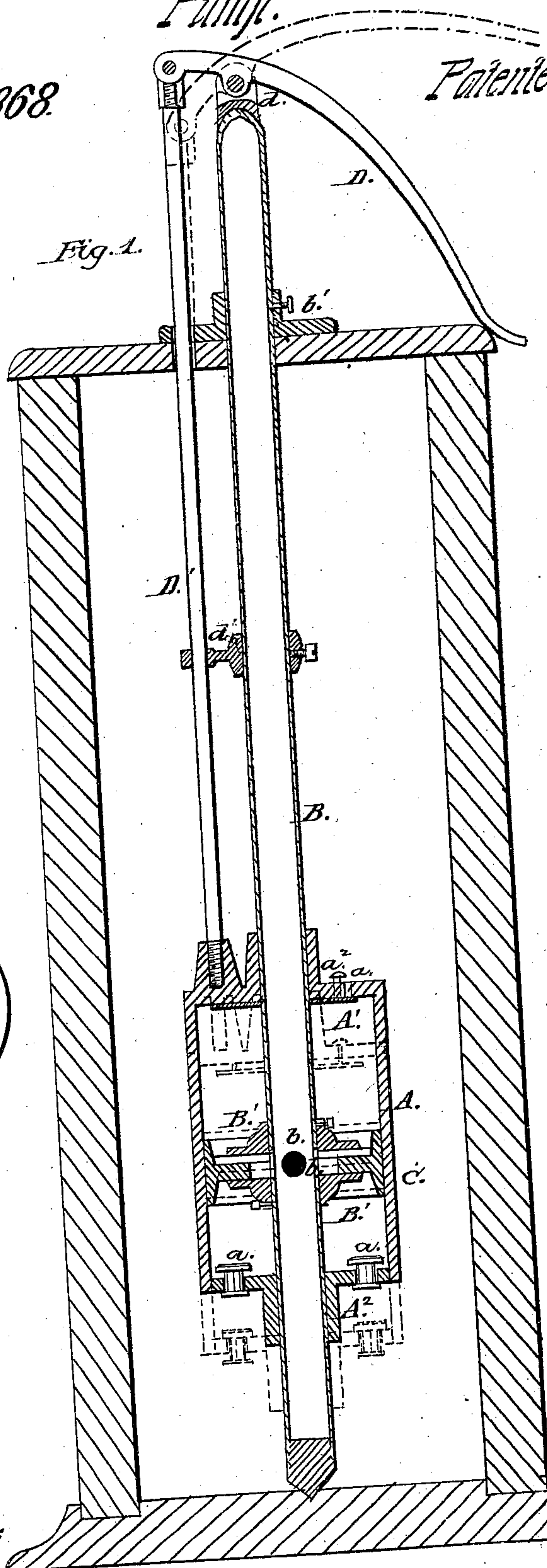


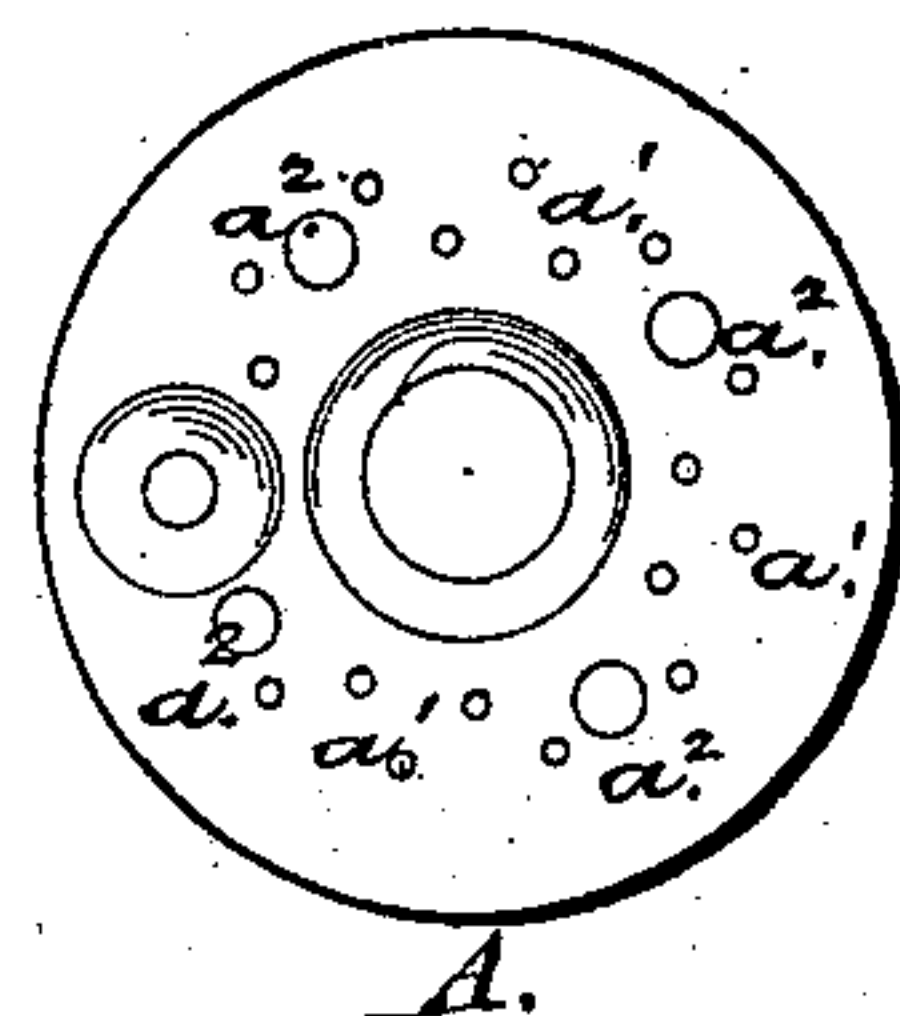
*Pumpk.*

