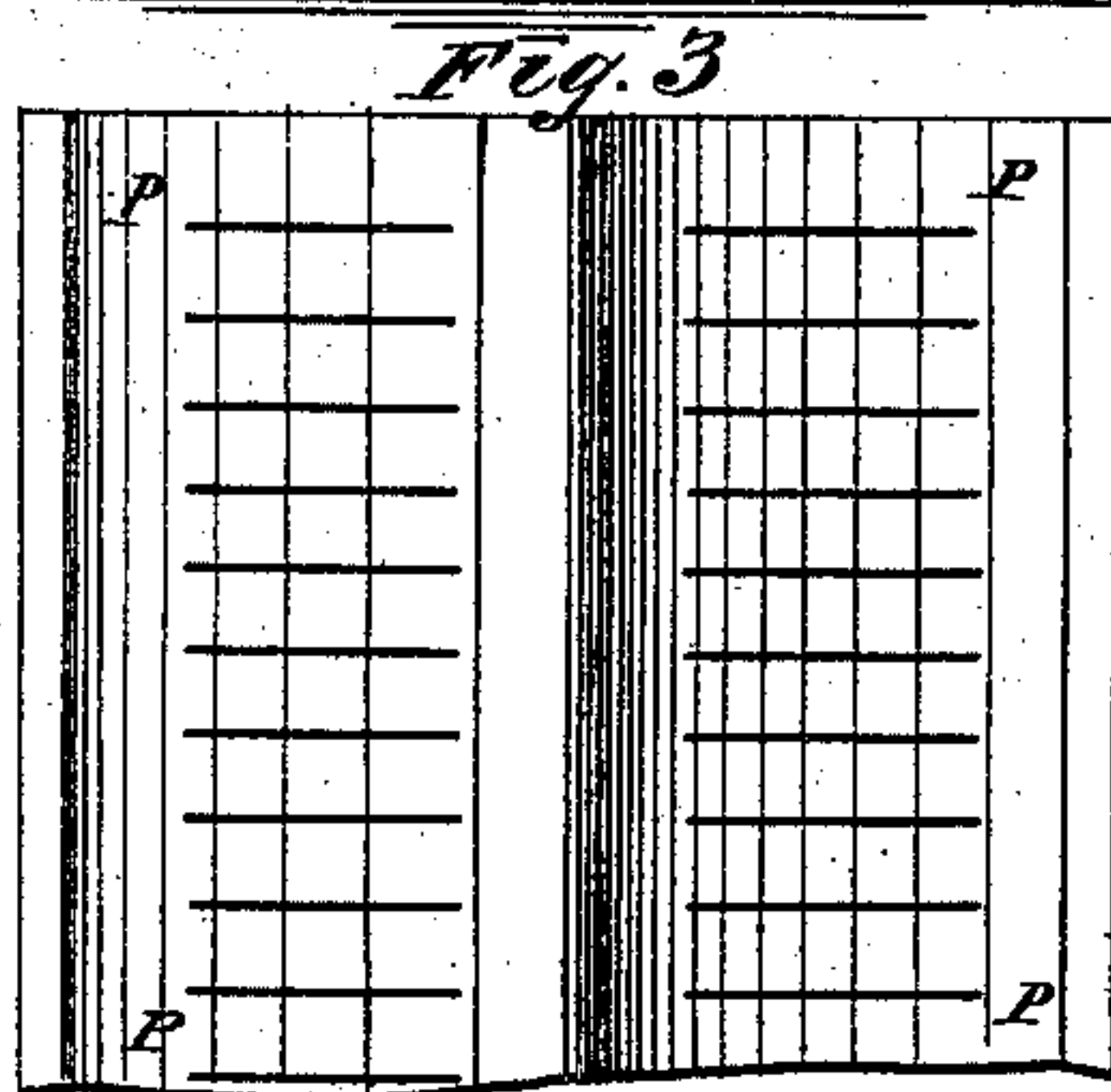
