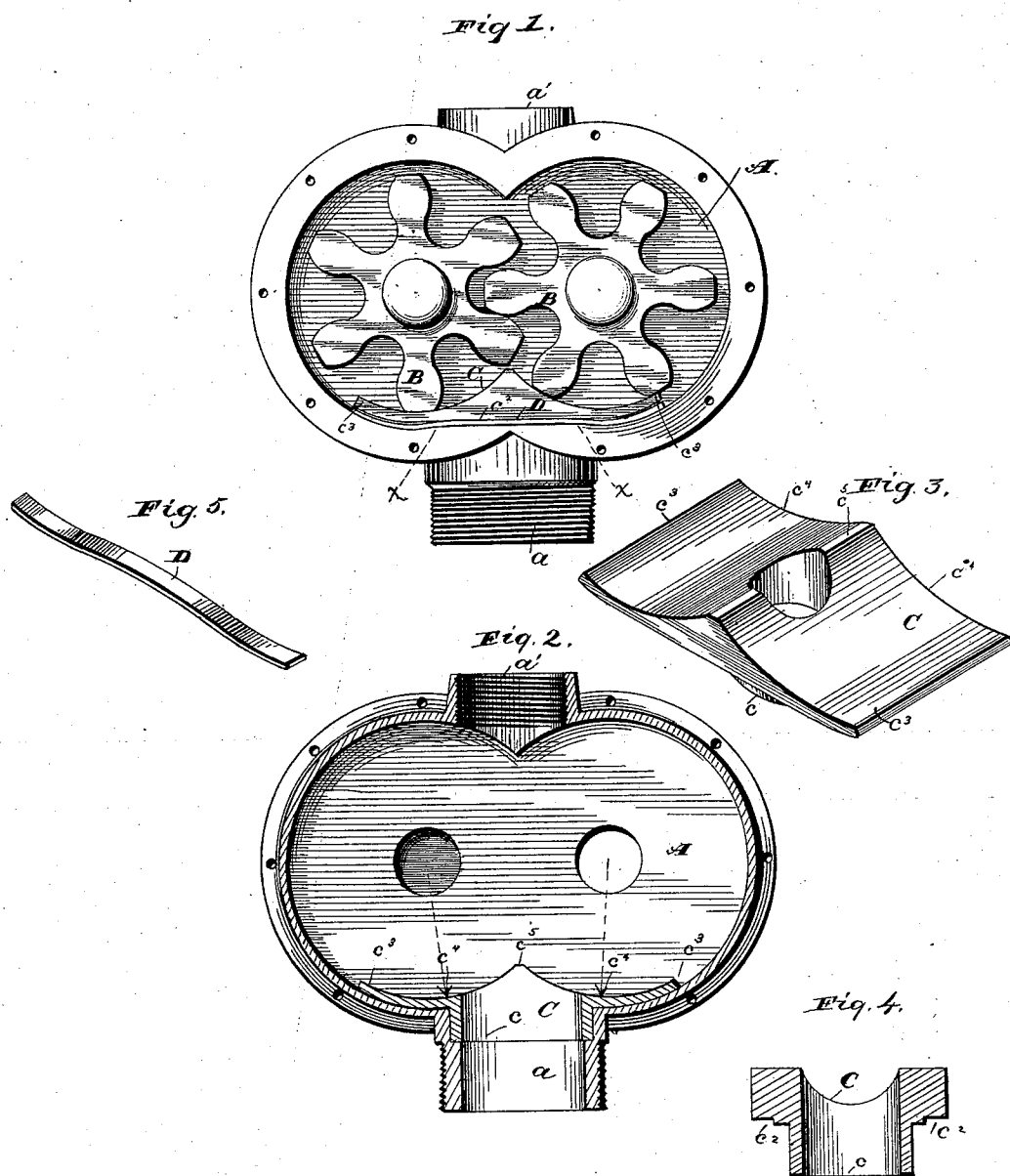


(No Model.)

