A. H. French,

Windlass Water Elevator.

No. 32,862. Patented July 23, 1861.

Fig. 2.

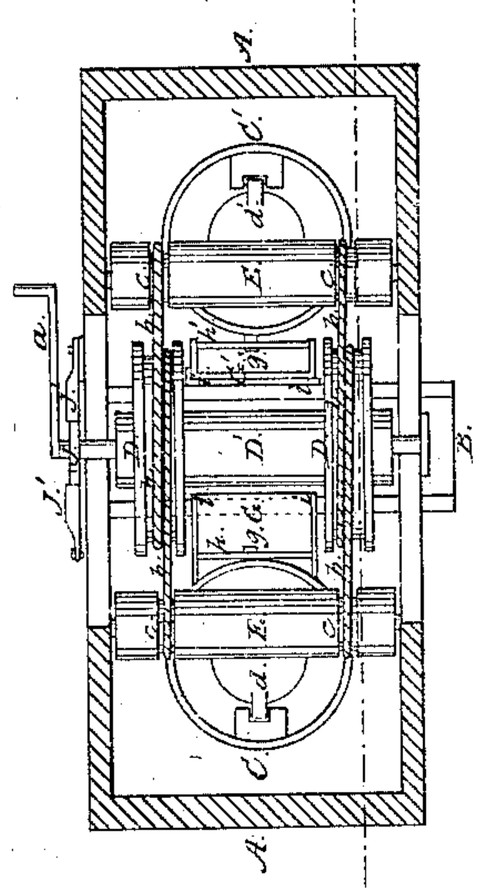
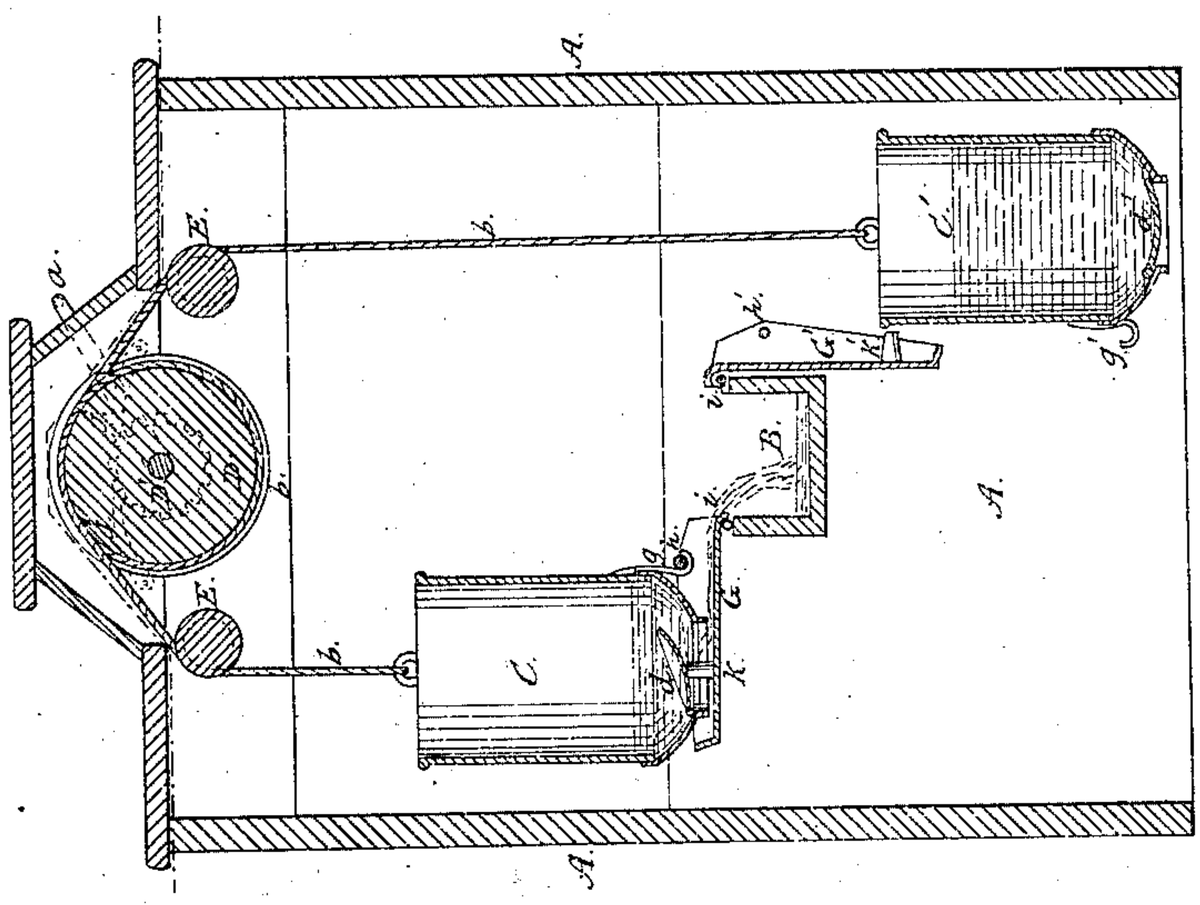


Fig. 1.



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UNITED STATES PATENT OFFICE.

A. H. FRENCH, OF PITTSFIELD, ILLINOIS.

WATER-ELEVATOR.

Specification of Letters Patent No. 32,862, dated July 23, 1861.

