J. M. TAYLOR.

Rotary Pump.

No. 223,684. Patented Jan. 20, 1880.

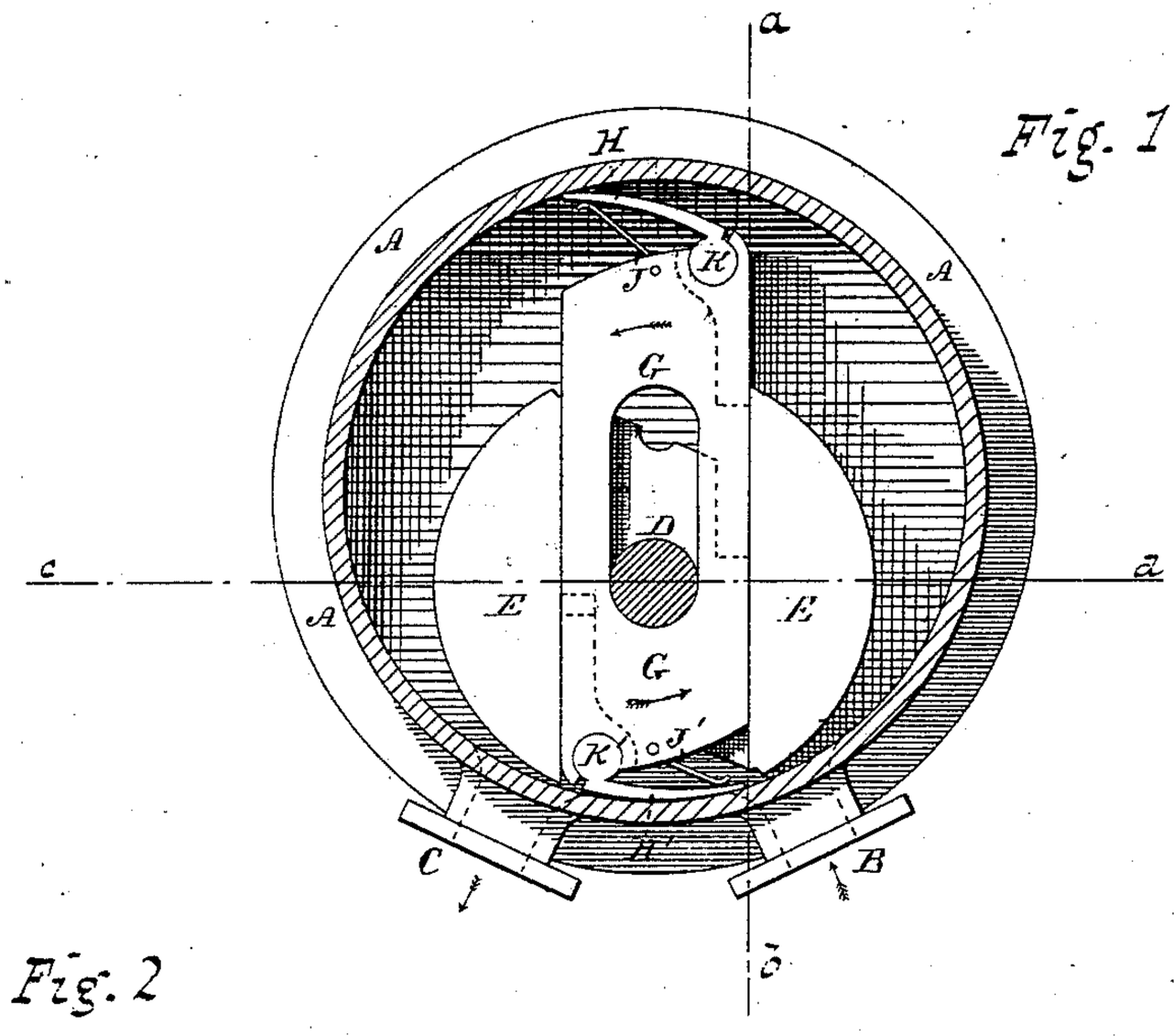
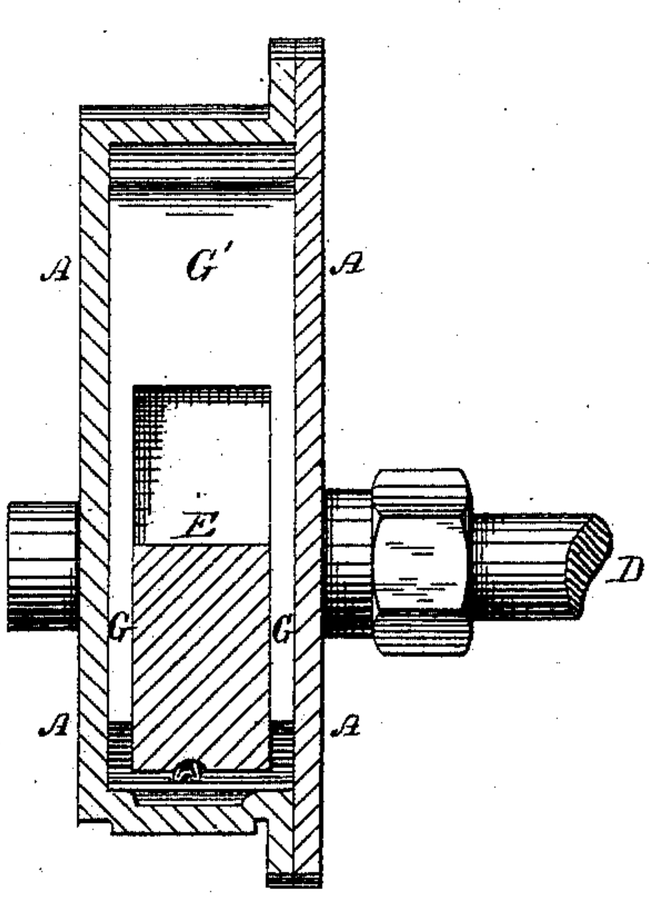