F. B. DEMING.
ROTARY PUMP.

No. 367,374.

Patented Aug. 2, 1887.



Witnesses.
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UNITED STATES PATENT OFFICE.

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ROTARY PUMP.

SPECIFICATION forming part of Letters Patent No. 367,374, dated August 2, 1887.

Application filed October 15, 1886. Serial No. 216,347. (No model.)

To all whom it may concern:

Be it known that I, FRANK B. DEMING, a citizen of the United States, residing at Salem, in the county of Columbiana and State of Ohio, have invented certain new and useful Improvements in Rotary Pumps; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in rotary pumps; and it consists in the construction and arrangement of parts, hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 represents a side elevation of the pump with the near side of the casing removed. Fig. 2 is a vertical section of the casing and the removable piece in its bottom. Fig. 3 is a perspective of the removable piece or section, and Fig. 4 a transverse section thereof. Fig. 5 is a perspective of one of the spring-metal strips.

A represents the casing or shell, and B the intermeshing pistons, which may be of any desired pattern. The casing has induction-port *a* and eduction-port *a'* at the bottom and top, respectively, and suitable bearings for the pistons in its sides. The interior or working surface of the casing is formed concentric with the axial centers of the pistons, except on the bottom, where the surface between the points *x x* is straight or flat.

C is a removable section adapted to fit the bottom of the casing, and having a central hub, *c*, which rests in an annular recess in the neck of the induction-port. The bottom of the section is shaped to conform to the surface of the casing on which it rests, and on each side has rabbets *c'*, occupied by the spring-strips D, and wings *c'' c''*, constituting its ends. On the top the said section is provided with segmental curves *c⁴ c⁴*, concentric with the axis of the pistons, and terminating centrally in point *c⁵*, where the pistons first engage the said curved surfaces when in operation.

The strips D preferably are made of spring metal, though rubber may be employed instead, or the strips may be wholly dispensed with. The strips serve to take up any wear that may occur on the respective parts, as well as to keep the parts in close and perfect work-

ing relation. In practice it has been found that when the pump is working at full speed and the suction through the induction-port very strong the removable section will be held against the pistons by the draft thus created, and the springs are not really required.

Two decided and material advantages accrue by the construction above described. In the first place, it enables me to produce a pump in which the pistons or cams are brought in contact with a close-fitting surface over less than one-fourth of their periphery, instead of having them close-fitting all around, as has been the case heretofore in pumps of this particular kind, thus incurring correspondingly less friction and wear than formerly, and yet getting equally good, if not better, results in the action of the pump. In the second place, by employing the removable section, I wholly avoid the tedious and expensive labor of turning out the respective sides of the shell to adapt them to the pistons which worked with their wings or cams in close contact with the casing all round. As the pistons with my improvement do not touch the shell at all on their periphery, the shell requires no special inner finishing for them, but may be put in use as it comes from the molds. Should the removable section become worn, it can be replaced at small expense.

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

1. In a rotary pump, a main casing, in combination with a separate loose section located on the inside of the casing about the induction-port, and provided with an opening through which the fluid enters the pump, and finished curved upper surfaces raised above the surface of the casing to take the wear of the pistons, substantially as set forth.

2. In a rotary pump, a main casing provided with an induction-port in its bottom and an eduction-port in its top, and two pistons out of contact with the casing and meshing with each other, in combination with a separate section having a hub set loosely into the induction-port from the inside of the casing, and wings which extend around said induction-port on all sides and have finished upper surfaces to take the wear of the pistons

and produce a vacuum, substantially as set forth.

3. In a rotary pump, a separate section having a central opening for the passage of fluid to the pump, a hub that extends into the induction-port of the main casing, wings which overlap the main casing about the induction-port, and wearing-surfaces on its top for the

pistons, in combination with the main casing and packing between the casing and the separate section, substantially as set forth. 10

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