(No Model.)

J. W. POWERS.

PUMP.

No. 315,442. Patented Apr. 7, 1885.

Fig. 1.

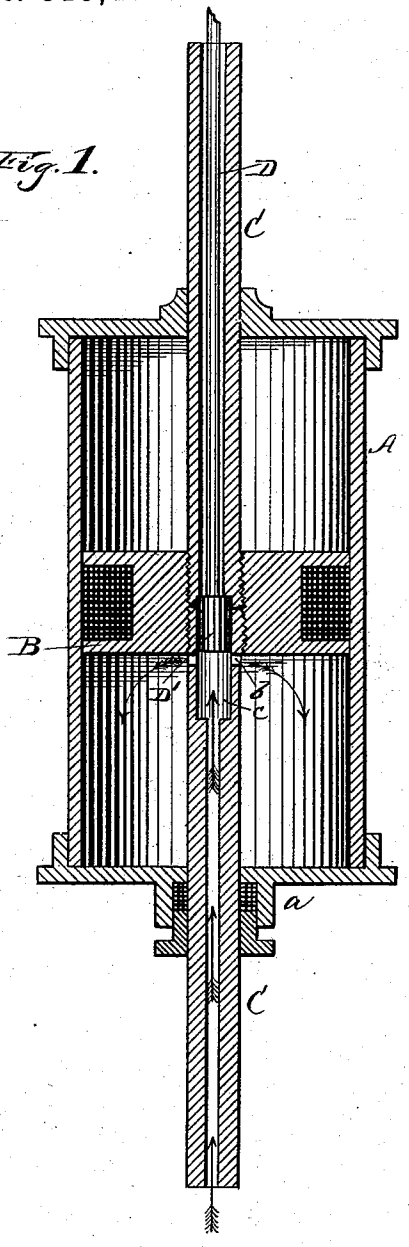
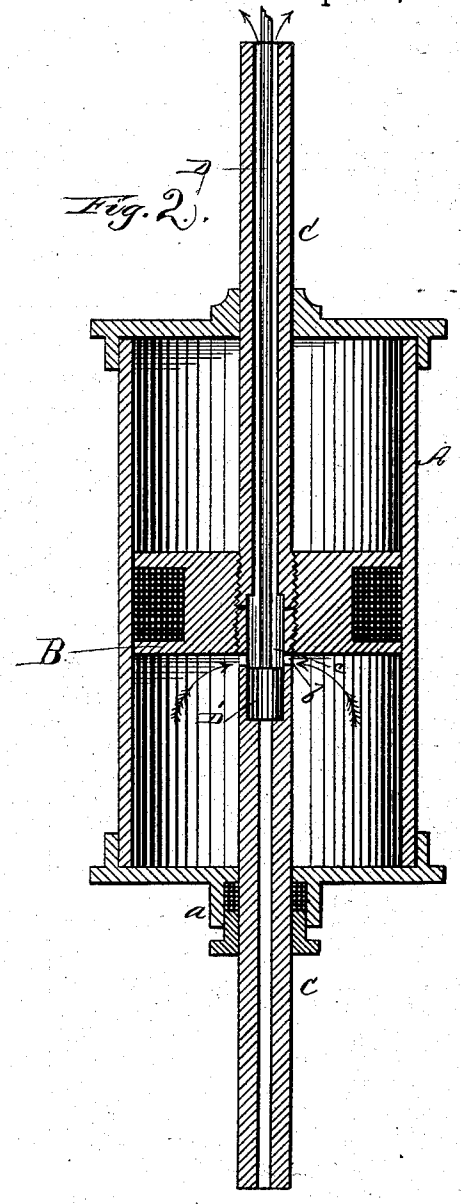


Fig. 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

JAY W. POWERS, OF WINNETKA, ILLINOIS, ASSIGNOR OF TWO-THIRDS TO MORRIS J. MOTH AND ROBERT S. MOTH, OF SAME PLACE.

PUMP.

SPECIFICATION forming part of Letters Patent No. 315,442, dated April 7, 1885.

Application filed August 30, 1883. (No model.)

To all whom it may concern:

Be it known that I, JAY W. POWERS, a citizen of the United States, residing at Winnetka, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Pumps, of which the following is a specification, to wit:

This invention relates to an improvement in pumps; and it consists in certain peculiarities of the construction and arrangement of the same, substantially as will be hereinafter more fully set forth and claimed.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the accompanying drawings, in which—

Figures 1 and 2 are central vertical sections of my device in two positions.

A represents a pump-cylinder, provided with the usual heads and stuffing-boxes, *a*, through which the hollow piston passes, and within which is a suitably-packed piston-head, B, which is provided with a hollow rod, C, extending entirely through the cylinder and head, as represented. This rod is preferably made in two parts screwed into the head B from opposite sides, and its center is enlarged, as at *c*, to form a space or chamber, in which works a head, D′, upon the end of the actuating piston-rod D, as shown in the drawings. The hollow rod is formed with ports *b* in its sides just below the main piston-head.

The operation is as follows: The cylinder is secured in the well, the operating-rod D connected to any desired operating device or power, and the lower end of the hollow rod then forms the supply and its upper end the exhaust to and from the cylinder. Upon the upward stroke of the device, as in Fig. 1, the head D′ is at the upper end of the enlargement of the hollow rod, and the fluid is drawn into the lower end of the cylinder through the hollow rod and its ports *b*. When the stroke is reversed, as seen in Fig. 2, the head D′ shifts down in its chamber to the lower end of the same, cutting off the supply through the rod C, and carrying the piston-head down with it. This opens a passage from the cylinder through the ports *b* and the upper end of the hollow rod C to the point of delivery above, and the fluid in the cylinder is exhausted, as will be evident at once. This forms a pump very simple and cheap in construction, and which is especially adapted for use in deep wells.

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

The pump-cylinder A, having a hollow rod, C, passing through both ends of the cylinder, and carrying a piston-head, B, and an enlargement, *c*, within said rod, having ports *b* opening out just below the piston, in combination with an operating-rod, D, passing through the hollow rod, and having a head, D′, within the enlargement of said rod, substantially as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JAY W. POWERS.

Witnesses:
CHAS. KRESSMANN,
FRANK JOHNSON.