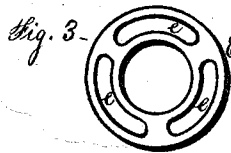
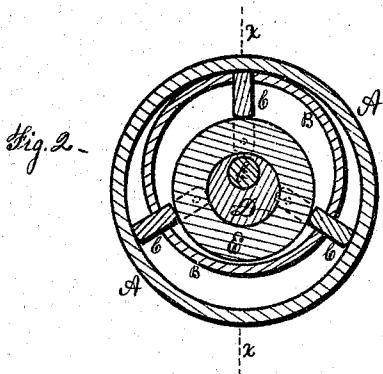
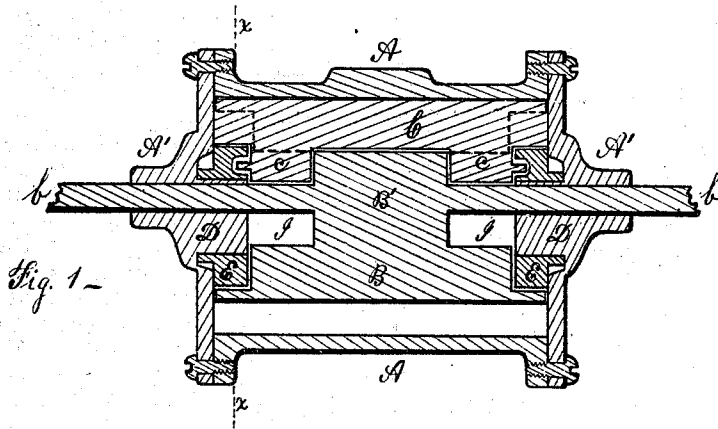


J. E. GILLESPIE.  
Rotary-Pumps.

No. 141,000.

Patented July 22, 1873.



Witnesses -  
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# UNITED STATES PATENT OFFICE.

JAMES E. GILLESPIE, OF NORWICH, CONNECTICUT.

## IMPROVEMENT IN ROTARY PUMPS.

Specification forming part of Letters Patent No. 141,000, dated July 22, 1873; application filed May 15, 1873.

*To all whom it may concern:*

Be it known that I, JAMES E. GILLESPIE, of Norwich, in New London county, State of Connecticut, have invented certain Improvements in Rotary Pumps, of which the following is a specification:

My invention relates to that class of rotary pumps in which radially-sliding pistons are used, adjusted in a drum revolving in an eccentric outer cylinder or case, and having loose eccentric rings supporting the inner edges of the pistons; and my invention consists in a combination, with such arrangement of pistons and loose eccentric rings, of stationary eccentrics, upon which said rings freely rotate; and of certain devices to insure the rotation of said rings with the pistons; and also of such a construction of the revolving drum and pistons as will give the greatest support to the pistons when slid out their maximum distance from the shaft.

Figure 1 is a longitudinal section of my improved pump taken through the diameter  $xx$  in Fig. 2. Fig. 2 is a transverse section through the line  $xx$  in Fig. 1. Fig. 3 shows the inner side of the loose eccentric rings.

A represents the outer cylinder or case, which is constructed in the ordinary manner, having the heads  $A'$  bolted upon it. B is the revolving drum, secured upon the driving-shaft  $b$ , which rotates in suitable bearings in the heads  $A'$ . D are the stationary eccentrics, concentric with the outer case, and formed upon the inner sides of the heads  $A'$ . E are the loose eccentric rings, also concentric with the outer case, freely rotating upon the stationary eccentrics, having circular recesses  $eee$  in their inner sides, as shown in Fig. 3, the heads  $A'$  being preferably recessed about the stationary eccentrics D, as shown in Fig. 1, so as to give a broader bearing for the rotating rings E. C are the radial pistons, sliding in grooves in the revolving drum B, their inner edges resting at each end upon the loose rings E, and having the lugs or extensions  $cc$  upon their inner edges, the depth of these grooves in the revolving drum B being equal to the width of the body of the pistons C, while at each end of the drum, under the extensions  $cc$ , these grooves are cut down to the

shaft  $b$ ; or, which I consider preferable, the ends of the drum are recessed out, forming annular chambers I I, in which the extensions  $cc$  of the pistons are free to approach the shaft  $b$ , as is shown in Fig. 1. This construction also leaves a solid center or hub,  $B'$ , to the drum about the shaft  $b$ , giving it all necessary solidity and strength, while at the same time the pistons in every part of their revolution, whether at their maximum or minimum distance from the shaft, have a lateral support through the whole thickness of the ends of the drum B. In the outer end of each extension  $c$  are inserted pins, which enter into the above-described recesses  $eee$  in the inner side of the loose rings E E, these recesses being somewhat long to allow sufficient play for the pins as the pistons revolve, by which means the loose rings are compelled to rotate with the pistons and drum, thus transferring the wear from the narrow heel of the pistons to the broad cylindrical surface of the stationary eccentrics. These eccentrics D support the loose rings E in position against the inward pressure of the pistons, and entirely prevent the tendency existing in some other rotary pumps of the pressure upon the outer edge of one piston forcing the loose ring against the opposite pistons, thus forcing them hard against the case, thereby causing great friction and wear.

I claim as my invention—

1. The stationary eccentric D and loose ring E, in combination with the radial pistons of a rotary pump, substantially as and for the purposes described.
2. The radially-sliding pistons C, having extensions  $cc$  toward the shaft, as shown, in combination with the correspondingly recessed or grooved revolving drum and loose eccentric ring E, substantially as and for the purpose set forth.
3. The combination of the pins upon the piston C with the recesses  $e$  in the loose ring E, substantially as and for the purpose specified.

JAMES E. GILLESPIE.

Witnesses:

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