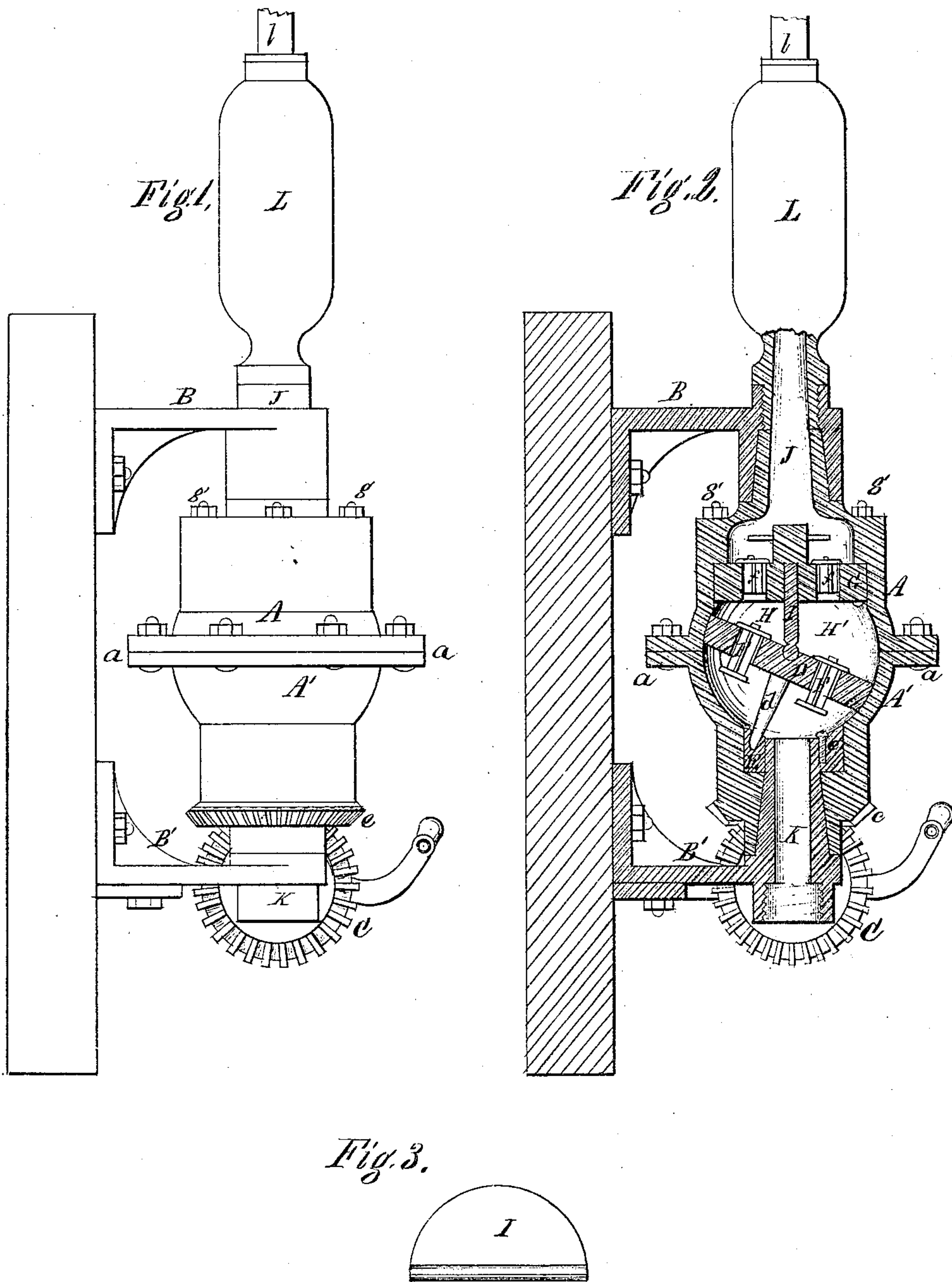


T. Swan,
Rotary Pump.
No. 103684. *Patented May 31. 1870.*



Witnesses.

