(No Model.)

W. B. ALLYN.

ROTARY PUMP.

No. 385,832. Patented July 10, 1888.

Fig. 1.

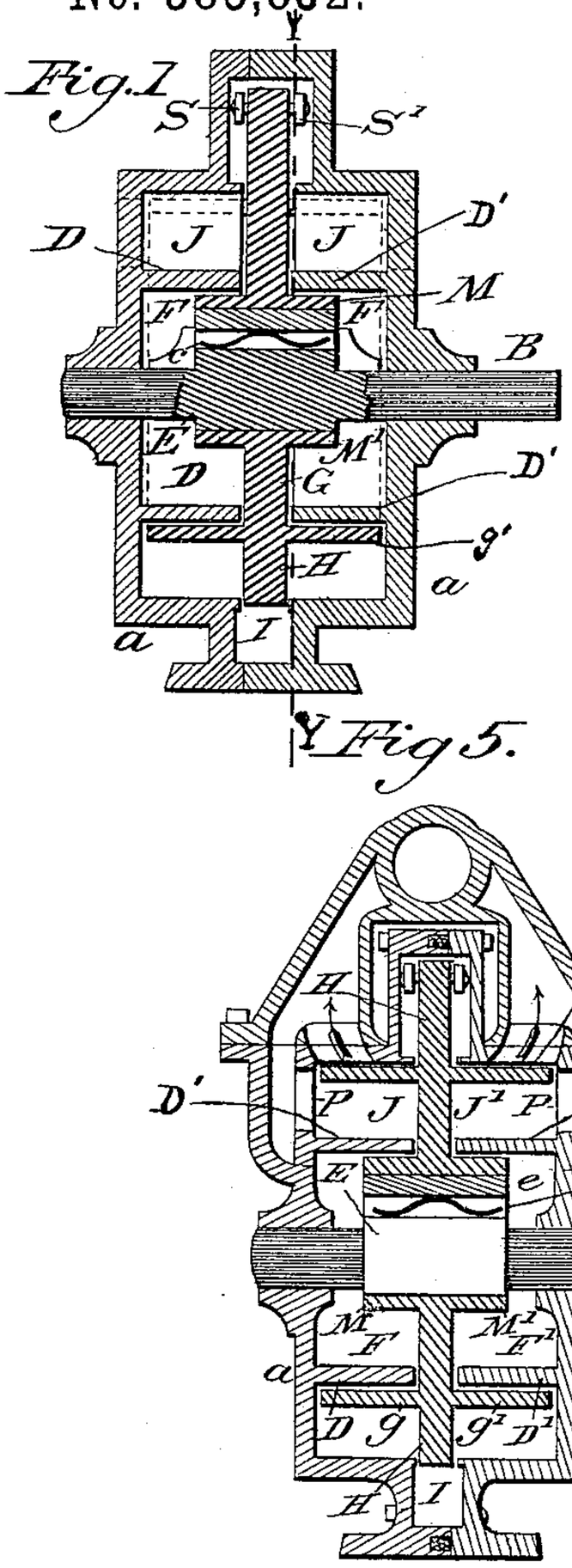


Fig. 5.

Fig. 2.

