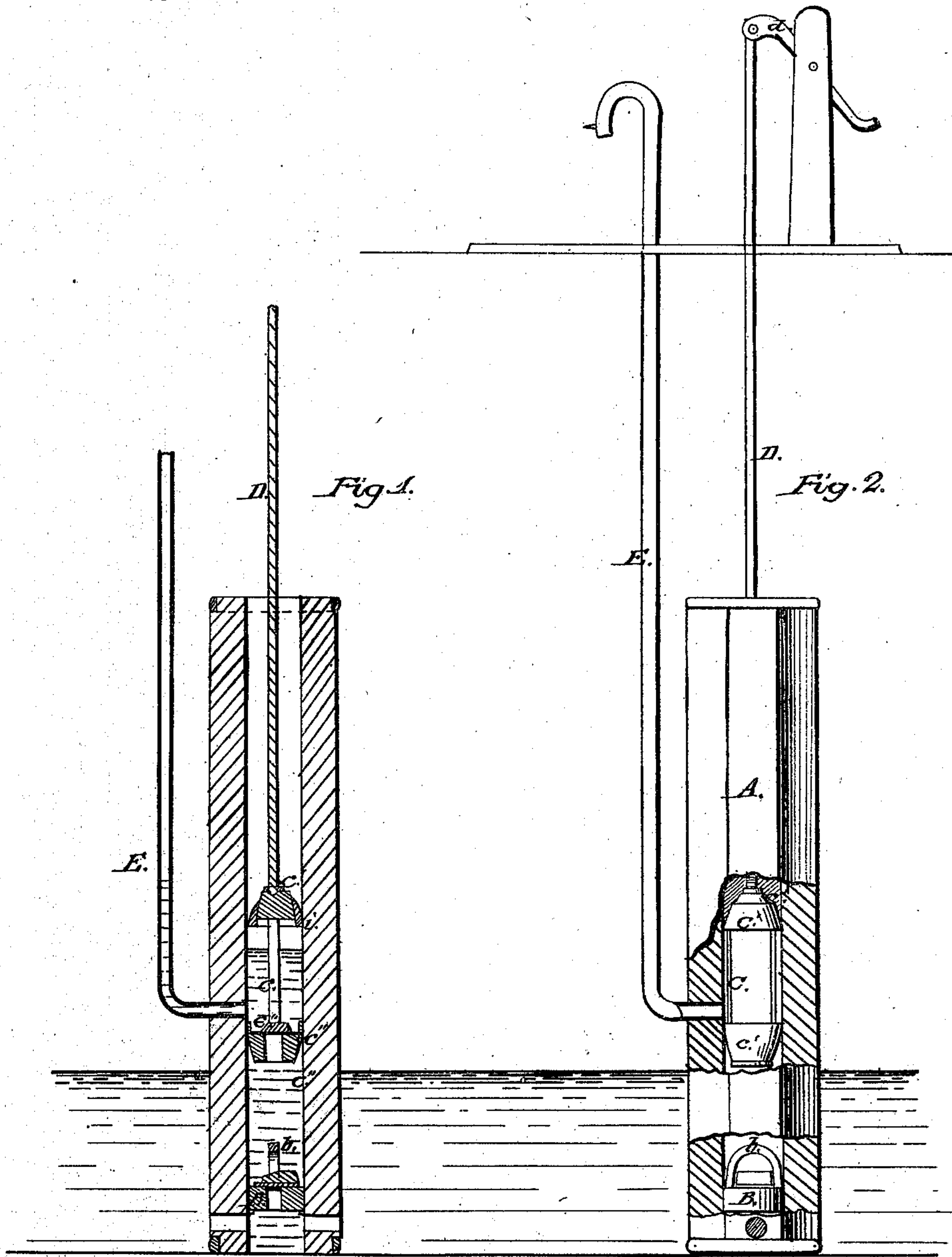


*M. Hanstone.*

*Pump.*

*N<sup>o</sup> 97,633.*

*Patented Dec. 7, 1869.*



*WITNESSES:*  
*C. J. Clausen*  
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# United States Patent Office.

MICHAEL HANSTINE, OF WAYNESBOROUGH, PENNSYLVANIA.

Letters Patent No. 97,633, dated December 7, 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, MICHAEL HANSTINE, of Waynesborough, Franklin county, Pennsylvania, have invented a new and useful Improvement in Force-Pumps; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Figure 1 represents a sectional elevation, and

Figure 2, a similar view.

The same letters refer to corresponding parts.

My invention relates to force-pumps, to be used for forcing water out of deep wells and cisterns to the surface; and

My improvement consists in the construction and arrangement of the several parts of which it is composed, as hereinafter more fully described.

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

A, in the drawings, represents the pump-barrel, which I propose to make of wood, of suitable length, and having any required bore. The bore is to be uniform throughout its entire length, save at the lower end, where it is to be made slightly tapering, to receive and retain the lower valve. Making the bore thus uniform enables me to withdraw from it all the inner working-parts, if it becomes necessary to repair them, from the top of the well, and without necessitating the removal of the barrel therefrom.

B represents the lower ordinary check-valve, opening upward. Its seat is made slightly tapering from top to bottom, and fits snugly in the lower portion of the barrel.

A staple or yoke, *b*, is fastened to the upper end of the seat, by which it may be removed from the barrel.

C represents the plunger, which is composed of the upper solid disk C' and the lower portion or suction-valve C'', united together by connecting-bars. The distance between the two portions is to be about equal to the length of the stroke, and its position in the pump-barrel, with reference to the discharge-pipe F, is to be such that in its reciprocating movement, the solid upper disk C' shall always be above and its valve C'' always be below this discharge-pipe. The leather-packing rings *c'* and *c''* extend inwardly, a little dis-

tance beyond the disk C' and valve-seat C'', so as to present each a flange to the pressure of the water, by which means they are always kept tight until the leather wears out.

D is the piston-rod, which is attached to a pivoted lever, *d*, on top of the well, for operating the pump in the usual manner.

E represents the discharge-pipe above alluded to.

As a consequence of the peculiar construction of this pump, I am enabled to produce an effective one, well adapted for deep wells, which is simple in construction, cheap in first cost, and less liable to become deranged, than any pump with which I am acquainted.

The operation is as follows:

The up-stroke of the piston opens the lower valve, and water rushes into the barrel. By the down-stroke, the lower valve is closed, and the piston-valve opened, admitting the water into the piston until it reaches the upper solid disk thereof. If the stroke is not completed by this time, some of the water will be forced into the discharge-pipe. By the next up-stroke the piston-valve is closed, and thereby the water therein and in the discharge-pipe retained, and the lower valve again opened to admit more water. Thus the operation is continued.

I am aware that a patent was granted to P. P. Campbell and D. D. Campbell, on the 28th of September, 1839, in which are shown some of the leading features of my pump, which features I do not claim singly, or as combined in said patent; but having thus described my invention,

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

A pump, combining in its construction a straight barrel or stock, A, lower or check-valve B, having a bail for lifting it out of its seat, a plunger, C, composed of an upper solid disk, C', connected to a valve, C'', by bars, as shown, and a piston-rod, D, when all the parts are constructed and arranged, as and for the purpose set forth.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

Witnesses: MICHAEL HANSTINE.  
GEO. W. WELSH,  
R. WELSH.