*Patented Dec. 28. 1869.*

No. 98368.



*Fig. 1.*



*Fig. 2.*

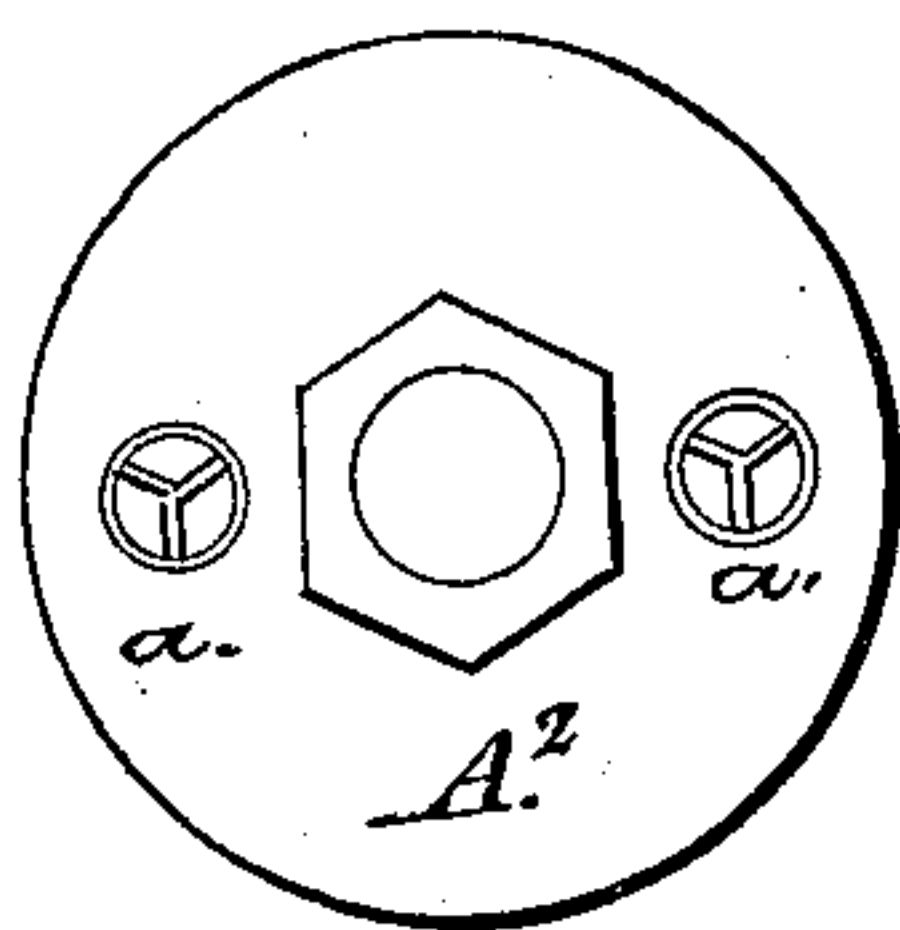


Fig. 3.