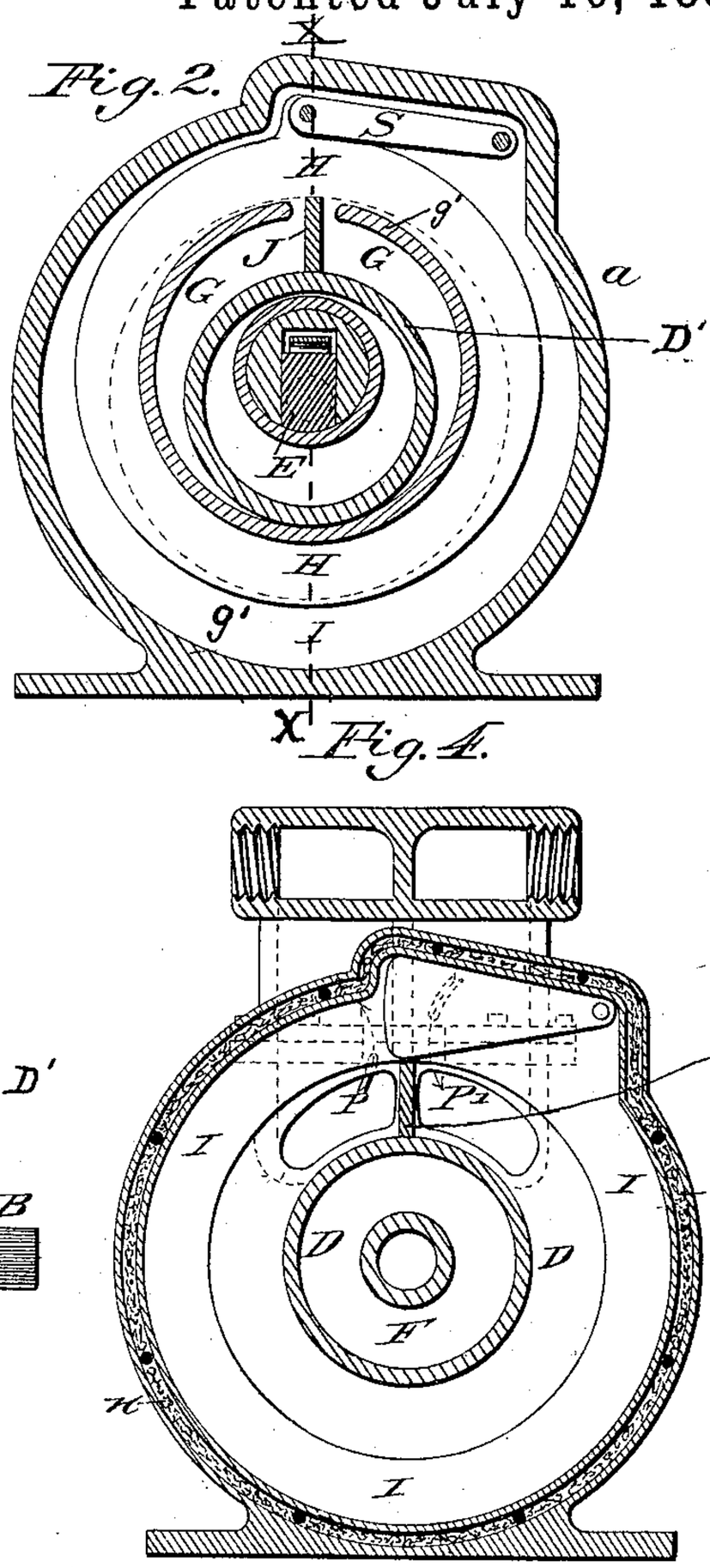
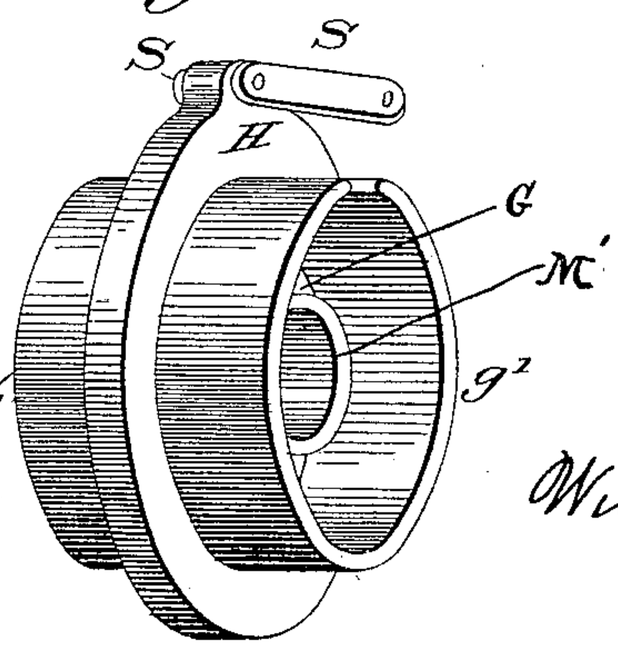


Fig. 4.

Fig. 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

WILLIAM B. ALLYN, OF BOSTON, MASSACHUSETTS.

ROTARY PUMP.

SPECIFICATION forming part of Letters Patent No. 385,832, dated July 10, 1888.

Application filed January 17, 1887. Serial No. 224,642. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM B. ALLYN, of Boston, in the county of Suffolk and State of Massachusetts, have invented a certain new and useful Improvement in Rotary Pumps, of which the following is a specification, reference being had to the accompanying drawings, in which—

Figure 1 is a sectional elevation of my invention on the line X X of Fig. 2. Fig. 2 is also a sectional elevation of the same on the line Y Y of Fig. 1. Fig. 3 is a detached perspective view of the piston and links. Fig. 4 is an interior view of one side of the casing, showing the ports and a section at the top in which are shown chambers for attaching the inlet and outlet pipes; and Fig. 5 is a sectional elevation of the invention, showing the ports and an arrangement of water-passages and upper chambers.

