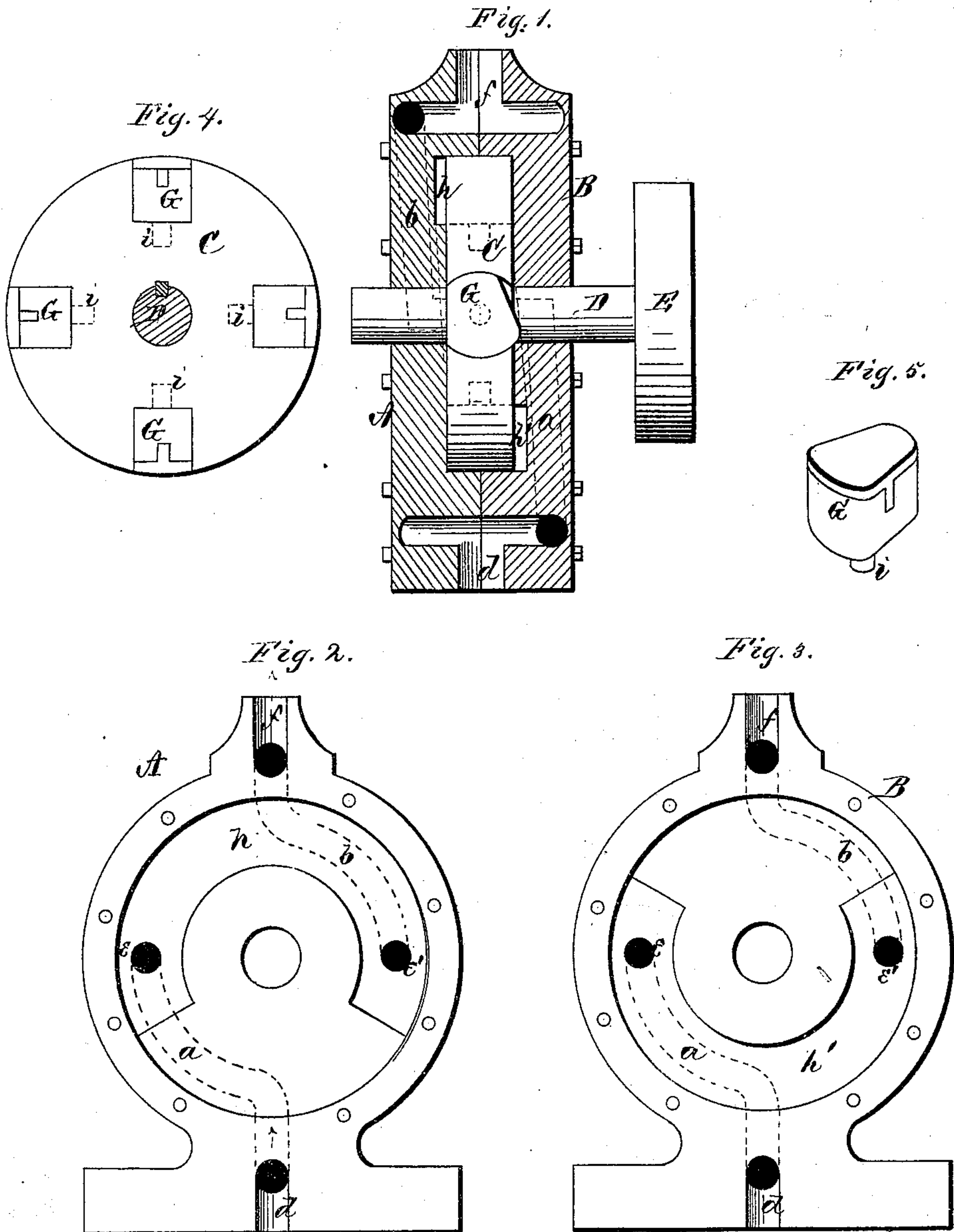


**W. P. MAXSON.**  
**Rotary Pumps or Engines.**

No. 141,155.

Patented July 22, 1873.



Witnesses:

*Henry N. Miller*  
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# UNITED STATES PATENT OFFICE.

WILLIAM P. MAXSON, OF ELMIRA, NEW YORK.

## IMPROVEMENT IN ROTARY PUMPS OR ENGINES.

Specification forming part of Letters Patent No. **141,155**, dated July 22, 1873; application filed May 7, 1873.

*To all whom it may concern:*

Be it known that I, WILLIAM P. MAXSON, of Elmira, in the county of Chemung and in the State of New York, have invented certain new and useful Improvements in Steam Pump and Engine; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

The nature of my invention consists in the construction and arrangement of a rotary pump or engine, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a cross-section of the case, showing an edge view of the wheel. Figs. 2 and 3 are inside views of the two halves of which the case is composed. Fig. 4 is a side view of the wheel; and Fig. 5 is a perspective view of one of the cams or valves in the wheel.

A and B represent the two halves of which the case is composed, the inner sides of said halves being recessed, so that when bolted together a circular cavity is formed just deep enough to admit the wheel C water and steam tight. Through the centers of all these passes the shaft D, which is keyed to the wheel so that it revolves by applying power to the pulley E on the shaft. In each of the halves A and B are made two passages, *a* and *b*, the former leading from the inlet *d* to a point, *e*, and the other from a corresponding point or port, *e'*, to the outlet *f*, each passage running one-fourth around the wheel. The ports *e* and *e'* run to the interior surface of the cavity in the case. In the recess of the part A is made an annular depression, *h*, running around the upper portion; and in the part B is a similar depression, *h'*, around the lower portion, each depression being somewhat more than a half-circle, and the ends gradually inclined so as to reach the surface of the recess or cavity in the case. The cavity is thus divided on opposite sides, so that if a movable plunger be put into the wheel C so as to fit the slot, it

will fill it all the way around. This plunger or valve is made by boring into the wheel C just the depth that the recess *h* or *h'* is wide, and putting in a pin, G, that will fit it water and steam tight. Then turn off one side even with the wheel; next turn the pin so that the edge will fill the cavity or depression and fasten it and turn off the other side. This forms a cam in the form or shape shown in Figs. 1 and 5. Four of these cams are inserted in the wheel C at equal distances apart, each turning on its pivot or tenon *i*.

As the wheel C revolves the cams or valves G G are turned on their pivots so as to fill alternately the semicircular depressions *h* and *h'*, and thus draw by suction the water up through the inlet-passages *a a*, and force it out through the discharge-passages *b b*.

The cams or valves G G are each made in two pieces, tenoned together, as shown in Fig. 5, and I intend to insert a spring between the two parts so that it will compensate for wear.

By the arrangement of the cavities and passages as described a continuous stream of water or a steady power by steam is obtained.

By making the cam G in the manner described the reverse motion may be made by means of the water-pressure itself, thus avoiding friction and wear, and saving an immense amount of power.

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

1. The combination of the casing A B, provided with recesses *h h'*, inlet-passages *a a*, and outlet-passages *b b*, with the revolving wheel C, constructed and arranged substantially as and for the purposes herein set forth.

2. The combination of the cams G G, constructed as described, and arranged in the wheel C, with the casing A B having ports *a b*, substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 16th day of April, 1873.

WILLIAM P. MAXSON.

Witnesses:

EDWARD C. VAN DUZEN,  
M. S. DECKER.