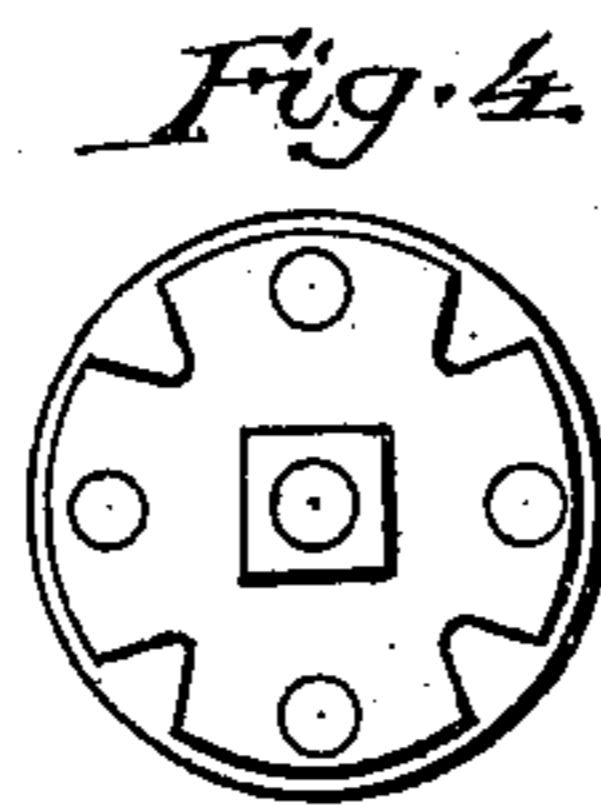
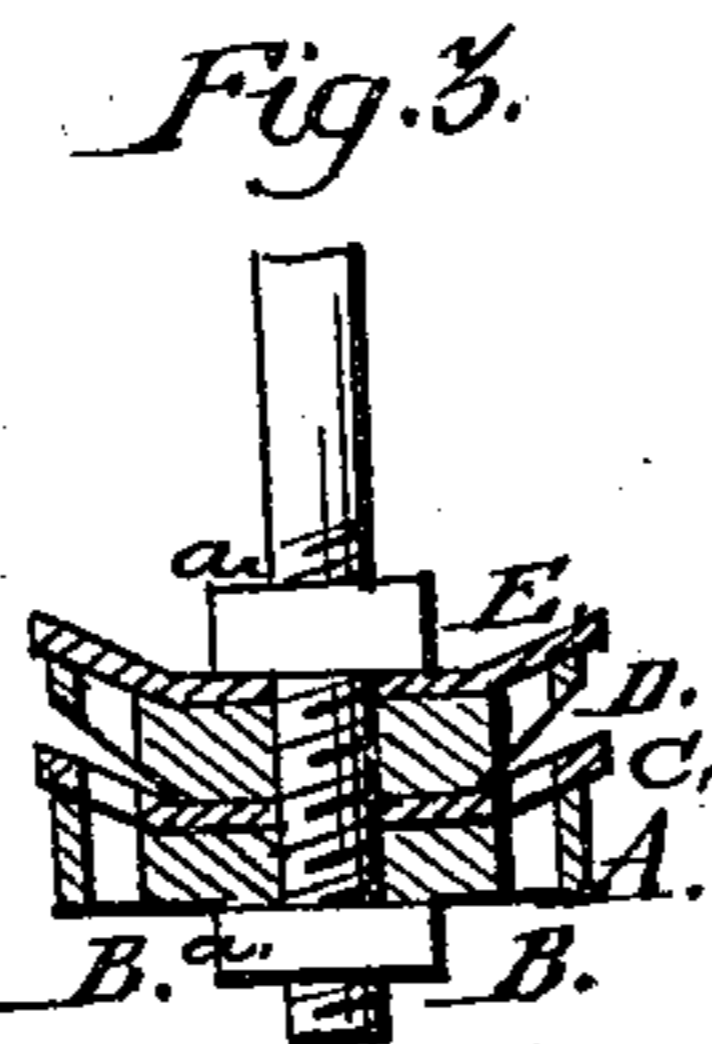
