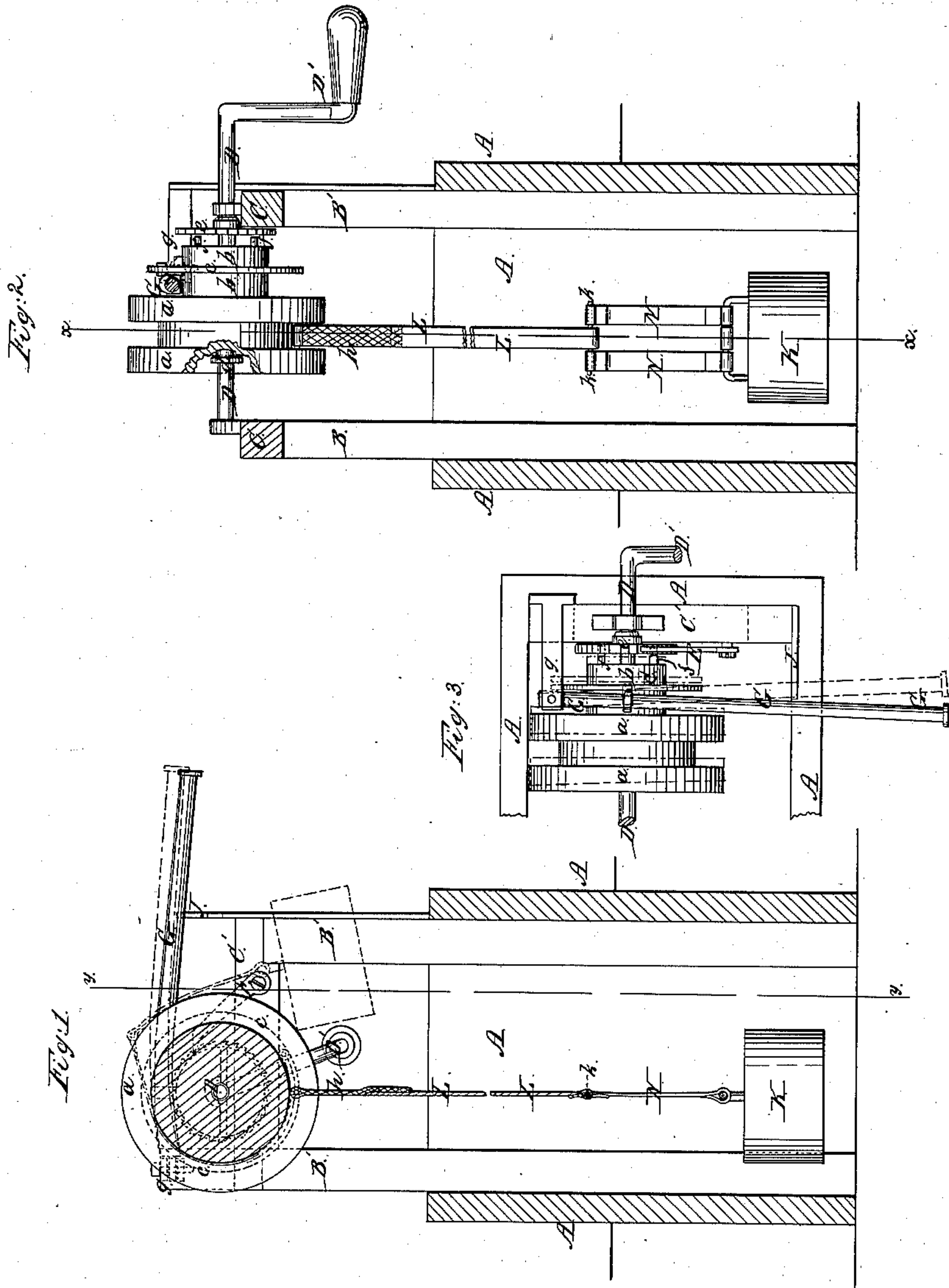


R. Bartle
Windlass Water Elevator.

N^o 31,942.

Patented Apr. 9, 1861.



Witnesses;
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UNITED STATES PATENT OFFICE.

RANSOM BARTLE, OF INDEPENDENCE, IOWA.

WATER-ELEVATOR.

Specification of Letters Patent No. 31,942, dated April 9, 1861.

To all whom it may concern:

Be it known that I, RANSOM BARTLE, of Independence, in the county of Buchanan and State of Iowa, have invented a new and useful Improvement in Operating Well-Buckets; 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 transverse section, taken in the plane indicated by the red line x, x , in Fig. 2. Fig. 2, is a longitudinal section, in the vertical plane indicated by the red line y, y , in Fig. 1. Fig. 3, is a top view of the mechanism for raising and lowering the well bucket.

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

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

A, is the well curb and B, B, B', B', are four uprights which are secured in the corners of curb A, and project up a suitable height above the curb.

