JOHN ROBERTSON.

Pumps.

No. 123,579. Patented Feb. 13, 1872.

Fig. 1.

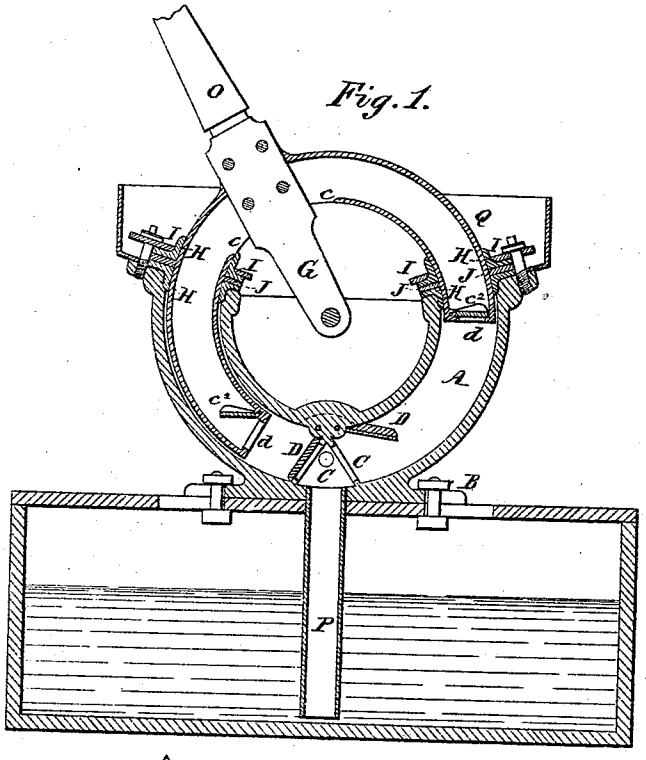
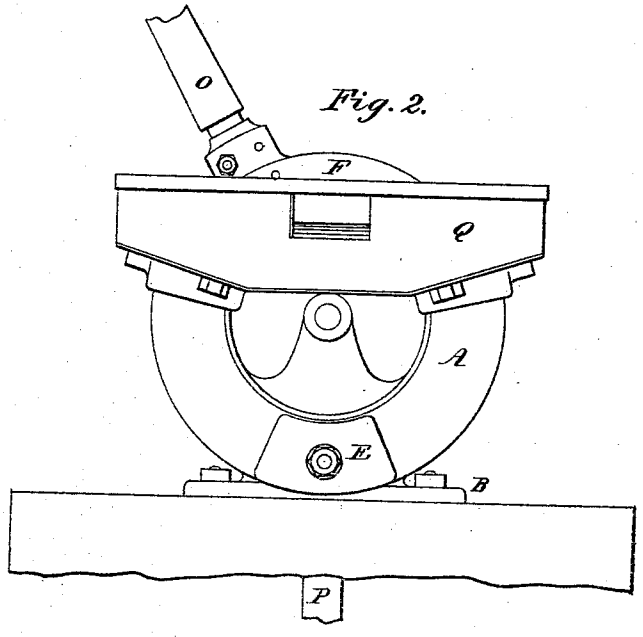


Fig. 2.



Witnesses.

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UNITED STATES PATENT OFFICE.

JOHN ROBERTSON, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN SEGMENTAL PUMPS.

Specification forming part of Letters Patent No. 123,579, dated February 13, 1872.

To all whom it may concern:

Be it known that I, JOHN ROBERTSON, of Brooklyn, Kings county, New York, have invented, made, and applied to use certain Improvements in the Construction of Pumps; and that the following is a full, clear, and correct description of the same, reference being had to the accompanying drawing making part of this specification, and to the letters of reference marked thereon, in which—

Figure 1 is a longitudinal sectional view of my invention. Fig. 2 is a side elevation of the same.

In the drawing, which is made half the size of the model, like parts of the invention are pointed out by the same letters of reference.

The nature of the present invention consists in certain improvements, as more fully hereinafter set forth, in the construction of pumps; the object of the invention being the production of a pump simple and efficient, at a low cost.

To enable those skilled in the arts to make and use my invention, I will describe the same.

A shows the cylinder of the pump, made of iron or any suitable metal, and cast in one piece usually. This cylinder is made semicircular in form, and is provided with a stand or foot-plate, B, to support it. Upon the interior of the cylinder A are cast the valve-seats C, to which are hinged the valves D, and openings are left in the cylinder A, between the valve-seats, that access may be had for the insertion or removal of the valves D. These openings in the cylinder A are closed when the pump is in use, or after the valves have been inserted by the caps E. F shows the trunk of any pump composed of two sections, the upper end of one of said sections being riveted to the upper end of a supporting-standard, G, while through the other section of the trunk are passed the screw-bolts *f*, which may be readily removed, and allow this section of the trunk to be easily removed from or inserted in the cylinder A. The sections composing the trunk may be made square, with rounded corners, or of any suitable form to allow them to be easily and snugly packed when inserted in the cylinder A. The sections are provided with openings *e* upon their upper ends to allow the water to be discharged, and also with openings *d* upon their lower ends for the entrance of the water from the cylinder A, over which openings are placed the retaining-valves C^2. The cylinder A is recessed at its upper ends to receive the packing H, which may be leather, hemp, or any other suitable material, and is secured within the recesses and held in position by the outer plates I, secured by bolts. J shows center plates inserted between the packing H, and made to easily be passed over the sections of the trunk F. These plates are employed to hold the packing H firmly in position while the pump is in operation, and to prevent its losing its shape. G shows a supporting-standard, held upon a bolt passed through the cylinder A, employed to support the sections composing the trunk F. O shows the handle for operating the pump, made of any convenient form, and attached to the trunk F at any suitable point to operate the same. P is a pipe to conduct water to the cylinder, the upper end of said pipe entering the cylinder between the valve-seats C. Q is a well, which may be bolted to or cast upon the upper end of the cylinder A, and forms a receptacle for the water raised.

Such being the construction, the operation is as follows: The trunk having been inserted in position in the cylinder, properly packed, and the handle O having been attached to the same, motion is communicated through the handle to the trunk, by which the air is exhausted in the cylinder, the valves D being opened and closed alternately, and by the opening and closing of these valves each section of the trunk is supplied with water from the pipe P through the cylinder A alternately. Thus, as one section of the trunk, having received its charge of water, ascends to discharge it into the well Q, the other or opposite section of the trunk is depressed to receive its supply. The retaining-valves C^2 are opened and closed as the sections of the trunk to which they are attached are depressed and elevated.

The value of a pump thus constructed is found in the fact that the cylinder A may be cast in one piece, and needs no boring upon its interior, as the packing is secured upon its upper ends, thus greatly reducing the cost of

manufacture, and in its simplicity and durability, the packing being stationary, and all the working parts of the pump easily got at.

Having thus set forth my invention, what I claim as new is—

The combination, with the curved cylinder A, of a curved hollow trunk, F, valves D and C^2, and packing H, constructed and operating substantially as and for the purposes set forth.

JOHN ROBERTSON.

In presence of—
A. SIDNEY DOANE,
EDW. TUSCH.