A. Fuller.

Pump.

No. 97,382. Patented Nov. 30, 1869.

Fig. 2.

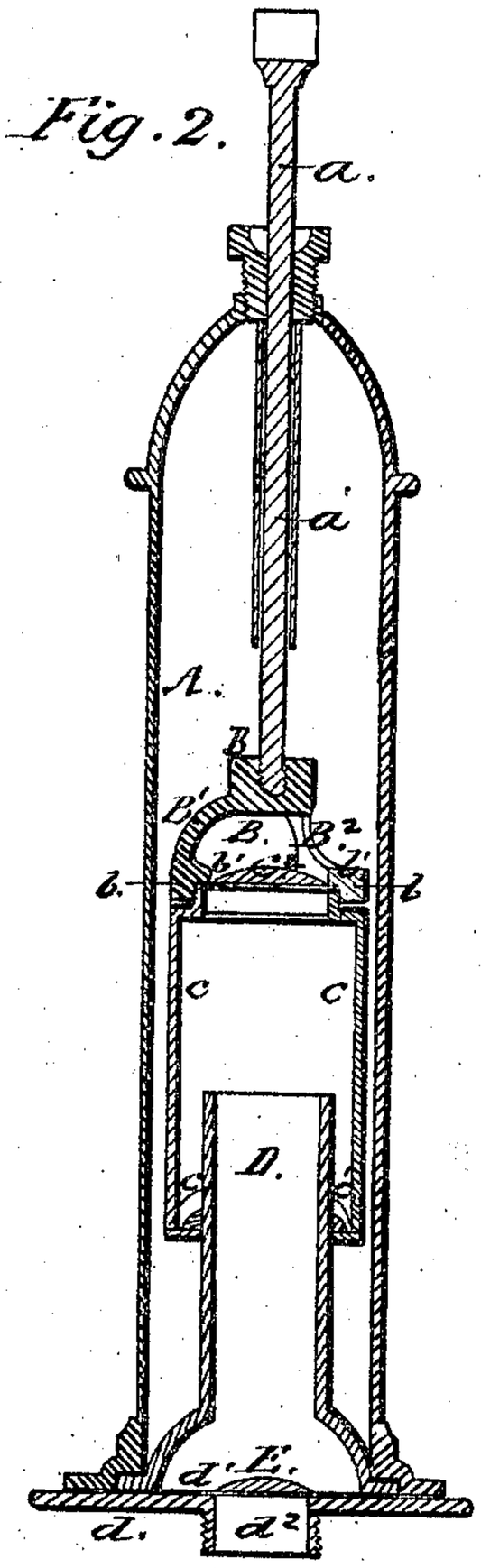


Fig. 1.

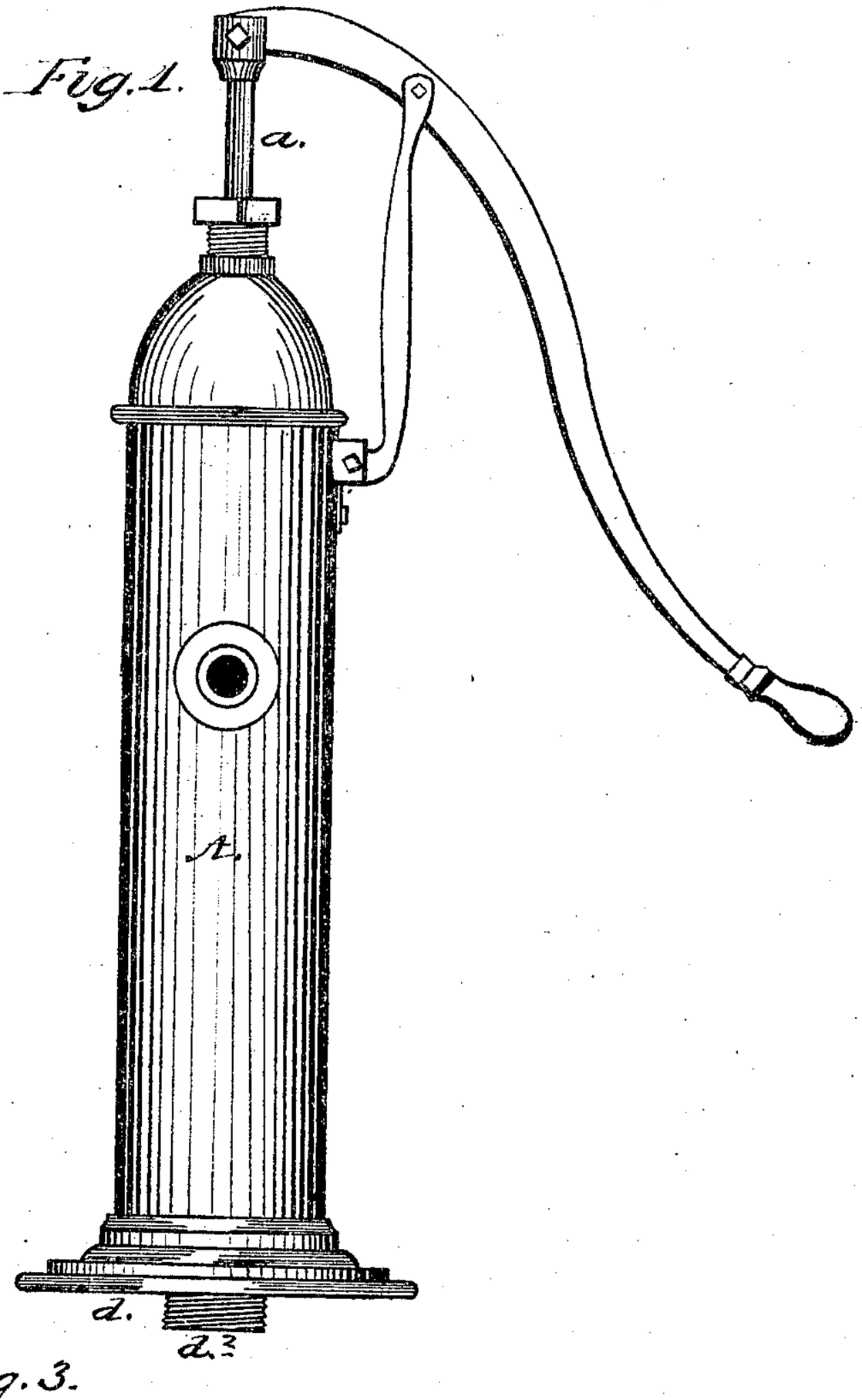
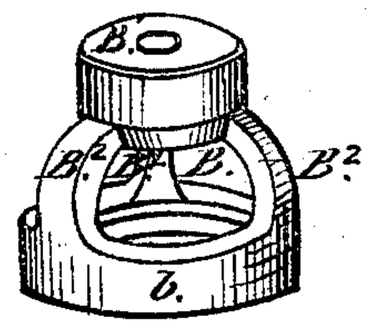


