

(Model.)

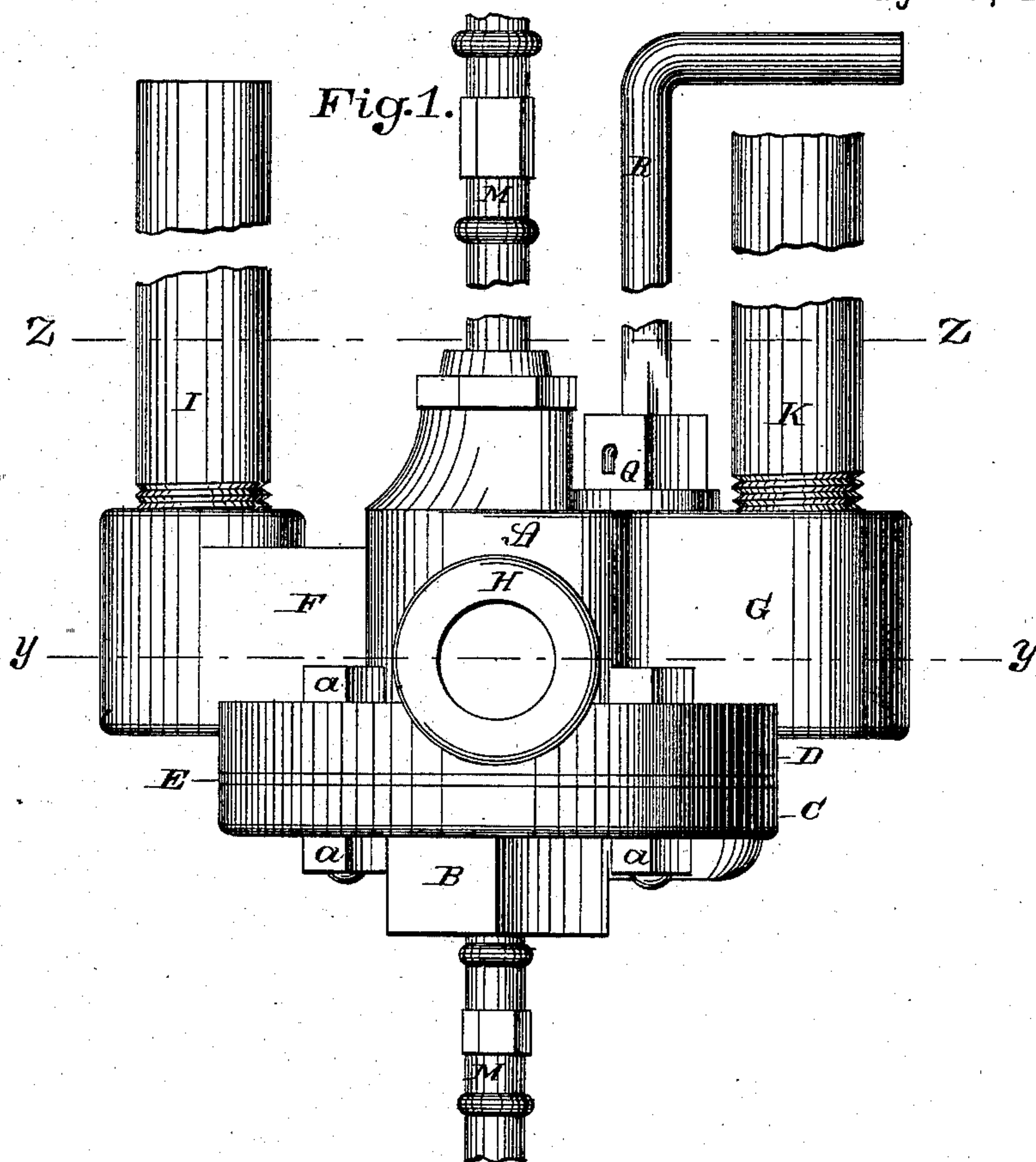
