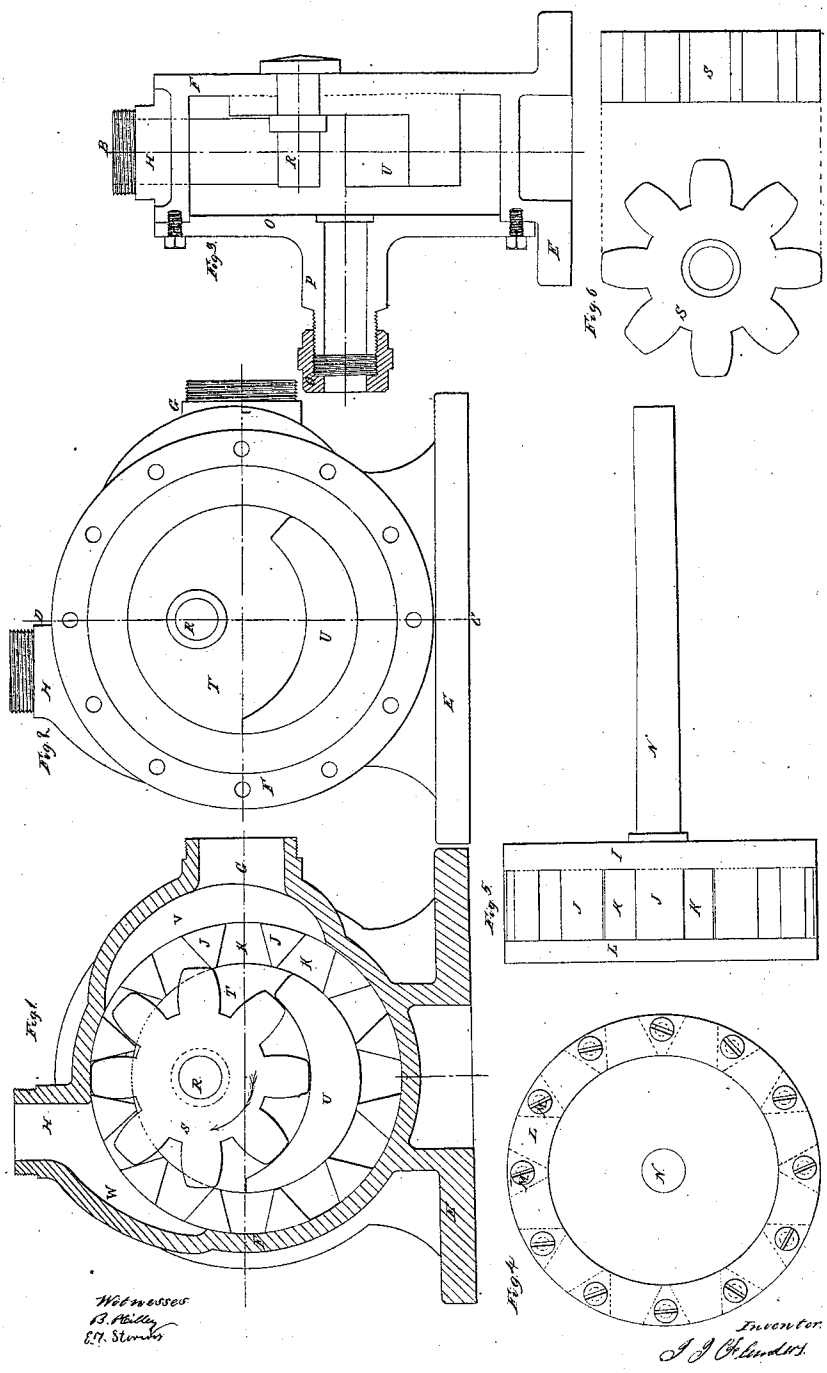
J. J. Flanders,

Rotary Pump.

No. 25,999 Patented Nov. 1, 1859.



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UNITED STATES PATENT OFFICE.

JOHN JEWELL FLANDERS, OF MANCHESTER, NEW HAMPSHIRE, ASSIGNOR TO HIMSELF AND E. G. W. BARTLETT, OF SAME PLACE.

ROTARY PUMP.

Specification of Letters Patent No. 25,999, dated November 1, 1859.

To all whom it may concern:

Be it known that I, JOHN JEWELL FLANDERS, of Manchester, in the county of Hillsborough and State of New Hampshire, have invented a new, useful, and Improved Rotary Pump; and I do hereby declare that the same is described and represented in the following specifications and drawings.

