

No. 666,976.

Patented Jan. 29, 1901.

E. C. REITER.  
HOISTING MACHINE.

(Application filed Apr. 19, 1900.)

(No Model.)

2 Sheets—Sheet 1.

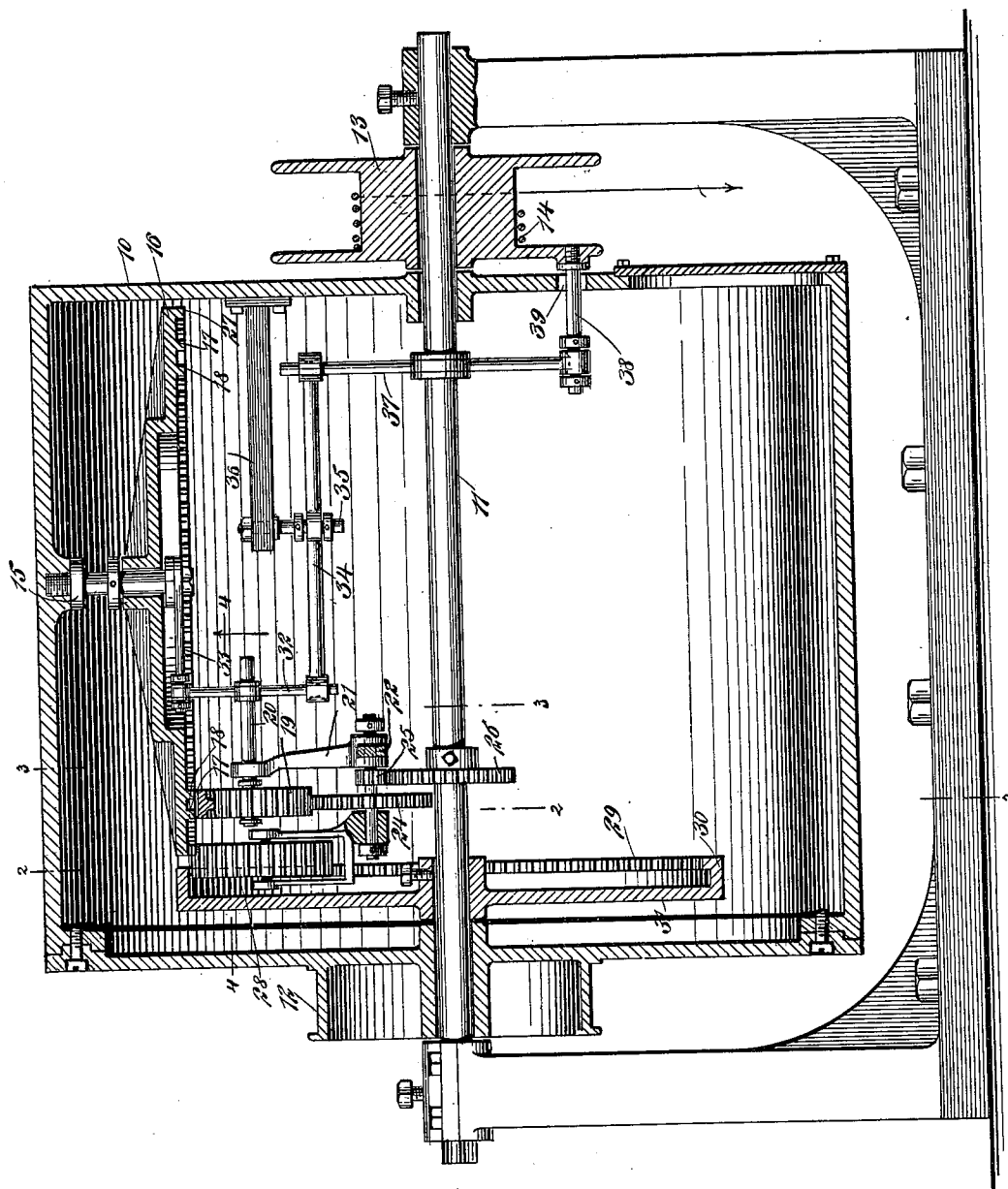


Fig. 1

WITNESSES:

