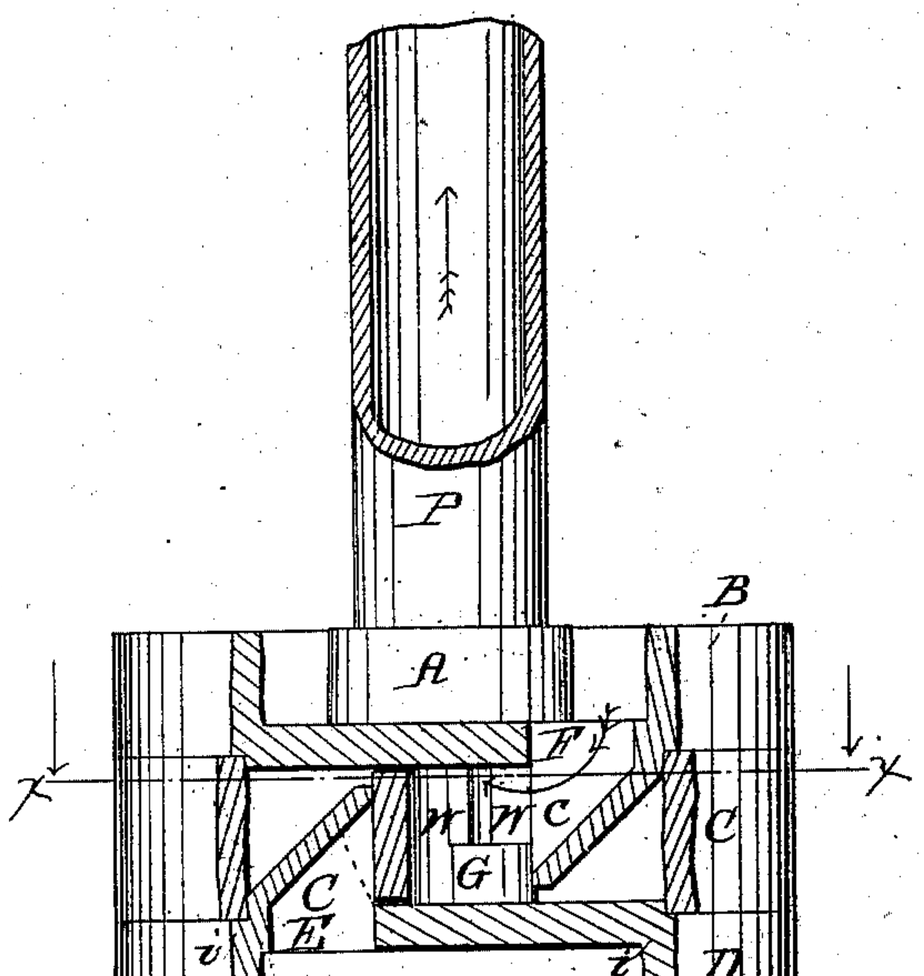
W. Derrick,

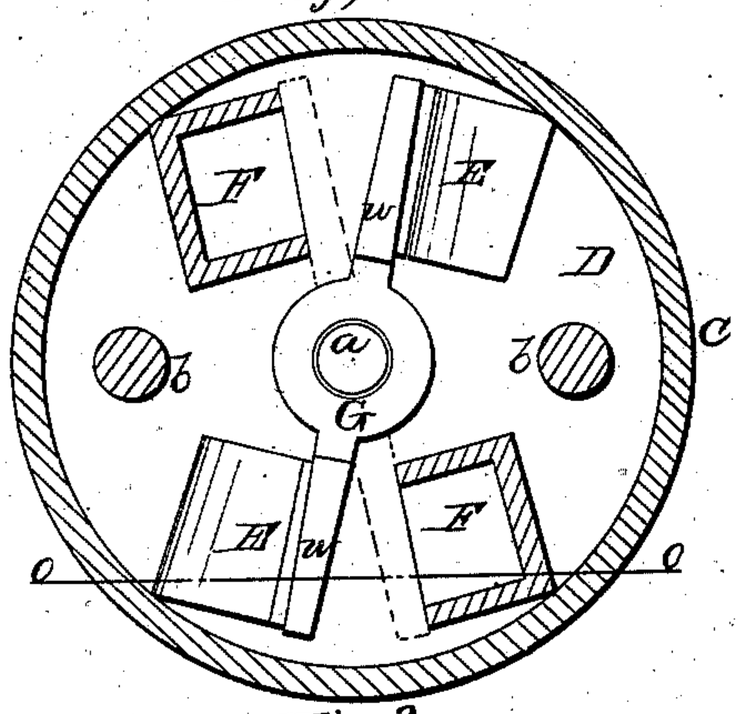
Pump Piston,

No. 68,852, Patented, Sept. 17, 1867.

