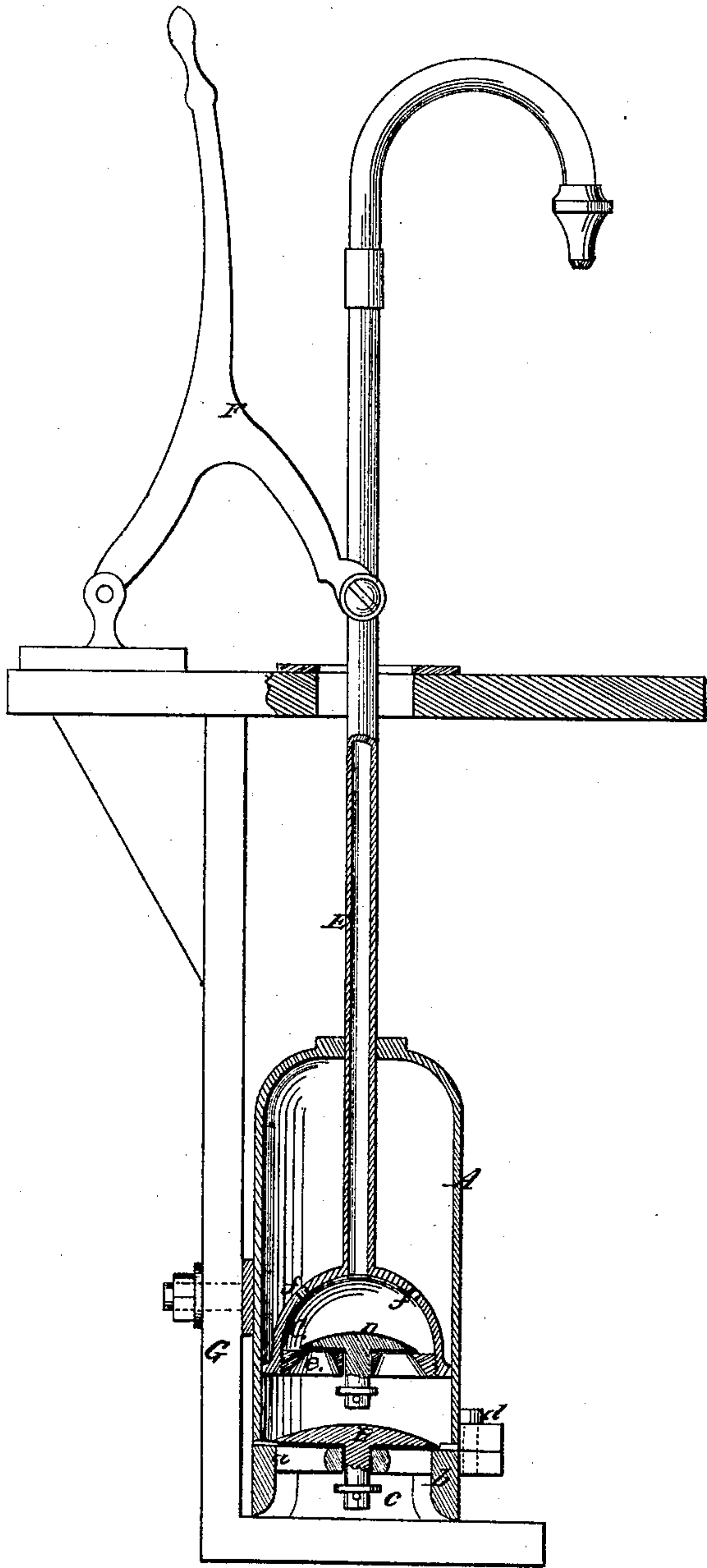


*J. Goland,*

*Submerged Pump.*

*N<sup>o</sup> 39,391.*

*Patented Aug. 4, 1863.*



Witnesses.

*J. A. Crounse*  
*Robt. H. Lawrence*

Inventor

*John Goland*  
*per Messrs H. & C.*  
*Attorneys*

# UNITED STATES PATENT OFFICE.

JOHN GOLAND, OF BATAVIA, ILLINOIS.

## IMPROVEMENT IN PUMPS.

Specification forming part of Letters Patent No. 39,391, dated August 4, 1863.

*To all whom it may concern:*

Be it known that I, JOHN GOLAND, of Batavia, in the county of Kane and State of Illinois, have invented a new and Improved Pump; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, making a part of this specification, said drawing being a vertical central section of my invention.

This invention relates to an improved pump of that class in which a tubular piston-rod is employed, and which are designed to be used submerged or at the bottom of the well.

The invention consists in the employment or use of a valve at the bottom of the pump-cylinder, in connection with a hollow piston provided with a valve and perforated, and all arranged to operate in such a manner that a continuous stream will be forced up through the tubular piston-rod as the piston is worked up and down.

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A represents the pump-cylinder, the upper end of which is of semi-spherical form, and the lower end provided with a puppet-valve, B, opening upward. The seat *a* of this valve may be in a cylindrical case, *b*, provided with side openings or water-passages, *c*, said box being attached to the cylinder A by screws *d*.

C represents the piston, which is hollow and of semi-spherical form, and having a puppet-valve, D, in its lower end, the seat *e* of which is screwed into the piston C. In the upper part of the piston C there are made holes or openings *f*, of any suitable number, the use of which will be presently shown.

E is the piston-rod, which is tubular and communicates with the piston C. This piston-rod may be operated through the medium of a lever, F, arranged as shown, or in any suitable way.

The pump-cylinder may be secured to any proper framing G, to retain it in proper position in a submerged state.

The operation is as follows: When the piston C rises, the piston-valve D closes, and a suction is formed in the lower part of the cylinder A, the valve B in the lower end of the cylinder opening upward, and the water rising in the cylinder, following the piston. The water in the cylinder A above the piston C as the latter rises passes through the perforations *f* and up through the piston-rod E. As the piston C descends, the valve B closes and the piston-valve D opens, and the water will be forced up through the piston-rod E, and also through the perforations *f* in the piston C into the cylinder A, from which it is forced out through the piston-rod as the latter rises, as previously described. Thus it will be seen that a very simple and efficient double-acting pump is obtained.

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

The valve B in the bottom of the cylinder A, in combination with the hollow piston C, provided with the valve D, and perforated at its upper part, as shown at *f*, all arranged to operate as and for the purpose set forth.

JOHN GOLAND.

Witnesses:

N. S. YOUNG,  
O. WILSON.