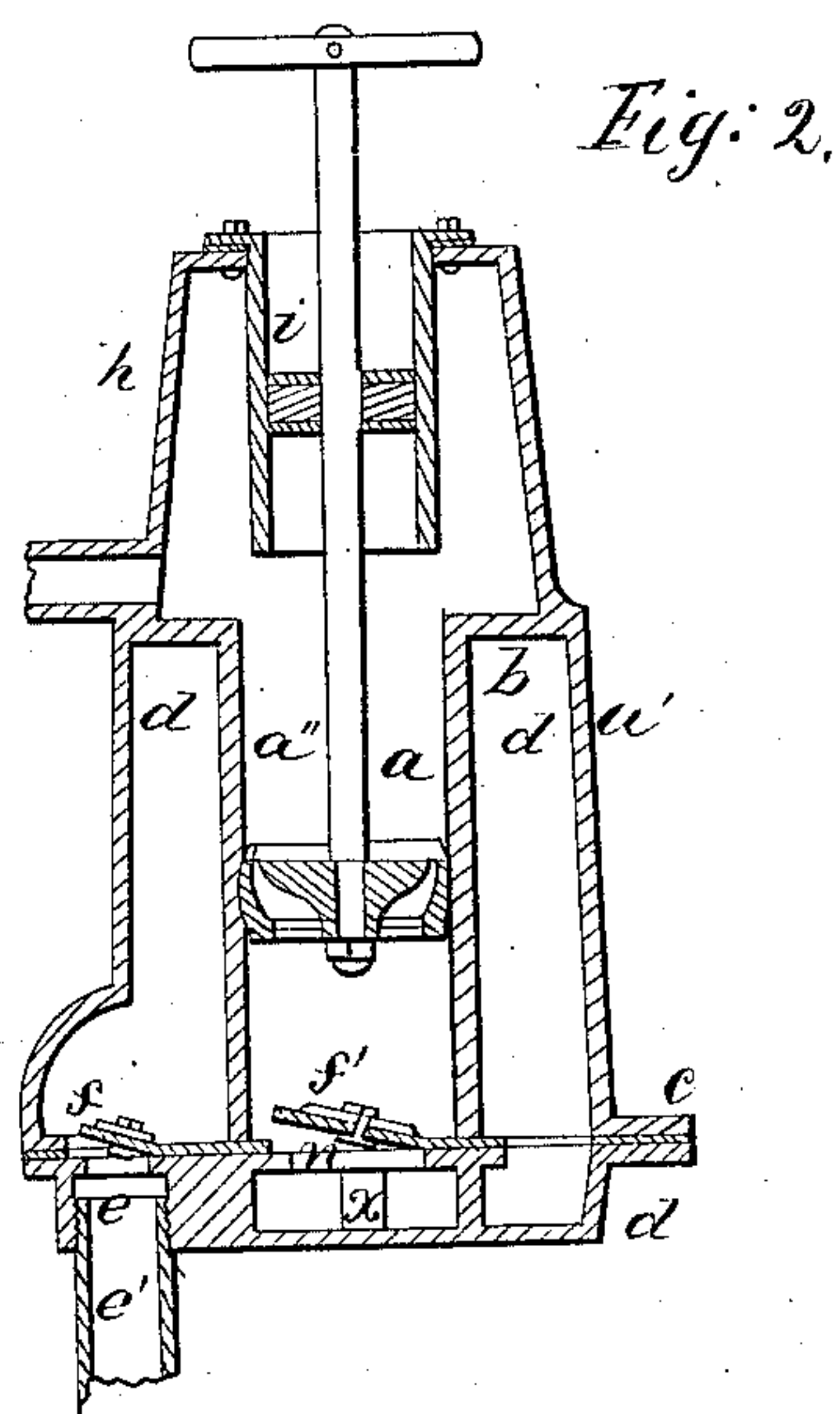
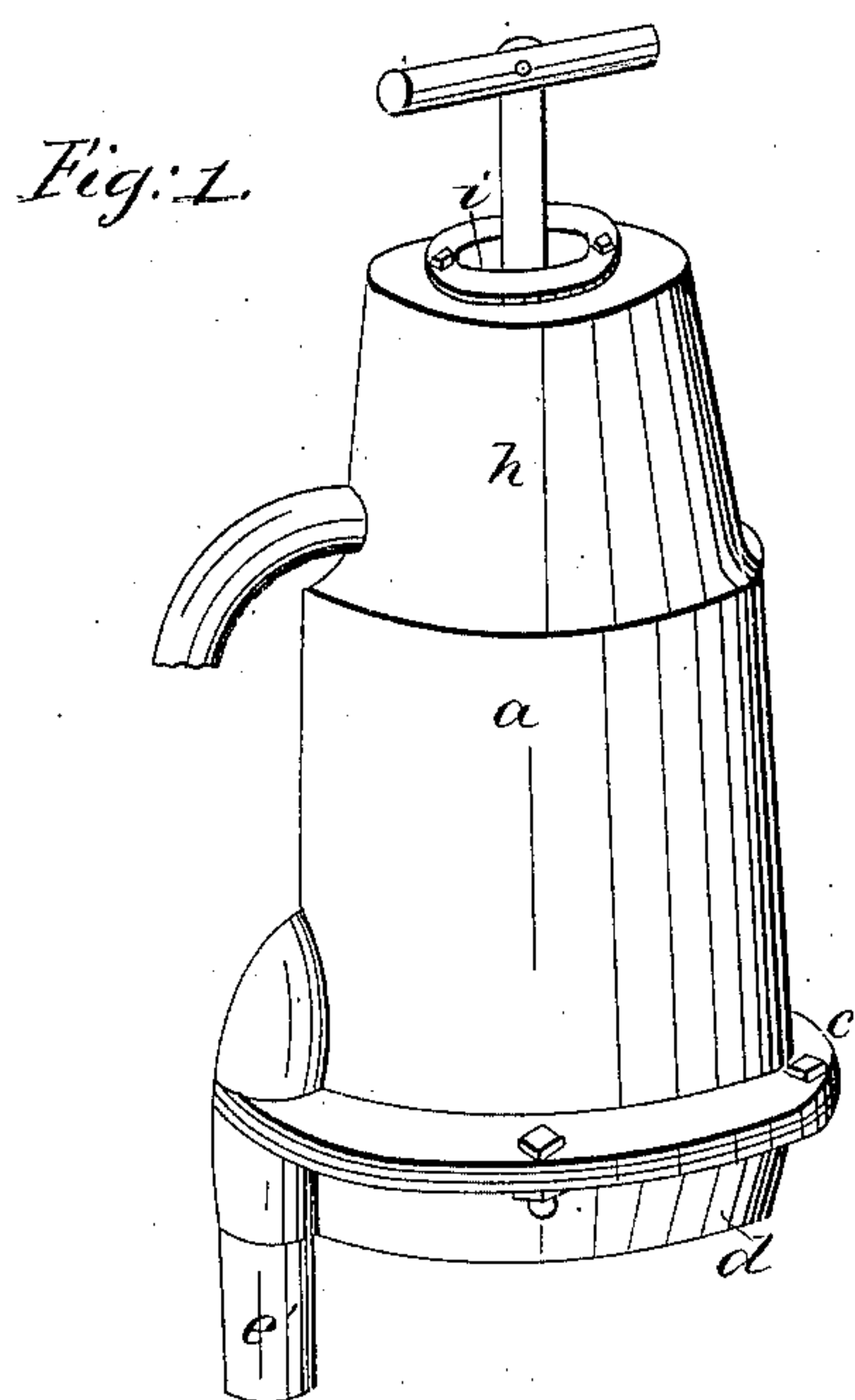