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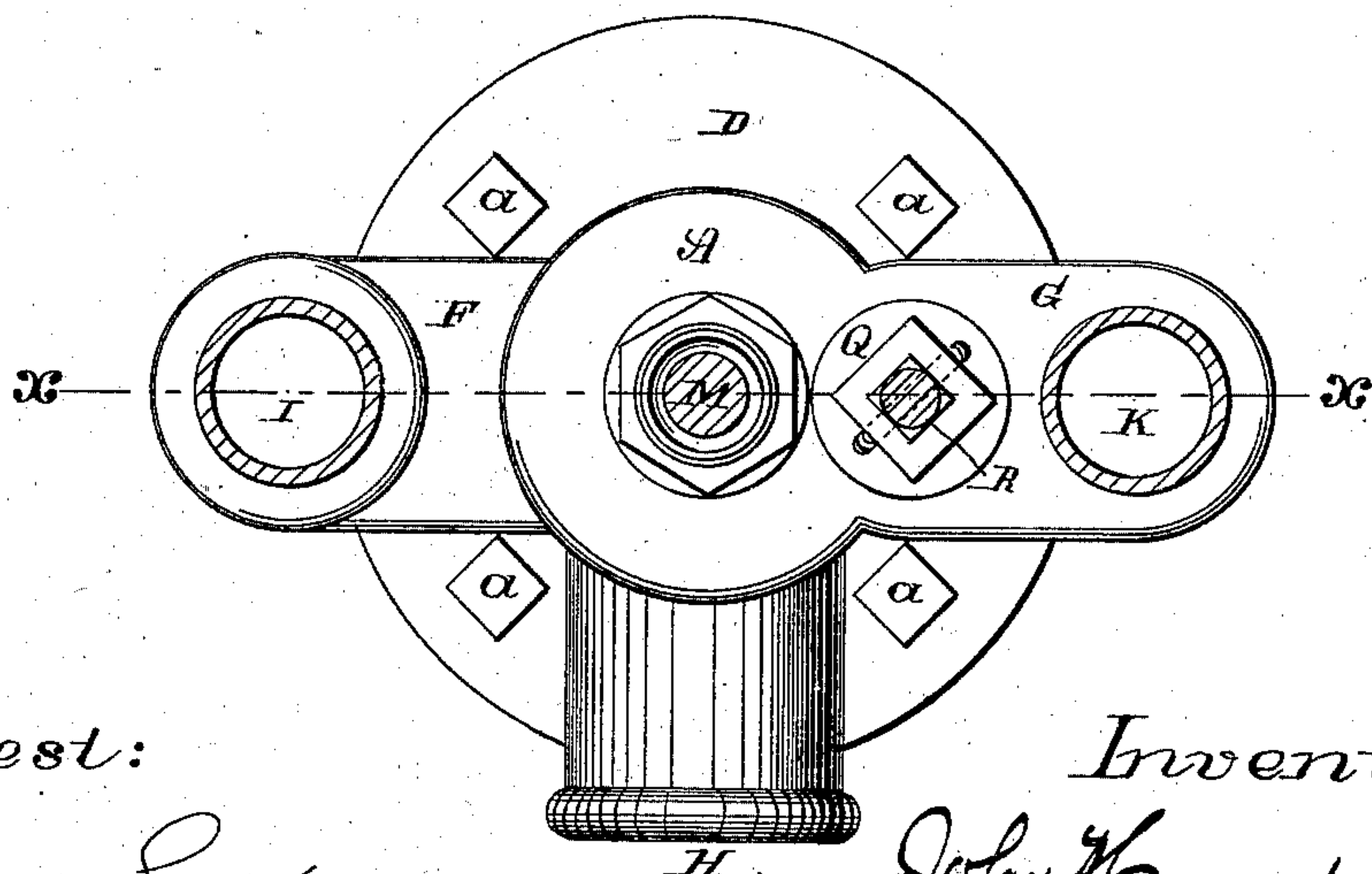
PUMP.

