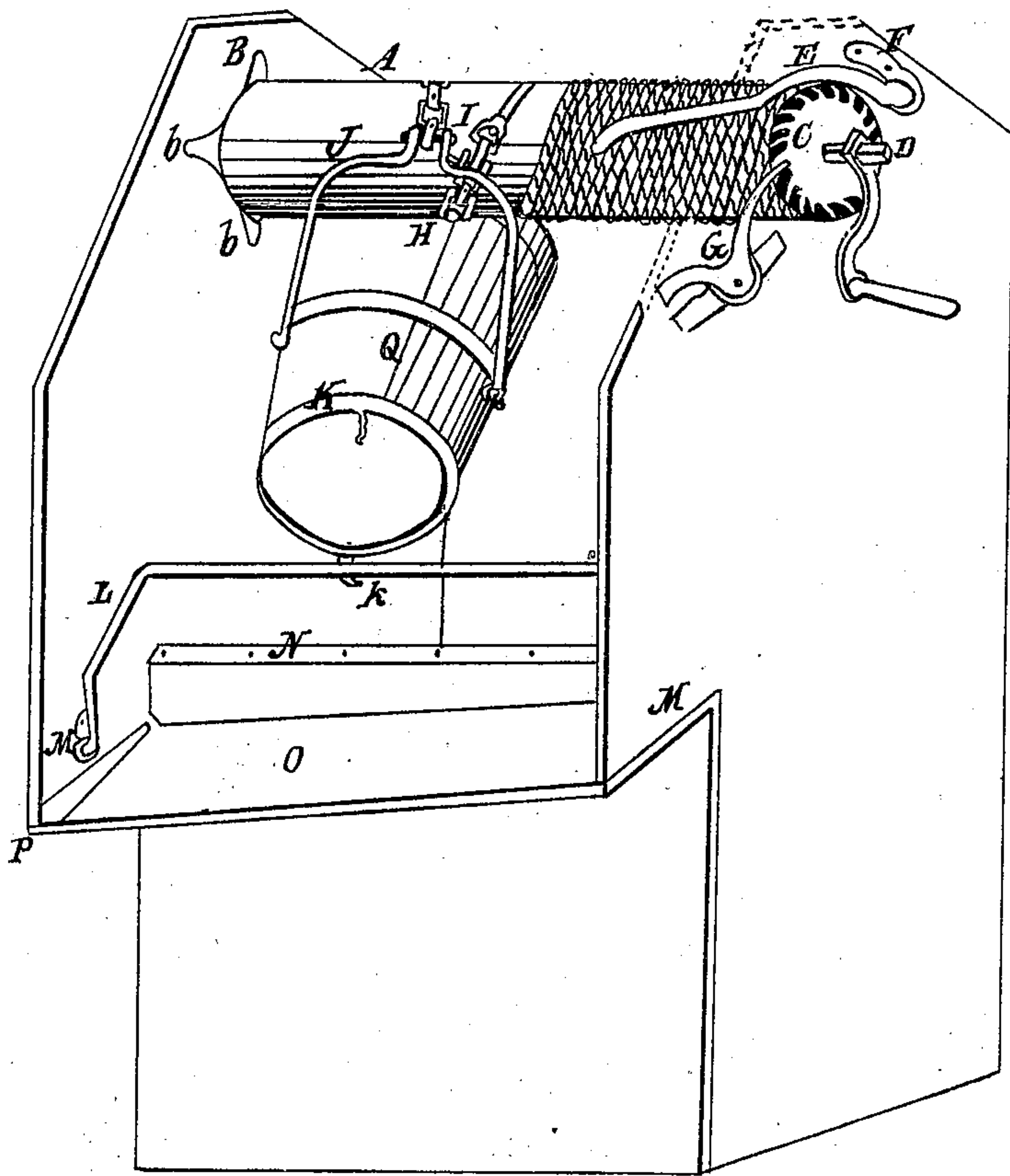


*A. F. Gray,*  
*Windlass Water Elevator.*  
*N<sup>o</sup> 34,629.      Patented Mar. 11, 1862.*



*Witnesses.*

*Geo. Kelley*  
*John J. R. Patrick*

*Inventor.*

*Alexander Farchar Gray.*

# UNITED STATES PATENT OFFICE.

ALEXANDER FARCHAR GRAY, OF BELLEVILLE, ILLINOIS.

## IMPROVEMENT IN WATER-ELEVATORS.

Specification forming part of Letters Patent No. 34,629, dated March 11, 1862.

