G. NORTON.

Single Propeller Pump.

No. 215,474. Patented May 20, 1879.

Fig. 1.

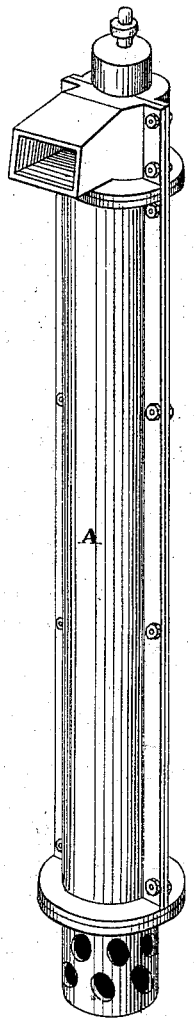


Fig. 2

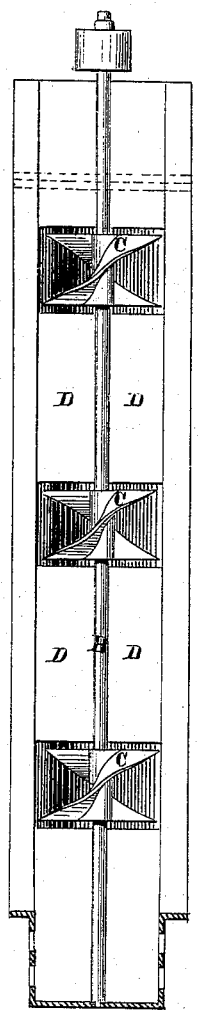
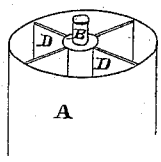


Fig. 3.



Witnesses

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Frank A. Brooks

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UNITED STATES PATENT OFFICE.

GEORGE NORTON, OF STOCKTON, CALIFORNIA, ASSIGNOR TO W. H. VAN VLEAR, THOMAS J. KENNEDY, AND E. F. AVERY, OF SAME PLACE, ONE-FOURTH TO EACH.

IMPROVEMENT IN SINGLE-PROPELLER PUMPS.

Specification forming part of Letters Patent No. **215,474**, dated May 20, 1879; application filed March 8, 1879.

To all whom it may concern:

Be it known that I, GEORGE NORTON, of Stockton, county of San Joaquin, and State of California, have invented a Single-Propeller Pump; and I hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings.

My invention relates to certain improvements in that class known as "propeller-pumps;" and it consists in the construction of a single straight cylinder, having a shaft extending longitudinally through its center, and provided with propeller-blades at intervals along its length.

In order to avoid the employment of more than one set of screws or propellers, I have conceived the idea of employing a longitudinal diaphragm, which, fitting snugly between the propeller-blades, shall prevent any rotation and twisting in the stream, as will be more fully described by reference to the accompanying drawings, in which—

Figure 1 is a view of my apparatus. Fig. 2 is a longitudinal section, showing the interior of the cylinder.

A is the cylinder of my pump, which may be of any suitable diameter, and located in any manner which may be found most convenient. Within this cylinder a shaft, B, extends from end to end centrally, and is provided at certain intervals with propeller-blades or partial spirals, C, like the threads of a screw, encircling the shaft, and just filling the cylinder, so as to revolve freely. The office of these spirals is to lift the water when the shaft is rotated by suitable machinery or driving power. If simply rotated within the cylinder the water would acquire such a twist as to be unmanageable, and but little would be raised. In order to overcome this difficulty two shafts, with spirals rotating in opposite directions within the same cylinder or tube, have been used; but this is cumbersome.

My improvement consists in the employment of a diaphragm, which extends the whole length of the cylinder, and is centrally placed, being formed at its center to receive and accommodate the shaft, which lies in the seat or groove; or a regular box may be made in the diaphragm to receive the shaft. If made in short sections, fitting snugly up to the propeller-blades, the grooves may be made alternately in opposite sides of the section, so as to support and steady the shaft, as shown.

At points opposite the spirals or screws this diaphragm is cut away; if it be not made in short sections, so as to permit the rotation of the propeller blades or screws.

It will be seen that by this construction the water will be prevented from twisting and whirling within the tube or cylinder A; but the extension of the diaphragm below the lowest spiral and above the upper one will insure a perfect suction and discharge with no useless mechanism.

If desired, the diaphragms may be made double, or may have plates extending to the sides of the tube, at right angles with them; but the single diaphragm is sufficient to accomplish the object desired.

The apparatus is cheap, simple, and effective.

I am aware that diaphragms have been used in short sections, leaving open spaces in the cylinder between the edges of the sections and the propeller-blades, thereby allowing a rotation and twisting of the stream, which is objectionable, and which objection my invention is intended to obviate.

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

The tube or cylinder A, with its central rotating shaft, B, and propellers or spirals C, in combination with the diaphragm or diaphragms D, extending continuously from propeller to propeller, and practically dividing the cylinder, and preventing the twisting or rotation of the water, substantially as and for the purpose herein described.

In witness whereof I have hereunto set my hand andseal.

GEORGE NORTON. [L. S.]

Witnesses:
EUGENE LEHE,
THOS. J. KENNEDY.