

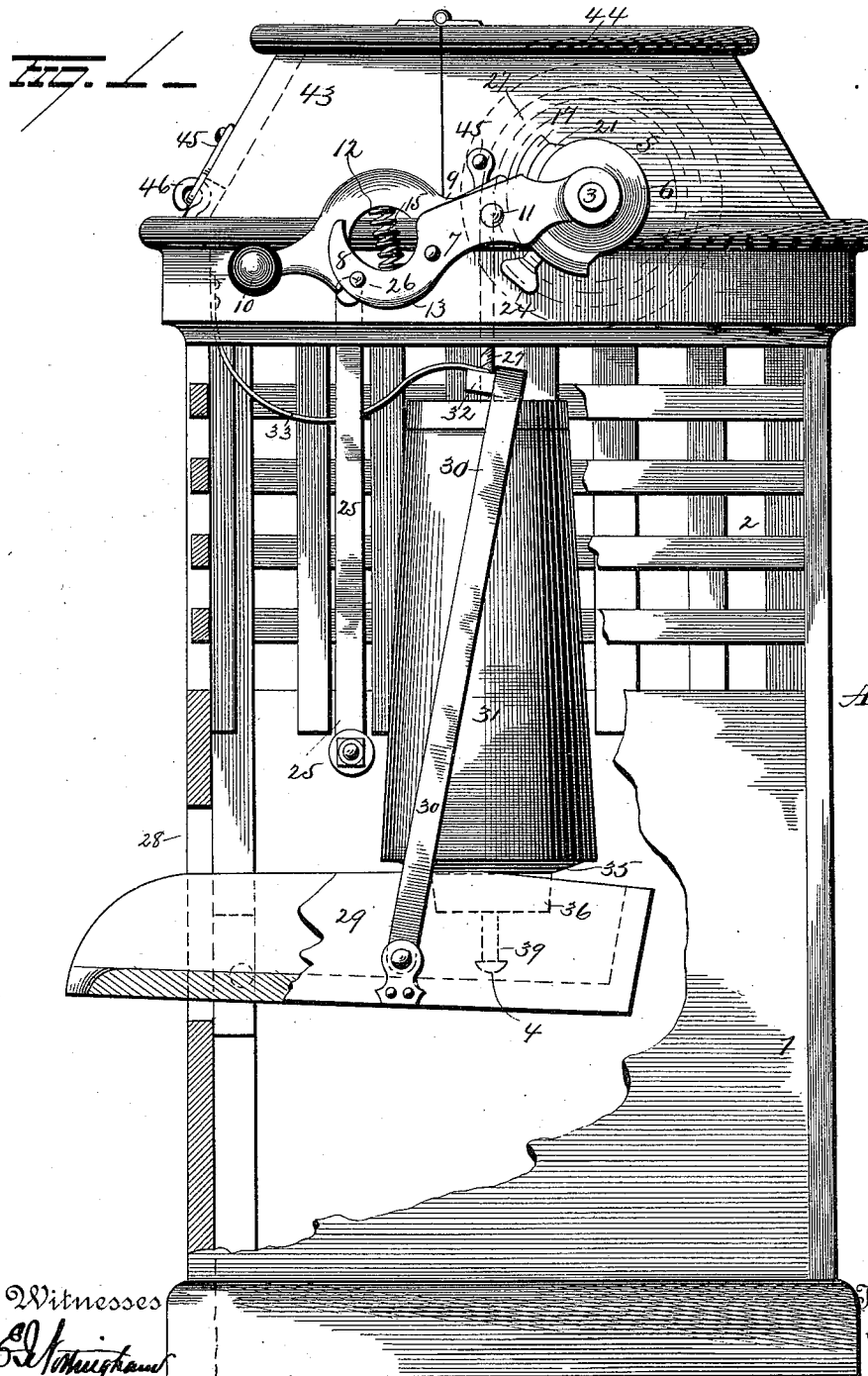
(No Model.)

3 Sheets—Sheet 1.

G. M. ATHERTON.  
WATER ELEVATOR.

No. 418,861.

