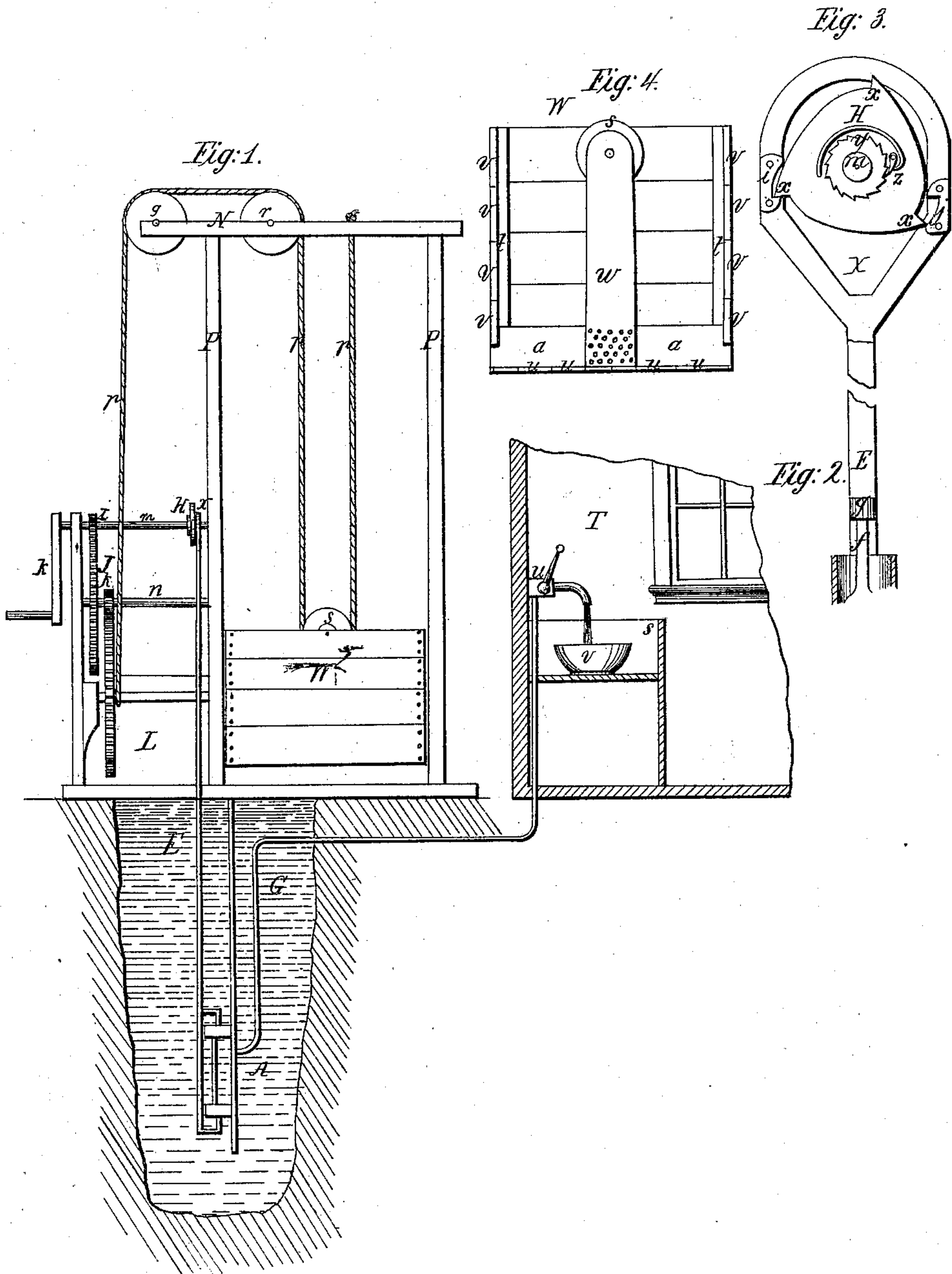


*R. Porter,*

*Windlass Water Elevator,*

*No 33,226,*

*Patented Sept. 3, 1861.*





# UNITED STATES PATENT OFFICE.

RUFUS PORTER, OF MELROSE, ASSIGNOR TO HIMSELF, AND H. T. LITCHFIELD,  
OF EAST BOSTON, MASSACHUSETTS.

## IMPROVEMENT IN APPARATUS FOR ELEVATING LIQUIDS BY RETAINED POWER.

Specification forming part of Letters Patent No. 33,226, dated September 3, 1861.

