

A. A. HATCHER.
WINDLASS WATER ELEVATOR AND BRAKE MECHANISM.
APPLICATION FILED JAN. 26, 1912.

1,036,110.

Patented Aug. 20, 1912.

Fig. 1.

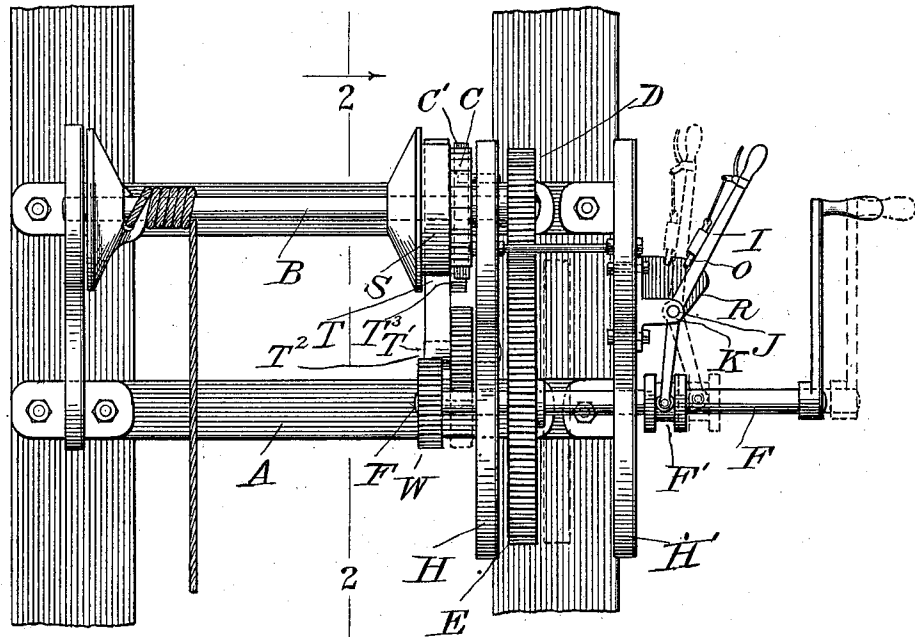


Fig. 2.

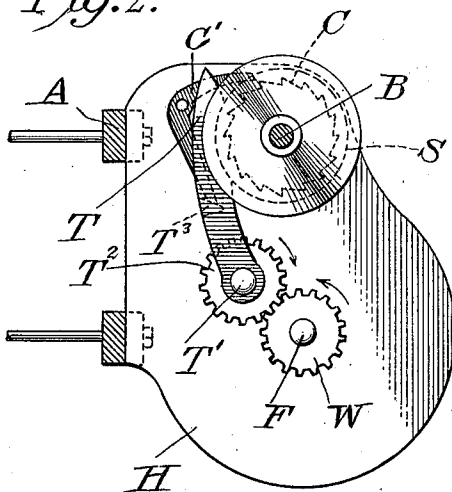
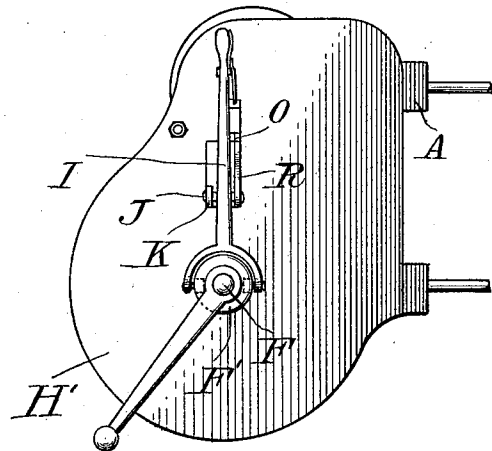


Fig. 3.



WITNESSES

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WINDLASS WATER-ELEVATOR AND BRAKE MECHANISM.

1,036,110.

Specification of Letters Patent.

Patented Aug. 20, 1912.

Application filed January 26, 1912. Serial No. 673,600.

To all whom it may concern:

Be it known that I, ALBERT ALAXANDER HATCHER, a citizen of the United States, residing at Beckley, in the county of Raleigh and State of West Virginia, have invented certain new and useful Improvements in Windlass Water-Elevators and Brake Mechanism; 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, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in windlass water elevators and brake mechanism therefor and comprises a simple and efficient device of this nature having various details of construction and combinations and arrangements of parts which will be hereinafter fully described, shown in the accompanying drawings and then specifically defined in the appended claims.

I illustrate my invention in the accompanying drawings, in which:—

Figure 1 is a front view of my invention, parts being shown in dotted lines in adjusted position. Fig. 2 is a sectional view on line 2—2 of Fig. 1, and Fig. 3 is an end elevation.