Patented Jan. 7, 1890.



Witnesses  
*E. J. Downing*  
*G. F. Downing.*

Inventor  
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By his Attorney  
*H. A. Seymour*

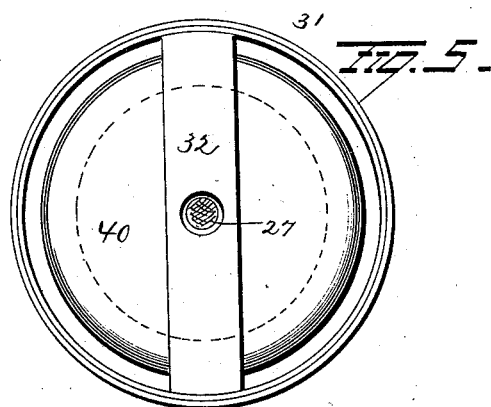
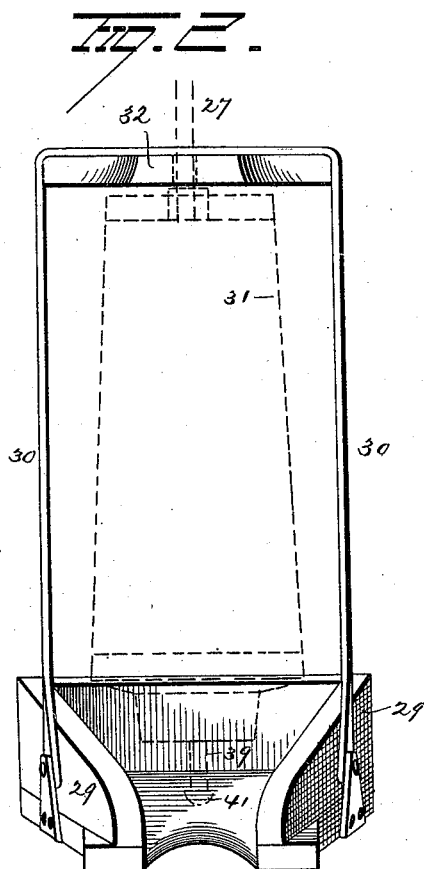
