

(No Model.)

2 Sheets--Sheet 1.

G. M. MARSHALL.
Rotary Pump.

No. 232,286.

Patented Sept. 14, 1880.

FIG. 1.

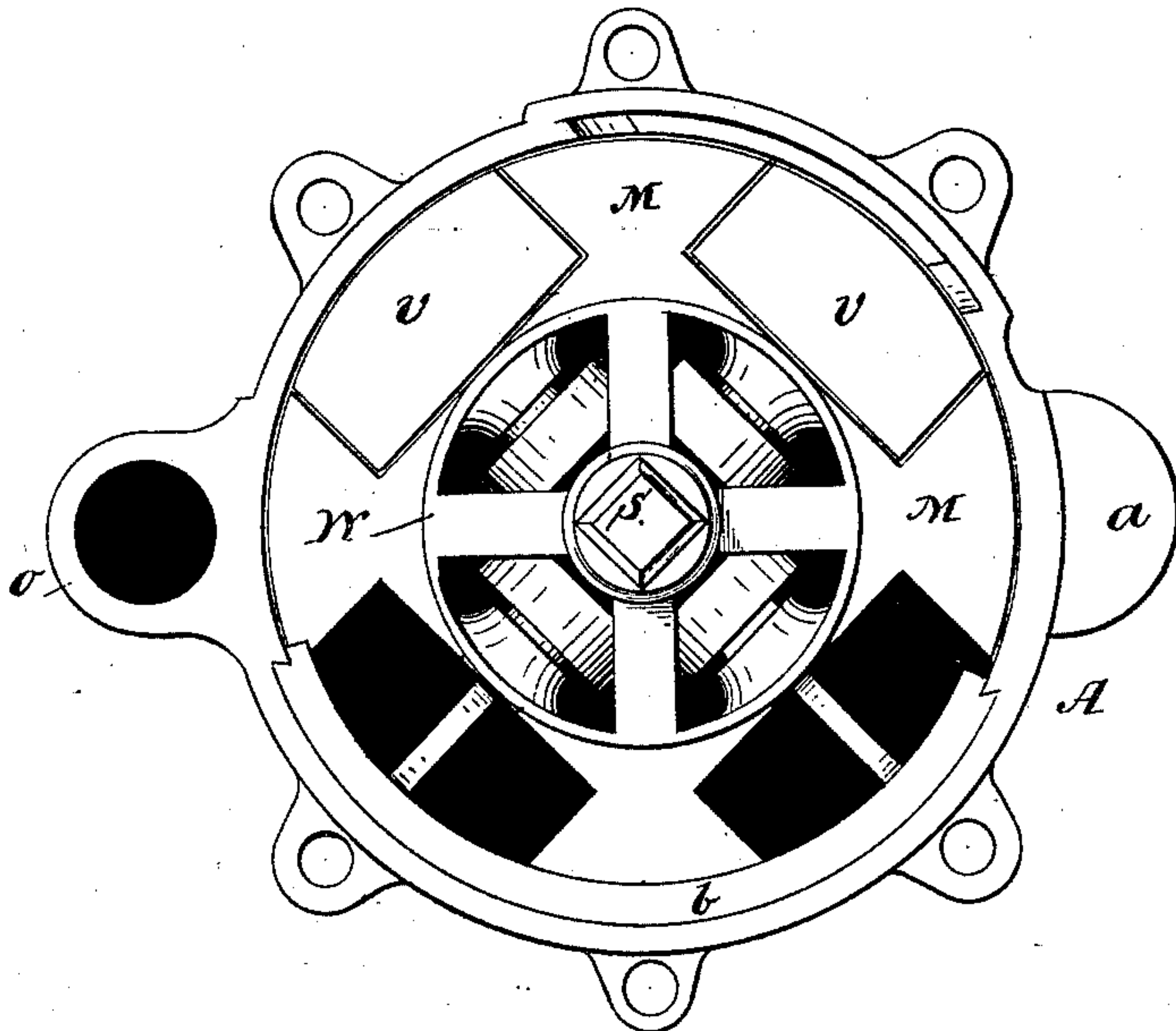
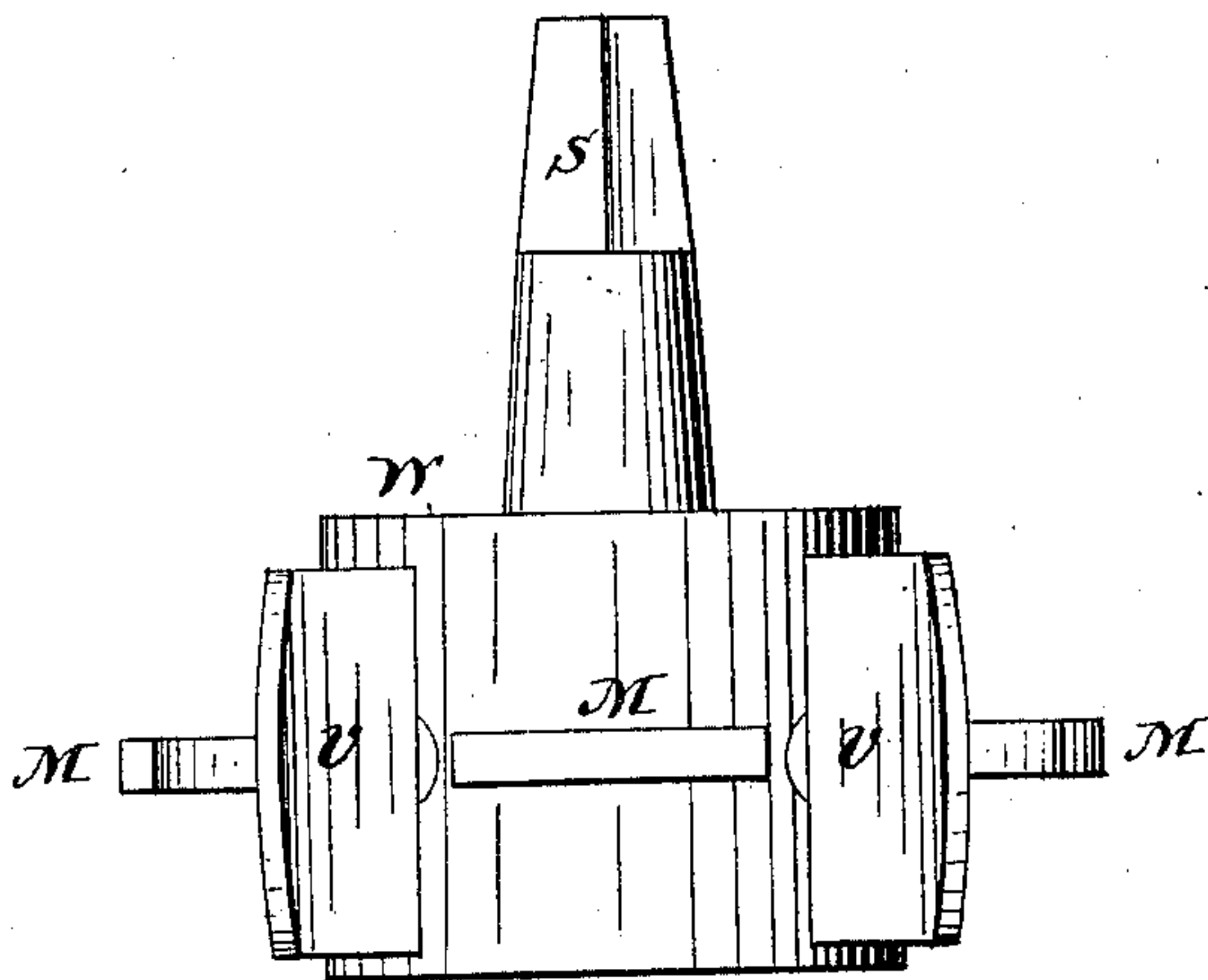