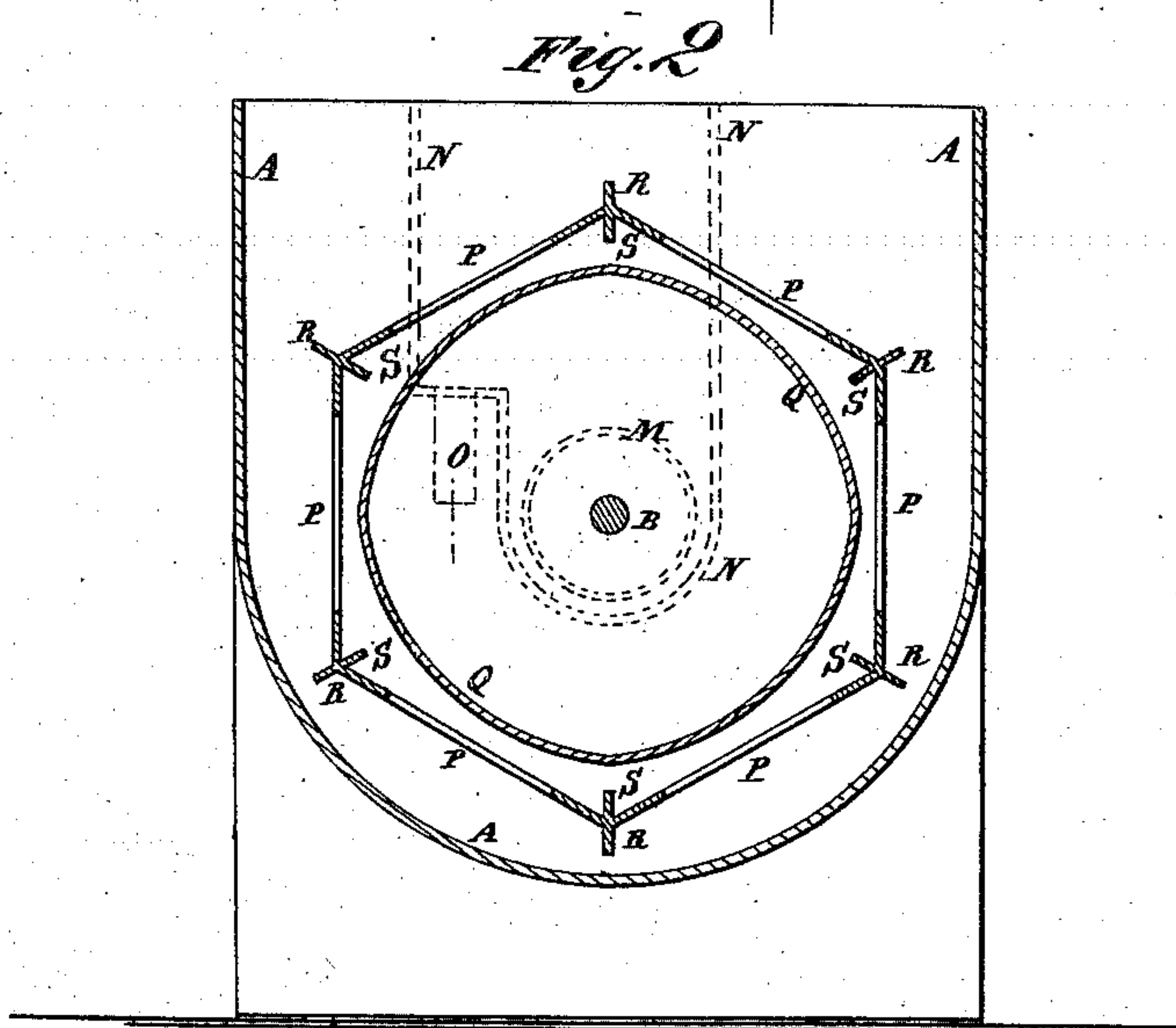