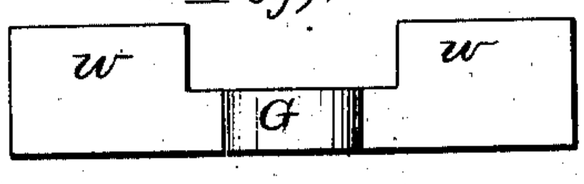
Fig; 1.



Fig; 2.



Fig; 3.



Witnesses;
A. H. Bellings
P. J. Turner

Inventor;
Wm. Derrick
By Wm. S. Longborough
Atty

United States Patent Office.

WILLIAM E. DERRICK, OF JORDAN, NEW YORK, ASSIGNOR TO HIMSELF AND AARON PECK, OF THE SAME PLACE.

Letters Patent No. 68,852, *dated September* 17, 1867.

IMPROVEMENT IN PUMP-PISTONS.

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, WILLIAM E. DERRICK, of Jordan, in the county of Onondaga, and State of New York, have invented certain new and useful improvements in the construction of "Pump-Pistons;" and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is an elevation of my invention, representing a portion broken away in the plane of the red line *o* in fig. 2, so as to show the relative arrangement of the upper and lower sections and the pivoted valve.

Figure 2 is a horizontal section in the plane of the red line *x* in fig. 1, looking down.

Figure 3 is a detached view of the pivoted valve.

Like letters indicate corresponding parts.

This invention relates to that class called "submerged pumps," and its nature consists mainly in providing such pumps with vertical or inclined valve-seats, so as to prevent the lodgment of any sediment upon the face of the seat, or between it and the valve.

To enable others to make and use my invention, I will describe its construction and operation.

I make the piston-head in two primary parts, B and D, with an intervening ring, C. The hollow piston-rod P is screwed into the boss A of section B. This and section D are each provided with arched or chambered water-ports E and F. The two ports in each section open toward those in the other. The arch of the ports is formed as seen in fig. 1, so as to form a vertical seat or bearing for the wings *w* of the valve G. This arrangement entirely prevents the lodgment, upon the face of the valve or upon its seat, of sand or other sediment, and consequently a close and perfect fit of the valve against the seat is always insured. The valve is composed of a metal plate, so made as to turn upon an axial pivot, *a*, which is cast upon the web of section D, fig. 2, and has two wings *w*, figs. 2 and 3, fitted to the ports E and F. Sections B and D are each made with a slight shoulder, *i*, fig. 1, to centre the ring C. The parts are clamped together by screw-bolts *b*. The object of making the ring C separate is to afford free access to the vertical face of the ports E and F, with a file or other convenience for trimming them up. The ring C may be provided at one or more points with a projecting lug or rib to fit in a corresponding recess in the upper and lower sections B and D, so as to secure the desired relative position of the parts in the two sections, as shown in fig. 2. When the piston rises the ports E are opened, and the water from the upper part of the pump passes through these ports and up the hollow piston, at the same time filling the lower portion of the pump. When the piston descends the valve reverses, opening port F and closing E, and the water below is forced up through the piston and discharged, while the upper part of the pump-barrel is being filled. It might be desirable, in order to facilitate the moulding of sections B and D, to make the face of the valve-seat more or less inclined in the direction of the dotted lines *c*, fig. 1, instead of vertical, and place the wings *w* of the valve on the same oblique line.

I am acquainted with the pump-piston patented to S. B. Mason and C. B. Gill, February 6, 1866, and do not claim anything therein shown; but what I do claim, is—

The pump-piston, having two sets of induction and eduction ports E and F, and a valve, G, with two flat wings *w* connected together by a shank, which is held in position by the solid pivot *a* upon the lower half D of the piston-head, all the parts being constructed and arranged in the manner shown and described and for the purposes set forth.

WILLIAM E. DERRICK.

Witnesses:

CHARLES KELLY,

ANDREW BACKER.