(No Model.) 2 Sheets—Sheet 1.

# J. LEE.

## ROTARY PUMP.

No. 292,122. Patented Jan. 15, 1884.

Fig. 1.

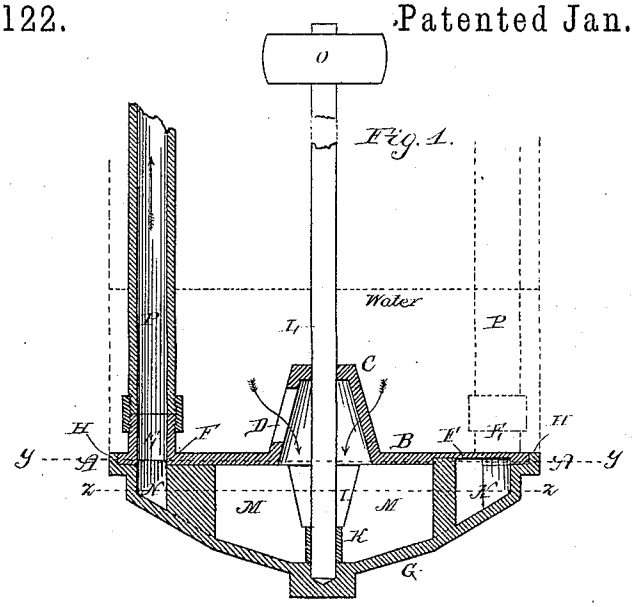



Fig. 2.

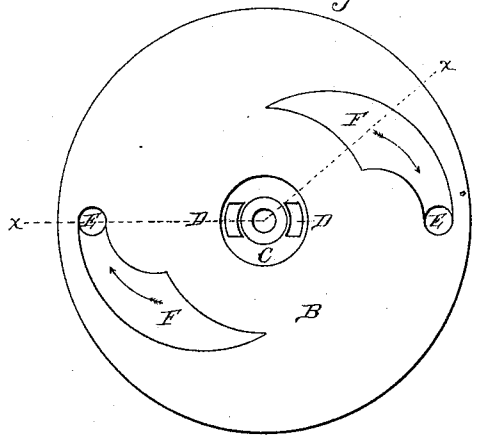
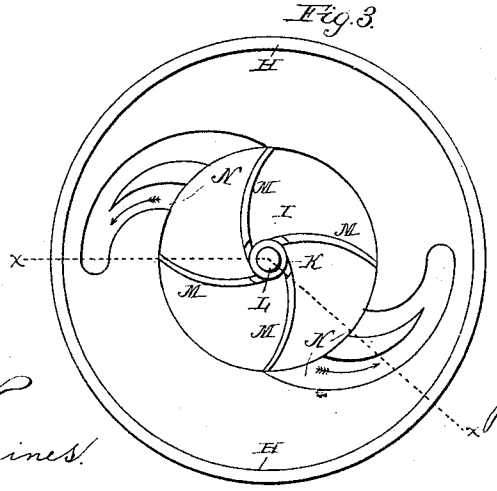



Fig. 3.




Witnesses:

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per F. A. Lehmann

Atty.

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(No Model.) 2 Sheets—Sheet 2.

# J. LEE.

## ROTARY PUMP.

No. 292,122. Patented Jan. 15, 1884.

Fig. 4

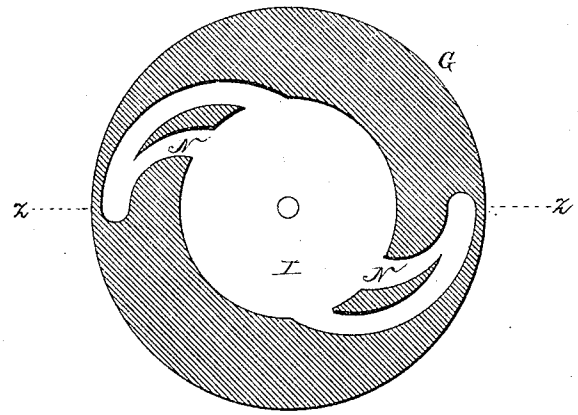
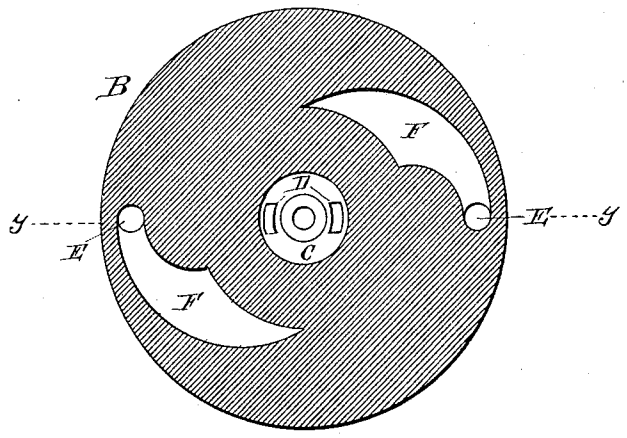



Fig. 5.




