

(No Model.)

J. S. GODFREY.
ROTARY PRESSURE BLOWER OR FORCE PUMP.

No. 517,273.

Patented Mar. 27, 1894.

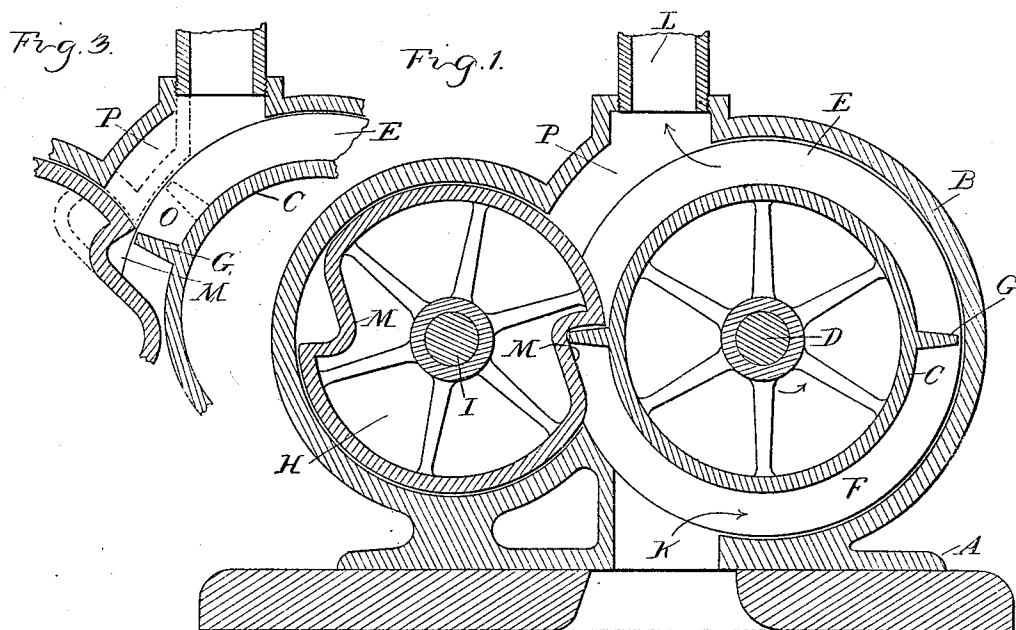
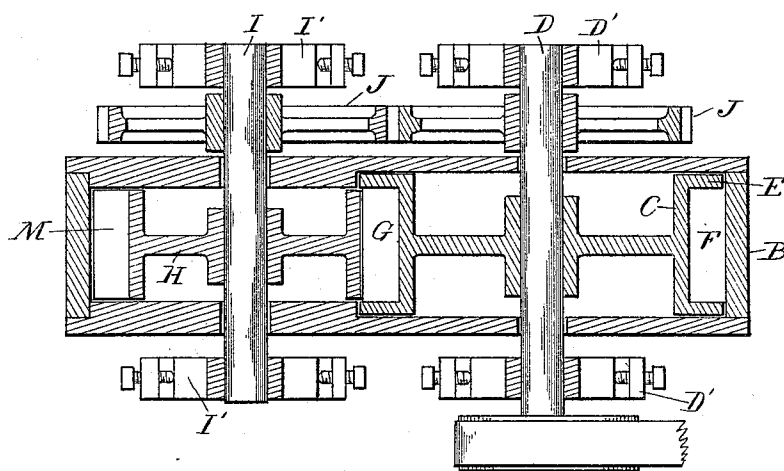


Fig. 2.



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UNITED STATES PATENT OFFICE.

JOSEPH S. GODFREY, OF LANSING, MICHIGAN, ASSIGNOR OF ONE-HALF TO
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ROTARY PRESSURE-BLOWER OR FORCE-PUMP.

SPECIFICATION forming part of Letters Patent No. 517,273, dated March 27, 1894.