Fig. 1

Fig. 2



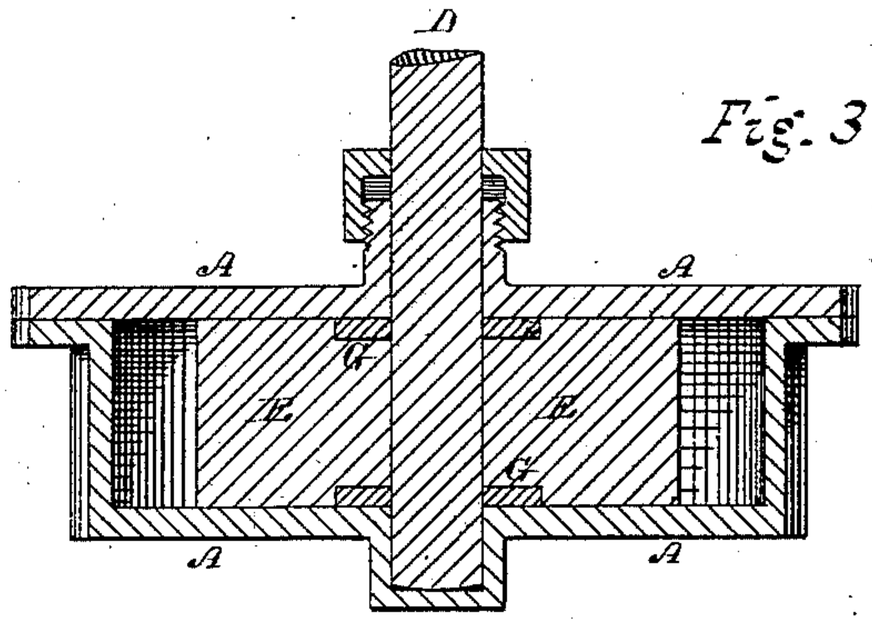


Fig. 3

Witnesses.

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UNITED STATES PATENT OFFICE.

JOHN M. TAYLOR, OF HARTFORD, CONNECTICUT, ASSIGNOR TO HIMSELF AND WILLIAM TAYLOR, OF SAME PLACE.

ROTARY PUMP.