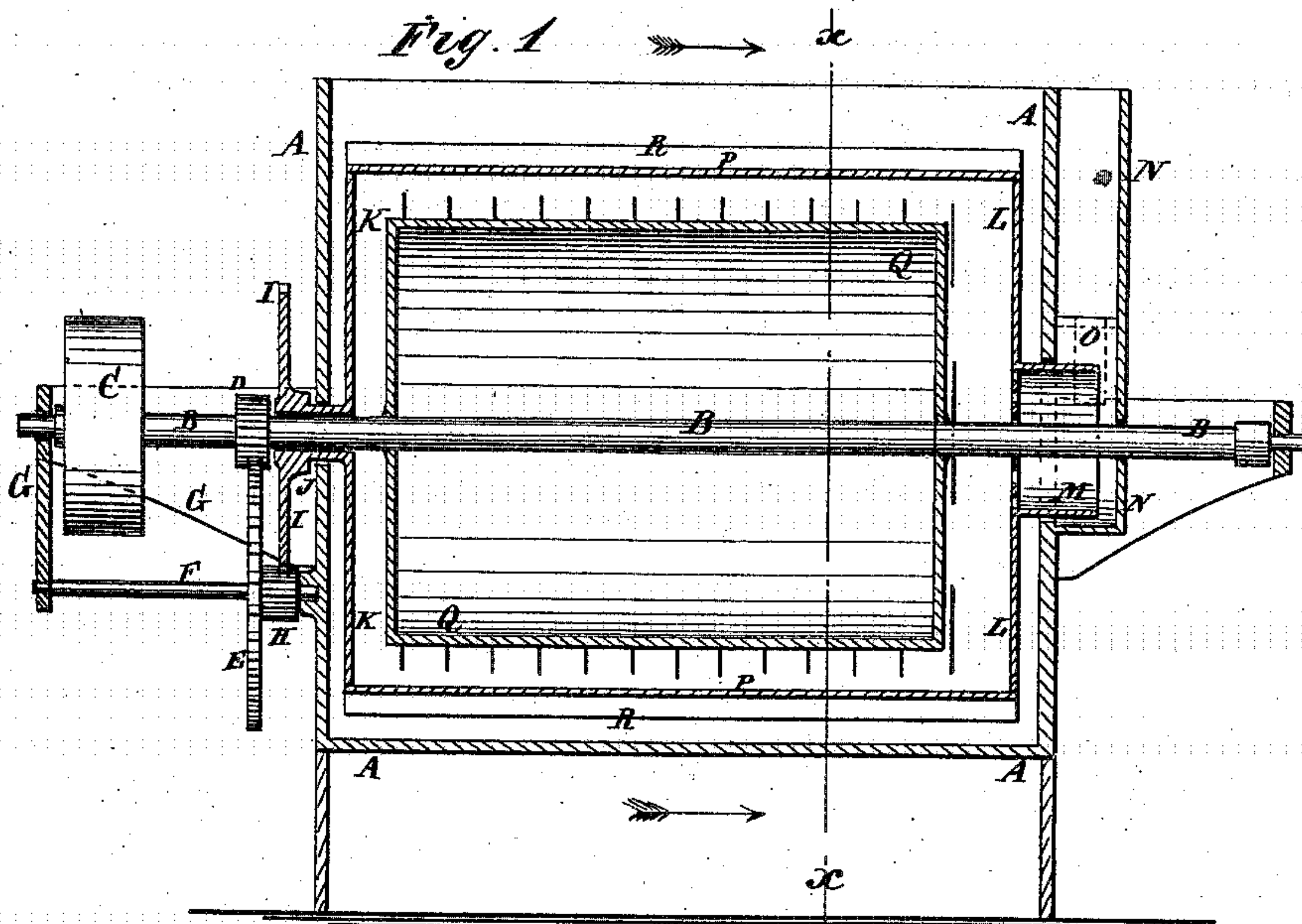


