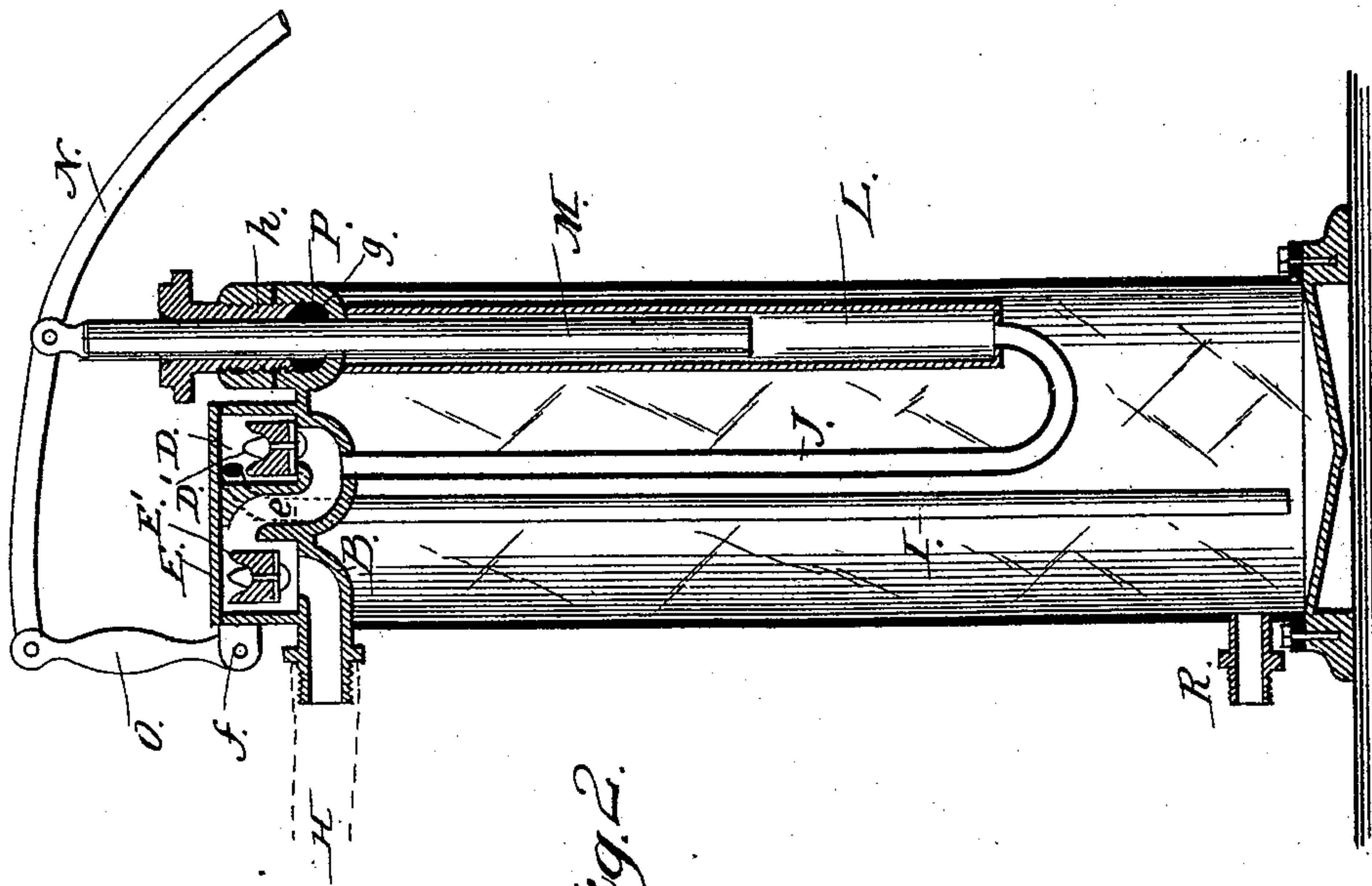


Fig. 2.

WITNESSES:

Chapman Fowler,
Fred McKee.

INVENTOR

Archibald W. White,

BY

A. H. Evans & Co

ATTORNEYS.

