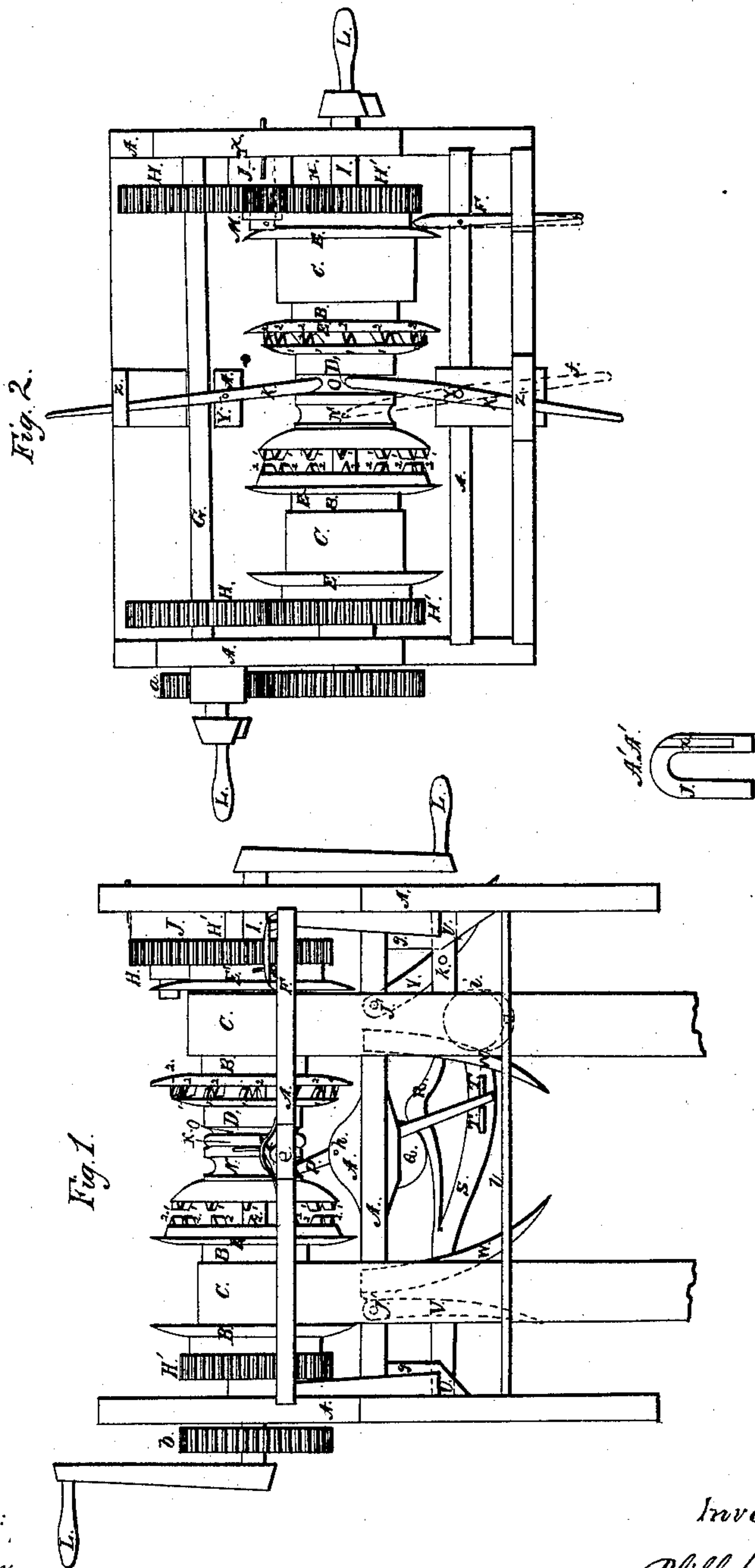


*P. H. Kimball,*

*Windlass Water Elevator,*

*N<sup>o</sup> 67,318.*

*Patented July 30, 1867.*



Witnesses:  
*Geo. L. Chopin.*  
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# United States Patent Office.

PHILIP H. KIMBALL, OF PROPHETSTOWN, ILLINOIS.

*Letters Patent No. 67,318, dated July 30, 1867.*

## IMPROVEMENT IN WATER-ELEVATORS.

The Schedule referred to in these Letters Patent and making part of the same.

### TO ALL WHOM THIS MAY CONCERN:

Be it known that I, PHILIP H. KIMBALL, of Prophetstown, in the county of Whiteside, and State of Illinois, have invented a new and useful Machine for Drawing Water from Deep Wells; 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 accompanying drawings and the letters marked thereon, making a part of this description, in which—

Figure 1 is a longitudinal elevation of my machine.

Figure 2, a plan view of the same.