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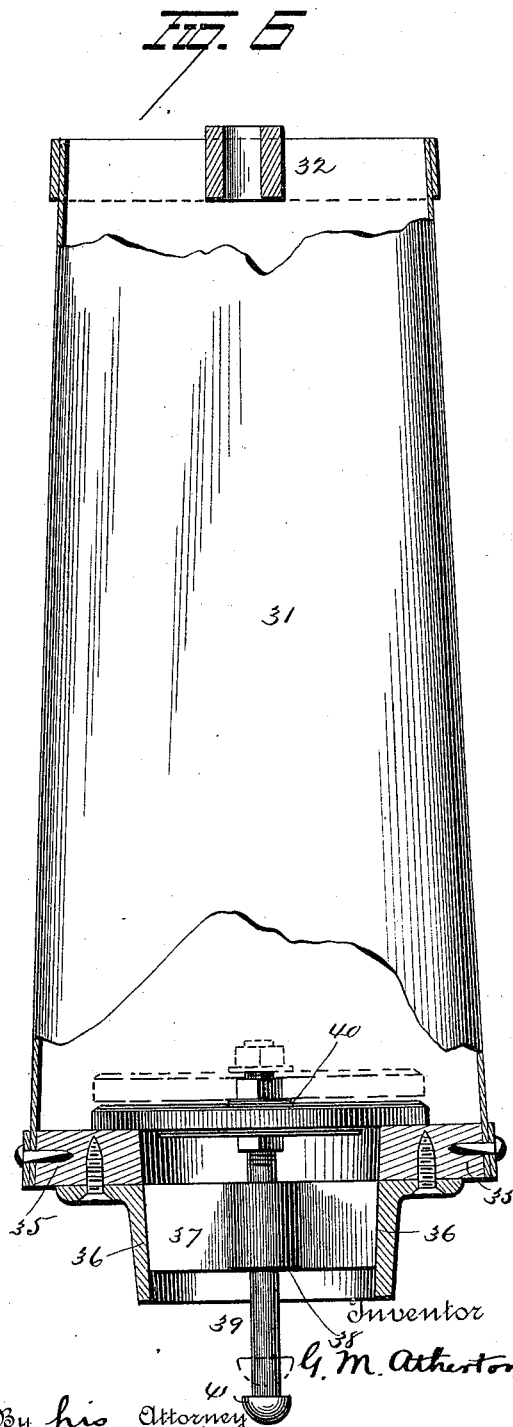
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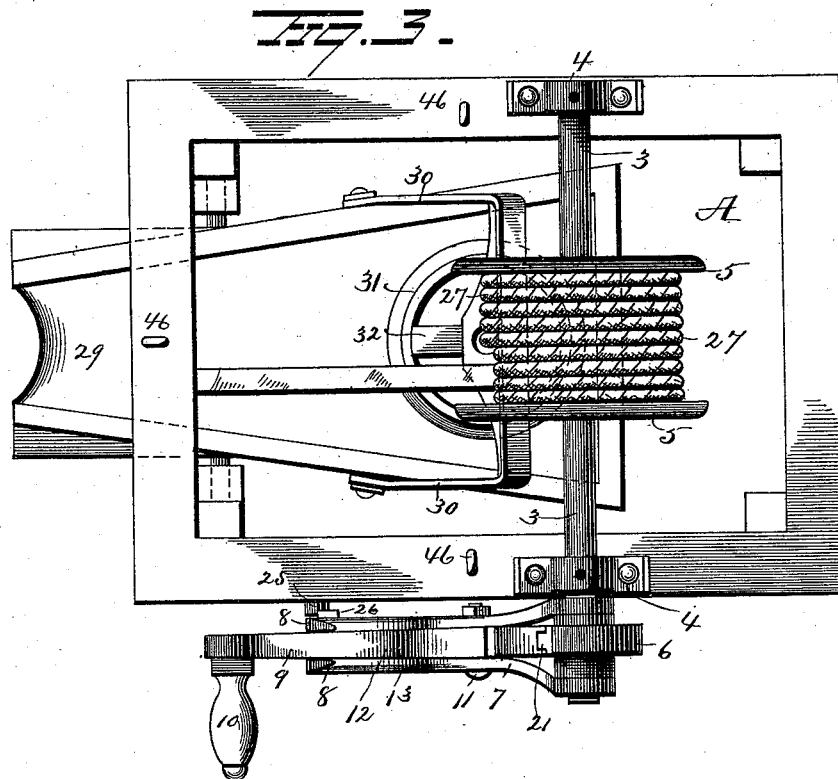
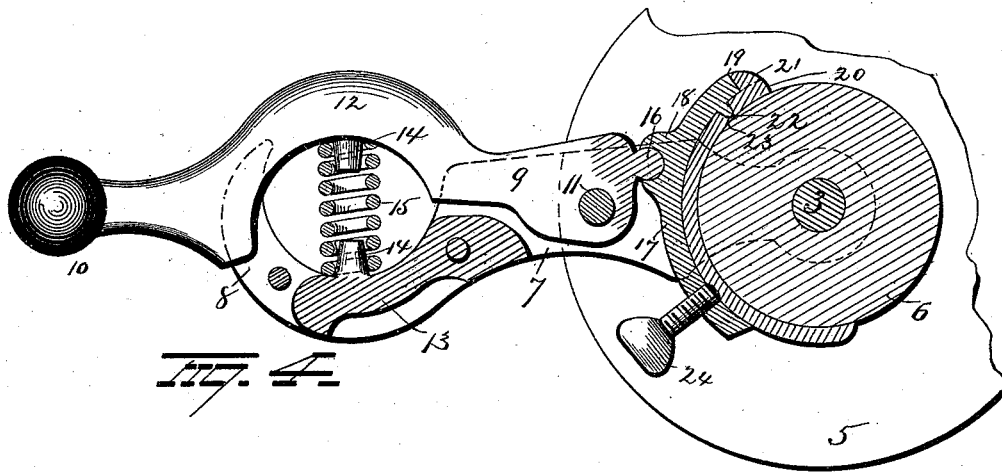
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3 Sheets—Sheet 3.

