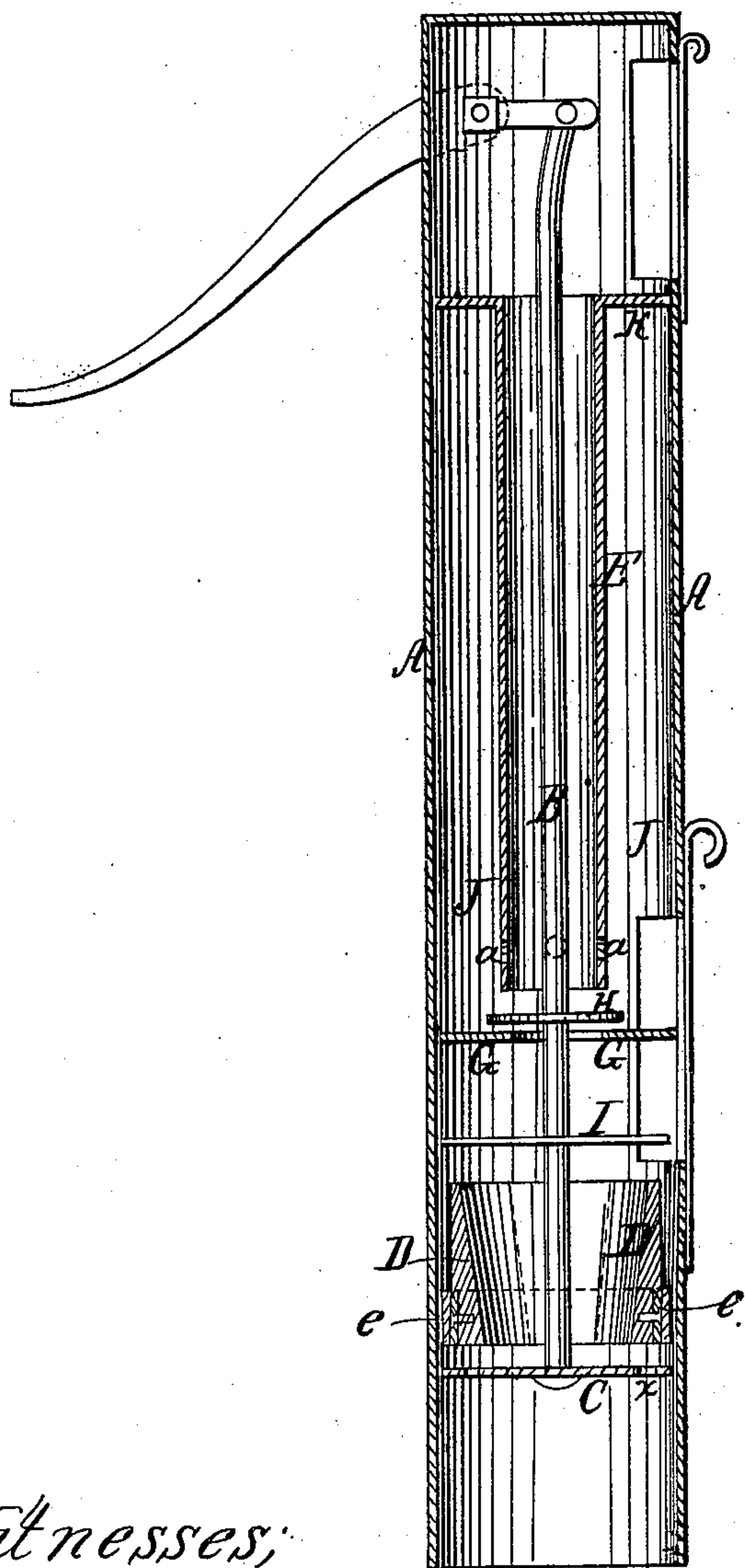


*J. Bean,*

*Pump Lift,*

*Nº 71,122.*

*Patented Nov. 19, 1867.*



*Witnesses;*

*Cornelius Cox*  
*A. A. Yestman*

*Inventor;*

*John Bean*  
*per*  
*Alexander M. Mason*  
*att*

# United States Patent Office.

JOHN BEAN, OF HUDSON, MICHIGAN.

*Letters Patent No. 71,122, dated November 19, 1867.*

## 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, JOHN BEAN, of Hudson, in the county of Lenawee, and in the State of Michigan, have invented certain new and useful Improvements in Pumps; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon. In the annexed drawings, making part of this specification—

A represents the pump-stock, which is constructed in any of the known and usual ways, and B represents the pump-rod. Upon the lower end of the rod B is secured an annular plate or disk, C, which is made a little less in diameter than the opening in the stock in which it plays. *x x* represent a series of perforations in plate C, near its periphery. D represents a hollow cylinder, open at both ends, and made of staves, which are not secured permanently together, but are held together by means of India-rubber bands, *e*, which surround them. When this cylinder is placed in the chamber of the pump-stock, the India-rubber band *e* fits snugly against the sides of the chamber. The lower end of the cylinder D is made broad enough to cover the openings in the plate C, thus forming, in connection with said plate, a valve. I represents a cross-bar or stop on the rod B, to prevent the cylinder from rising beyond a certain height. G represents a partition or diaphragm in the chamber of the stock, having an opening through its centre, through which the pump-rod plays, and which is made large enough for a water-passage. A disk, H, covers this opening in the diaphragm, fitting loosely over the rod B, and forming a valve. E represents a tube, which is placed in the chamber of the stock, above the diaphragm G. This tube has a flange, K, around its mouth, which fits snugly in the chamber of the stock, and suspends the tube, as seen. The rod B passes down through the centre of the tube, said tube being open at both ends, and provided, near its lower end, with perforations, *a a*.

The operation of this pump is as follows: When the pump-rod passes downward, the water enters cylinder D through perforations *x x* in plate C, and by its weight the staves of the cylinder expand so as to fit the chamber of the stock snugly and prevent leakage. When the rod B is raised, the water from the cylinder passes up through diaphragm G, into the chamber J, around tube E; and when this chamber becomes partially filled, the water, from the force below and the air compacted in the upper part of this chamber, is forced up the tube through openings *a a*, and escapes at the top of the pump-stock in the usual way.

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

The pump, constructed with the cylinder D, formed of staves held together by India-rubber bands, and the tube E in the chamber of the pump-stock, and with the diaphragm G and the rod B, as and for the purposes herein set forth.

In testimony that I claim the foregoing, I have hereunto set my hand this 3d day of September, 1867.

JOHN BEAN.

Witnesses:

A. W. OCOBOCK,  
T. W. TOLCHARD.