

C. D. Wright,
Rotary Pump.

N^o 13,930.

Patented Dec. 11, 1855.

Fig. 1.

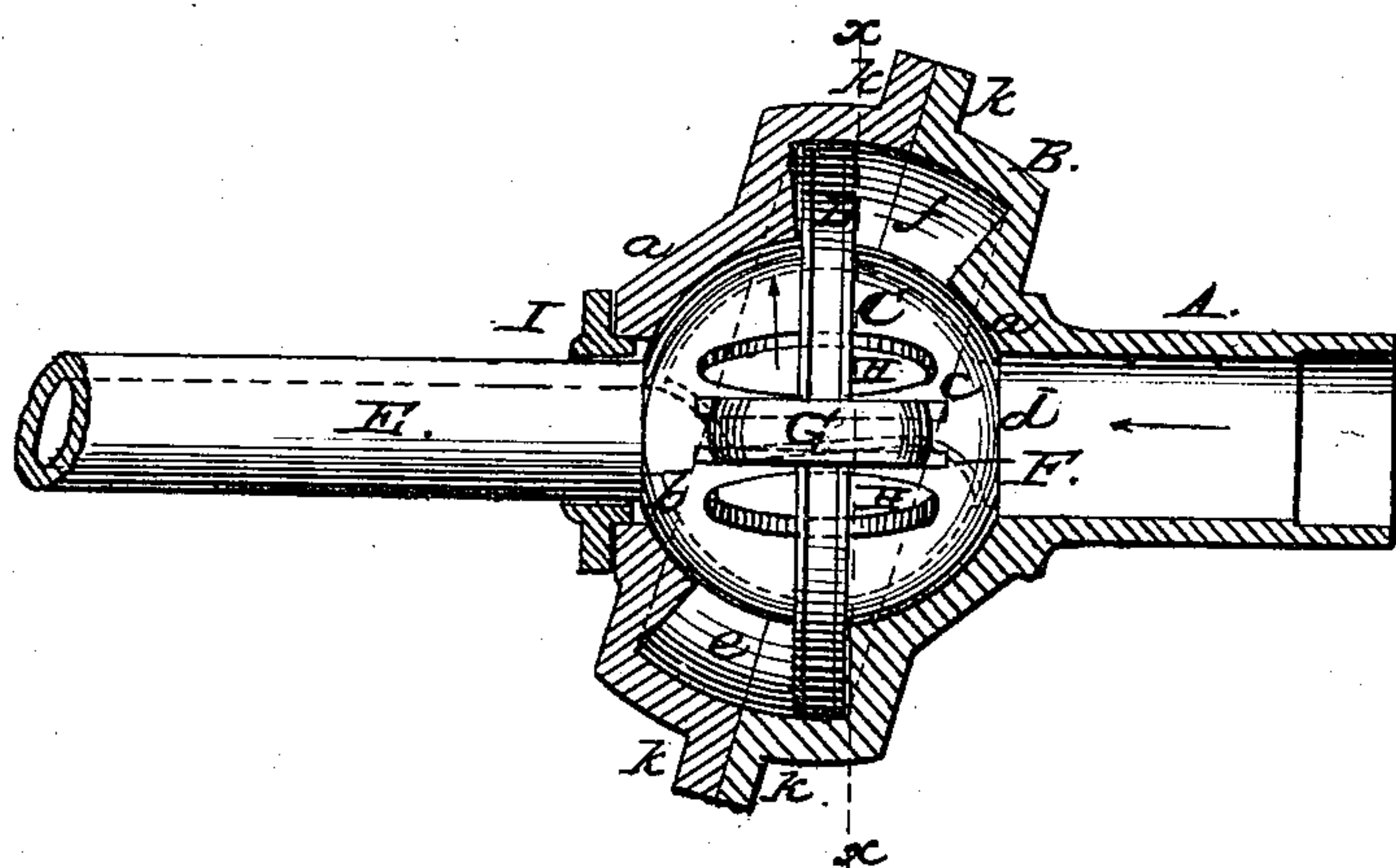
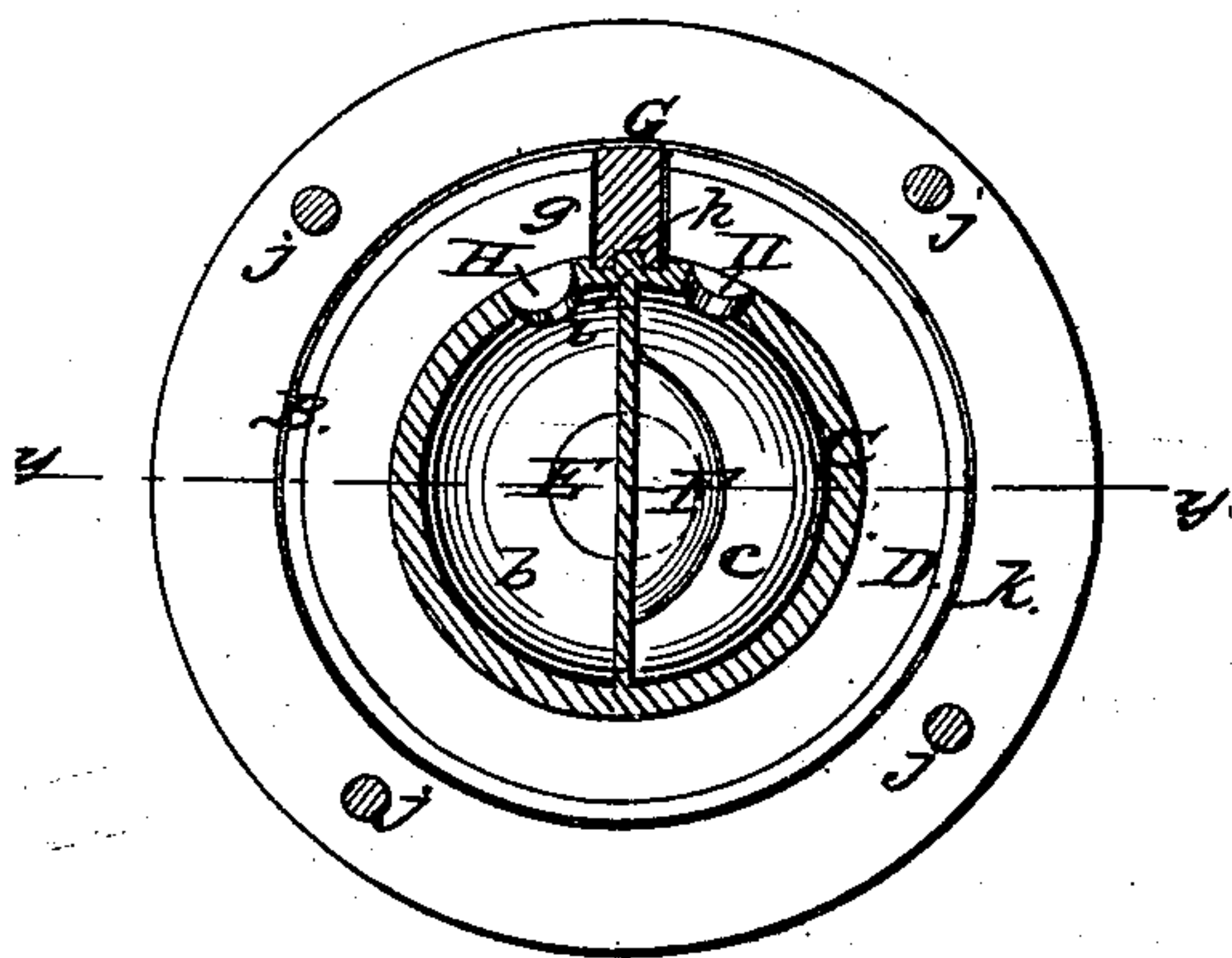