The nature of my invention consists, first, in the use of a trip-bar arranged to slide in suitable guides placed at the ends of the machine, and in attaching a curved spring to the top of said bar for the purpose of holding it in position after it has been moved longitudinally far enough to operate a trip-lever used to throw drums in and out of gear with a compound-toothed wheel made to slide on the same shaft to which the drums are attached; and in connection with the above I use stationary inner guides and suitable levers, the latter being attached to the trip-bar by means of a bolt, and so arranged that when the buckets are drawn up between the guides and levers they will move said bar alternately back and forth, and thus reverse the motion of the drums upon which the buckets are hung; second, in arranging levers on both sides of the machine for the purpose of throwing either drum out and in gear when only one bucket is used to elevate water.

By means of this general arrangement convenient means are provided for readily drawing water from wells of great depth, and as the machine is geared to operate with two cranks, one having much the greatest power, the operator can choose either, according to strength or the amount of water to be elevated. Another important feature in my machine consists in the buckets being emptied and their motion reversed while turning the crank continuously in the same direction.

In order to give a correct understanding of my device, I have marked each corresponding part, where shown more than once, by the same letter, and will now give a detailed description.

A represents a substantial frame which supports the various parts of my machine, and also answers the purpose of a curb for the well, and may be made in any of the common styles desired, but I prefer that shown in the drawings, as most convenient. B are the common drums used for elevating and lowering the common buckets, attached to straps C in the usual manner. These drums are loosely attached to shaft I, and have the usual flanges, E, for keeping the belts or straps C in the proper position, and have also the teeth 2 2, &c., on the inner ends, in order that they may have their motion reversed by means of the toothed drum D, made to slide upon shaft I easily when operated upon either by levers K, figs. 1 and 2, or by the trip-bar S and trip-lever P, fig. 1. This drum D has the groove O, in which the ends of levers K are fitted so as to move it longitudinally on the shaft I far enough to alternately mesh into teeth 2 of drums B B, and the groove N for the trip-lever P, fig. 1, to operate in and move the drum in the same manner. The levers K are pivoted to the frame A by means of the pins Y, so as to allow the levers to swing in the slot formed by the parts z e, seen more clearly at fig. 1. S, fig. 1, shows what I term a trip-bar, the ends of which are fitted loosely in mortises made in the projecting parts g of the frame A, as seen by the dotted lines U, fig. 1, so as to move longitudinally far enough for the bent part of the spring R to pass under friction-roller Q, and occupy the same position on the opposite side from that shown in the drawing. The bar S can be made of wood if desired, but the spring R should be of steel, and be curved enough at the top to hold the bar S in position after having been moved far enough to trip the lever P. This lever is pivoted to A by means of pin h, fig. 1, the upper end extending into groove N, and the lower end downward and between the lugs T T, rigidly attached to the bar S. By this arrangement the longitudinal motion of bar S will carry the lower end of lever P so as to throw the drum D in or out of gear with either of the drums B. W shows what I term a guide, permanently attached to the frame above, and used to keep the bucket, shown by red lines i, in place when throwing the lever V outward so as to ship the bar S and throw the spring R on the other side of Q. The lever V is pivoted to frame A by pin J', and to bar S by pin k, so as to move easily. l, fig. 1, represents a rod used to catch the hook of the common bucket and turn the water out in the usual manner. The mouth of one of the buckets used is shown at i, in position to be emptied after being drawn up. It will be seen from this that the buckets passing alternately up



and between guides W and levers V, will ship the drum D, and allow the cranks L to be turned continuously in the same direction. At plan view, fig. 2, the gearing is shown more clearly than at fig. 1. Wheels H are attached to shaft G, wheels a M to independent shafts, and wheels b H' to the shaft I. J, figs. 1 and 2, represents a toggle key arranged with a tongue, X, to slide in a groove in frame A and hold the wheel M, figs. 1, 2, in gear with wheels H H' when both drums B are required for use. When only one drum is used for elevating water the toggle J can be drawn out, as seen by drawing A' A', and the wheel M thrown out of gear so as to allow drum B nearest to wheel M to turn without moving crank L, in which case the brake F will have to be used to check the descent of the bucket.

The operation is very simple when both drums B are used. All that is necessary is to turn either of the cranks L, and the machine will raise water without further care, but when one drum is used the drum D will have to be thrown out and in gear by one of the levers K.

Having thus fully described my device, what I claim, and desire to secure by Letters Patent, is—

1. The combination of the guides W, levers V, and bar S, all arranged to operate substantially as set forth.
2. The bar S, in combination with spring R, friction-roller Q, trip-lever P, arranged to ship the drum D, substantially as set forth.
3. The drums B, in combination with drum D and gearing b a H H' M, substantially as described.
4. The combination of drum B, wheel M, gearing H H', lever F, toggle J, all arranged and operating substantially as described.

PHILIP H. KIMBALL.

Witnesses:

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A. HAYWARD.