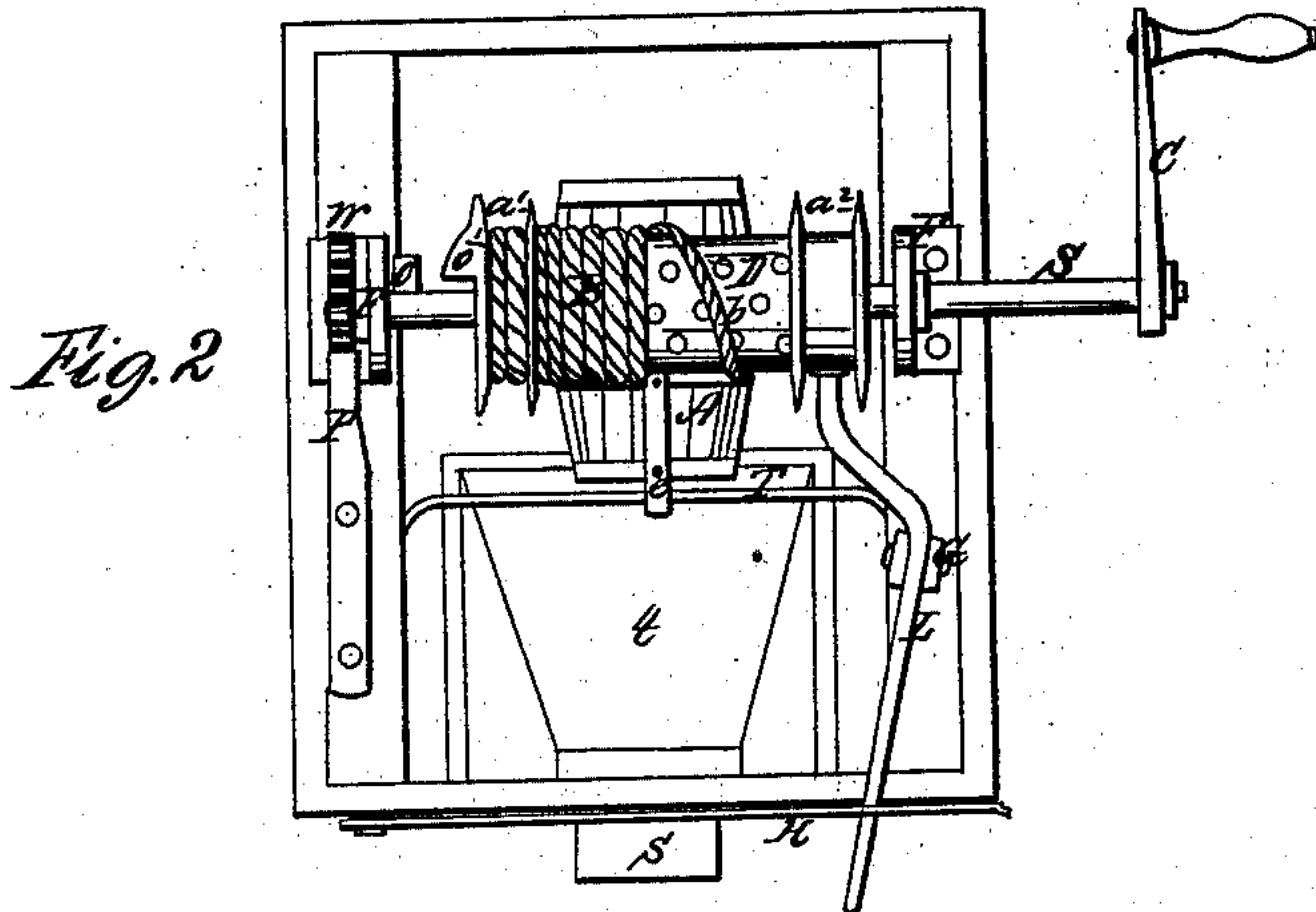