C, C', are two horizontal cross bars connecting the ends of the uprights B, B, B', B', and which together with the uprights form a frame for supporting the drum shaft and mechanism for raising and lowering the well bucket.

D, is a shaft which extends across the top of said frame and has its bearings in suitable boxes resting on and secured to the bars C, C', as represented in Fig. 2 of the drawings; shaft D, has a winch or hand crank D', attached to one end, by means of which the shaft D, is rotated in winding up the bucket strap. This shaft D, is arranged on one side of the center of the curb as shown in Figs. 1 and 3, so that the bucket may have plenty of room to be drawn up above the curb if desirable. The drum consists of two flanges a, a , which are of the same diameter and a hub b , having an annular flange c . This drum is allowed to turn loosely on its shaft D, and it is also allowed to have an end play on this shaft D, between a fixed collar d , and a fixed ratchet wheel e . This ratchet wheel e , has two holes through it, and the end of hub b , has two pins f, f , projecting from it which correspond with the holes through the ratchet wheel e . The pawl E, which engages with the teeth of ratchet wheel e , is pivoted to the frame por-

tion c' , and prevents the shaft D, from rotating backward in winding up the bucket strap. This pawl E, is not disengaged from the ratchet wheel e , when the bucket is lowered into the well for the reason hereinafter described.

G, is a bar which is pivoted at one end to the over-reaching arm g . This bar G, passes across the hub portion b , between flange a , and flange c , and projects out a suitable distance from the end of cross bar C', to serve as a powerful lever. This bar G, has a flat portion formed on it where it touches the hub b , and the sides of flanges a , and c , so that the bar will have a good bearing on the hub b . The pivot of this bar G, will allow the opposite end of the bar to have a universal motion.

J, is a plate or arm which projects out from one of the uprights B, as shown in Figs. 1 and 3, and serves as a rest for the end of bar G, when this bar is not in immediate use.

The end play which the drum above described is allowed to have is sufficient to withdraw the pins f, f , from the holes in ratchet wheel e , and when these pins are not in the perforations in wheel e , the drum is free to turn on the shaft D, but when these pins f, f , are engaged with the wheel e , the drum can be rotated by turning the crank D'.

The bar G, is used as a friction brake for the drum when this drum is disengaged from the wheel e , to allow the bucket to descend into the well slowly.

The friction brake G, may be so weighted that the friction between this bar and the hub b , will be just sufficient to let the bucket descend with the desired velocity, or this brake may be operated with the hand to govern the descent of the bucket.

The rest J, serves to support the brake bar G, and to release the drum from unnecessary friction in drawing up the bucket.

The bucket which is represented by K, in Figs. 1 and 2 is hung by a flat metal strap or ribbon L, which has been found to answer a better purpose than a chain for the reason that it can be wound in a more compact state and takes up less space than a chain would, and the bucket is less liable to turn around in drawing it up with the flat metal strap. One end of this strap L, is attached in a suitable manner to a short elastic strap h , which is of the same width

as the metal strap and this strap *h*, is secured to the drum between the two flanges *a, a*. This elastic strap *h*, may be made of india rubber or of any other suitable substance combining strength with elasticity.

The opposite end of the metal strap, strip or ribbon *L*, is attached to the middle of a short rod *k*, and on each end of this rod two short straps or strips *N, N*, are secured, the lower ends of which are attached to the bucket in a suitable manner.

The elastic strip *h*, which is introduced between the drum and end of the metal strap *L*, is intended to prevent this strap *L*, from breaking should the bucket fall suddenly into the well.

The two metal strips *N, N*, which connect the ball of the bucket *K*, to the lower end of the strap *L*, passes over the peripheries of flanges *a, a*, when the bucket is nearly at the top of the well and prevents the bucket from turning by the twisting of the single strap *L*.

To raise the bucket *K*, from the well the drum is engaged with the ratchet wheel *e*, by moving the bar *G*, toward this wheel *e*, until pins *f, f*, on hub *b*, enter the perforations in wheel *e*; the end of bar *G*, is then

raised and rested on arm *g*. The pawl *E*, now being engaged with the ratchet wheel *e*, the crank *D'*, is turned so as to rotate the drum in the direction indicated by the arrow in Fig. 1, and as this drum is rotated it will wind up the strap *L*, between flanges *a, a*, and draw up the bucket.

When the water is discharged from the bucket the end of bar *G*, is moved off the rest *g*, and this movement of bar *G*, disengages the drum from wheel *e*, and the gravity of the bucket causes it to descend again into the well with a velocity which can be regulated by a greater or less pressure on the friction brake bar *G*.

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

The arrangement of the sliding treble flanged drum, constructed as shown with the brake lever *G*, shaft *D*, straps *h, L*, separated strips *N, N* and bucket *K*, all in the manner and for the purposes herein shown and described.

RANSOM BARTLE.

Witnesses:

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