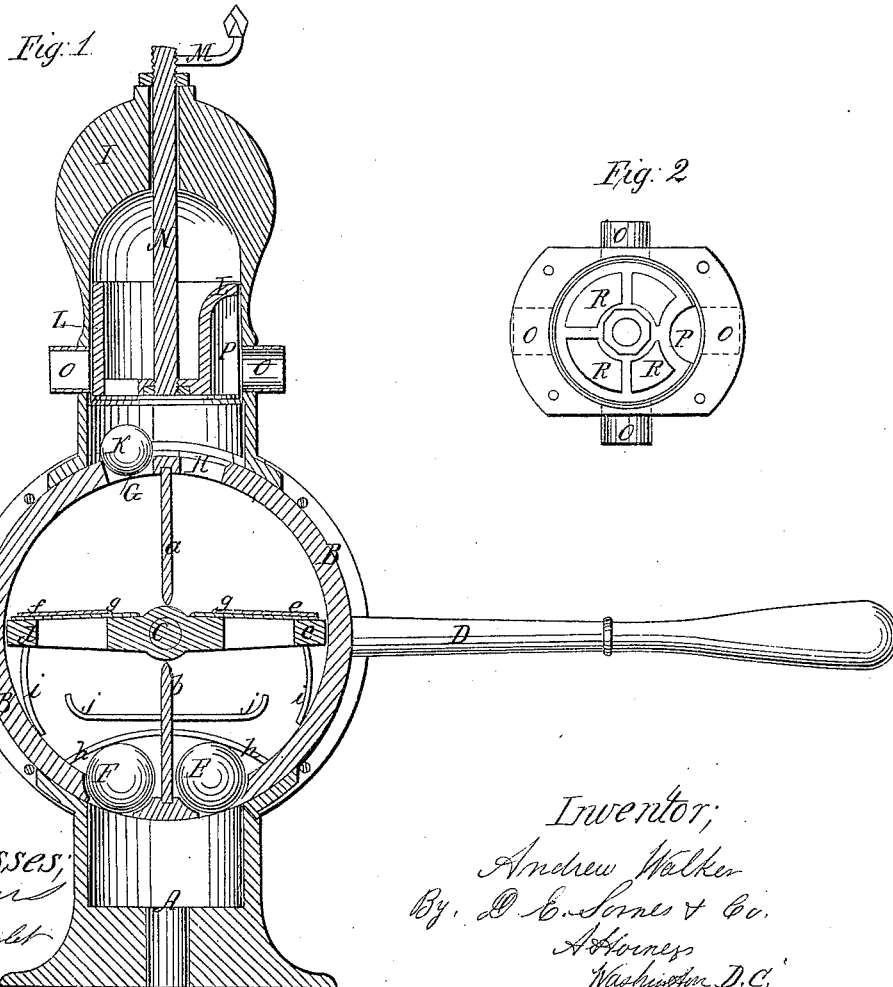


A. Walker,

Oscillating Pump,

N^o 45096.

Patented Nov. 15, 1864.



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UNITED STATES PATENT OFFICE.

ANDREW WALKER, OF CLAREMONT, NEW HAMPSHIRE.

IMPROVEMENT IN ROTARY PUMPS.

Specification forming part of Letters Patent No. 45,096, dated November 15, 1864.

To all whom it may concern:

Be it known that I, ANDREW WALKER, of Claremont, in the county of Sullivan, in the State of New Hampshire, have invented a new and useful Improvement in the Construction of Pumps and Fire-Engines; and I hereby certify that the following is a true and exact description thereof, reference being had to the accompanying drawings, in which—

Figure I is a vertical section of the pumps, and Fig. II is a bottom view of the rotary piston thereof.

To enable others skilled in the art to make and use my invention, I will describe its construction and operation by the aid of the accompanying drawings and the letters of reference marked thereon.

A is the pipe leading to the well, cistern, or fountain from which the water is to be drawn.

B is the cylinder of the pumps, which is divided into two apartments by the partitions *a* and *b*. The axis C is placed within the cylinder, and one end thereof works in a joint or box in the center of one extremity of the cylinder. The other end of the axis passes through the center of the other extremity of the cylinder a sufficient distance to allow the lever D to be attached to it. The axis works water-tight between the partitions *a* and *b*. To the axis C are attached the horizontal floats or pistons *c* and *d*, which are made to work water-tight within the cylinder by means of packing. In the floats or pistons *c* and *d* are the valves *e* and *f*, which work on hinges at *g g*. On each side of the partition *b* are the ball-valves E and F, placed on orifices in the bottom of the cylinder, through which the water enters from the pipe A. The wires *h h* pass through the partition *b* and are adjusted so as to prevent the balls from becoming displaced, but allow them to raise off the orifices a sufficient distance to let the water pass through them. Through the top of the cylinder are two orifices, G and H, communicating with the air-chamber I. These orifices are opened and closed alternately by the ball-valve K.

In the lower part of the air-chamber I is placed the rotary piston L, Figs. I and II, in which are apertures R R, Fig. II, which admit of the pressure of the air on the water when it is forced into the air-chamber I. To the revolving piston L is attached the rod N, which

passes through the top of the air-chamber I, and to the top of which is attached the lever M, by which the piston is made to revolve. The piston L extends below the discharge-pipes O O. In the side of the piston is a recess, P, which extends above the discharge-pipes O O, which will allow the water to pass up and escape through the pipe to which the recess is turned. The lever M serves as an index to point to the discharge-pipe it is desired to open, any one of which may be opened or closed instantaneously.

The operation of the pump is as follows: By means of the lever D the horizontal floats or pistons *c* and *d* are raised and lowered alternately. When either of the pistons is raised, the ball-valve in the same apartment at the bottom of the cylinder opens, and the water follows the piston (or is drawn up by the suction thereof) and fills the vacuum. At the same time the valve *e* or *f*, as the case may be, is closed, and the water above the piston is forced up through the orifice G or H, where it meets with the pressure of the air in the air-chamber I and is forced out through either of the discharge-pipes O O, to which the recess P may be turned. When the water is forced through either of the orifices G or H, the ball K is forced onto the opposite one, which prevents the water from flowing back on the piston in the cylinder that is depressed, and at the same time the ball on the same side at the bottom of the cylinder is closed, which prevents the water from flowing back through the pipe A, and the valve in the piston is opened and the water forced through it to the space above the piston. When it is desired to let the water escape from the cylinder, it may be done by lowering either of the pistons *c* or *d* until the ball E or F is rolled from the orifice by one of the wires *i i*, and at the same time the valve *e* or *f* will be opened by the wire *j j* in the partition *b*. When one apartment of the cylinder is empty, the water may be allowed to escape from the other in the same manner.

The rotary piston L may be applied to hydrants as well as to pumps, and by which all the discharge-pipes may be closed at once, or any one that is desired may be opened in a moment, thus admitting of quick change in case of fire.

I do not confine myself to the construction

of pumps for drawing water from wells, cisterns, &c., but may construct fire-engines, &c., on the same principle as my pump.

What I claim as new in my invention, and desire to secure by Letters Patent, is—

1. The rotary piston L, substantially as described, and for the purpose set forth.
2. The combination and arrangement of the rotary piston L, the horizontal floats or pis-

tons *c* and *d*, the ball-valves E and F, the ball-valve K, the orifices G and H, substantially upon the principle and in the manner herein set forth.

ANDREW WALKER.

Witnesses:

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HENRY JUDKINS.