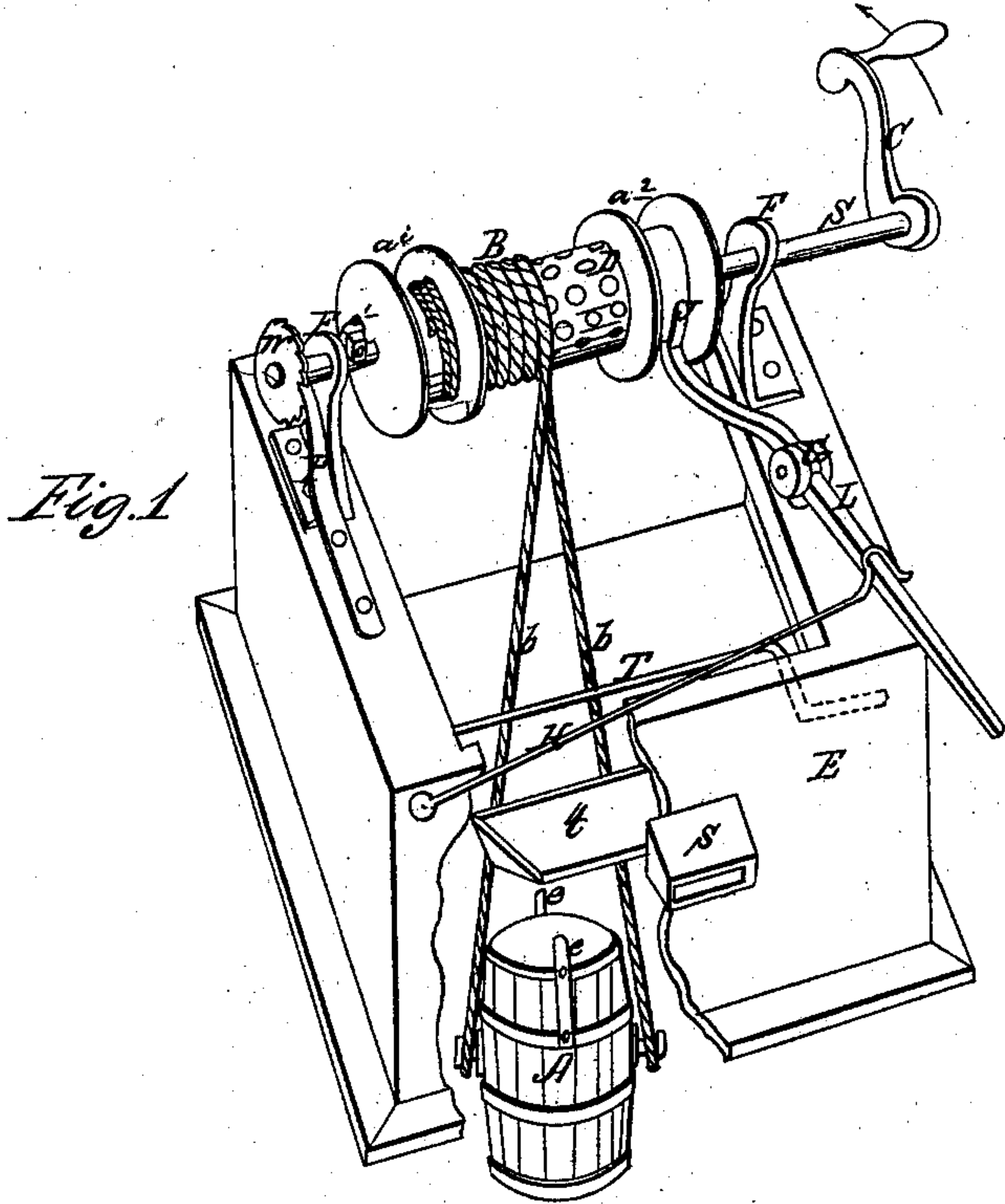


