A. J. Reynolds.

Submerged Pump.

No. 44,891. Patented Nov. 1, 1864.

Fig. 1.

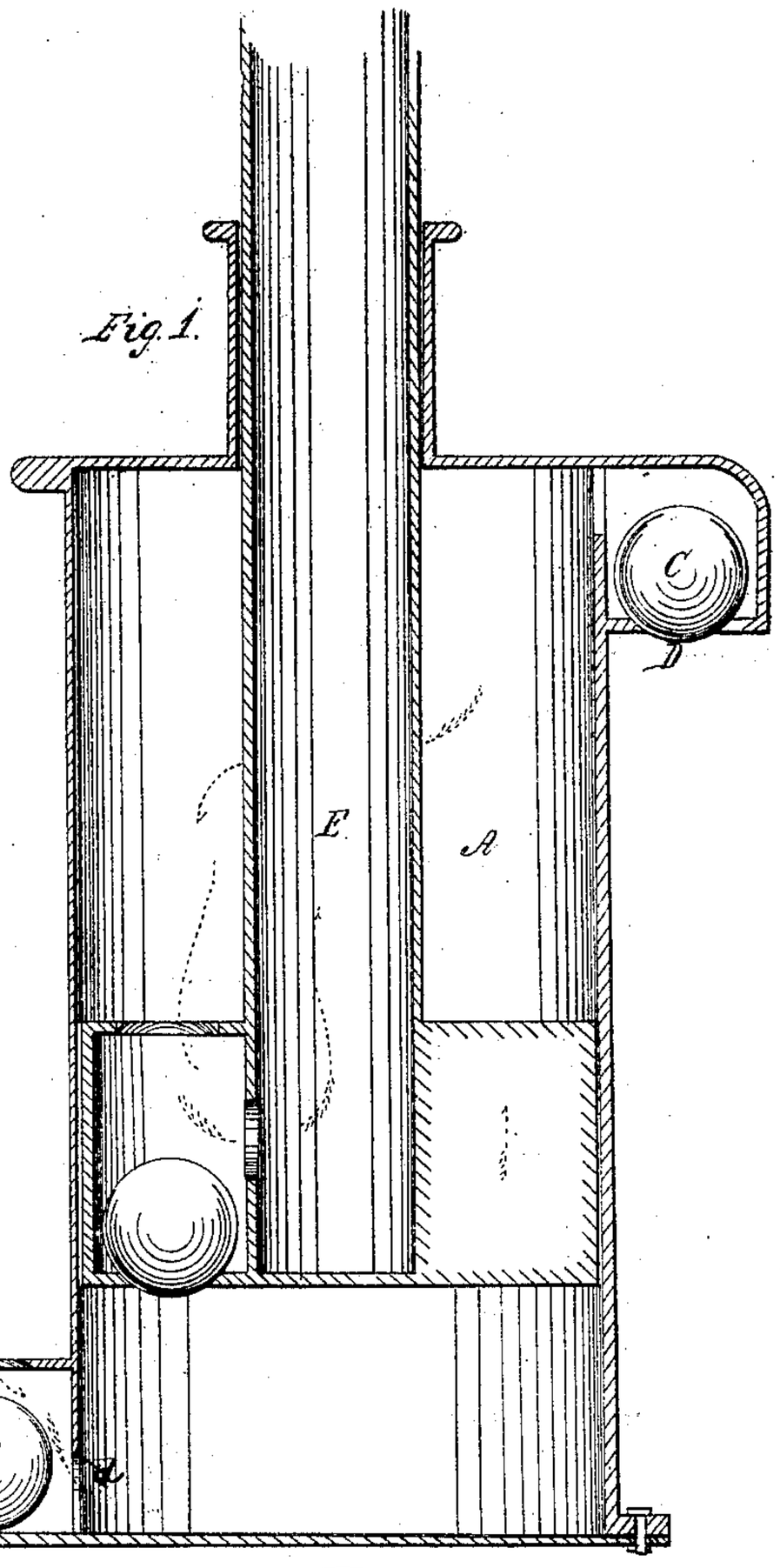
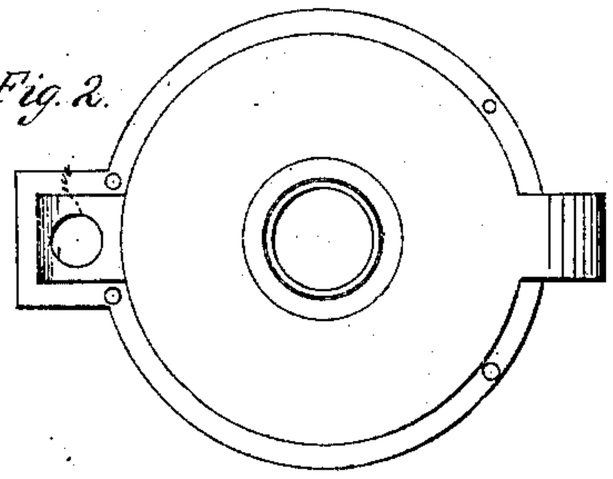


Fig. 2.



Witnesses;
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UNITED STATES PATENT OFFICE.

ANDREW J. REYNOLDS, OF STURGIS, MICHIGAN.

IMPROVEMENT IN DOUBLE-ACTING SUBMERGED PUMPS.

Specification forming part of Letters Patent No. **44,891**, dated November 1, 1864; antedated October 20, 1864.

To all whom it may concern:

Be it known that I, ANDREW J. REYNOLDS, of Sturgis, county of St. Joseph, State of Michigan, have invented a new and Improved Double-Acting Submerged Force-Pump; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, said drawings being a vertical central section of my invention.

This invention consists in the employment or use of a double-acting pump cylinder, provided with two ball-valves and a tubular piston-rod, in connection with water passages, all arranged to operate as and for the purposes set forth.

To enable those skilled in the art to fully understand and construct my invention, I proceed to describe it.

Figure 1 is the pump. Fig. 2 is a view or plan of the same from the top of said pump.

A represents the pump-cylinder, which is provided with two ball-valves, B and C, and so arranged as to open and close the water-passages D D alternately as the piston E rises and falls.

The operation is as follows: When piston E rises, a suction is produced in the lower part of cylinder A, under piston E, and valves B and C fall. The water passes into cylinder A down through the openings D D, following piston E as it rises, while the water in the upper part of cylinder is forced up through piston E. (See red arrows.) When the piston descends, the valves B and C rise, closing the lower port D and opening the port D at the top of cylinder A, and the water is then received at the top, while the water in the lower part of the same is forced up through piston E.

Thus it will be seen that I have a cheap and reliable double-acting submerged force-pump of an exceedingly simple construction.

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

The cylinder A, provided with the two ball-valves B and C, in combination with the water-passages D D and *d*, all arranged to operate in connection with a double acting hollow discharging-piston, as and for the purposes herein set forth.

A. J. REYNOLDS.

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