FIG. 2.



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Pennington Hatfield

Inventor:
Geo M. Marshall
W. S. Whitman Atty:

(No Model.)

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FIG. 3.

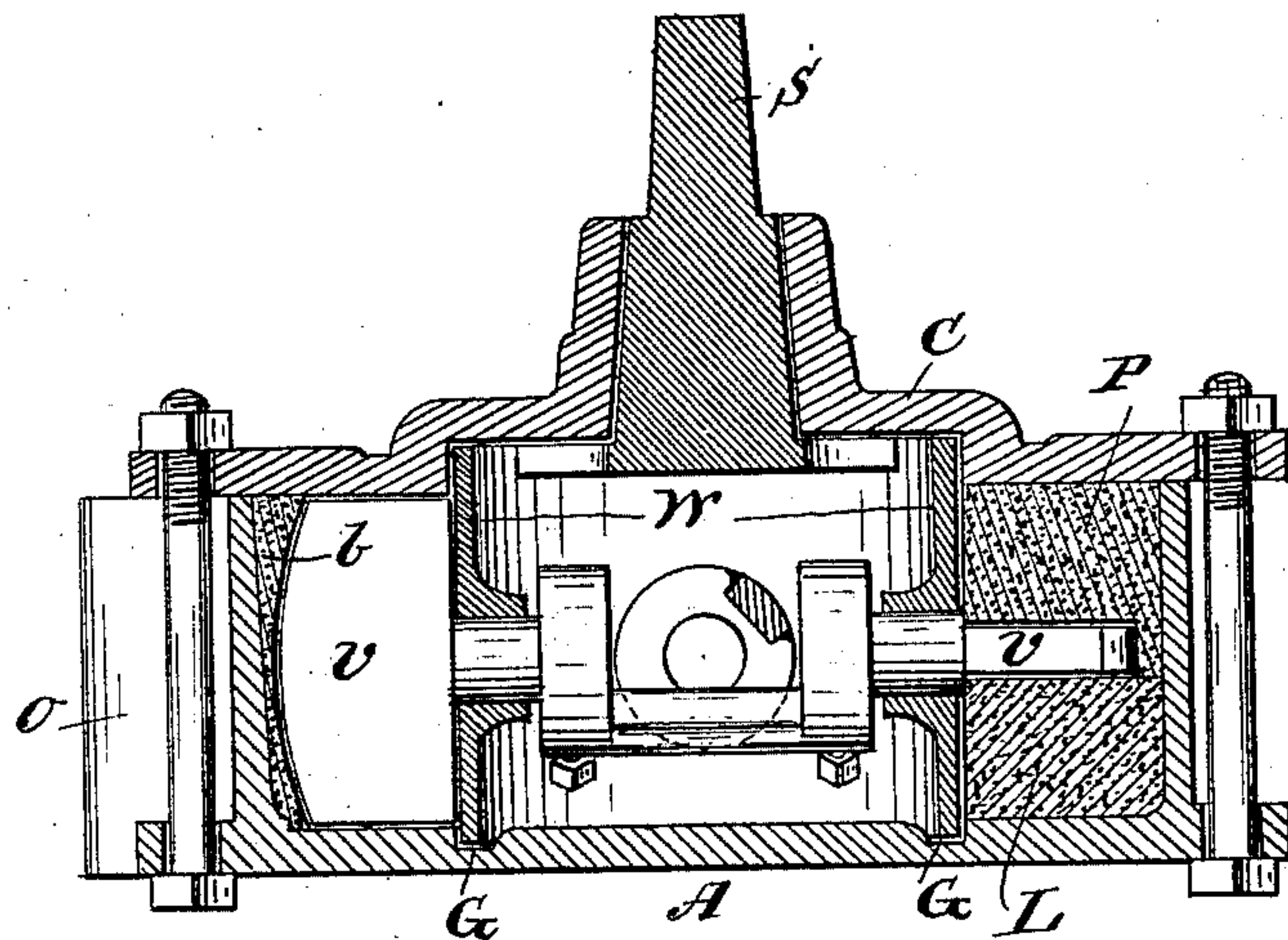
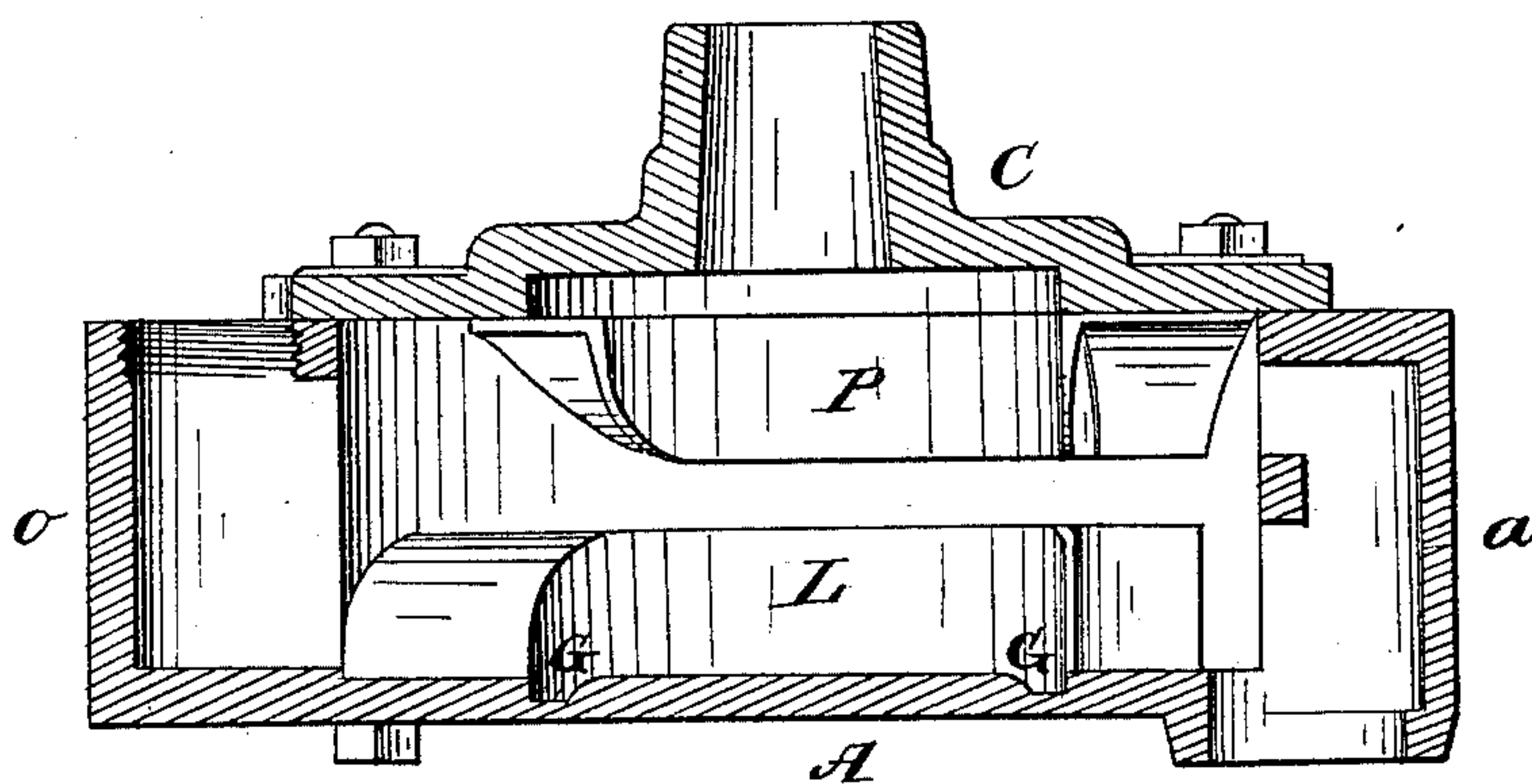