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# UNITED STATES PATENT OFFICE.

GARRICK M. ATHERTON, OF HOWARD, KANSAS.

## WATER-ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 418,861, dated January 7, 1890.

Application filed July 20, 1889. Serial No. 318,126. (No model.)

*To all whom it may concern:*

Be it known that I, GARRICK M. ATHERTON, of Howard, in the county of Elk and State of Kansas, have invented certain new and useful Improvements in Water-Elevators; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in water-elevators, the object being to provide means for facilitating the raising and lowering, as well as the filling and emptying, of a water-bucket, and, further, to provide for stopping the bucket in its descent at any point without any sudden strains or jars to cause wear or breakage of the rope or other parts; and a still further object is to provide against accidentally dropping the bucket, and the consequent rapid back action of the crank, which is a constant source of danger attending the use of ordinary windlass water-elevators; and, finally, a still further object is to provide for automatically keeping the curb sufficiently closed when not in use to prevent cats, dogs, or other animals, or objectionable objects from getting into the well.

With these ends in view my invention consists in a well-curb having a removable cover, a hinged spout, and reel in connection with a peculiar form of crank by which the bucket attached to the reel is raised or lowered or stopped at any position.

It still further consists in certain novel features of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view of the curb, a portion being broken away to show the hinged spout. Fig. 2 is a detached view of the spout and bail. Fig. 3 is a plan view of the crank and reel, parts being in section. Fig. 4 is a side elevation of the crank. Fig. 5 is a plan view of the bucket, and Fig. 6 is a vertical sectional view of the same.

A represents the curb or box which covers the well and furnishes a support for the water-elevating apparatus. This curb is preferably of rectangular shape, closed throughout the lower portion 1, and the upper portion 2

of slat or lattice work. The curb is of sufficient height to elevate the crank within convenient reach of the operator. Shaft 3 is journaled in boxes 4 4 on top of the curb, and on this shaft, about midway between the ends, the reel 5 is fixed. The shaft projects beyond the box at one end, and a friction-sheave 6 is rigidly secured to this portion in position to be operated upon by the clutching mechanism of the crank. Of this crank the numeral 7 represents the shank. This portion of the crank is loosely mounted on the reel-shaft 3 and spread apart at this end to straddle the sheave. At the opposite end this shank is preferably rounded outward and inward, where it terminates in a pair of horns 8 8. A lever 9, to the outer end of which the crank-handle 10 is secured, is fulcrumed at its inner end on the pintle 11. At a point 12, corresponding to the bend 13 in the shank 7, this lever bends in an opposite direction, and within these bends or rounded portions of the shank and lever lugs or similar devices 14 14 project toward each other and are adapted to receive the ends of a spiral spring 15, which is interposed between the shank and lever at this point to normally force them apart. A rounded cam projection 16 is formed on the end of the lever adjacent to its support or fulcrum, and the shoe 17, which conforms in shape to the periphery of the friction-sheave, is furnished on its back with a socket 18, corresponding in shape with the projection 16, and adapted to receive it and permit a free movement. The shoe is notched at its upper end to form a seat 19, and the friction-block 20, which fits within the shoe, has a lip 21 on its upper end, which projects outward to enter the seat 19. This connection, together with the pin 22, which extends loosely through a perforation 23 in the friction-block, forms a kind of pivotal support for the latter. A thumb-screw 24 in the shoe is provided as a means for increasing or decreasing the friction of the block by bearing at its end upon it when turned in and by withdrawing from it when turned in the opposite direction. Thus the further the friction-block is forced toward the sheave and away from the shoe the greater the friction produced, and the opposite adjustment has the opposite effect. Again, the effect of the spiral spring is to force

the contiguous parts apart as much as possible, and as a result keep the brake or friction block applied to the sheave. On the other hand, to force these parts together or contrariwise from the positions taken, due to the expansional action of the spiral spring, causes the withdrawal of the friction-block. It is of course important that means should be provided for easily and quickly producing these results, and to this end a spring-latch 25 projects from the curb in position to engage a projection 26 on the crank. This latch has an inclining or beveled end, and so has the projection, only they are oppositely beveled, and so that as the crank is turned to wind the rope 27 on the reel the projection and latch pass each other, due to the sloping ends and the yielding of the latch; but if the crank is reversed the projection abuts against the latch and the crank is stopped.