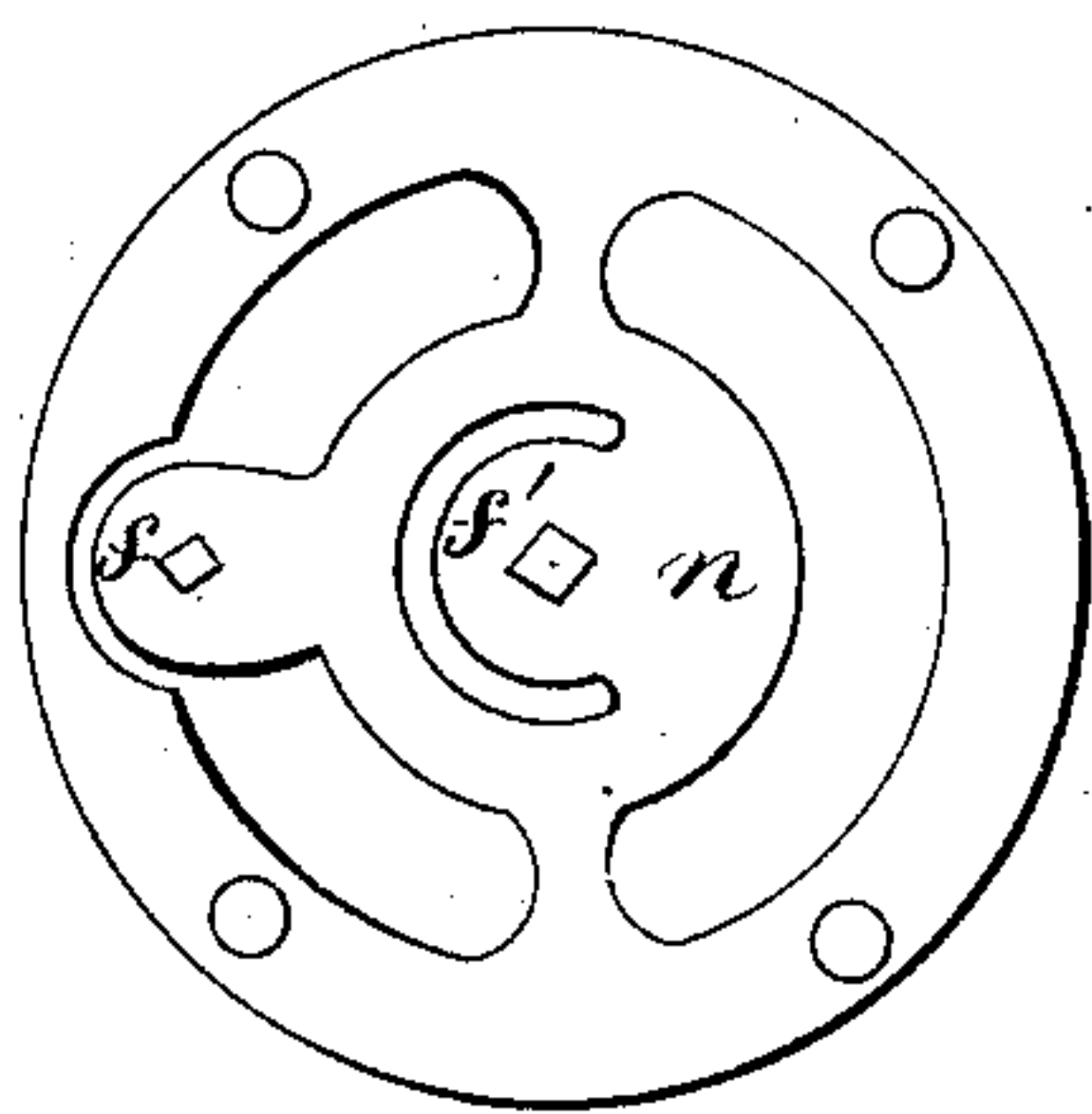