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# UNITED STATES PATENT OFFICE.

JOSEPH LEE, OF CLEVELAND, OHIO.

## ROTARY PUMP.

SPECIFICATION forming part of Letters Patent No. 292,122, dated January 15, 1884.

Application filed May 8, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH LEE, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Rotary Pumps; 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 pertains to make and use the same, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in rotary pumps; and it consists in the combination of a wheel or piston, mechanism for actuating said wheel, and an inclosing shell or case in which the wheel revolves, the said case having central inlet-ports for the admission of the water, and outlet-ports located near its outer edge for the discharge thereof; and it further consists in the peculiar construction of the casing, all to be more fully set forth hereinafter.

In the drawings, Figure 1 is a vertical section on the line *x x* of Fig. 3. Fig. 2 is a bottom view of the upper section of the casing. Fig. 3 is a top plan view, the upper section of the casing being removed. Fig. 4 is a horizontal section of the lower section of the casing, taken on the line *z z* of Fig. 1. Fig. 5 is a horizontal section of the upper section of the casing, taken on the line *y y* of Fig. 1.

A represents a shell or casing, in which the operating wheel or piston is located. This shell is designed to be placed at the bottom of a well or cistern from which water is to be pumped, and consists of an upper section, B, and a lower section, G. The upper section, B, is provided with a central hollow cone or projection, C, which extends above its upper side, and in this cone are made the inlet-ports D. Outlet-ports E are located near the outer edge of the section B, on opposite sides thereof.

On the under side of the section B are cut the inclined tapering tangential grooves or ways F, which extend from near the center of the section to the outlet-ports E, with which they connect at their contracted ends, their widest ends being nearest to the center of the section, as shown at Fig. 2.

The lower section, G, of the casing is provided with an upper circumferential flange, H, which serves to secure the upper section in place upon the lower one, and this lower section is also provided with a central chamber, I. Leading from this chamber are the inclined tapering tangential grooves or ways N, which are of the same size as the ways F, and register with them when the sections are put together, forming, when thus combined, inclined tangential tapering ways, connecting the central chamber with the outlet-ports.

K represents a wheel or piston, having radial wings M. This wheel is of a size to fit into the chamber I, and is rigidly secured to a vertical shaft, L, which shaft has its bearings in the casing, and extends upward a suitable distance, as shown in Fig. 1.

To the upper end of the shaft I apply a driving-pulley, O, or any other suitable device or mechanism for connecting the shaft with a suitable motor for actuating the wheel.

Pipes P are connected to the outlet-ports for the purpose of conveying the water from the casing to any desired point.

The operation of my invention is as follows: The casing is placed at the bottom of the well or cistern from which water is to be pumped. The water enters the chamber I through the inlet-ports D, and from the chamber I it is forced by the rotation of the wheel K through the ways F N to the outlet-ports, and from thence through the pipes P to any desired point.

The operation of a pump of this construction is steady and regular, and it will raise a given volume of water a given height with less operative power to drive it than the reciprocating pumps now in common use. The capacity of the pump depends upon the rapidity with which the piston-wheel is rotated.

Having thus described my invention, I claim—

1. The combination of a piston-wheel with an inclosing-case, the said case having central inlet-ports, and outlet-ports located near its outer edge, substantially as set forth.

2. The combination of the piston-wheel and the casing A, said casing consisting of the sections B G, section B having centrally-located inlet-ports D, and outlet-ports E near its outer

edge, section G having central chamber, I, connecting with the inlet-ports, and ways N, connecting said chamber I with the outlet-ports, substantially as shown.

3. The combination of the piston-wheel with the casing A, said casing consisting of the sections B G, section B having cone C, inlet-ports D, outlet-ports E, and ways F, section G having chamber I, groove H, and ways N, registering with ways F, all combined to operate substantially as shown and described.

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

JOSEPH LEE.

Witnesses:
L. H. WARE,
W. F. CLASS.