Witnesses:

J. C. Peyton  
Baltis & Long

*Inventor:*

J. A. Forrester  
per  
W. D. Baldwin  
attorney



# United States Patent Office.

ISAAC N. FORRESTER, OF BRIDGEPORT, CONNECTICUT.

Letters Patent No. 98,368, dated December 28, 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, ISAAC N. FORRESTER, of Bridgeport, in the county of Fairfield, and State of Connecticut, have invented certain new and useful Improvements in Pumps, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which make part of this specification, and in which—

Figure 1 represents a vertical central section of my improved pump;

Figure 2, a plan or top view of its cylinder; and

Figure 3, a view of the bottom of the same, as seen from below.

My invention relates to that class of pumps in which a moving cylinder or barrel is employed in connection with a stationary piston and tubular rod, and consists in an improved construction and arrangement of the receiving and delivery-valves by which the tubular piston-rod is made to serve for a discharge-pipe as well as a guide to the barrel in its movements, as hereinafter more fully set forth.

In the accompanying drawings, which show a convenient arrangement of parts for carrying out the objects of my invention—

A represents the cylinder or barrel of the pump, which is reciprocated upon the central tubular piston-rod and discharge-pipe B.

The pipe B, which is closed at bottom, is fixed to a base-plate, at the bottom of the well, and supported by a collar, *b'*, at its top.

C represents a piston-valve, which fits truly within the barrel A, and surrounds the tubular rod B between the two collars B' B' secured thereon by set-screws or keys.

The rod B is perforated with a series of holes, *b b*, between the collars, and a circular opening is formed at the centre of the valve C, to prevent the same from being in contact with the rod, and allow access of water to the holes *b*.

The collars B' are set sufficiently far apart to allow the valve C to rise and fall a proper distance to admit the water which passes through the receiving-valves to the rod B, which serves as a discharge-pipe for the same.

The lower end of the barrel is closed by a bottom head, A<sup>2</sup>, in which are placed the lower receiving-valves *a a*. These are wing-valves of the ordinary construction.

The upper head of the barrel may be either cast in a piece therewith, as in the present instance, or made separate, and secured by bolts, as found most convenient.

In it are formed the openings *a*<sup>1</sup>, which are closed by the upper receiving-valve A<sup>1</sup>, which is a flat valve placed within the barrel, and moving vertically upon the rod B, being guided and having its range of motion regulated by the stems *a*<sup>2</sup>.

The barrel A is reciprocated by means of a brake or lever, D, having arms of unequal length, and pivoted to standards *d* on the top of the tubular rod B, which is curved in semicircular form at its upper extremity to form a spout.

The short arm of the lever D is pivoted to a rod, D', which passes through a guide, *d'*, secured to the rod B, and is suitably secured at bottom to the cap of the barrel A.

The guide *d'* prevents the rod D from springing or bending when in operation.

The barrel A being always immersed in water, the same will enter the lower receiving-valves *a a* and fill the space around the rod B, and below the valve C, on its downward stroke.

When the barrel is moved upward, the valve C will rise and admit this water through the holes *b b* to the tubular rod B, and the upper receiving-valve A<sup>1</sup> will fall and allow water to fill the space above the valve C.

The water will be in turn discharged through the holes *b* and rod B, by the falling of the valve C and rising of valve A<sup>1</sup> on the next downward stroke, and so on in a continuous stream during the operation of the pump.

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

The combination of the moving barrel A, stationary perforated tubular rod B, collars B', piston-valve C, and receiving-valves *a a*; A<sup>1</sup>, the whole arranged and operating substantially as and for the purpose set forth.

In testimony whereof, I have hereunto subscribed my name.

ISAAC N. FORRESTER.

Witnesses:

GEO. S. PRATT,  
SAM. B. SUMNER.