

T. SHAW.
COMPOUND PROPELLER PUMP.

No. 99,791.

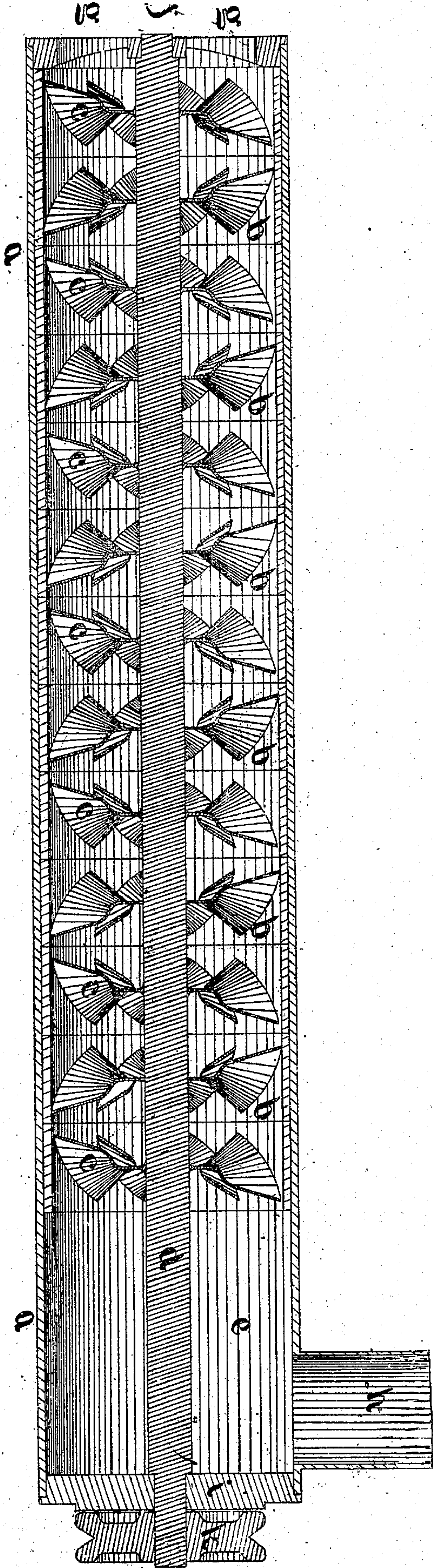
Patented Feb. 15, 1870.

Witness.

Wm. J. Shaw

J. B. Webb

Thomas Shaw



United States Patent Office.

THOMAS SHAW, OF PHILADELPHIA, PENNSYLVANIA.

Letters Patent No. 99,791, dated February 15, 1870.

IMPROVEMENT IN COMPOUND PROPELLER PUMPS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, THOMAS SHAW, of the city and county of Philadelphia, Pennsylvania, have invented a new and improved Pump; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing and to the letters of reference marked thereon.

My invention consists in the employment of a number of propeller wheels, each alternate one stationary, and the others revolving, and of reversed angle in a tube in the manner and for the purpose as hereafter described.

The object of the invention is to pump sand and water to any height by a constant application of power to the ascending column, as hereafter described.

In order to enable others to use and practice my invention, I will proceed to describe its construction and operation.

On reference to the accompanying drawings, which form part of the specification,

The sketch represents a longitudinal section through the center of pump, of which *a* is a metal tube surrounding the short sections of tubes *b*, for the purpose of keeping them together and in line.

The propeller-wheels *c* are secured to revolving-shaft *d*, and similar wheels *b*, with blades of reversed angle, are secured stationary to the tube.

The shaft *d* revolves in a journal in center of disk *f* on its lower end, and has a similar journal in the center of disk *i* on its upper end, and is provided with a pulley, *k*, all for the purpose as hereafter described.

The apertures *g* are for the entrance of sand or fluid, and the chamber *e* and pipe *h* are for the exit of the same.

The pump is operated in this wise: it is suspended vertically, or at an angle into the material to be pumped,

or, if circumstances require it, it may be operated in a horizontal position.

Power is applied to revolve shaft *d* by a cord, or any of the ordinary methods, in a direction indicated by angle of propeller-wheel, the rotation of which forces the fluid in a direction longitudinal with the tube and with the curve of revolution. All the force moving in the curve of revolution is thrown violently against the wings of stationary wheel, which causes the material to glance off and move in a line parallel with the tube, when the blades of the next revolving wheel catch upon the fluid or material and move it in the same manner upon the next succeeding stationary wheel, and so on alternately, until the column of water or other material is lifted to the desired height.

It will be observed that this constant lifting at every part of the column handles the material as if it was a rope of sand, and will lift water, mud, and sand to any desired height, without reference to, or aid from atmospheric pressure; and that it can be used for dredging or other purposes, and that the inlet and outlet apertures of tube *a* can be modified without any alteration in the result, and that the outer tube *a* can be dispensed with by providing flanges on each end of tubes *b*, that they may be bolted together in the same manner as ordinary flange-pipe.

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

The alternate stationary and revolving propeller-wheels, arranged in a tube with blades of reversed angles in the manner and for the purpose set forth.

THOMAS SHAW. [L. s.]

Witnesses:

PHILIP S. JUSTIN,
E. COBB.