Reference now being had to the details of the drawings by letter, A designates the frame of the apparatus having a reel B with spindle ends journaled in said frame, and fixed to said reel is a ratchet wheel which is adapted to be engaged by means of a pawl C' pivoted to the frame to hold the reel from rotation in one direction. One end of the spindle of the wheel has fixed thereto a gear wheel D which is adapted to be engaged by a pinion E which is fixed to the longitudinally sliding shaft F, which latter is mounted to have a sliding movement in bearings in the parallel standards H and H' forming a part of the frame. Said shaft has an annular groove F' formed therein and adapted to be engaged by a grooved or forked end of the lever I, which latter is pivotally mounted upon a pin J carried by the lugs K projecting from the standard H'. A pawl, designated by letter O, is mounted upon the lever I and is adapt-

ed to engage one of the notches formed in the segment R which projects from the standard H' in order to hold the shaft F in one of its adjusted positions.

Fixed to the reel is a brake drum S adapted to be engaged by the brake shoe T which is pivotally mounted upon a pin T' carried by the standard H and a pinion T² is also mounted upon said pin T' and is fixed to the brake shoe and is adapted, when the shaft F is thrown so that the gear wheels E and D are out of mesh, to gear with the teeth of the pinion W which is fastened to one end of the shaft F, thus forming means whereby the operator, after having reeled up the rope or cable in the act of hoisting the bucket, may, by shifting the lever cause the two gear wheels to be drawn out of mesh and the brake applied and controlled by causing the shaft F to make a partial rotary movement in either direction. Said brake shoe T is provided with a lug T³ projecting from one edge thereof and is adapted to contact with one end of the angled pawl C' when the brake is applied in order to throw the pawl out of engagement with the teeth C.

The operation of the apparatus will be readily understood and is as follows:—The reel B is rotated by turning the handle to the right when the gears are in the positions shown in solid lines in Fig. 1 of the drawings. As the rope winds upon the reel, the dog or pawl C' turns idly upon the ratchet teeth C and will prevent the reel from reverse rotation. When it is desired to lower the bucket, the shaft carrying the handle is moved to the position shown in dotted lines in Fig. 1, throwing the gear W into mesh with the pinion T², at the same time throwing the gear E out of mesh with the pinion D. When the parts are, through the medium of the lever mechanism, thrown to the position shown by dotted lines in Fig. 2, a rotary movement to the left imparted to the handle, the lugs T³ upon the brake shoe coming in contact with one end of the pawl C', will cause the latter to tilt upon its pivot and its opposite end thrown out of contact with the teeth C, thus allowing the drum and the reel to rotate in unwinding the rope, the amount of friction intermediate the brake shoe and the drum being regulated by the operator having hold of the handle.

What I claim to be new is:—

1. A windlass water elevator and brake mechanism, comprising a rotatable reel, a brake drum and a gear wheel fixed thereto, a longitudinally sliding shaft mounted in the frame of the apparatus, a gear wheel fixed to said shaft, designed to be thrown into mesh with said gear wheel which rotates with the reel, means for moving the shaft longitudinally, a brake shoe, pinion wheels adapted to be thrown into mesh as said shaft is moved longitudinally, one of said pinions fixed to said brake shoe, and means for applying the brake as the shaft is rotated, as set forth.

2. A windlass water elevator and brake mechanism comprising a rotatable reel, a brake drum and a gear wheel fixed thereto, a longitudinally sliding shaft mounted in the frame of the apparatus, a gear wheel fixed to said shaft, designed to be thrown into mesh with said gear wheel which rotates with the reel, means for moving the shaft longitudinally, a brake shoe, pinion wheels adapted to be thrown into mesh as said shaft is moved longitudinally, one of said pinions fixed to said brake shoe, means for applying the brake as the shaft is rotated, a ratchet wheel fixed to the reel, a pivotal dog engaging the ratchet teeth and

adapted to be automatically thrown out of engagement with the ratchet wheel as the brake shoe is applied, as set forth.

3. A windlass water elevator and brake mechanism, comprising a rotatable reel, a brake drum and a gear wheel fixed thereto, a longitudinally sliding shaft mounted in the frame of the apparatus, a gear wheel fixed to said shaft, designed to be thrown into mesh with said gear wheel which rotates with the reel, means for moving the shaft longitudinally, a brake shoe, pinion wheels adapted to be thrown into mesh as said shaft is moved longitudinally, one of said pinions fixed to said brake shoe, means for applying the brake as the shaft is rotated, a ratchet wheel fixed to the reel, a pivotal dog normally engaging the ratchet wheel, a lug upon the brake shoe adapted to contact with one end of the dog as the brake shoe is applied to throw the dog out of engagement with the ratchet teeth, as set forth.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

ALBERT ALAXANDER HATCHER.

Witnesses:

J. S. LILLY,

WESLEY WILKES.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."