Fig. 2.



UNITED STATES PATENT OFFICE.

C. D. WRIGHT, OF FORT ATKINSON, WISCONSIN.

ROTARY PUMP.

Specification of Letters Patent No. 13,930, dated December 11, 1855.

To all whom it may concern:

Be it known that I, C. D. WRIGHT, of Fort Atkinson, in the county of Jefferson and State of Wisconsin, have invented a new and Improved Rotary Pump; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1, is a longitudinal section of my improvement, the force pipe and hollow sphere not being bisected; *y, y*, Fig. 2, shows the plane of section. Fig. 2, is a vertical section of ditto *x, x*, Fig. 1, showing the plane of section.

Similar letters of reference indicate corresponding parts in the two figures.

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe its construction and operation.

A, represents the suction pipe of the pump to one end of which the shell or body B, of the pump is attached. This shell is of cylindrical form and the suction pipe A, communicates with the interior of the shell at the center of one of its sides. The shell is placed obliquely with the suction pipe, as clearly shown in Fig. 1.

Within the shell or body B, a hollow sphere C, is fitted. Two opposite sides of the sphere fit in concaves *a*, in the inner sides of the shell and the sphere has a circular flanch D, around it, the outer edge of which fits and works water-tight against the inner side of the rim of the shell or body B, said flanch, if necessary, being provided with suitable packing on its edge. To one side of the sphere C, a hollow shaft E, is attached; and the interior of the sphere C, is divided into two compartments *b, c*, by a partition F, and one compartment *b*, communicates with the hollow shaft E, and the other compartment *c*, communicates with the suction pipe A, through an aperture *d*, in the side of the sphere.

The flanch D, as the shell or body B is placed obliquely or inclined with the shaft and suction pipe, divides the shell or body into two compartments, *e, f*, as clearly shown in Fig. 1. The flanch D, has a slot or recess *g*, cut in it, in which slot or recess a piston G, is fitted. The inner edge of this piston is of concave form and corresponds inversely to the convexity of the sphere C. The inner edge of the piston also has a

groove *h*, cut in it, in which groove a projection or ledge *i*, on the sphere C, fits, see Fig. 2. This projection or ledge serves as a guide to the piston which slides back and forth in the flanch D, as the sphere and flanch rotate. The outer edge of the piston bears water tight against the inner surface of the rim of the shell or body B, and the piston is equal in length to the width of the rim. Through the sphere C, and at each side of the piston G, an opening H, is made, the openings extending each side of the flanch.

The hollow shaft E, is fitted water tight to the shell or body B, by means of a stuffing box I, see Fig. 1, and the shell or body B, is formed of two parts connected together by bolts *j*, which pass through flanches *k*. The hollow shaft E, serves as a force pipe. When motion is given the shaft E, and sphere C, the shaft and sphere rotating in the direction indicated by the arrow, see Fig. 1, a suction or exhaust is created in the compartment *f*, of the shell B, behind the piston G, and the water will pass through the suction pipe A, into the compartment *c*, of the shell and the water will pass through the opening H, at one side of the flanch, and fill the compartment *f*, and when the same opening on the opposite side of the flanch passes out from the concave *a*, in the inner side of the shell or body, the water will pass into the other compartment *e*, of the shell B, and will be forced during the succeeding revolution of the sphere through the opening H, in front of the piston, and into the compartment *b*, of the sphere and out through the hollow shaft E, when the openings H on one side of the flanch D, are open or free from the concave *a*, adjoining them, the openings on the opposite side of the flanch are covered by the concave *a*, adjoining them. By this means the proper cut-offs between the compartments of the shell or body B, are obtained. The pump throws a continuous stream and may be placed in a horizontal or vertical position. Like almost all rotary pumps this one may also be used as a rotary steam engine. The operation is precisely the same, the steam passing into the pipe A, the hollow shaft E, serving as an exhaust pipe.

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

The construction of the pump, as shown,

viz: having the hollow sphere C, placed within an inclined or oblique shell B which forms the body of the pump; the sphere being attached to a hollow shaft E, at one
5 side and communicating with a suction pipe A, at its opposite side, two opposite sides of the sphere fitting in concaves *a*, in the sides of the shell, the sphere being also divided into two compartments *b*, *c*, one of which,
10 *c*, communicates with the suction pipe A, and the other, *b*, with the force pipe or hollow shaft E, the sphere having a flanch

D, attached to it, which divides the shell or body B, into two compartments *e*, *f*, and the flanch having a piston G, working in it 15 at each side of which apertures H, are made in the sphere C, the above parts being arranged and operating substantially as shown and for the purposes specified.

C. D. WRIGHT.

Witnesses:

WM. H. FOSTER,
ROBT. FARGO.