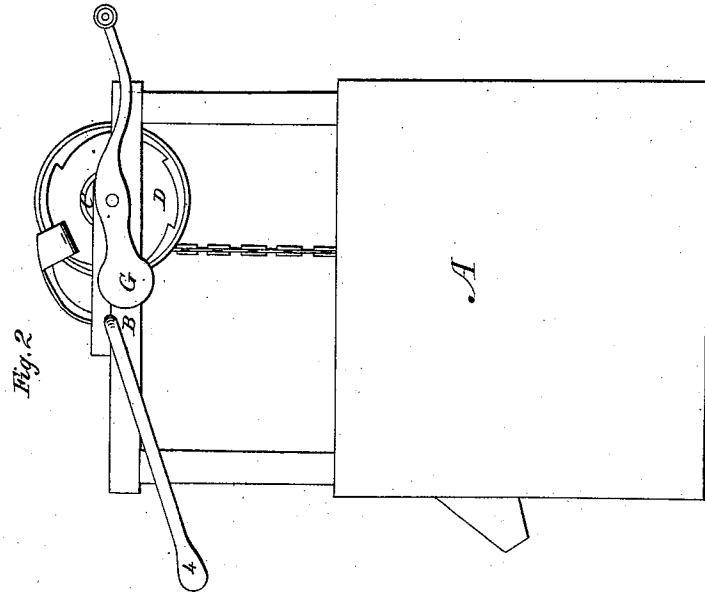


*H. M. Smith,*

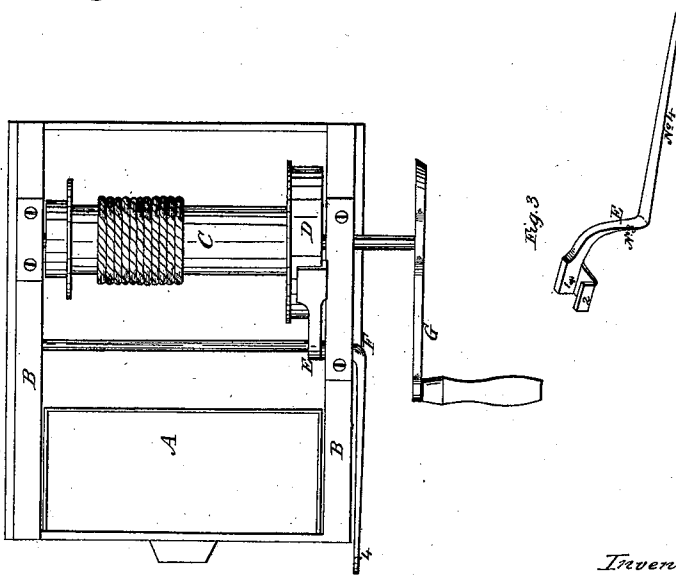
*Windlass Water Elevator,*

*N<sup>o</sup> 54,225.*

*Patented Apr. 24, 1866.*



*Fig. 1*



*Witnesses:*  
*Sam. L. Tower*  
*Henry Bodeker*

*Inventor:*  
*H. M. Smith*

# UNITED STATES PATENT OFFICE.

HIRAM MOORE SMITH, OF RICHMOND, VIRGINIA.

## IMPROVEMENT IN WATER-ELEVATORS.

Specification forming part of Letters Patent No. 54,225, dated April 24, 1866.

*To all whom it may concern:*

Be it known that I, H. M. SMITH, of the city of Richmond and State of Virginia, have invented a new and useful Improvement in Machines for Raising Water from Wells or other Places; and I do hereby declare that the following is a full and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure I is a vertical view; Fig. II, a horizontal, and Fig. III a perspective, view of combined brake, pawl, and lever.

The same letters refer to the same parts in each figure.

A is a common well-curb, which I make by nailing boards onto four posts, which extend up about three feet from platform and support two rails, B B, on which the cylinder C works in ordinary bearings.

The cylinder C, I make of hollow cast-iron with journals attached, or by inserting an inch bar of round iron into a wood block eighteen inches long and large enough to turn five inches diameter. The iron is turned for the journals and crank and the wood rounded off for the rope.

On the right-hand end of the cylinder I attach a cast-iron wheel, D, about ten inches diameter, with periphery one and one-half inch wide. The wheel is recessed under rim about one and one-eighth inch deep, and ratchet-teeth formed inside of the rim.

I make a brake-lever in this way: Take a three-quarter-inch bar of round iron about twenty-four inches long. Make one end in form of an 7, with cross three and one-half long. Then bend, as in Fig. III, so that one will be one and one-half inch wide and curved to fit over

periphery of D. The other part is bent so as to clasp the rim of D, but allowing the rim with ratchet-teeth to revolve freely between the two jaws 1 and 2 thus formed. Now bend the bar at E at right angles, so that the two jaws will come 1 on top and 2 under the rim of D. Then bend the other end back at right angles at F, which forms the arm of lever, with handle 4 extending back past the curb. No. 3, between E and F, forms, when fitted onto rail B, fulcrum of lever. The arm 4, being longest, will overbalance the jaws and bring the under one, 2, always in contact with the teeth on under side of rim D, and secure it against turning back when left to its own action.

The bucket, rope, or chain may be in any known form of construction.

The operation is evident. Turn the crank, and the pawl, being pressed upward by weight of arm 4, is constantly applied to the teeth of D to prevent the descent of the bucket at any time during the ascent, if not desired. To return the bucket into the well, raise the arm of lever by handle 4 briskly, so as at once to release the pawl and apply the brake with suitable force to control the descent of the bucket, and with increased force stop it as it reaches the water.

I do not claim any of the devices herein presented separately; but

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

The combination and arrangement of pawl and brake E F 4, brake and ratchet-wheel D, and crank G, as and for the purposes described.

H. M. SMITH.

Witnesses:

I. S. TOWER,  
SYLVANUS SMITH.