FIG. 4.



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by

Ch. Whitman Atty.

UNITED STATES PATENT OFFICE.

GEORGE M. MARSHALL, OF KILBOURN CITY, WISCONSIN.

ROTARY PUMP.

SPECIFICATION forming part of Letters Patent No. 232,286, dated September 14, 1886.

Application filed May 27, 1880. (No model.)

To all whom it may concern:

Be it known that I, GEORGE M. MARSHALL, a citizen of the United States, residing at Kilbourn City, in the county of Columbia and State of Wisconsin, 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 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.

My invention relates to that class of pumps which are known as "rotary force-pumps;" and the nature thereof consists in certain modifications in construction of the same and novel combination of parts hereinafter shown and described.

In the accompanying drawings, in which corresponding parts are designated by the same letters, Figure 1 is a plan view with the cover removed. Fig. 2 is a view of the wheel detached. Fig. 3 is a transverse vertical section. Fig. 4 illustrates the interior of the cylinder with the wheel or piston detached therefrom.

In the drawings, A represents the case or cylinder, having on one side thereof a water-inlet, *a*, and the other side thereof an outlet, *o*. C is the cover, to which is secured the projection P. This cover is secured to the case by bolts passing through ears in the same and in the case, and nuts of proper construction. Within the case is the wheel or piston W, provided with four valves, *v*, connected in pairs by a yoke in such a manner as to allow the shafts of the said valves to rotate or turn in an angle of ninety degrees. These valves in their revolution about the shaft S fill the space in a radial direction between the piston W and the Babbitt packing *b*, and are turned edgewise or feathered between the projection P, attached to the cover of the case or box, and the projection L, secured to the bottom plate. They are rotated by striking the

said lower projection at a point at or near the escape-pipe or outlet *o*. The projections P and L are removable, and so constructed that they may be filled with Babbitt metal as a packing.

The wheel W revolves in grooves G or an annular slot cut in the bottom of the case in such a manner as to form a cylindrical space, within which the crank-shaped shaft S may partially rotate. The valves *v*, when in a horizontal position, entirely fill the elongated openings formed in the partition-plate M. As the wheel revolves and one of the valves is made to assume a horizontal position by impinging against the lower projection the opposite valve on the same shaft assumes a vertical position. To effect this result the valves should be arranged at right angles with each other upon the shaft.

I am aware that, broadly, it is old to employ a central shaft hung in a cylinder having a number of paddles or valves adapted to assume either a horizontal or vertical position, and that it is old to provide the shafts of said paddles or valves with depending arms striking an annular flange in the bottom of the cylinder or case, while the paddles themselves are caused to pass between rests or bars to change their position.

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

In a rotary pump, the combination, with the cylinder or case A, having the packing *b* and separated partitions or projections P L, and supply and discharge pipes, of the circular or hollow piston W, having the peripheral horizontal wings M and the valves *v v*, with their shafts connected together in pairs inside of the piston W, and each pair revolving or operating independently of the other, substantially as and for the purpose set forth.

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

GEO. M. MARSHALL.

Witnesses:

J. A. CLENDANIEL,
S. J. ADAMS.