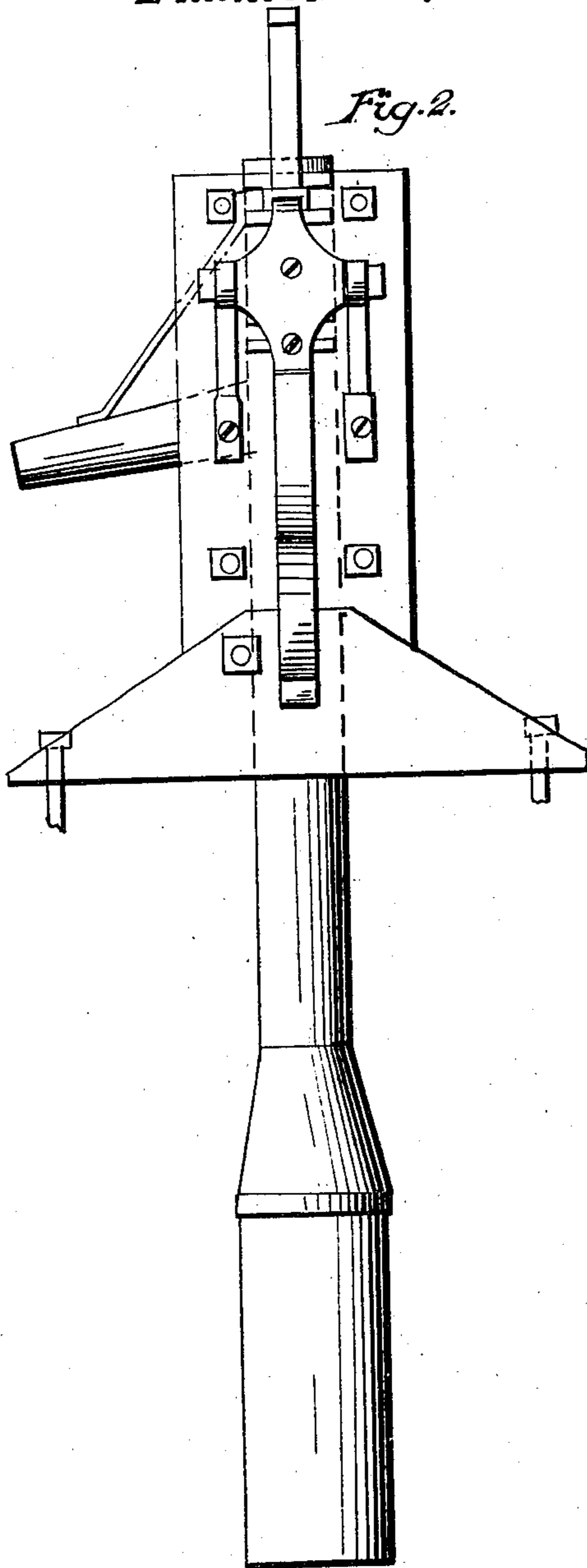
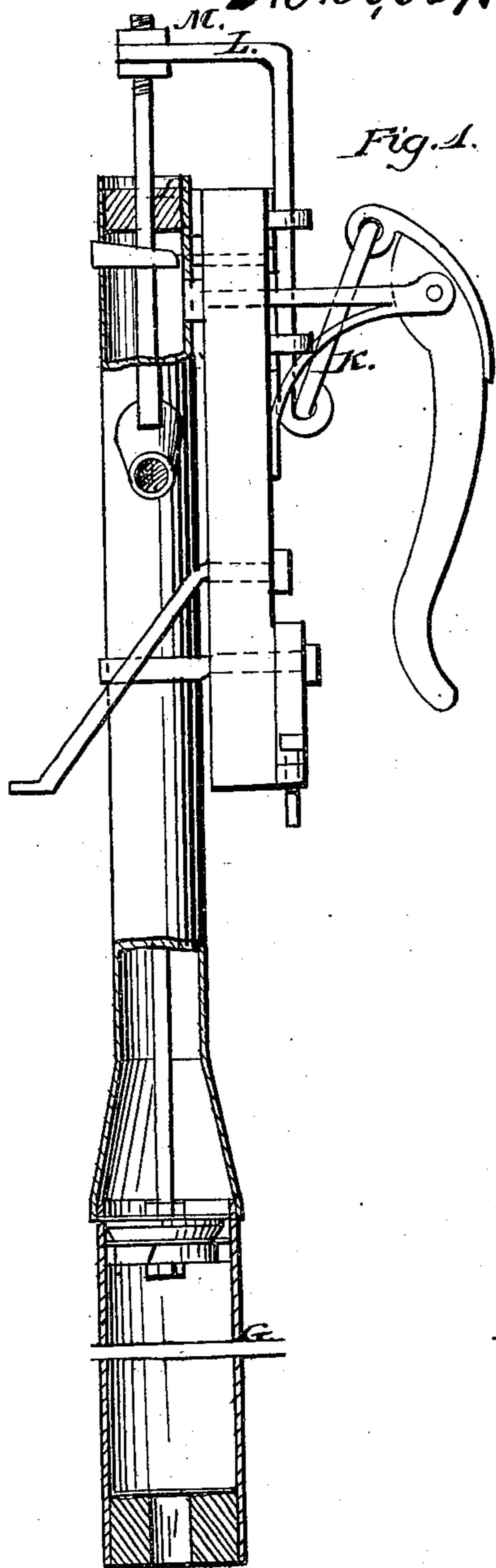