C. E. Warner
Wm. Duncan

Inventor.

Thos. Swan
per J. A. Morley & Co
Attys.

United States Patent Office.

THOMAS SWAN, OF MANLIUS, NEW YORK.

Letters Patent No. 103,684, dated May 31, 1870.

IMPROVEMENT IN ROTARY 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, THOMAS SWAN, of Manlius, in the county of Onondaga and State of New York, have invented a new and Improved Rotary Pump; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings forming part of this specification, in which—

Figure 1 is a side view of my invention, and

Figure 2 is a central section of the same.

Figure 3 is a detail view.

Similar letters of reference indicate like parts in the several figures.

In the accompanying drawing—

A is the hollow globe, which is made in two parts A A', and bolted together by flanges *a*.

The said globe is suspended between two brackets, B B', in such manner as to be rotated by the gears C c.

Within the globe A is placed a disk, D, (fig. 2.) which fits into the globular chamber H H' accurately, and is held at an angle somewhat inclined from the horizontal.

This disk D is seated by means of a spindle, *d*, on a ring, E, which is fixed to a prolongation of the bracket B' by a set-screw, *e*.

There are two valve-seats or openings through the disk D, which are occupied by valves F F'.

The upper part of the chamber H is provided with another disk or diaphragm, G, which has two valves, *f f*, and this diaphragm is held in its position in a fixed manner by screw-bolts *g' g'*.

The chamber H above the disk D is divided into two compartments by a half-circular plate or butment, I, the said butment being seated in a half round groove in the upper face of disk D, and its upper edge entering a cavity in the fixed disk or diaphragm G.

K is the inlet or suction-pipe, and

J, the discharge or force-pipe.

L is the air-chamber, having a hose-pipe or discharge, *l*.

Its operation is as follows:

The whole globe and shell A is rotated by the gearing, or by other suitable means, and the diaphragm G and disk D also revolve with the globe, the diaphragm G being fixed rigidly to the globe by the bolts *g' g'*, and the disk D being turned on its spindle by the butment I.

When a half revolution of the globe has been made, the compartment H is brought around so as to change places with the compartment H', and this movement throws the H-side of disk D down from the diaphragm G, so that the compartment H is made larger and sucks in water through its valve F, and at the same time the H'-side of disk D is brought into position shown by H, and that compartment is contracted by that side of the disk being elevated, so that water is forced from said compartment H' through its valve *f*, into the delivery or forcing-pipe J, and in this manner the compartments H H' are alternately enlarged and contracted by the rotation of the globe A.

The wobbling motion of the disk D is obtained by its rotative axis being out of line with the rotative axis of the shell or globe.

In making this motion, the disk D rocks on the foot of the butment I, laterally with relation to said butment, and the half circular edge of the butment slides endwise on the upper walls of the globe-chamber and in the diaphragm G, so that a kind of gimbal connection is made between the parts G, I, and D, which accommodates the wobbling motion of the said disk D.

The edges of the disk D can have a packing-ring of leather or other suitable material, and the lower face of the diaphragm G can be so modified in form that there shall be less space in the compartments H and H', when they are in the position of greatest contraction, and all or nearly all of the air in said compartments be expelled, so that in starting the pump, no water-priming will be required.

By these means I obtain a rotary pump in which there is no jarring, clapping, or sudden change of motion to the working parts, thus allowing it to be driven freely and at a high velocity.

Having thus described my invention,

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

A pump which, for its chief working parts, combines the hollow globe A, wobbling disk D, and central partition or butment I, substantially as herein specified.

The above specification of my invention signed by me this 3d day of December, 1869.

THOMAS SWAN.

Witnesses:

K. H. C. PRESTON,
F. A. MORLEY.