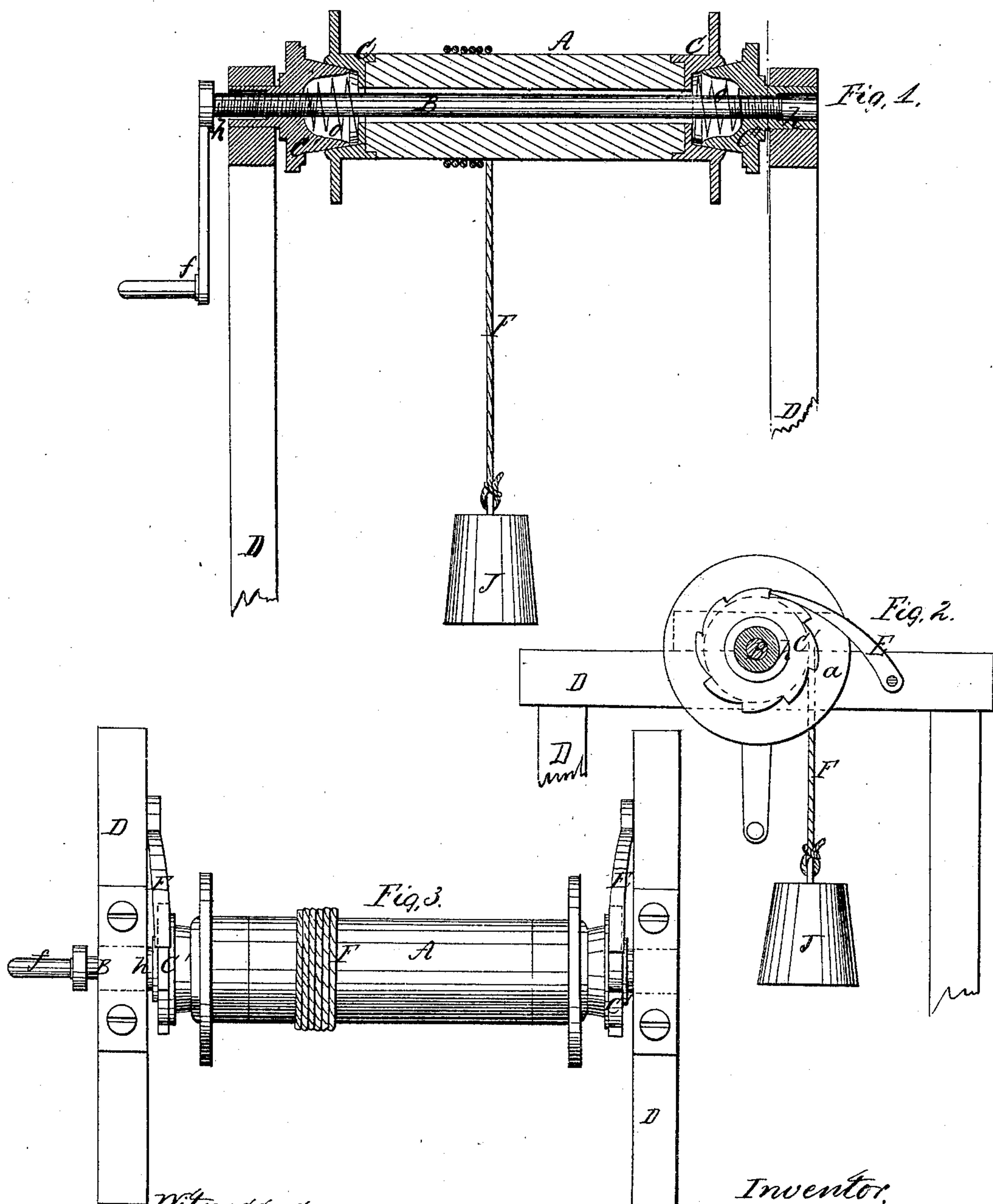


W. E. BABCOCK.  
WATER ELEVATOR.

No. 61,137.