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*E. C. Reiter*

INVENTOR

*Edward C. Reiter*

BY *Munn & Co.*

ATTORNEYS

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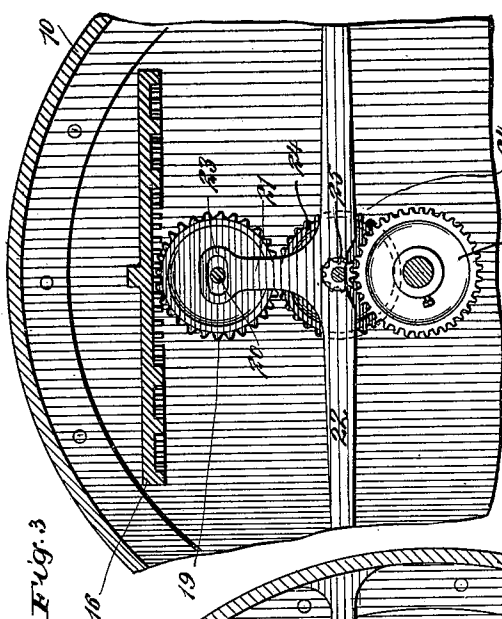


Fig. 3

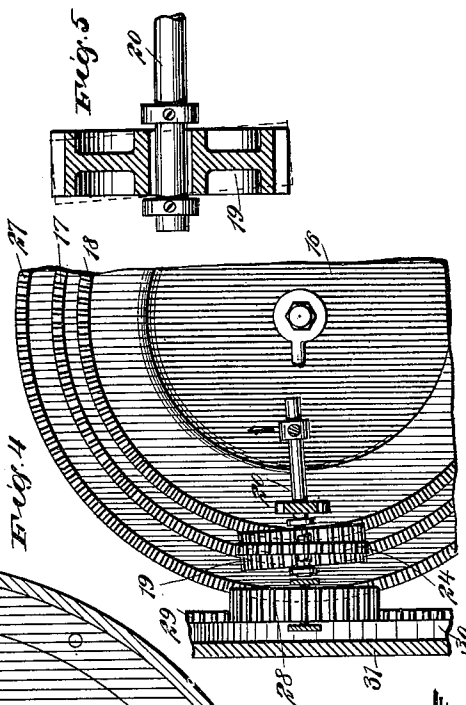


Fig. 4

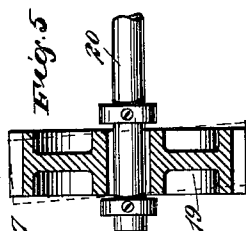


Fig. 5

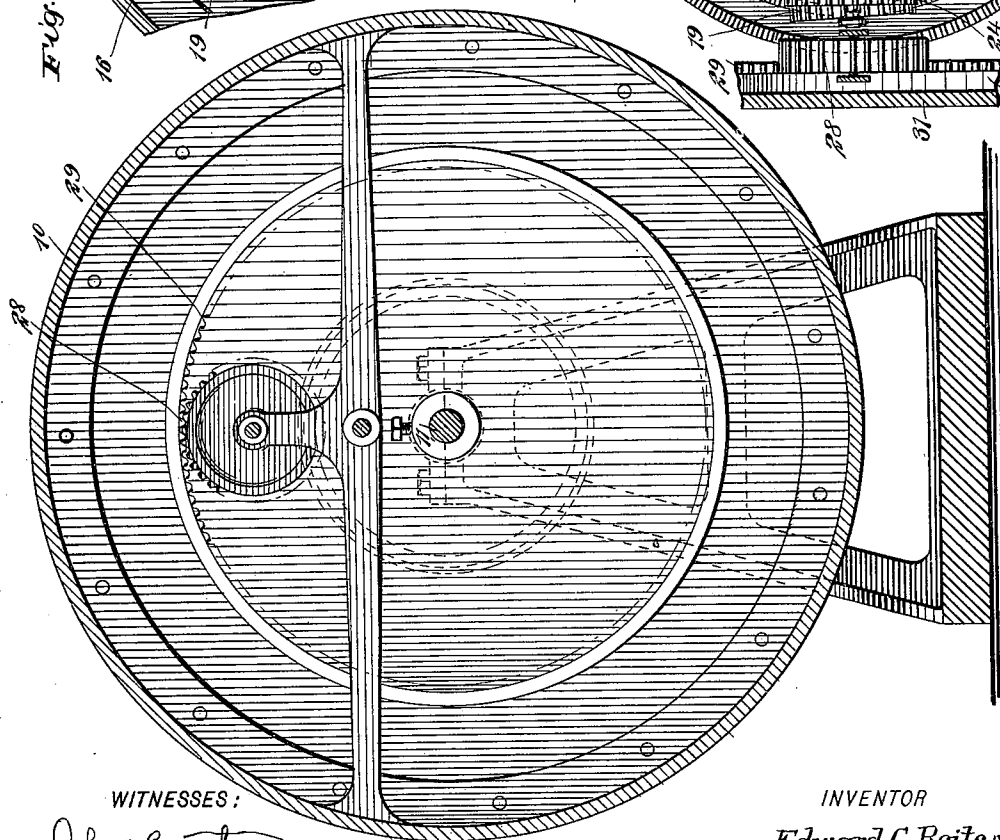


Fig. 2

WITNESSES:

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# UNITED STATES PATENT OFFICE.

EDWARD CHARLES REITER, OF ROCKVILLE, CONNECTICUT.

## HOISTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 666,976, dated January 29, 1901.

Application filed April 19, 1900. Serial No. 13,483. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD CHARLES REITER, a citizen of the United States, and a resident of Rockville, in the county of Tolland and State of Connecticut, have invented a new and Improved Hoisting-Machine, of which the following is a full, clear, and exact description.

This invention relates to improvements in hoisting machines or drums; and the object is to provide a hoisting-machine of simple construction and so arranged that when the drum is not rotating the load on the hoisting-cable may be supported and held at any desired point without danger of rotating the device to lower the load.

I will describe a hoisting-machine embodying my invention and then point out the novel features in the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a sectional elevation of a hoisting-machine embodying my invention. Fig. 2 is a section on the line 2 2 of Fig. 1. Fig. 3 is a section on the line 3 3 of Fig. 1. Fig. 4 is a section on the line 4 4 of Fig. 1, and Fig. 5 is a sectional view of a deflecting stop or retarding wheel employed.