Fig. 3.



Witnesses:
Chas. F. Rumm.
Fred Thomas

Inventor;
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H. W. Beadle atty

United States Patent Office.

AARON FULLER, OF MARIETTA, OHIO.

Letters Patent No. 97,382, *dated November* 30, 1869.

IMPROVEMENT IN PUMPS.

The Schedule referred to in these Letters Patent and making part of the same

To all whom it may concern:

Be it known that I, AARON FULLER, of Marietta, in the county of Washington, and State of Ohio, have invented a new and useful Improvement in Pumps; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

This invention relates to that class of pumps in which a cylindrical piston is employed in connection with an internal cylinder; and consists, first, in constructing the piston of larger size than the cylinder, and connecting the two by means of a ring-valve, by which arrangement a small friction-surface is obtained; and second, in the employment of a sleeve, in connection with the piston-rod, by means of which the piston is caused to move with a regular and steady stroke.

In the drawings—

Figure 1 is a side elevation,

Figure 2, a sectional elevation, and

Figure 3, a perspective view of valve-holder B.

To enable others skilled in the art to make and use my invention, I will now proceed to describe fully its construction and method of operation.

A represents the outer casing or cylinder of the pump, which is provided at the bottom with a suitable flange for securing the same, and at the top with a stuffing-box, through which passes the piston-rod *a*, the latter being operated by a handle, after the usual manner.

To the top of the pump is also attached a sleeve, which encircles the piston-rod, and prevents the latter from wabbling in the stuffing-box.

The lower end of the rod *a* is screwed into the valve-holder B, which consists of the screw-socket B^1, which is connected, by the arms B^2, to the annular rim *b*.

This latter is provided with a flange, *b'*, thus forming a receptacle for the valve C, which opens upward.

The rim *b* is provided with a thread, by means of which it is secured to the upper end of the cylindrical piston *c*, which, when in place, bears against the edges of the valve C^2, and holds the same in place.

The lower end of the piston *c* is provided with the annular packing *c'*, which fits closely around the barrel D.

d represents a circular plate, provided on its upper side with a leather or rubber pad, d^1, on which rest the cylinder A and the barrel D, and on the under side with an annular screw-socket, d^2, to which is attached the tubing through which the water is drawn.

In the centre of the plate *d* is a circular orifice connecting with the annular socket d^2, which is covered by the valve E, the same being partially cut out from the pad d^1, and has a metal weight riveted thereto.

The operation of my invention will be readily understood.

When the piston *c* is raised, a vacuum is formed in the barrel D, which causes the water below to open the valve E, and rush up and fill the barrel and piston up to the valve C^2.

The piston being then depressed, causes the water to close the valve E, open the valve C^2, and rush out between the arms b^2, and through the spout of the pump.

The advantages of my invention are—

First, the pump can be made at less expense, as the outer cylinder A is not, of necessity, bored.

Second, it will hold water longer, as it cannot leak out below the upper end of the barrel D, if both valves should be leaky, and as long as the piston is tight, the pump cannot lose all its water.

Third, the working piston, operating as it does on the outer surface of the small cylinder, and surrounded with water, will operate with less packing than when it works on the inner surface, and in some cases without any packing.

It will be observed, that the bearing-surface between the piston and cylinder is very small, it being limited to the ring-valve only, and consequently the sleeve *a'* is provided about the piston-rod, by means of which the latter is prevented from wabbling.

I do not claim any of the particular devices shown; but having thus fully described my invention,

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

The piston *c*, constructed as described, and provided with the ring-packing *c'*, when used in connection with the cylinder D, and combined with the rod *a*, working in the sleeve *a'*, as described, for the purpose set forth.

This specification signed and witnessed, this 15th day of May, 1869.

AARON FULLER.

Witnesses:

STEPHEN NEWTON,

A. F. WARD.