*J.D. West,*  
*Force Pump,*  
*No 18,309, Patented Sept. 29, 1857.*



*Fig: 3.*



*Inventor;*  
*J.D. West*

# UNITED STATES PATENT OFFICE.

J. D. WEST, OF NEW YORK, N. Y.

## PUMP.

Specification of Letters Patent No. 18,309, dated September 29, 1857.

*To all whom it may concern:*

Be it known that I, J. D. WEST, of the city, county, and State of New York, have invented certain new and useful Improvements in the Construction of Pumps, Double-Acting, by which I obtain great perfection, compactness, and durability, the following being a description of its construction, in which reference is made to the accompanying drawings, in which—

Figure 1, is a general view. Fig. 2, is a vertical section; Fig. 3, a plan of the valve packing.

This improvement consists in the construction and arrangement of the suction air chamber with the pump so as to form a cheap and compact structure easily made and fitted and repaired, in which I secure in some measure the valves against frost as well as the cylinder and plunger, and by the employment of two induction or foot valves I give a steadier action and more sure than heretofore attained with a valve piston as hereinafter more clearly appears.

The construction is as follows: I form a casting *a* of two concentric cylinders *a'* *a''*, connected at the top at *b* so as to leave the space between air tight, for a suction air chamber; the inner cylinder is bored for the purpose of fitting a piston *p* into it; the outer cylinder of this casting has a flanch around its lower edge at *c* by which the bottom casting *d* is bolted onto it; this lower casting *d* has an induction opening at *e* to which the suction pipe *e'* is affixed; this opening is covered by a valve *f*, opening upward into the air chamber and another induction opening from this casting into the inner cylinder is also covered with a similar valve *f'*. Both these valves are formed in a

single piece of leather *n* a plan of which is shown in Fig. 3. This forms also the packing of the joint between *c* and *d*. Above the air chamber *a* there is another double cylinder *h*, *l*. The bore of the cylinder *i* is about half the size of the lower inner one above named; the two are on a line with each other and the piston that works in *i* is on the same rod as piston *p*. This whole arrangement is clearly shown in the drawing, but as this part of the pump has before been patented no further description is necessary.

The operation of this pump is as follows: As the pistons are drawn up the water rushes up into chamber *a* from the suction pipe *e'* through valve *f* and flowing over runs under the valve seat of valve *f'* at *x* and thence passing up through valve *f'* it enters the inner cylinder *a''*. Thence it goes through the plunger box *p* as the plungers descend and passes off at the spout *s*; the effect of the double pistons is for keeping up a constant stream but as before remarked is not new.

I do not claim air chambers with a pump, as they have before been used but not in so compact or perfectly constructed a form as I have here devised.

Therefore having thus fully described my improvement in pumps what I claim, and desire to secure by Letters Patent, is—

The combination of the air chamber with two inner cylinders and duplicate foot valves, substantially in the manner and for the purposes set forth.

J. D. WEST.

Witnesses:

J. J. GREENOUGH,  
SAML. COLEMAN.