Referring to the drawings, 10 designates a frame or casing mounted to rotate on a fixed shaft 11, and attached to one end of this frame or casing is a pulley 12, with which a band may be engaged, the said band leading from any desired source of power. Also mounted to rotate on the fixed shaft 11 at the opposite end of the frame or casing is a hoisting-drum 13, with which a cable 14 engages. Mounted to rotate on a stud 15, attached to the frame or casing, is a crown-wheel 16, having a double row of teeth 17 and 18, adapted to be engaged by a deflecting stop or retarding wheel 19. This wheel 19 is mounted loosely on an arm 20, which is supported in a bracket 21, attached to a cross-bar 22, the ends of which are secured to the sides of the frame or casing. The arm 20 passes through an elongated opening 23 in said bracket 21, so that said arm carrying the wheel may have a swinging motion, as will be hereinafter described.

The wheel 19 meshes with a gear-wheel 24,

the shaft of which is mounted in the bracket 21, and on the shaft is a pinion 25, which meshes with a circular rack 26, rigidly attached to the shaft 11. An outer annular row of teeth 27 on the crown-wheel 16 engages with a gear-wheel 28, also supported by a member of the bracket 21, and this gear-wheel also engages with a circular rack 29, formed on the interior of a flange portion 30 on a disk 31, rigidly attached to the shaft 11.

The arm 20 is connected to a lever 32, mounted to swing on an arm 33, extended from the stud 15. The opposite end of this lever 32 is connected to an auxiliary lever 34, pivoted at its center to a stud 35, extended from a bar 36, attached to one of the end walls of the frame or casing, as clearly indicated in the drawings. The opposite end of the auxiliary lever is connected to a rod 37, mounted to swing on the shaft 11, and from the opposite end of this rod 37 a pin 38 extends through a slot 39 in the end wall of the frame or casing and engages with one of the flanges of the drum 13 near its periphery. It will be noted that the rod 37 has a swinging connection with the pin 38.