*To all whom it may concern:*

Be it known that I, RUFUS PORTER, of Melrose, in the county of Middlesex and State of Massachusetts, have invented a new and useful Apparatus for Supplying Dwelling-Houses with Water; and I hereby declare that the following is a full and exact description of the same, reference being had to the annexed drawings, making part of this specification, in which—

Figure 1 is a side view in connection with a vertical section of a well and of a portion of a dwelling-house. Fig. 2 is a longitudinal section of the pump. Fig. 3 represents a device by which a vibratory motion of the pump is produced. Fig. 4 is a vertical section of the weight-box, and Fig. 5 is a pipe-cleaning faucet.

The nature of this invention consists in a combination of certain mechanism similar in principle to the movement-gear of a clock driven by a weight or spring, and so arranged as to apply a continuous force to a small submerged force-pump ready to operate the same whenever the water which is elevated by the said pump is permitted to flow, thus applying the power retained by the weight or spring to the purpose of producing a flow or stream of water from a well whenever required without the labor of working a hand-pump.

It also consists in a peculiar construction of the force-pump, as will be hereinafter described and represented.

The pump consists of a barrel A twelve inches long by two inches in diameter, and near the longitudinal center thereof are two valve-seats *b c* two inches apart, and between them is a double puppet-valve *d*, which in operation is seated alternately upon each of the valve-seats *b* and *c*. Within each end of the barrel is a hollow piston C D, furnished with a single puppet-valve *e*, which becomes seated upon the centerward end of the piston whenever the piston moves centerward. The two piston-rods *f f* are connected to two arms *g g*, which project from a vertical pump-rod E, which extends upward from the pump to a point three feet above the top of the well.

The barrel A is attached by metallic straps or otherwise to the side of a vertical post F, into which the pump is partly embedded, and through the side of the pump, at the longi-

tudinal center thereof, is an aperture *h*, and a corresponding aperture extends in continuation through the post F, and into this aperture *h* is inserted one end of the pipe G, which conducts the water from the pump to the point where it is discharged.

To the head of the pump-rod E is attached a catch-plate X, to the front of which are attached two catches *i j*, which are impinged upon alternately by the several teeth *x x* of the vibrator H, which is mounted upon a horizontal shaft *m*, and in connection with a ratchet *y* and pawl *z*, whereby the vibrator is revolved in one direction by the shaft *m*, but, being free upon the shaft, remains stationary while the shaft is revolved in the opposite direction.

Upon the left end of the shaft *m* is mounted a pinion I, which is driven by a gear-wheel J, which is mounted upon another parallel shaft *n*. Upon this shaft is another pinion K, into which meshes another gear-wheel L, which is mounted upon a barrel-shaft M. To this barrel-shaft is attached a rope or chain *p*, which is coiled around the barrel and extends thence upward over the pulleys *q* and *r*, thence downward under the pulley *s* and up to the beam N, which is supported by two posts P P. The pulley *s* is connected to a weight-box W, which is ordinarily a three-foot cube. (See Fig. 4.) The weight-box is usually filled with stones and sand, the weight of which is about four thousand pounds.

That portion of the conducting-pipe which descends into the well may be furnished with a faucet Z of peculiar construction, as represented sectionally in Fig. 5, for the purpose of discharging water from the upper portion of the pipe into the well to prevent its freezing in cold weather.

The plug Y of the faucet has two apertures *a'* and *b'*, so arranged relatively that while either is open the other is closed. From the right end of the plug Y an arm *c'* projects at an inclination of forty-five degrees, and from the end of the arm is suspended a weight *d'*, which ordinarily holds the plug in such a position that water will escape from the upper pipe to the well *via* the aperture *a'*; but a wire *e'* ascends from the arm *c'*, and being arranged above in the manner of a bell-wire, and extending to the vicinity of the draft or



hydrant faucet, the position of the plug Y may be instantly changed so as to close the aperture *a'* and open the channel-aperture *b'*, whereby the water from below will rush up to the hydrant-faucet.

It may be observed that the vibrator H and catches *i j* are of such peculiar form that the periphery of the vibrator serves as guide to the catch-plate X, and also comes in collision with the rear ends of the catches at such points as to detach the catches from the teeth *x* at the proper points or stages.

To the left end of the shaft *m* is attached a crank *k* for the purpose of occasionally winding up the weight W.

In the drawings, Fig. 1, T represents a portion of the interior of a kitchen; S, a sink; U, the hydrant-faucet, and V a basin.

An apparatus constructed in the above described improved manner has been found to be very efficient for the purpose for which it is intended.

From the above it will be readily seen that the pistons C D cannot move while the discharge-faucet is closed; but as soon as the faucet is opened the great power stored up will operate upon the mechanism attached to such pistons and cause the discharge-tube to be kept constantly full of water.

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

1. The combination of the pump A, the weight W, the pinions I K, the gears J L, and the discharging-pipe G, when the whole are constructed and made to operate together substantially in manner as set forth.

2. The pump A, as constructed and made to operate substantially in manner as specified.

RUFUS PORTER.

Witnesses:

C. H. HUDSON,

J. W. RICHARDSON.