To all whom it may concern:

Be it known that I, A. H. FRENCH, of Pittsfield, in the county of Pike and State of Illinois, have invented a new and useful Water-Elevator; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1, is a longitudinal section through the well curb and the buckets, in the vertical plane indicated by the red line *x*, *x*, in Fig. 2. Fig. 2, is a section through Fig. 1, in the horizontal plane indicated by red line *x*, *x*.

Similar letters of reference indicate corresponding parts in both figures.

This invention relates to an improvement in filling and discharging water from well buckets whereby the water is automatically discharged from the buckets when they are drawn up to the desired height, and emptied into a main receiving trough.

The nature of my invention consists in combining with a bucket having a valve in its bottom which opens upward, a hinged or swinging trough constructed in such a manner and hinged to a main trough that when the bucket of water is elevated, a hook on the bottom of the bucket will raise the trough to the proper position, and a projection on the trough will open the bucket valve and allow the water in the bucket to flow into the main discharging trough as will be hereinafter described.

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

A, represents the well curb which is constructed in the usual manner and suitably covered, as shown in Fig. 1, of the drawings.

B, is the main trough for receiving water from two buckets C, C′, and discharging it into a vessel placed under the trough to receive the water.

D, D, are two grooved pulleys which are placed at a suitable distance apart and secured to the shaft D′, which has a crank *a*, on one end, by means of which the pulleys are rotated. Ropes *b*, *b*, pass once around their respective pulleys D, D, and are attached to the short side handles on the top edges of buckets C, C′. The rates *b*, *b*, also pass over the guide rollers E, E, and run in grooves *c*, *c*, *c*, *c*, formed in these rollers, which grooves keep the ropes at the same distance apart in raising and lowering the buckets, while the rollers keep the buckets in their proper relative positions with respect to swinging troughs G, G′, so that the buckets will not fail to operate these troughs G, G′, when they are elevated.

The bottoms of the buckets have valves *d*, *d*, in their centers which valves cover quite large openings; and these valves *d*, *d′*, are suitably hinged to the buckets so that they will open upward, as shown in Fig. 1, of the drawings. These valves thus opening upward will retain water in the buckets, and when the empty buckets descend into the water in the well these valves *d*, *d′*, will open upward and allow the buckets to fill quickly with water, then while the buckets are being elevated the weight of the water in them will hold the valves *d*, *d′*, down tightly on the bottoms of the buckets.

The hooks *g*, *g′*, on the side of buckets C, C′, and near the bottoms of these buckets are used to elevate the free or swinging ends of their respective troughs G, G′, when the buckets are drawn up to the proper height. These troughs G, G′, are hinged at *i*, *i′*, to the sides of main trough B, as shown in Fig. 1, and when the troughs G, G′, are not acted upon by the bucket hooks *g*, *g′*, they hang in vertical positions so as to allow the buckets C, C′, to pass up between them and the sides of the curb A. These troughs G, G′, have cross rods or bails *h*, *h′*, attached to them at a suitable point and the troughs also have projections or lifting pins *k*, *k′*, attached to their upper surfaces in such positions with relation to their respective bails, *h*, *h′*, that when the hooks *g*, *g′*, on the buckets C, C′, catch under the bails *h*, *h′*, on the troughs G, G′, and raise these troughs to the position shown in Fig. 1, the pins *k*, *k′*, will lift the valves *d*, *d′*, in the bottoms of their respective buckets and allow the water in the buckets to flow over troughs G, G′, into the main trough B, when the buckets C, C′, are allowed to descend into the well the troughs G, G′, will hang down as before to be operated upon by the hooks *g*, *g′*, when the buckets are again elevated.

In the accompanying drawings two buckets are used, which being hung as described are operated so as to rise and descend alternately, that is to say, while one bucket C, is being elevated, the other C′, will descend, and fill while the former is discharging its contents. A ratchet wheel J, is keyed to the shaft D′, and on each side of this shaft D′,

a pawl J′, is pivoted to the frame of curb A. These pawls J′, J′, are used to retain the shaft D′, when it is desired to hold the buckets in any one position.

The operation of my invention is as follows: The buckets C, C′, hang on each side of the trough B, and they are prevented from turning around by the manner in which they are hung by the two cords *b*, *b*, running in grooves over the rollers E, E. The crank or winch *a*, is turned in one direction until the bucket C, is elevated to the position shown in Fig. 1, then if desirable this bucket C, may be retained in this position by engaging one of the pawls J′, with ratchet wheel J, until all the water has run out of it. While this bucket C is emptying, the bucket C′, will be filling with water, and when bucket C, is emptied the crank *a*, is turned in the opposite direction so as to elevate the full bucket C′, and lower the empty bucket C. When the full bucket C′, has been drawn nearly to its highest point the hook *g*′, on this bucket will catch under the bail *h*′, on the trough G′, and raise this trough to the position of trough G, represented in Fig. 1, and at the same time, the projection *k*′, on trough G′, will lift the valve *d*′, and empty the bucket of its contents. In this way the buckets C, C′, are alternately elevated and emptied and lowered and filled.

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

Constructing the well buckets with hinged valves *d*, *d*′, in their bottoms and hooks *g*, *g*′, on their sides, and combining with said buckets the hinged or swinging troughs G, G′, furnished with bails *h*, *h*′, and lifting pins *k*, *k*′, all arranged and operating substantially as and for the purposes herein set forth.

A. H. FRENCH.

Witnesses:
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