A. H. French,

Windlass Water Elevator.

No. 35,369. Patented May 27, 1862.

Fig. 3.

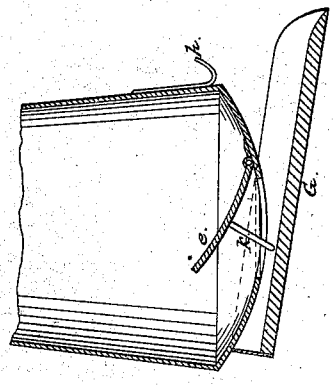


Fig. 2.

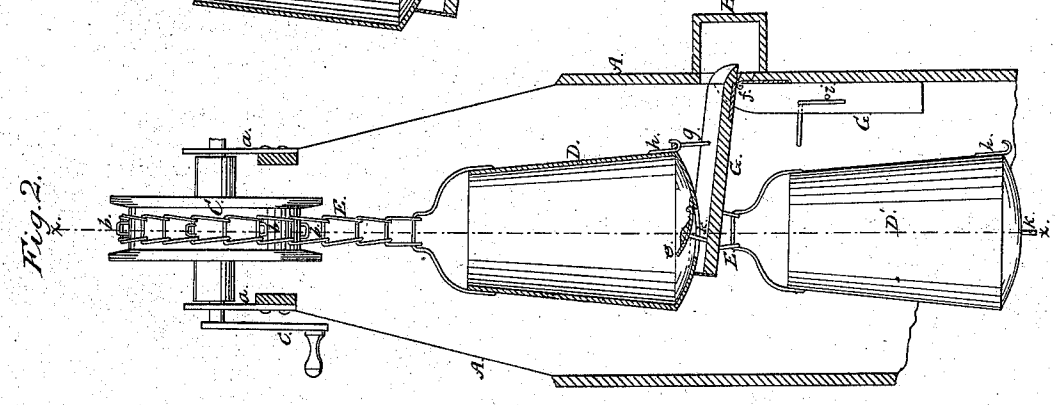
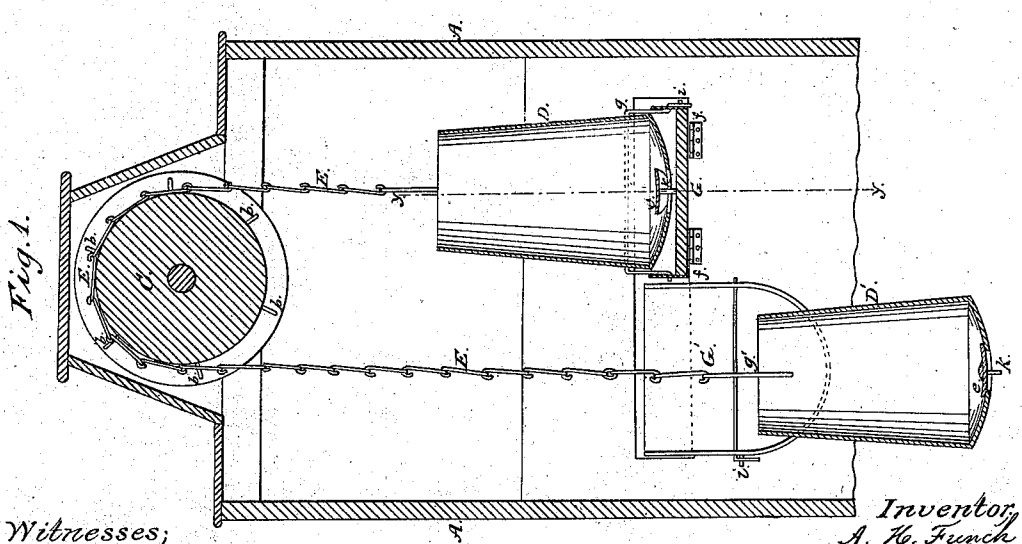


Fig. 1.



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UNITED STATES PATENT OFFICE.

A. H. FRENCH, OF PITTSFIELD, ILLINOIS.

IMPROVEMENT IN WATER-ELEVATORS.

Specification forming part of Letters Patent No. **35,369**, dated May 27, 1862.

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 certain new and useful Improvements in Water-Elevators; 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 apparatus in the vertical plane indicated by red line *x x* on Fig. 2. Fig. 2 is a transverse vertical section in the plane indicated by red line *y y* in Fig. 1. Fig. 3 is an enlarged sectional view of the bottom of one of the buckets, showing the valve in the bottom of the same.