*To all whom it may concern:*

Be it known that I, ALEXANDER FARCHAR GRAY, of Belleville, in the county of St. Clair, in the State of Illinois, have invented a new and useful Machine to be used in Drawing Water from Wells and Cisterns; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawing, making a part of this specification, in which the figure is a perspective view.

A is a cylinder or roller; B *b b*, arms of recoiling-plate; C, ratchet-wheel; D, gudgeon; E, brake; F, socket; G, click; H, flat chain; I, link cast in connection with a cup open at the bottom; J, bail; K *k*, curved ears attached to the mouth of the bucket; L, tilting-rod; M, projecting plate for the attachment of the tilting-rod; *m*, points showing the position of the right-hand plate; N, metallic plate covering the upper edge of the inside wall of the trough; O, bottom of the trough forming an inclined plane to the corner P; Q, bucket.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

I construct my well-box in the form shown in the accompanying drawings, using the scale which accompanies them as a guide for the proper construction of its several parts. Before I put the box together I screw permanently to each end of the cylinder the recoiling-plate (which is provided with four arms, three of which are seen at B *b b*, projecting beyond the circumference of the cylinder A) and the ratchet-wheel C, both being cast in metal in connection with their respective gudgeons. The design of the arms, as seen at B *b b*, is to recoil the rope when a very long one is required. I then attach the brake E, by means of the socket F, immediately in the rear of the ratchet-wheel C, so that it can be pressed at will on the ratchet-wheel. This is done with two common wood-screws, by which means the drilling of a hole through the brake and the attachment by means of a bolt and nut are dispensed with. The click I attach in the usual way, as seen at G. The flat chain H is constructed by having square links cast in malleable iron and then looped together with hoop-iron and riveted in the center. The link I, which is designed for the attachment

of the rope, is also cast in malleable iron, with the addition of a cup open at the bottom large enough to admit the passage of the end of the rope, which is then knotted and drawn back tight into the cup, forming a swivel, the metal cup protecting the knot from wear. The bail J, I form so that it can be connected with the chain in the same manner as the links. Either one of the curved ears K *k*, which are attached to the mouth of the bucket Q, is sure to catch on the tilting-rod L, as the flat chain H will not permit any other side of the bucket to be presented than the two sides which are furnished with the curved ears, when the bail J is attached to the bucket on the contrary sides. The tilting-rod L, I make out of round wrought-iron of suitable size, extending the full breadth of the well-box, and bent in the manner as seen in the drawing, slipping its bent ends into the holes of the projecting plates, as seen at M *m*. The tilting-rod, bent and attached in this manner, draws the bucket forward, emptying its contents as soon as either of the curved ears K *k* come in contact with it, which is sure to take place when the bucket is raised by turning the windlass, and it would be well enough to remark that the point of tilting by this arrangement is not confined to any particular spot on the tilting-rod.

I attach, by means of common screws, to the upper edge of the inside wall of the trough a metallic plate, as seen at N, broad enough to project over the wall about one-quarter of an inch, which prevents any rush of water from the trough back into the well.

The bottom of the trough O, I construct in such manner as to form an inclined plane, its lowest point being at the outer corner P, where a metallic spout is attached, which can be seen by referring to the drawing.

I use in the construction of the bucket Q a flat metallic bottom supplied with a common leather valve capped with metal.

As the form and relative size of the well-box are indispensable to the proper working of my machine, I have furnished a scale as a guide for its proper construction, which can be seen by referring to the drawing.

I am well aware that buckets have been provided with ears or hooks for the purpose of tilting them. This I do not claim; but

I claim—



1. The combination and arrangement of the cylinder A, with the recoiling-plate and arms B *b b*, ratchet-wheel and gudgeon G, the flat chain H, the mode of fastening the rope at I, the form of the bail J for the attachment of the chain H, the peculiar shape of the ears or hooks K *k*, adapted to the tilting-rod L, and the shape of the tilting-rod and its mode of attachment at M *m*.

2. The plate N on the upper edge of the inside wall of the trough, in combination with

the bottom of the trough O, inclining to the corner P, and the form of the box, using the scale which accompanies the drawing as a guide for its proper construction, the whole being constructed, arranged, and operating substantially as herein described, for the purpose set forth.

ALEXANDER FARCHAR GRAY.

Witnesses:

JOHN J. R. PATRICK,

GEO. KELLEY.