Like letters refer to like parts in the several figures.

This invention pertains to improvements upon a rotary pump, for which I have obtained Letters Patent of the United States No. 104,403, dated June 21, 1870, and No. 146,741, dated January 27, 1874.

The objects of my improvements are, first, to avoid undue friction heretofore caused between the sliding abutment and the bearing-surface of the slot receiving the same; and, secondly, to obviate the necessity of forming an opening in the web of the piston, which is liable to become choked by sediment.

The invention consists of the combinations of parts, including their construction, substantially as hereinafter fully set forth, and pointed out in the claims.

In carrying out my invention I construct the piston *g g'* with a peripheral flange, H, arranged in alignment and formed solidly with the web G of the piston. Disposed in the upper part of the casing are abutments J J, arranged so as to cause their inner ends to stand endwise closely to the flange H of the piston *g g'*. Upon the sides of the flange H opposite the slots in the piston *g g'* is pivoted a link or links, S S', connecting it with the casing *a* in such a manner that while the piston will be permitted to have the requisite movement the abutments J J will be prevented from having contact with the surfaces of the slots in the piston. The addition of the flange H to the piston admits of the use of separate abutments, one arranged upon each side of the flange and web thereof, while the use of the separate abutments renders unnecessary the formation of an opening in the web G, in which the abutment heretofore worked. The flange H extends entirely around the piston, and is of sufficient width to prevent it leaving the circumferential recess I in the casing *a*, thereby preventing the water from passing back through the same.

The piston is actuated by a driving-shaft, B, having a rectangular portion or surface, upon which is fitted an eccentric, E. The eccentric works in a bearing or flanges, M M', formed with the web G, and which can be extended more or less, as desired. Between the shaft B and the eccentric E is interposed a spring, *c*, which allows the piston to pass over small obstructions liable to enter with the water.

In order to provide room or space for the bearing or flanges M M' and the eccentric E, recesses F F are furnished between the flanges D D', which extend inwardly from the casing to the web G of the piston.

This pump may be provided with water-chambers at the top which would serve as a convenience in the attachment of the inlet and outlet pipes.

Ports P P, four in number, may also be supplied to the casing *a*, one being disposed upon each side of each of the abutments J J and connecting by passages with the aforesaid chambers, as shown in Figs. 4 and 5.

As the pump can be reversed, the ports on either side of the abutments can serve as inlets or outlets.

If desired, rectangular passages may be provided leading directly from the chambers of the pump and connecting with the upper chambers, as shown by dotted lines and arrows in Figs. 4 and 5.

Longitudinal wear may be taken up by interposing elastic packing between the sections of the casing, as shown at *n n*, Fig. 4, which will allow said sections to be drawn together more or less, and adjusted by means of bolts and set-screws.

In operation it will be seen that when power is applied to the shaft B and the piston is actuated by the eccentric E the links S S', while permitting the piston to have the requisite movement, will prevent it from turning or the abutments J J from coming into contact with the surfaces of the slots in the piston. My pump is applicable to blowers and motors constructed on the same principle, and by placing two or more on the same shaft the moving parts may be easily balanced and steam be used expansively.

I do not claim the eccentric-actuated piston without the peripheral flange and with an abutment extending through an opening in its web or with any passages through it for water, as these have been before used; but

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

1. In a pump, the combination, with a casing having the circumferential recess and inwardly-projecting flanges, of the piston having the peripheral flange arranged coincidently with and entering said recess, links connecting the flange with the casing, and abutments, substantially as set forth.

2. In a pump, the combination, with a casing having the circumferential recess and inwardly-projecting flanges, of the piston having the peripheral flange arranged coincidently with and entering said recess, links connecting the flange with the casing, and abutments disposed endwise and closely to the sides of said flange, substantially as set forth.

3. In a pump, the combination, with a casing having the circumferential recess and inwardly-projecting flanges, of the piston having the bearing or flanges and the peripheral flange, the abutments disposed endwise and closely to the sides of said peripheral flange of the piston, the shaft fitted with a spring-cushioned eccentric interposed between the shaft and the said bearing, and the links connecting the piston-flange with the casing, substantially as set forth.

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