Application filed April 3, 1893. Serial No. 468,910. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH S. GODFREY, a citizen of the United States, residing at Lansing, in the county of Ingham and State of Michigan, have invented certain new and useful Improvements in Rotary Pressure-Blowers or Force-Pumps, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention consists in the construction of the casing and the rotary pressure head, and further in the peculiar construction, arrangement and combination of the various parts, all as more fully hereinafter described.

In the drawings, Figure 1 is a vertical, central, longitudinal section through a rotary pressure blower and force pump embodying my invention. Fig. 2 is a central horizontal section thereof and Fig. 3 is a similar section to Fig. 1, showing the parts in a different position.

A is the base, B the casing, C, the rotary pressure drum. D, is its shaft journaled in adjusting bearings D'. This drum is provided with marginal circumferential flanges E extending to the inner face of the outer wall of the casing and fitting closely beside the side walls thereof, as plainly shown in Fig. 2, forming a circumferential groove F, which forms the cylinder of my blower or pump.

G are walls or diaphragms arranged on the outer face of the drum C connecting the flanges and forming the pistons.

H is a drum secured to the shaft I, journaled in adjustable bearings I' and engaging between the flanges E of the drum C; its periphery, bearing against the periphery of the drum C, and fitting closely against the inner faces of the flanges E, forms the piston head or abutment against which the pistons G of the drum force the fluid. The shafts D and I are geared together by gear wheels J, and power is applied to the shaft D to rotate the two drums.

K is the inlet aperture in the casing located in the base, and L is the exit through the casing and located near the point where the two drums meet.

The parts being thus constructed their operation is as follows: Power being applied to the drums, in the direction of the arrow, as the pistons G pass the inlet aperture they

will create a suction and draw in the fluid, forcing it in the cylinder F ahead of the piston and out through the exit aperture, the drum H acting as the interposed abutment to prevent the fluid from continuing its rotation with the drum. The drum H is provided with recesses or pockets M arranged at such points that the pistons G will enter therein. As the pistons or diaphragms G approach the drum H, after passing the exit aperture L their power would be exerted through the intervening fluid directly upon the abutment, and act to seriously check or stop the blower or pump. This is illustrated in Fig. 3 by the dotted lines. If the casing were continued around from the exit to the drum H, a trap O would be formed, with the effect described. To overcome this, and give unobstructed flow from in front of the piston during its entire movement, I form a recess or channel P extending from the exit to the drum H. This gives a free passage for all fluid in front of the piston after it passes the exit aperture.

By means of the adjustable bearings D' and I' the drums C and H may be kept in proper relation to each other.

What I claim as my invention is—

1. In a rotary pressure blower or force pump, the combination of a casing having inlet and exit apertures, a rotary pressure drum within the casing having circumferential marginal flanges, diaphragms projecting from the drum between the flanges, and an abutment drum, bearing on the pressure drum between the flanges, and having recesses corresponding to the diaphragms, and actuating means for both drums, substantially as described.

2. In a rotary pressure blower or force pump, the combination of a casing, having inlet and exit apertures, a rotary pressure drum within the casing, circumferential marginal flanges on said drum, diaphragms projecting from the drum between the flanges, an abutment drum within the casing and bearing on the pressure drum between the flanges, having recesses in its periphery for the diaphragms, and the channel P, extending in the casing from the exit opening to the point of juncture of the two drums, substantially as described.

3. In a rotary pressure blower or force pump, the combination of the casing having inlet and

exit apertures, a rotary pressure drum within
the casing, diaphragms projecting from the
circumferential face of the drum, an abut-
ment drum within the casing, bearing against
5 the pressure drum, having recesses in its pe-
riphery for the diaphragms, means for caus-
ing a simultaneous movement of the drums,
and the channel P extending into the casing

from the exit opening to the point of juncture
of the two drums, substantially as described. 10

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

JOSEPH S. GODFREY.

Witnesses:

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