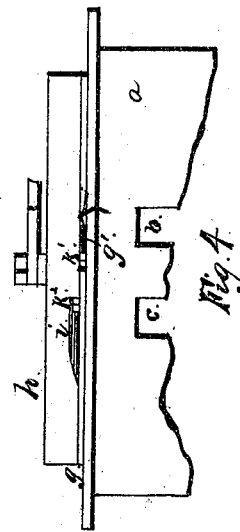
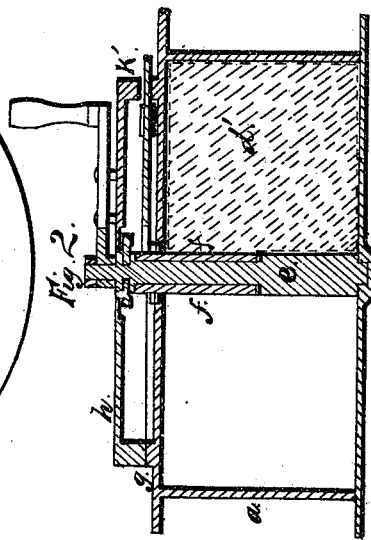
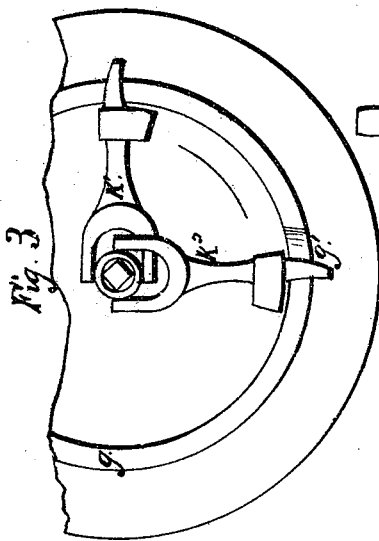
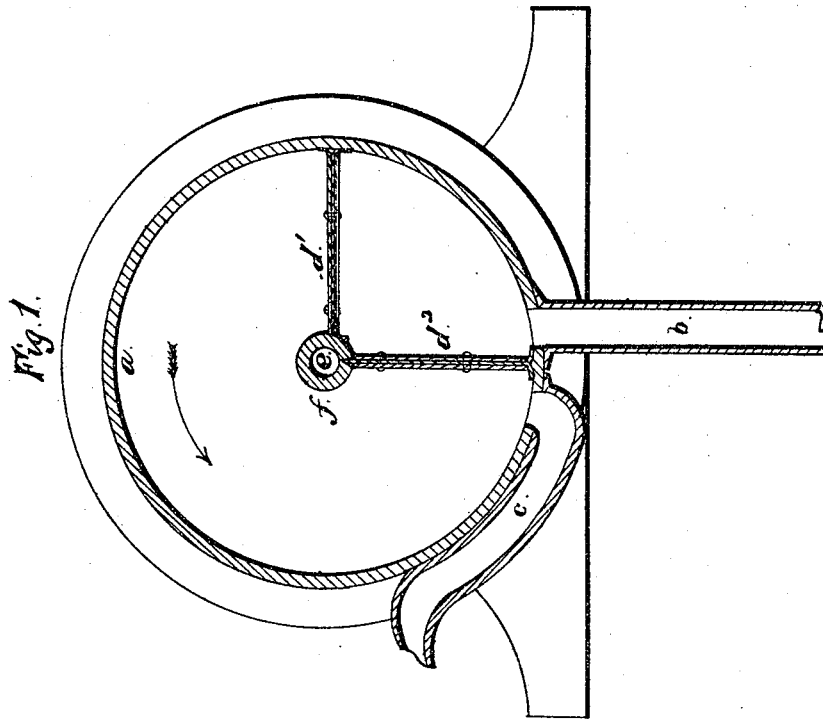


*W. H. Davis,*

*Rotary Pump,*

*N<sup>o</sup> 7,751.*

*Patented Nov. 5, 1850.*



# UNITED STATES PATENT OFFICE.

WM. H. DAVIS, OF MAYSVILLE, KENTUCKY.

