

G. W. HOLMES.

PUMP.

No. 187,852.

Patented Feb. 27, 1877.

Fig. 1.

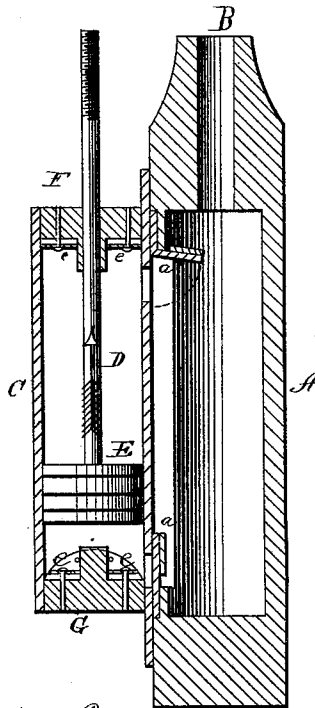


Fig. 2.

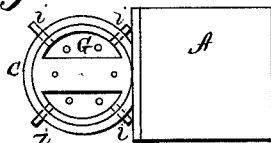
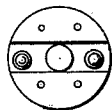


Fig. 3.



WITNESSES
H. Hubrey Toutmin.
J. L. Curran.

INVENTOR
George W. Holmes.
Alexander Mason
 ATTORNEYS.

UNITED STATES PATENT OFFICE.

GEORGE W. HOLMES, OF COUNCIL BLUFFS, IOWA.

IMPROVEMENT IN PUMPS.

Specification forming part of Letters Patent No. **187,852**, dated February 27, 1877; application filed January 20, 1877.

To all whom it may concern:

Be it known that I, GEORGE W. HOLMES, of Council Bluffs, in the county of Pottawattamie, and in the State of Iowa, have invented certain new and useful Improvements in Pumps; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

The nature of my invention consists in the peculiar construction and arrangement of the heads of the cylinder of a submerged pump, as will be more particularly hereinafter described.

To enable others skilled in the art to manufacture and use my invention, I will proceed to describe its construction and operation.

In the accompanying drawings, making part of this specification, Figure 1 represents a longitudinal section; Fig. 2, a bottom view, and Fig. 3 a plan view, of one of the cylinder-heads.

In the figures, A represents a pump-stock, which is made of wood, as usual, and having the usual water-tube B through it. Connected to this stock by means of screws or suitable bolts is a metallic cylinder, C, which is provided with the usual piston-rod D and piston-head E. F and G represent the two heads of the cylinder C. These heads are made of a diameter about equal to the inner diameter of the cylinder, so that they fit snugly therein. They are made with water-openings through them, and each is provided upon its inner face with the usual valves *e e*, which allow ingress but not egress of water.

Near the upper and lower ends of the cylinder are cut two openings, which lead into the stock A, and which are covered by the

valves *a a*, which allow water to pass from the cylinder into the stock, but not back again.

By the upward stroke of the piston-head the water is driven from upper portion of the cylinder, and by the downward stroke it is driven from the lower portion, at each stroke, into the chamber of the stock.

The heads F and G, after being adjusted to their places in the ends of the cylinder, are held there by means of the pins or screws *i i*.

By means of this arrangement or construction the heads may be easily removed at any time that it becomes necessary to repair the valves, and thus I am enabled to make a double-acting pump which will be simple and inexpensive.

I do not claim a pump-cylinder in which the heads carrying the valves are connected together by rods on the outside of the cylinder. In such case the heads, being connected together, cannot be removed independently. With my invention either head and its valves can be removed without disturbing the other.

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

The heads F and G, which carry the valves *e e*, made separate from, and independently connected to, the cylinder C by the pins or screws *i i*, and in combination with the valves *a a* and the stock A, as and for the purpose set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 11th day of December, 1876.

G. W. HOLMES.

Witnesses:

A. C. KEATLEY,
G. A. HOLMES.

1750 words.