Patented Jan. 15, 1867.



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# United States Patent Office.

W. E. BABCOCK, OF EAST PEMBROKE, NEW YORK.

*Letters Patent No. 61,137, dated January 15, 1867.*

## IMPROVEMENT IN WATER ELEVATORS.

*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, W. E. BABCOCK, of East Pembroke, in the county of Genesee, and State of New York, have invented a new and useful Improvement in Windlass Elevator for raising water and other purposes; and I do hereby declare that the following is a full, clear, and exact description thereof.

The object of this invention is to provide a safe and durable method for raising water from wells and for other purposes; and it consists in arranging a drum upon a shaft in such a manner that while it is entirely secure from accident while the weight is suspended from it, a slight reverse movement of the crank sets it free and allows the bucket or weight to descend without turning the crank, and as rapidly as may be desired.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation, reference being had to the accompanying drawings, forming a part of this specification, and to the letters of reference marked thereon.

Figure 1 represents a vertical sectional elevation.

Figure 2 shows an end view; and

Figure 3 represents a top view.

Similar letters of reference indicate like parts in the drawing.

A represents the drum of the windlass; B is the shaft; C the head-piece of the drum, and C' the piece that forms the nut and journal and cone, and upon which is the ratchet. D represents the frame which supports windlass; E represents the pawls, F the rope or chain, and J the weight to be raised. C and C' form friction cones, and the friction produced by a movement of the cone C' into cone or cavity *e*, in the head of the drum, is sufficient to hold the drum in any position and to raise any weight required. The drum A revolves loosely on the shaft B when the weight is descending and when there is no friction in the cones. The drum bears where the shaft passes through the head C. A portion of the head *e* forms the flange to confine the rope to the drum, and the cavity or inverted cone in the end receives the cone on *e'*, the outside of *e'* and the inside of *e* being of the same taper. The piece C' extends to the outside of the frame D, the outer portion, *h*, forming the bearing upon which rests the weight of the whole apparatus. This bearing *h* is hollow nearly its whole length, but inside of the bearing and hollow portion a screw-thread is cut, a right-hand screw at one end and a left-hand screw at the other. The inner portion of C' is hollowed out and contains a spiral spring, which operates against the head of the drum and is useful in raising light weights. The outer edge or periphery of the piece *e'* forms a ratchet-wheel in which the ratchet-pawls E work, they being attached to the frame D. The shaft B has the crank *f* upon one end, and screw-threads are cut upon each end, a right-hand thread on one end and a left-hand thread upon the other, which work in the right and left-hand screw-threads cut in *e'*. When the shaft is revolved, the effect is to bring the cone-pieces C' toward each other, through the action of the right and left-handed screws; a backward movement of the crank throws them from each other. The first movement would of course bring the cones in contact with each other and carry round the drum; the backward movement would as surely liberate the drum. Now, when the forward movement of the crank brings the cones into contact the screws will keep operating and press them together until the friction is sufficient to carry the drum along with the shaft, and this friction is greater or less according as the weight to be raised is more or less. There might be a ratchet upon the flange of the drum, and a pawl to work in it, for the purpose of holding the weight at any desired point. But in my present arrangement this object is accomplished by disengaging one of the pawls E from the ratchet on C'. When that is done, and the weight moves the drum, the disengaged ratchet will move with it and tighten the drum. The same effect might be produced by using but one cone and allowing the other to be fast to the shaft, and the windlass could be constructed in this manner if desirable. It is not considered necessary to particularly describe the frame D, as there is nothing peculiar in its construction. The shaft and bearing are secured to it in the usual manner by boxes and caps, and the pawls are screwed or bolted to the inside, where they drop into the notches of the ratchet by their own weight.

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

The drum A, the shaft B, the head C, the ratchet-cone *e'*, and the spiral spring *o*, when arranged and combined substantially as described for the purposes herein set forth.

W. E. BABCOCK.

Witnesses:

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