

G. F. & H. F. Shaw,

Pump.

No. 111,983.

Patented Feb. 21. 1871.

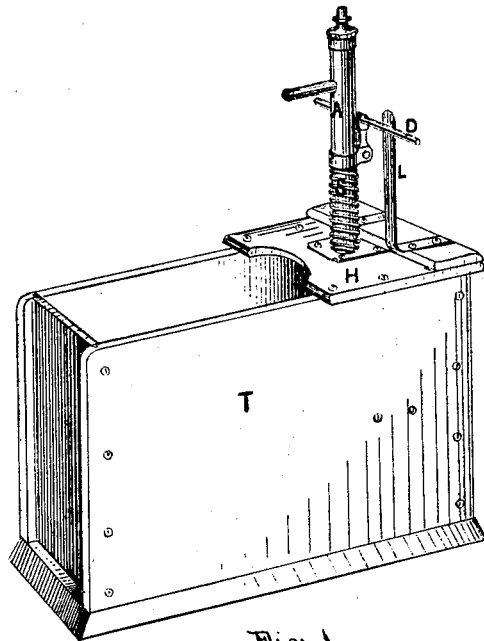


Fig. 1

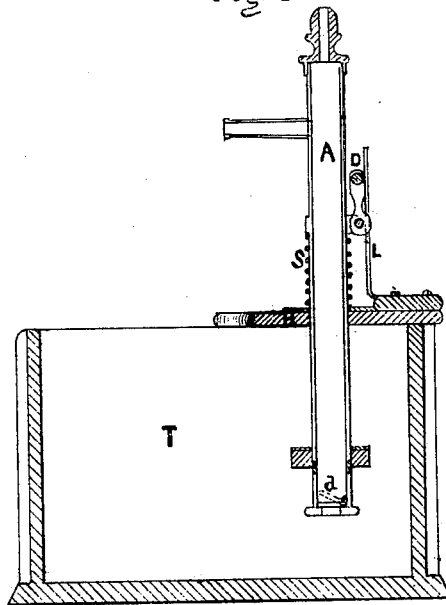


Fig. 2

Witnesses, *Franklin Parker* Inventors
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GEORGE F. SHAW AND HENRY F. SHAW, OF WEST ROXBURY,
MASSACHUSETTS.

Letters Patent No. 111,983, dated February 21, 1871.

IMPROVEMENT IN PUMPS.

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

To all whom it may concern:

We, GEORGE F. SHAW and HENRY F. SHAW, of West Roxbury, in the county of Norfolk and State of Massachusetts, have invented certain new and useful Improvements in Pumps, of which the following is a specification.

Nature of the Invention.

The nature of our invention consists in arranging a vertical tube, having a valve at or near its lower end, in such a manner that it may be vibrated rapidly in the direction of its length; the object being to take advantage of the principle in statics that a body left to the action of gravity will move with a certain velocity, and that it is easy and practical to move a body by mechanical means faster than it would move if left to the action of gravitation. Thus, in our invention we cause the tube of the pump to move downward faster than the water that is in it will move by the action of gravity. This has a tendency to form a vacuum in the lower part of the tube, into which the water will flow. Repetition of this action will soon fill the tube and cause the water to flow from it.

Description of the Accompanying Drawing.

Figure 1 is a perspective view, showing a tank with our improved pump affixed.

Figure 2 is a vertical section through the same.

General Description.

T in the drawing may represent any water receptacle, into which the pump-tube A is placed.

The pump-tube A is free to slide up and down through the base H, and its weight is balanced by the spring S or other retractor.

D is a brake or handle made fast to the pump-tube, and is guided by vertical standards, one of which is shown at L.

The mechanical construction of our invention may be varied in many ways.

The pump may be balanced by a weight, or two pump-tubes may be connected by a working-beam, so that one may balance the other.

d, fig. 2, is a common flap-valve, placed near the lower end of the tube.

We do not confine ourselves to any particular construction, but wish to claim any organization of parts which will effect the object by means of devices operating substantially as described.

To operate our invention we have simply to cause the pump-tube to vibrate rapidly up and down.

The power required to operate the pump is only that necessary to overcome the *vis inertia* of the weight of the tube as the springs S balance the tube and the water in it.

We claim as our invention—

The combination, in a pump, of the tube A, provided with the valve d, and a retractor, constructed, arranged, and operated substantially as described and shown.

GEORGE F. SHAW.
HENRY F. SHAW.

Witnesses:

FRANK G. PARKER,
JAS. S. CONANT.