There is an opening 28 in the front or side of the curb, and the spout 29 is pivoted or hinged just inside of this opening, so that when it is lowered or in the vertical position which it normally assumes from its own weight it entirely closes this opening, and, furthermore, prevents its being opened by anything—such as a cat or dog—pushing upon it from the outside. A bail 30 is pivotally secured to this spout, near its large inner end, and the rope 27, to which the bucket 31 is attached, passes loosely through a hole 32 in it, in order that as the bucket is raised and, finally, when it reaches the top, strikes the bail at this point, the spout is raised to its proper position for the discharge of the water into a receptacle outside of the opening 28. A strap or similar device 33 extends from the inside of the curb to the bail to prevent the latter from lowering too far; or, in other words, to retain it in convenient position.

The bucket 31 also requires a brief description. It is preferably conical in shape, thus larger and heavier at the bottom, so that it sinks at once bottom end first upon reaching the water. The bottom 35 is open and a heavy ring 36, which acts as a sinker and valve rod support, is secured to the bottom. This ring is usually made of cast metal with a web 37 extending across it. This leaves ample space around it for the entrance of the water. A hole 38 in this web receives the valve-stem 39, and the valve 40 is secured to the upper end of this stem or rod. A head 41 on the lower end prevents the rod from slipping out. The hole 38 is sufficiently long to keep the stem always vertical. The action of this valve is very simple. The water itself forces it up until the head 41 strikes the web. This allows the water to flow in freely until the bucket is full. Then by turning the crank in the direction indicated by the arrow the bucket is withdrawn full of water. When it strikes the bail of the spout, it raises the latter to its correct position, and the contact of the spout against the stem of the

valve simultaneously opens the latter and the water discharges through the bottom of the bucket. The bucket is lowered by simply reversing the crank until the projection strikes the latch 25, so that the shank is held while the lever is depressed sufficiently to withdraw the friction-block from the sheave, as previously described.

The top is made in two sections 43 and 44, which are hinged together. These are held in place on the curb by means of hooks or similar devices 45, which enter screw-eyes 46 in the curb. One section 44 is intended to remain fast, and the other serves as a hinged lid, which may be raised if it is desired to look into the well at any time.

It is evident that slight changes might be resorted to in the form and arrangement of the several parts described without departing from the spirit and scope of my invention, and hence I do not wish to limit myself to the particular construction herein set forth; but,

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

1. The combination, with a shaft having a friction-sheave secured thereon, of a shank loosely mounted on the shaft, a lever pivoted to the shank and the two being held apart by an interposed spring, and a friction-block having loose connection with the lever in position to engage or release the sheave accordingly as the shank and lever are forced apart or together, respectively, substantially as set forth.

2. The combination, with a shaft having a friction-sheave secured thereon and a shank loosely mounted on the shaft and straddling the sheave at one end, of a lever pivoted to the shank, an interposed spring for normally holding them apart, a friction-shoe having loose connection with the lever, a loosely-connected friction-block, and a set-screw for adjusting the latter to increase or diminish the friction, substantially as set forth.

3. The combination, with a well-curb, a shaft journaled thereon, a reel rigidly secured to the shaft, a rope secured to the reel, and a bucket attached to the opposite end of the rope, of a friction-sheave fixed to the shaft, a shank loosely mounted on the shaft and straddling the sheave, a lever pivoted to the shank, a friction-shoe having a shoulder in its upper end, a friction-block held thereon by a lip and pin, a set-screw for adjusting the block, and a spring-latch adapted to lock the crank against any reverse motion, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

GARRICK M. ATHERTON.

Witnesses:

A. F. ELY,  
D. L. HAMAR.