Similar letters of reference indicate corresponding parts in the the several figures.

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 carries on one side a long trough, B, having at one end a discharge-aperture. On top of the framework, which is erected over the curb-box A, is a large pulley, C, having a deep annular groove formed in its periphery, and at regular intervals apart around the periphery of this pulley C are stop-pins *b b*, as shown in Figs. 1 and 2 of the drawings. The pulley C is mounted in bearings *a a*, and it is rotated by means of a crank, *c*, suitable pawls and ratchets being employed and so attached to the shaft of pulley C as to enable a person to stop the buckets at any desirable point. These pawls and ratchets are not shown in the drawings, as they form no part of my invention.

D D′ are two well-buckets, which are hung from the pulley C by a chain, E, that passes from the bail of one bucket, D, over the pulley C to the bail of the other bucket, D′, and this chain works in the groove in the circumference of pulley C, and receives the pins or spurs *d d* as the pulley is rotated back or forth, which pins *b b* prevent the chain E from slipping during the operation of raising and discharging water from the well.

The chain E is composed of links of round or square wire of a suitable size, bent at right angles, as shown in Fig. 2 of the drawings, and looped together, forming a broad flat chain, which, as the buckets are alternately raised and lowered into the well, prevents them from turning around; and as this kind of chain is not liable to twist or untwist the buckets will when elevated at a proper point never fail to operate the swinging troughs G G′, hereinafter described, and discharge the water contained in them.

The buckets D D′ are constructed with convex bottoms, and in the center of the bottom of each bucket is a circular opening which is covered by a hinged valve, *e*, opening upward or into the bucket. The valve *e* in the bottom of each bucket is suitably loaded to keep it down tightly on its seat when the bucket is full of water and being raised to the top of the well.

The buckets D D′ are quickly filled in consequence of the openings in their bottoms, as described, and as soon as the buckets descend to the water in the well their valves *e e* will open and admit the water; but as soon as an attempt is made to raise either bucket the valve will close tightly over the orifice through which the water entered and prevent the bucket from leaking.

G G′ are two troughs which are hinged just at the lower edge of a long opening through one side of the curb-box A, and hang in a vertical plane side by side when not in use—*i. e.*, when not operated upon by the buckets D D′. These troughs G G′ are hinged to the inside of the curb-box A at *f f*, (shown in Fig. 2 of the drawings,) so that when said troughs are brought in horizontal planes by raising their lower ends they will discharge water into the long trough B, which is outside of the curb-box A, as before explained.

The troughs G G′ are to receive the water from their respective buckets and empty it into the main trough B; and to this end each trough G G′ has a bail, *g*, attached to it at a point where the bail will be caught, in raising the bucket of water, by a hook, *h*, on the bucket, which hook will raise the trough until this trough is in a position slightly inclining toward the main trough B, when a pin, *k*, which is fixed to and projects down from the valve in the bottom of the bucket in question, will now strike against the bottom of the trough and raise the valve *e* sufficiently to allow the bucket to be emptied of its contents through the orifice in its bottom.

Both buckets D D′ operate in the same manner upon and discharge their water into their respective troughs G G′. The bails *g g′*, above referred to, are pivoted to the sides of the troughs G G′, and one end of each bail projects through one side of its trough, and is bent downward at right angles to the main portion of the bail, as shown in Figs. 1 and 2 of the drawings. These bent ends of the bails strike against pins *i i*, (which project from the sides of the swinging troughs,) when the troughs are hanging down, and these pins *i i* thus keep the bails in a proper position to be caught by their respective bucket-hooks *h h*. In this way, and by employing a flat chain, E, in conjunction with the discharging apparatus, as described, the buckets will not fail to be discharged of their water at the proper time. The pivoting of the bails *g g′* to the swinging troughs G G′, as described, allows the hooks *h h* on the buckets to catch and raise these troughs to their proper position without throwing the buckets out of their vertical position, and consequently there will be no water wasted or thrown back into the well. The chain E will also run easier on the pulley C, and the operation will be carried on with more regularity.

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

The flat or square linked chain E, the grooved pulley C, carrying stop-pins *b b*, buckets D D′, with hinged valves in their bottoms and hooks *h h* on their sides, and the hinged troughs G G′, with their pivoted bails *g g′*, all arranged and combined as and for the purposes herein set forth.

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Witnesses:
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