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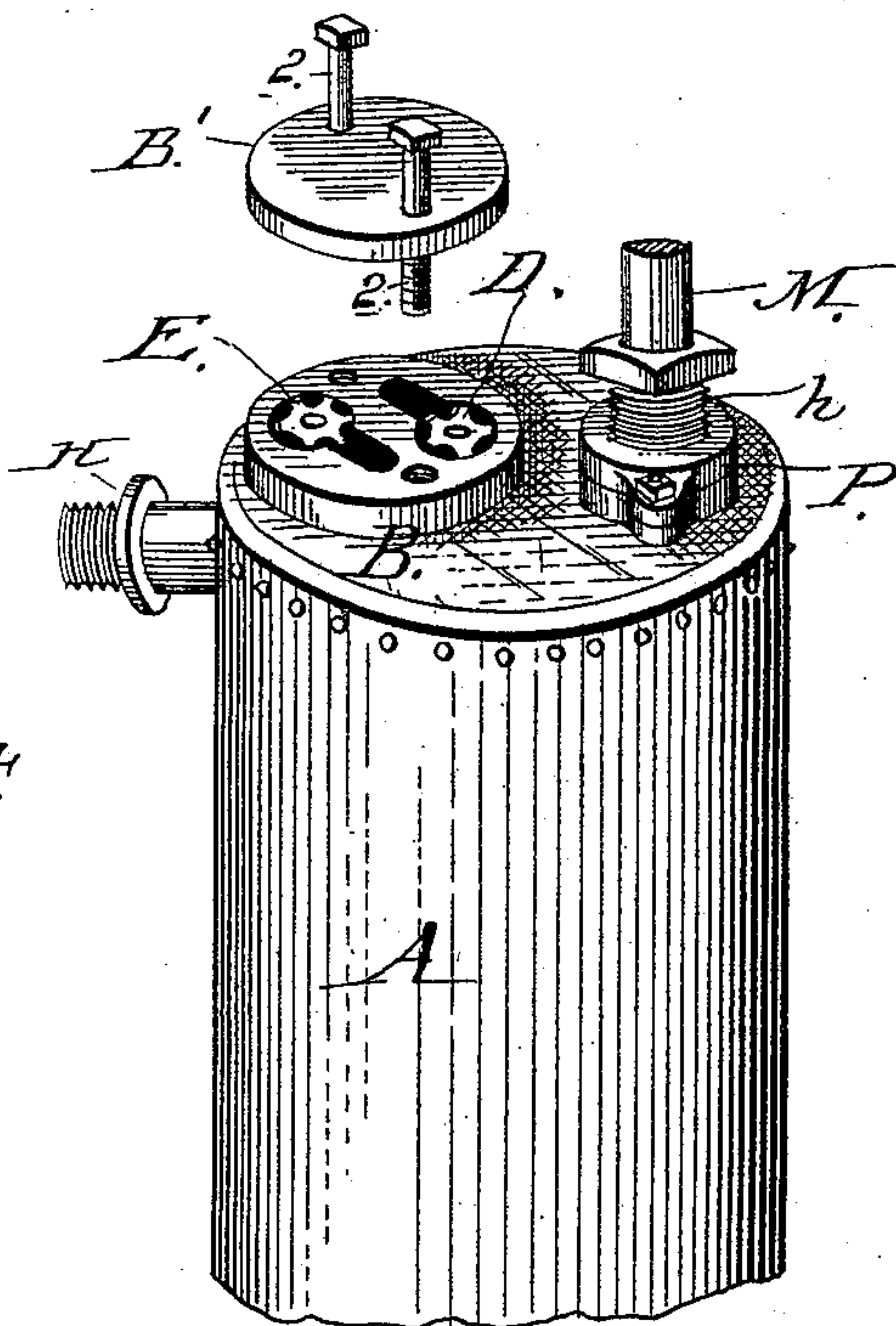


Fig. 4.

WITNESSES
Chapman Fowler
Jno. J. Darby.

INVENTOR
Archibald W. White,
by A. H. Evans & Co
Attorneys.

UNITED STATES PATENT OFFICE.

ARCHIBALD WATSON WHITE, OF SAN JOSÉ, CALIFORNIA.

PUMP.

SPECIFICATION forming part of Letters Patent No. 459,529, dated September 15, 1891.

Application filed February 11, 1891. Serial No. 381,068. (No model.)

To all whom it may concern:

Be it known that I, ARCHIBALD WATSON WHITE, a citizen of the United States, residing at San José, in the county of Santa Clara, and the State of California, have invented certain new and useful Improvements in Pumps, as set forth in the accompanying drawings, forming part of this specification, in which—

Figure 1 is a perspective view of a pump embodying my invention. Figs. 2 and 3 are vertical sectional views of the same. Fig. 4 is an enlarged perspective view of the upper head, showing the cap-plate of the valve-chamber removed to expose the valves.

My invention relates to certain improvements in force-pumps, and particularly to that class employed for spraying purposes; and my invention consists of the constructions and combinations of devices which I shall hereinafter fully describe and claim.

To enable others skilled in the art to which my invention appertains to make and use the same, I will now describe its construction and indicate the manner in which the same is carried out.