SPECIFICATION forming part of Letters Patent No. 223,684, dated January 20, 1880.

Application filed June 26, 1879.

To all whom it may concern:

Be it known that I, JOHN MITCHELL TAYLOR, of Hartford, in the county of Hartford and State of Connecticut, 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 thereof, whereby a person skilled in the art can make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Like letters in the figures indicate the same parts.

My invention relates to such pumps as are known by the name of "rotary pumps," and is also applicable to rotary engines.

The object of my invention is to provide a simpler, more efficient, and more durable rotary pump or engine than has heretofore been in use.

My invention consists in the construction and arrangement of the several parts, as will be hereinafter described.

In the accompanying drawings, Figure 1 represents a side view of my improved pump with one side of the outer case removed to show the interior parts. Fig. 2 is a vertical cross-section of the pump on the line *a b* of Fig. 1. Fig. 3 is a horizontal cross-section on the line *c d* of Fig. 1.

A is the outer shell or case of the pump, which has a cylindrical interior chamber. B is the inlet-pipe for the water to be pumped, and C is the outlet. D is the shaft which drives the pump. It receives a rotary motion from any convenient power.

E is a cylindrical block situated within the case A, eccentrically to the axis of A, in such a position that its circumference touches the interior circumference of A between the pipes B and C. This block is keyed to the shaft D and is driven by it.

G is a sliding valve which fits closely against the ends of the interior of A, and slides back and forth in grooves in the sides of the block E. Its interior is hollow, being formed of two side plates connected together by the parts G′ at the ends. These parts G′ extend from the outer end of G toward the middle a sufficient distance to form a solid projection from the block E and prevent water from passing through the valve. The sides of G are also made open to permit the passage of the shaft D.

H and H′ are wings hinged to the outer ends of the valve G, for the purpose of closing the opening at the ends of the valve and forming a tight packing against the curved interior of the case A. The sides of these wings fit against the ends of the cylinder A.

J and J′ are springs serving to press the wings outward against the case A, so as to form a tight joint. When the pump is in operation the pressure against the wings holds them out; but the springs are inserted to hold them in the proper position at all times. The wings are furnished with cylindrical water-tight bearings K and K′, which fit into corresponding sockets in the ends of the valve G. These sockets extend through the whole width of the valve, and the wings are placed in them through one end before being inclosed in the case A.

The wings are curved outward on their exterior side, so that when the valve is pressed inward, as shown at the bottom of Fig. 1, they form part of the exterior circumference of the block E.

The operation of my invention is as follows: When the valve is turned in the direction shown by the arrow water is drawn in through the pipe B to supply the right-hand chamber, as shown in Fig. 1, and it is expelled through the pipe C from the left-hand chamber, the circumference of the block E and the lower wing of the valve always forming a tight joint at the bottom between the two sides. As each end of the valve comes around to the bottom it is pressed inward, and the other end moves outward toward the circumference of A. The throw of the valve is limited by the shaft D passing through the slot in the sides of the valve, and the space at the top beyond its upper end is filled by the wing, the length of the valve being limited by the length of the line *c d* within the case A.

It will be readily observed that my invention is applicable also to a steam or water engine by admitting water under pressure or

steam through the opening C. This will cause the shaft D to rotate in a direction contrary to that shown by the arrows on the valve.

Two or more chambers of my improved pump can be used side by side for the purpose of giving a more uniform and continuous stream, if desired, the valves being placed so as to divide the circumference into equal parts.

What I claim as my invention is—

1. The combination of the block E, the reciprocating valve G, formed of side plates and solid ends united together, and sliding back and forth in grooves in the block E, and the jointed wings H H′, pressed outward by springs acting upon their free ends, and arranged within the cylindrical case A, furnished with the pipes B and C, substantially as described.

2. The inclosed cylindrical joint K, consisting of more than a half-circle in circumference, in combination with the wing H and valve G of a rotary pump, substantially as described.

3. The wing H, hinged at one end and pressed outward by the spring J, between it and the valve G, in combination with the sliding valve G, whereby the end of the valve is kept closed against the circumference of the interior chamber, substantially as described.

JOHN M. TAYLOR.

Witnesses:
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