J. S. WARREN.
Paper-Pulp Screens.

No. 154,733.

Patented Sept. 1, 1874.



WITNESSES:

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INVENTOR:

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UNITED STATES PATENT OFFICE.

JOHN S. WARREN, OF FISHKILL ON THE HUDSON, NEW YORK.

IMPROVEMENT IN PAPER-PULP SCREENS.

Specification forming part of Letters Patent No. **154,733**, dated September 1, 1874; application filed July 25, 1874.

To all whom it may concern:

Be it known that I, JOHN S. WARREN, of the city of Fishkill on the Hudson, county of Dutchess and State of New York, have invented a new and useful Improvement in Paper-Pulp Screen, of which the following is a specification:

Figure 1 is a vertical longitudinal section of my improved machine. Fig. 2 is a vertical cross-section of the same, taken through the line *x x*, Fig. 1. Fig. 3 is a detail top view of a portion of the screen.

My invention has for its object to furnish an improved screen or dresser for paper-pulp, which shall be simple in construction and effective in operation, doing its work rapidly and thoroughly. The invention consists in the peculiarly-shaped revolving cylinder, in combination with the revolving screen and the vat, as hereinafter fully described.

Similar letters of reference indicate corresponding parts.

A is the outer box or vat, the bottom of which is made semi-cylindrical in form. In bearings in the ends of the vat A revolves a shaft, B, to which is attached the pulley C to receive the belt, by which power is applied. To the shaft B, outside of the vat A, is attached a small gear-wheel, D, into the teeth of which mesh the teeth of a larger gear-wheel, E, attached to the short shaft F, the inner end of which revolves in bearings attached to the end of the vat A, and its outer end revolves in bearings in a bracket, G, also attached to the end of the vat A. To the gear-wheel E or to the shaft F is rigidly attached a small gear-wheel, H, into the teeth of which mesh the teeth of the larger gear-wheel, I. The gear-wheel I is attached to the end of a sleeve, J, through which the shaft B passes, and which passes through a stuffing-box in the end of the vat A, so as to be water-tight. To the inner end of the sleeve J is attached a polygonal disk, K, of six, more or less, sides. Upon the shaft B, at the other end of the vat A, is placed a similar disk, L, which is attached to the inner end of a sleeve or tube, M, through which the shaft B passes, and which passes through a stuffing-box in the end of the vat A. The sleeve M is made considerably larger than the shaft B, so as to serve as an outlet to the vat A. The outer end of the sleeve M

opens into a small compartment or chamber, N, attached to the outer side of the end of the vat A, and from an offset in which a discharge spout or tube, O, leads to discharge the dressed pulp. To the sides of the two disks K L are attached the screen-plates P, in which are formed cross-slits, as shown in Figs. 1, 2, and 3, through which the pulp passes from the vat A, into which it is led, into the interior of the screen K L P. To the shaft B, within the screen K L P, is attached a hollow cylinder, Q, which is formed of curved plates attached to each other at their side edges, and attached at their end edges to disks, the centers of which are attached to the shaft B. The curved plates that form the sides of the cylinder Q are made upon the arc of a circle having a longer radius than the radius of the cylinder, so that the middle parts of said plates may be at a less distance from the said shaft than the edges of said plates. By this construction the screen K L P and the cylinder Q will be revolved with different velocities, the cylinder revolving much slower than the screen, and the peculiar shape of the cylinder Q will pulsate the pulp so as to keep the slits of the screen-plates clear. The screen K L P is provided at its angles with outwardly-projecting flanges R, and with inwardly-projecting flanges S, to keep the pulp stirred up and prevent any tendency of the pulp to settle. With this construction all impurities of the pulp will sink to the bottom or lower part of the vat A, and may be drawn off through an opening in the bottom of the said vat, and may then be run through an ordinary screen, if desired.

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

The revolving cylinder Q, formed of segment-plates of a larger circle than the completed cylinder, united at their edges and working in connection with the screen K L P, which revolves in a contrary direction, thus producing a pulsating current, the whole operating in the vat A, substantially as described.

JOHN S. WARREN.

Witnesses:

SANFORD E. LENT,
JAMES H. REYNOLDS.