## ROTARY PUMP.

Specification of Letters Patent No. 7,751, dated November 5, 1850.

*To all whom it may concern:*

Be it known that I, WILLIAM H. DAVIS, of Maysville, in the county of Mason and State of Kentucky, have invented certain improvements in Rotary Pumps, and that the following is a full, clear, and exact description of the principle or character which distinguishes them from all other things before known and of the usual manner of making, modifying, and using the same, reference being had to the accompanying drawings, of which—

Figure 1 is a section of the cylinder across the axis; Fig. 2, a cross section through the axis; Fig. 3, a view of the front with the crank plate removed; and Fig. 4, a bottom view.

In most rotary pumps as hitherto constructed a revolving piston has been used in connection with a partition or abutment, one of which had to be removed out of the way of the other, at each revolution. This difficulty, of causing the partition to slide out of the way of the piston, or else to make the piston to retreat into the center to allow it to pass the partition or abutment, has been the principal objection to rotary pumps.

In my invention I employ two pistons which act alternately as revolving pistons and as the stationary partition. The pump consists of a cylinder (*a*) having both ends closed water tight, and being furnished with a suction pipe (*b*) and a discharge pipe (*c*). Within the cylinder are two pistons (*d'* and *d''*) which are made water tight, and to resist the pressure of the water in both directions by means of leathers or other packing. The piston (*d'*) is affixed to the axis (*e*) by half the width of its base. The other piston (*d''*) is attached in a similar manner to the hollow axis (*f*) which revolves freely on the axis (*e*). Upon the outside of the front plate of the cylinder is an annular ridge (*g*) which is cut away at (*g'*) at the part corresponding with the space between the suction and discharge pipes inside. The axis (*e*) extends to the outside and a plate (*h*) to which a crank is attached, revolves freely on it. The inner side of this plate has an annular ridge, corresponding to that on the front plate and having a notch, or part cut away as shown at (*i*). Upon the external ends of the two concentric axes, which project beyond the front plate are jointed two arms (*k'* and

*k''*) which revolve with the pistons with which they are connected. The arms (*k'* and *k''*) have projections which run just within the annular ridges, shaped like ax heads, and serve as wedges to force each other out of the notch (*g'*) on the front plate.

The action is as follows: The crank and plate (*h*) is turned in the direction of the arrow, and carries along with it the arm (*k'*) by its end which is caught in the notch (*i*), and the piston (*d'*) revolves with it. The other arm (*k''*) is held stationary by the notch (*g'*) in the front plate, and its piston (*d''*) performs the part of a stationary partition, resting in that part of the cylinder which is between the suction and discharge pipes. Thus the water is drawn into the cylinder through the suction pipe (*b*) on one side of the piston (*d'*), while it is discharged from the other side through the pipe (*c*). When the piston (*d'*) comes round, and approaches the back of the piston (*d''*), the wedge formed head of the arm (*k'*) inserts itself under the back of the head of the other arm (*k''*) and lifts it from the notch (*g'*) and causes it to be caught and carried around by the notch (*i*) in the crank plate, at the same time the arm (*k'*) takes the place of (*k''*) and remains stationary until lifted out of the notch and carried around in the same manner, at the next revolution. The motion of the pistons corresponding with that of the arms causes them to revolve, and to remain stationary alternately during the revolutions of the crank, and thus a constant stream of water is raised and discharged.

By this method of construction all valves, and sliding pistons or partitions are dispensed with and a rotary pump produced which possesses all the advantage of simplicity, compactness and durability, and which can be manufactured at a small cost.

What I claim as new and desire to secure by Letters Patent is,

The two pistons acting alternately with each other as rotary pistons, and as stationary partitions, in connection with the arms and apparatus by which they are worked, substantially as above set forth.

WM. H. DAVIS.

Witnesses:

EDWARD EVERETT,  
WM. GREENOUGH.