To enable others skilled in the art to make and use my invention I will proceed to describe its construction and operation referring to the drawings in which the same letters indicate like parts in each of the figures.

Figure 1 is a sectional elevation of my improved pump on the line A, B, of Fig. 3. Fig. 2, is a side elevation with the front plate removed to show the interior. Fig. 3, is a cross section on the line C, D Fig. 2. Figs. 4 and 5, are end and side elevations of the annular or internal gear. Fig. 6; is an end side elevation of the pinion.

The nature of my invention consists in a revolving annular inverted gear, in combination with a pinion and stationary stop or crescent, arranged to operate in a case, as described in the following specification.

In the accompanying drawings F, is a circular metal case made in the form shown in the drawing, or in such other form as will answer the purpose, and provided with a base or foot E, by which it may be fastened in the position desired. This circular case is also provided with a suction pipe G, and discharge pipe H, both of which are provided with a screw thread, by which hose or pipes may be connected to the case to conduct the water to and from it.

The annular internal gear shown in Figs. 4, and 5, is fitted to turn freely in the case F, as shown in Fig. 1. This annular gear consists of the circular disk I, provided with a series of teeth J, J, with spaces K, K, between them and the ring L, is fastened to the ends of the teeth J, J, by screws M, M, having their heads countersunk in the ring L. The disk I, is fastened to the shaft N, which is fitted to turn in the hub of the face plate O, and may have a crank, pulley or gear fastened to it, to turn the shaft and gear and operate the pump.

The end of the hub P on the plate O, has the nut Q, fitted to it so as to form a stuffing box around the shaft N, to prevent the escape of water. The stud R, is fastened in the back of the case F, as shown in Fig. 3, for the pinion S, to turn on shown in Fig. 6. This pinion is turned by the annular gear as shown in Fig. 1. There is a circular plate T fastened to the inside of the case F, as shown in Figs. 2 and 3, by the stud R, or otherwise. This plate T, is just large enough to fill the interior of the ring L, and of the same thickness, except the crescent shaped projection U, which projects from the plate T just the thickness of the pinion S, and the inside curve of this crescent just fits the periphery of the pinion, and the outside curve just fits the inside circle of the teeth J, J, of the annular gear as shown in Fig. 1, of the drawings.

The case F, is hollowed out each way from the suction as shown at V, for the purpose of allowing the water to be drawn into the spaces between the teeth of the gearing freely. And the case is also hollowed out at W, Fig. 1, below the discharge about as wide as the length of the teeth or thickness of the pinion, so as to allow the water to flow freely from the spaces in the gearing, as it is forced out into the discharge pipe H.

The face plate O, is circular and made in the form shown in section Fig. 3, and fastened to the case F, by screws as shown in the drawing.

To put this pump together, the plate T, and stud R, are first put in; then the shaft N, is put through the face plate O, and the pinion S, put into the annular gear in the position shown in Fig. 1, and the annular gear and pinion are both put into the case together and the face plate O, screwed on and the whole properly oiled when it is ready for use.

The operation of this pump is as follows: The annular gear and pinion with plate T, and crescent U, fill all the space between the bottom and top of the case; so that as the gears are turned in the direction indicated by the arrow, the teeth of the gears as they pass from the top down toward the suction G, are drawn out of the spaces as shown in Fig. 1, forming vacuum in the spaces and drawing the water in or sucking it in through the suction to fill the spaces between the teeth of the gearing which carry the water forward by the crescent U, and up toward the discharge; and as the teeth of the gears approach the discharge pipe H, they enter the spaces between the teeth and force the water out into and through the dis-

charge, thus when the gears are turned they draw in the water at G, and force it out at H.

My improved pump is simple, cheap and durable and is operated with far less power to raise a given quantity of water, than any other pump within my knowledge.

I contemplate substituting a shaft for the stud R, and fastening the pinion to it, and applying power to the shaft so substituted to turn the pinion. Also that it may be used as a steam engine by supplying steam through the suction G.

I believe I have described and represented my improved pump so as to enable any person skilled in the art to make and use it, I will now state what I desire to secure by Letters Patent, to wit:

I claim—

The combination of the revolving annular inverted gear, the pinion S, and stationary crescent U; the whole being arranged to operate in the case substantially as described for the purposes set forth.

J. J. FLANDERS.

Witnesses:
E. T. STEVENS,
B. P. CILLEY.