In operation as the frame or casing is rotated to hoist or lower a load attached to the cable 14 the crown-wheel will be rotated through the agency of the rack 29 and the gear-wheel 28. The fixed circular rack 26 will impart motion to the gear-wheel 24, which will cause a movement of the stop or retarding wheel 19. Should it be desired to stop and hold the load at any desired point, upon stopping the motor having connection with the wheel or pulley 12 the load by drawing upon the drum 13 will cause it to move slightly, and this movement through the agency of the pin 38 will rock the rod 37, which in turn will rock the auxiliary lever 34, and this rocking of the auxiliary lever 34 will swing the rod 37, causing the wheel 19 to move at a slight lateral angle, as indicated by dotted lines in Fig. 5, whereby the teeth of the wheel 19 will bind upon the two rows of teeth 17 and 18 and also bind with the teeth of the wheel 24, somewhat after the manner of a screw-gearing, thus locking the parts from movement. When the frame is again rotated, however, the wheel 19 will be swung to its normal position, permitting the easy movement of the hoisting-drum.

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

1. In a hoisting-machine, a fixed shaft, a  
5 hoisting-drum mounted to rotate on said shaft, a frame mounted to rotate on the shaft, a crown-wheel carried by the frame, a gear-wheel mounted to deflect and to engage with  
10 means operated by a movement of the drum for causing the deflection of said wheel, substantially as specified.

2. A hoisting-machine, comprising a fixed shaft, a hoisting-drum mounted to rotate on  
15 the shaft, a frame mounted to rotate on the shaft, a crown-wheel mounted to rotate in the frame, a circular rack rigidly connected to the shaft, a gear-wheel engaging with said rack and also engaging with teeth of the crown-wheel, a stop gear-wheel for engaging with  
20 teeth on the crown-wheel, and means operated by a movement of the drum for deflecting said wheel to cause it to bind with the teeth of the crown-wheel, substantially as  
25 specified.

3. A hoisting-machine, comprising a fixed shaft, a hoisting-drum mounted to rotate on the shaft, a frame mounted to rotate on the shaft, a crown-wheel mounted in the frame,  
30 means for causing a rotary movement of said crown-wheel, a stop gear-wheel having a swinging motion and having engagement with two rows of teeth on said crown-wheel, a gear-wheel meshing with said deflecting-wheel, a  
35 fixed rack on the shaft for imparting motion to the last-named gear-wheel, and means operated by the winding-drum for deflecting the stop-wheel, substantially as specified.

4. A hoisting-machine, comprising a fixed  
40 shaft, a hoisting-drum mounted to rotate on the shaft, a frame or casing mounted to ro-

tate on the shaft, a crown-wheel arranged in the frame or casing, a stop-wheel engaging with rows of teeth on the crown-wheel, a swinging shaft on which said wheel is mount- 15 ed, a swinging rod to which the swinging shaft is connected, an auxiliary lever having connection with one end of said rod, a rod extended from the opposite end of said lever and having swinging connection with the 50 shaft, and a connection between said last-named rod and the hoisting-pulley, substantially as specified.

5. In a hoisting-machine, a fixed shaft, a hoisting-drum mounted to rotate on the shaft, 55 a disk mounted on the shaft and having an interior rack, a crown-wheel mounted in the frame, a gear-wheel meshing with said rack and also with teeth of the crown-wheel, a stop gear-wheel engaging with two rows of 60 teeth on the crown-wheel, a shaft on which said stop-gear is loosely mounted, the said shaft being mounted to swing, a gear-wheel engaging with the stop gear-wheel, a shaft 65 for said gear-wheel, a pinion on the shaft of said last gear-wheel, a circular rack fixed to the shaft and with which said pinion engages, a swinging lever to which the stop-gear shaft 70 is attached, an auxiliary swinging lever to one end of which the swinging lever is attached, a rod mounted to swing on the fixed shaft and having connection with the oppo- 75 site end of said auxiliary lever, and a pin connecting said rod with the hoisting-drum, substantially as specified.

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

EDWARD CHARLES REITER.

Witnesses:

AMALIA P. DICKINSON,  
LYMAN TWINING TINGIER.