In the accompanying drawings, A represents a tank or reservoir having a flanged base A' and an upper head B, which is fitted or secured to the top of the tank in any well-known manner. Upon the top of this head is a valve-chamber provided with a cap-plate B', secured to the head by means of bolts 2, whereby the cap-plate may be removed to afford access to the valves, said head having within it the spaced vertical flanges b and c, forming two independent valve-chambers D and E, provided with check-valves D' E', adapted to be seated at d upon the head, as shown. The space between the flanges b and c forms a passage e, whose opposite ends communicate with the upper and lower ends, respectively, of the valve-chambers D and E. The head is also provided with a short tube G, whose inner end communicates with the bottom of the valve-chamber E and whose outer end projects beyond the outer wall of the tank and is adapted to be coupled to a hose H or other connection from the source of supply.

In the upper portion of the valve-chamber D is a port which communicates with the open upper end of a vertical pipe I, leading

into the tank A to a point near the bottom thereof and having its lower end open and communicating with the contents of the tank. Another pipe J has its upper end communicating with the passage e at a point in its bottom and under the valve-chamber E, while its lower end is curved upwardly and adapted to enter the bottom of a vertical closed cylinder L, depending from the head at one side of the tank A and adapted to contain a piston M of a size about equal to the inner diameter of the cylinder. This piston may be a solid one or may be hollow and closed at both ends, and its upper end is pivotally connected with a lever N, one end of which is free to serve as a handle for operating the pump, while its other end is pivotally secured to a vertical link O, whose lower end is also pivotally held to lugs or ears f on the valve-chamber casing. The piston M passes through a stuffing-box P, having a packing g and screw-gland h, as shown.

From the lower portion of the tank extends a short tube R, through which the liquid is forced into a hose and carried to the point of discharge in the manner common to spray-pumps and having a valve or cock S for controlling the discharge.

The operation of the pump is substantially as follows: When the piston is making its upstroke, (see Fig. 2,) the liquid is drawn in through the tube H, lifting the check-valve E' and permitting the liquid to pass through the passage e into the tube J and finally into the bottom of the cylinder beneath the plunger. As the piston commences its downward stroke (see Fig. 3) the liquid in the cylinder is displaced and forced out into the pipe J, thereby closing the check-valve E' and opening the valve D' and permitting the liquid to escape into the valve-chamber E and to pass through its port into the pipe I and to be discharged into the tank, thereby displacing the contents of the tank and forcing the liquid into the hose and to be discharged in the usual manner.

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

1. In a pump, the combination of a tank or vessel having an upper head divided into independent valve-chambers, each containing a

valve, a pipe leading from one of said chambers to a point near the bottom of the tank, a second pipe leading from the other chamber, a cylinder fixed within the tank and into
5 which said second pipe leads, and a piston working in said cylinder for alternately opening and closing the valves and drawing in and discharging the liquid, substantially as herein described.

10 2. In a pump, the combination of an outer tank or reservoir having an upper head divided into two independent valve-chambers, each provided with a valve, said head having an inlet-passage communicating with the
15 source of supply, and a second passage between the valve-chambers communicating with opposite ends thereof, a pipe leading from said second passage, a closed cylinder fixed within the tank or reservoir and into
20 which the pipe leads, a second pipe communicating with the upper portion of the other valve-chamber and leading to a point near the bottom of the tank, a piston operating within the cylinder to draw the liquid in
25 through one pipe and discharge it through the other, and a discharge from said tank, substantially as herein described.

3. In a pump, the combination of a tank or reservoir having an upper head provided with
30 an inlet-passage, two independent valve-chambers D and E, each containing a valve,

flanges between the chambers forming a passage which connects with the upper and lower ends, respectively, of said chambers, a pipe
35 leading from said passage downwardly, a closed cylinder within the tank, into the bottom of which said pipe enters, a second pipe communicating with the valve-chamber D and leading to the bottom of the tank or reservoir, a piston within the cylinder and of
40 about equal diameter therewith, a stuffing-box and gland through which the piston passes, means for operating the piston, and a valve-controlled discharge from the tank, substantially as herein described. 45

4. In a pump, an outer tank or reservoir having a closed cylinder fixed therein, a piston, and means for operating the same, in combination with a head on the upper portion of the tank, having independent valve-
50 chambers and valves, with an inlet-passage to one of said chambers, a pipe leading from one of said chambers to the cylinder and a second pipe from the other chamber to the lower portion of the tank, and a discharge-
55 pipe leading from the tank, substantially as herein described.

ARCHIBALD WATSON WHITE.

Witnesses:

GOLDWIN BROWN,
J. A. TROWBRIDGE.