No. 257,871.

Patented May 16, 1882.



*Fig. 2.*



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(Model.)

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2 Sheets—Sheet 2.

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Fig. 3.

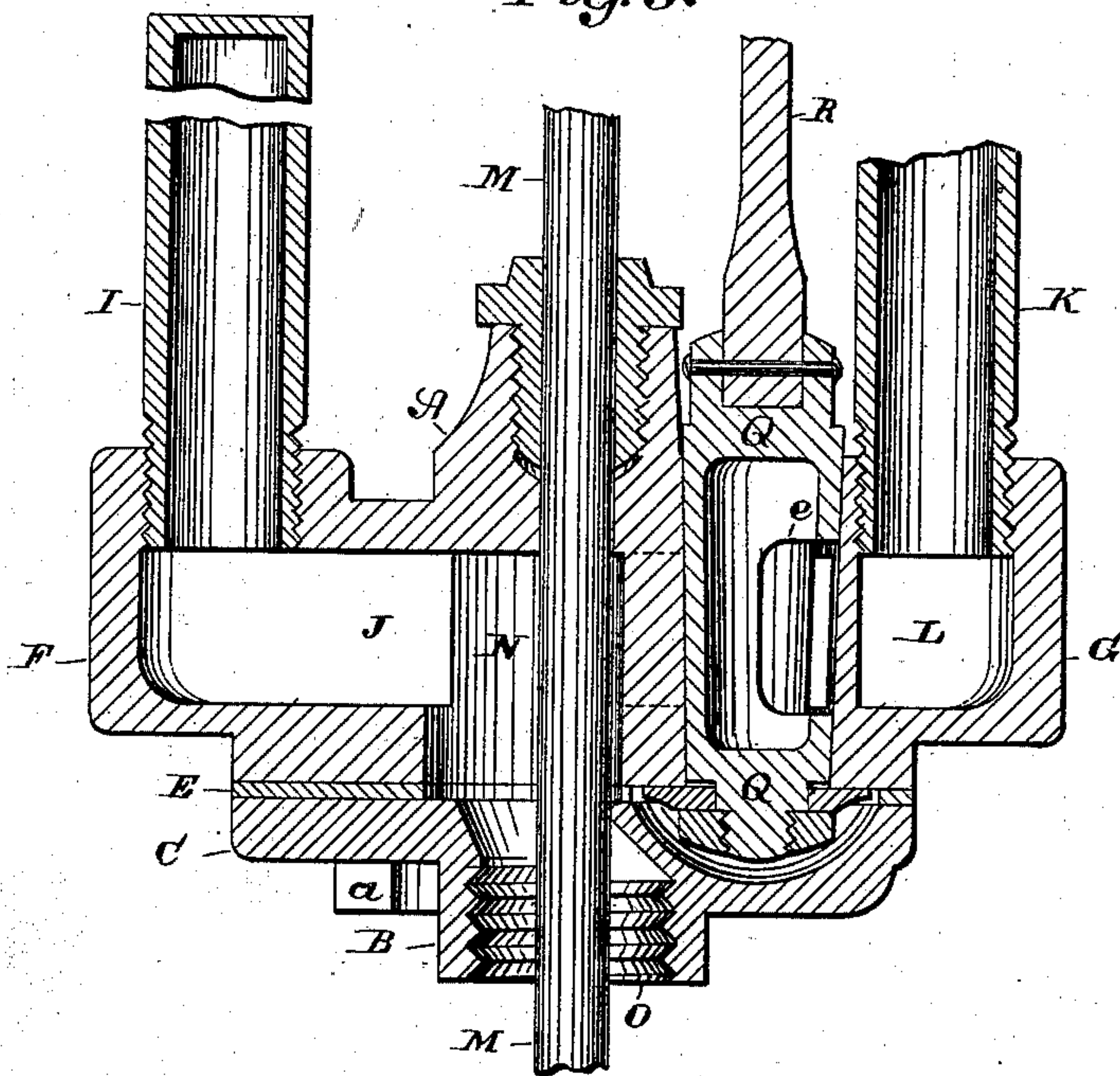
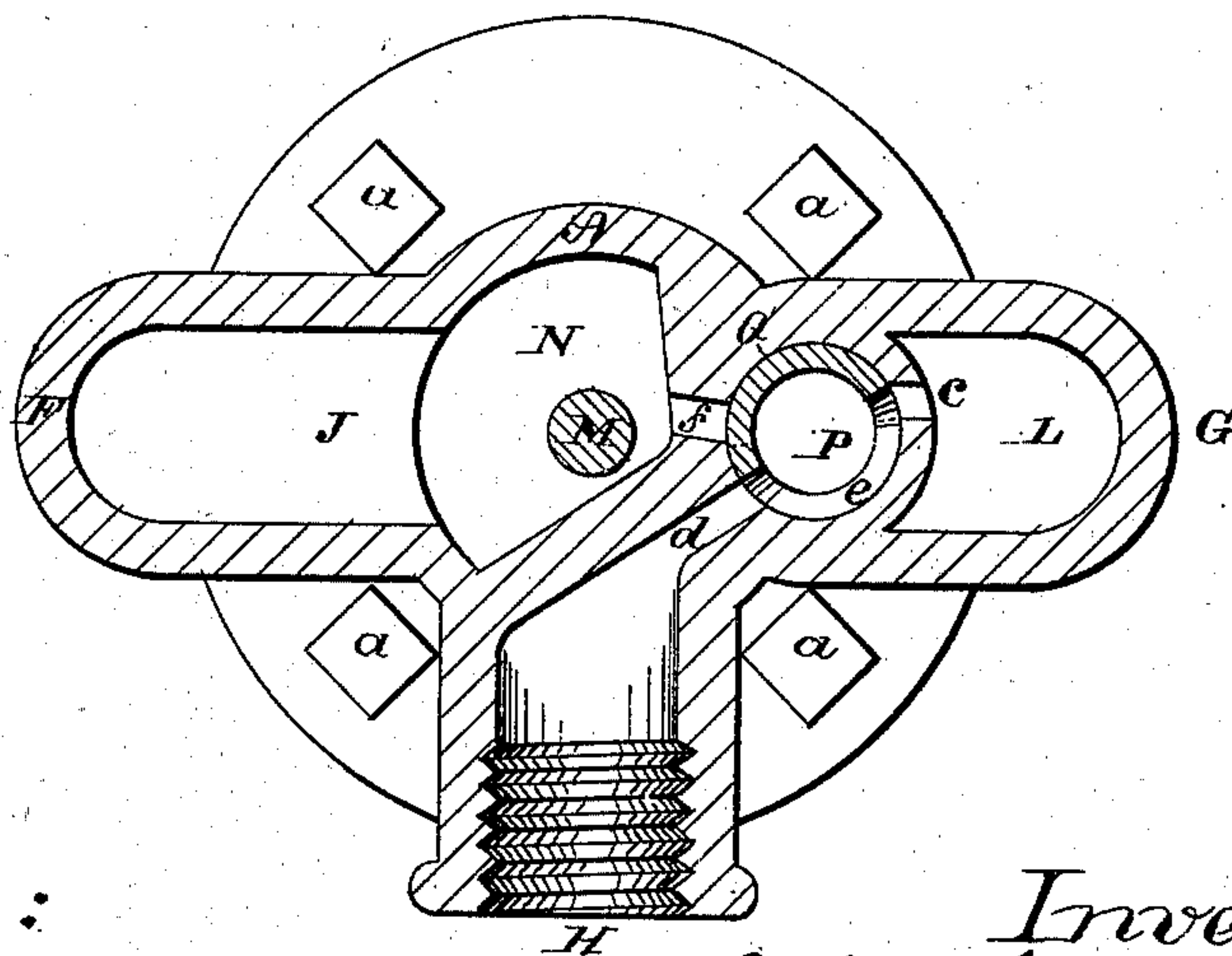