*A. C. Judson,*

*Pump.*

*Patented Dec. 21. 1869*

*No. 98067.*



*Witnesses:*  
*Geo. W. Mahoe*  
*Geo. F. Brooks*

*Inventor:*  
*A. C. Judson*  
*per*  
*Wm. H. [Signature]*  
*attorneys*

# United States Patent Office.

A. C. JUDSON, OF GRAND RAPIDS, OHIO, ASSIGNOR TO HIMSELF AND E. O. JUDSON, OF SAME PLACE.

*Letters Patent No. 98,067, dated December 21, 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, A. C. JUDSON, of Grand Rapids, in the county of Wood, and State of Ohio, have invented a new and improved Pump; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

This invention relates to improvements in pumps, such as are commonly used for lifting water from wells, and has for its object to provide an improved construction and arrangement of valves for the same; also an improved arrangement of operating-devices.

The invention consists in an arrangement of two metal dish-shaped disks, with a diaphragm of leather between them, and another leather diaphragm above, adapted for the better support of the water in lifting.

It also consists in an arrangement for operating the pump-rod without lateral vibration, so that it may be packed tightly in the tube, to prevent foul matter and vermin from getting in.

Figure 1 represents an elevation of my improved pump, partly in section;

Figure 2 represents a front elevation;

Figure 3 represents a section of the valve; and

Figure 4 represents a plan view of the same.

Similar letters of reference indicate corresponding parts.

A represents one metallic disk, which is concave on the upper surface, and provided with notches B, in the edge, for the passage of the water.

Above it is placed a leather diaphragm, C, with corresponding holes for the passage of the water.

Above this is placed another disk, D, which is bevelled on the lower side, to permit the necessary vibra-

tion of the diaphragm C. This disk is also provided with holes or notches, for the passage of the water, and is concave on the top.

Above it another leather diaphragm, E, is placed, but without holes.

These disks and diaphragms are placed on the pump-rod, and clamped together firmly by screw-nuts *a*.

The whole forms a strong and durable valve, not liable to get out of repair.

The leather diaphragms are sufficiently larger than the metallic disks to prevent them from rubbing on the surface of the tube.

Above the cylinder G, where the valve works, I prefer to reduce the size of the pump-tube, for economy of construction, and to make it more convenient to handle.

In order to work the rod H without lateral vibration, so that it may be packed at the top, as represented at I, I introduce, between the handle or connecting-rod K, operated by it, a bent arm, L, arranged to work vertically, in suitable guides, and to this I connect the pump-rod, as shown at M, whereby it is caused to move up and down in right lines, enabling me to make use of the packing I, with great advantage, in protecting the pump from foul matter, vermin, &c.

Having thus described my invention,

I claim as new, and desire to secure by Letters Patent—

The improved lifting-pump valve, comprising the two metal disks, A D, and diaphragms E, &c., all arranged and applied to the pump-rod, as specified.

A. C. JUDSON.

Witnesses:

STEPHEN S. LASKEY,

A. J. GARDNER.