J. W. Crannell,

Windlass Water Elevator.

N^o 68,711.

Patented, Sept. 10, 1867.



Witnesses;
Sam. S. Lacey
Chas. L. Johnson

Inventor;
John W. Crannell

United States Patent Office.

JOHN W. CRANNELL, OF YORKVILLE, MICHIGAN.

Letters Patent No. 68,711, dated September 10, 1867.

IMPROVEMENT IN WATER-ELEVATORS.

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

TO ALL WHOM IT MAY CONCERN:

Be it known that I, JOHN W. CRANNELL, of Yorkville, in the county of Kalamazoo, and State of Michigan, have invented a new and useful Improvement on "Water-Elevators;" 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 annexed drawings, making a part of this specification, in which—

Figure 1 is a perspective view.

Figure 2 is a plane view.

Similar letters of reference indicate corresponding parts in both figures.

My invention applies to that class of "water-elevators" in which a single water-bucket, A, is raised and lowered by its attaching rope or chain B being wound or unwound on and from a drum-reel, D, the bucket being tilted and emptied into the discharging-spout s by any one of two ear-catches, e, attached at opposite sides of the bucket, at a right angle to the points of suspension to the bail. E represents the well-curb, of ordinary rectangular construction, and F two standards, with bearings, in which the drum-reel shaft S, provided with a crank, C, is hung. The drum-shaft carries an overhanging ratchet-wheel, W, with which a spring or jointed pawl, P, engages, to sustain the loaded bucket in the usual way, at any point in its ascent.

I usually construct the drum-reel D of cast metal, cored out in the centre, and into perforations, all round the periphery of the shell, as clearly seen in fig. 1. At each end of the said perforated drum a recess or groove is formed by circular projecting flanges; that at a^1 being designed for winding around it a little extra length of rope or chain, for facilitating the exact adjustment to the depth of the well. The other at a^2 , being intended for the reception of a combined brake-iron, J, and shifting-lever L, as will hereinafter be more fully explained. The drum-reel is fitted to turn loosely on its shaft, with end play, and is only designed to turn with it when moved by the shifting-lever, so that a clutch projection, o, on one end of the shaft, and a corresponding one, o^1 , on the head of the drum, are brought into working contact.

I curve the brake-iron J so that it will embrace enough of the periphery of the reel to create the necessary friction, and pivot it to the end of the lever, which I joint to a stud, G, provided with a pin, to be inserted in a socket in the well-curb, so that the stud will turn a little in its seat. A hooked rod, H, keeps the drum coupled with its shaft.

For reasons to be explained in describing the mode of operation, I do not in my arrangement suspend the water-bucket by an ordinary bail, but instead thereof connect two long branch ropes or chains to the main one, as at b b, and attach in any convenient way their ends to the side of the bucket, at such points as will allow it to fill and empty readily in the well. T represents an ordinary cranked tilting-rod, which is hung to the sides of the curb, and t s the usual trough and spout for discharging the water.

The operation is as follows: As the operator turns the crank in the direction of the arrow, the clutched drum will turn, when the full water-bucket will ascend, as in any winch, by the rope or chain being wound around the drum. When the forked or branch portions of the rope reach the drum, they will spread over it and cause one or the other side of the bucket to be properly presented, so that one of the ear-catches e will hook on the tilting-rod T, which will turn, and the bucket be drawn forward, tilted, and its contents discharged, substantially in the ordinary way. The operator then unhooks the shifting-lever, and presses it sidewise, so as to unclutch the loose drum from its shaft, when the empty bucket will descend into the well to be refilled, by reason of its weight causing the loose drum to turn on its then stationary shaft in a contrary direction from before, thereby unwinding the rope or chain. My object in connecting the bucket to the hoisting-rope by the long rope or chain-bail, is for the purpose of having a double bearing around the drum, as may be clearly seen in fig. 2, to insure the proper presentation of one or the other of the ear-catches to the tilting-rod, as aforesaid, and to prevent the oscillation of the bucket when the drum is unclutched by a sudden end motion. I make the drum hollow, and cast it with perforations to allow the air to circulate through it, and aid in drying and preserving the rope. As soon as the bucket begins to descend the operator presses downwards to apply the brake J, and regulate the motion of the empty bucket. As soon as the bucket is filled the lever is hooked fast, and the drum clutched for lifting the filled bucket as before.

I do not claim broadly lowering the single bucket without revolving the crank-shaft, for that is not new:

but I am not aware that any such mode as mine of connecting the hoisting-rope or chain with the bucket has ever before been used with a loose perforated drum, operated as herein described; therefore, what I claim as my invention, and desire to secure by Letters Patent, is—

I claim the combination of the loose flanged drum D and attached rope and bucket, with the crank-shaft S, clutches *o o'*, shifting brake-lever L, pivot stud G, and hook H, arranged, connected, and operated substantially as and for the purpose herein specified.

JOHN W. CRANNELL.

Witnesses:

SAM'L S. LACEY,

OTTO L. JOHNSON.