Fig. 4.



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# UNITED STATES PATENT OFFICE.

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## PUMP.

SPECIFICATION forming part of Letters Patent No. 257,871, dated May 16, 1882.

Application filed November 1, 1881. (Model.)

*To all whom it may concern:*

Be it known that I, JOHN HUMPHRYES, Jr., of Salem, in the county of Columbiana and State of Ohio, have invented certain new and useful Improvements in Pumps for Windmills; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification, and in which—

Figure 1 is a side elevation; Fig. 2, a top view taken on the line *z z* of Fig. 1; Fig. 3, a vertical section taken upon the line *x x* of Fig. 2, and Fig. 4 a cross-section taken upon the line *y y* of Fig. 1.

My invention relates more particularly to the introduction of a valve-seat between the top of the well and the pumping-cylinder, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and operate the same, I will now proceed to describe its construction.

In the accompanying drawings, A represents the valve-seat, preferably cast in one piece of metal, with a separate bottom plate, B, held in position and secured to the seat by bolts *a*, passing through the flanges C and D, respectively, of the bottom and the valve-seat and an intervening packing, E.

The valve-seat A has two lateral extensions, F and G, projecting on opposite sides of the seat a suitable distance, and an extension, H, for connection with the escape-pipe. The extension F has an opening on top at its outer end, lined with a screw-thread, to receive the open end of the sustaining-pipe I, which sustains that side of the seat, at the same time communicating with the chamber J within the body of the extension and forming an air-chamber. The extension G projects a suitable distance, and by means of a screw-threaded opening in its top near the end receives the screw-threaded end of the discharge-pipe K, that thus communicates with the chamber L within the body of the extension G.

The piston-rod M passes down through the

center of the valve-seat, through the chamber N, the bottom plate, B, and on into the pipe leading to the pump-cylinder.

The center of the bottom plate, B, is provided with a threaded flange-opening, O, for connection with the thread end of the pipe leading down to the pumping-cylinder. This opening O opens into the chamber N.

Between the inner end of the chamber L and the side of the chamber N, lying partly within the body of the seat and partly within the extension G, is located a slightly-conical opening or chamber, P, the sides of which serve as a casing or bearing for the rotating conical valve or plug Q.

The chamber P communicates by a channel, *f*, with the chamber N, and by the channel *c* with the chamber L, and by a channel, *d*, with the underground discharge-pipe. These channels must be properly located for the action of the plug Q.

The conical valve or plug Q passes from above the top of the seat A through its bottom, where it terminates in a screw-threaded end, and is secured by a washer and nut, by means of which any wear can be taken up, and is covered in by the bottom plate, B. The plug is hollow, and has an opening, *e*, in its side that is of suitable length, and extends about half-way around the plug, so as to embrace any two of the three openings that may be within the same half of a circle within the opening *e*, thereby permitting water to pass from one out of the other through the plug.

A rod, R, extends from the top of the plug to a suitable point above, where it is provided with a crank.

In operating this device, when it is desired to pump water from the well the plug is rotated so that its aperture *e* will embrace or coincide with the channels *f* and *c*. The water will then pass from the pumping-cylinder, through the opening O, chamber N, using chamber J and pipe I as an air-chamber, through the channel *f*, plug Q, channel *c*, and chamber L, into the discharge-pipe K.

In emptying the discharge-pipe and air-chamber, when it is desired to prevent freezing, the plug Q is rotated to embrace or coincide with channels *c* and *d*, when the water,



by reason of gravity, flows from the discharge-pipe out through the chamber L, channel *c*, plug Q, channel *d*, and the ground-pipe. The plug is then rotated to coincide with or  
5 embrace channels *f* and *d*. Then the water flows out of the pipe I, chamber J, and N, through the channel *f*, plug Q, channel *d*, and discharge-pipe, thus emptying all the water above the bottom of the valve-seat.

10 By this construction the full benefits of an air-chamber and three-way cocks are secured, combined within a small space in a piece of cast metal solid and secured.

Having thus described my invention, I desire to secure by Letters Patent—

1. In a pump for windmills, a valve-seat provided with channels *c*, *d*, and *f*, chamber P, and a plug, Q, all arranged for communication with the pump-cylinder, air-chamber, dis-

charge-pipe, and escape-pipe, substantially as 20 set forth.

2. The combination of the seat A, provided with chambers N, J, L, and P, with the pipes I and K and plug Q, substantially as shown and described.

3. In a pump for windmills, the combination 25 of an air-chamber with a valve-seat provided with a three-way cock, with which the air-chamber is in direct communication, an inlet-opening, an escape-pipe, and a discharge-pipe, 30 substantially as shown and described.

In testimony whereof I affix my signature in the presence of two witnesses.

JOHN HUMPHRYES, JR.

Witnesses:

T. C. READ,

W. BURR HENION.