

F. P. Canfield,

Elevator.

Nº 82, 799.

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Fig. 2.

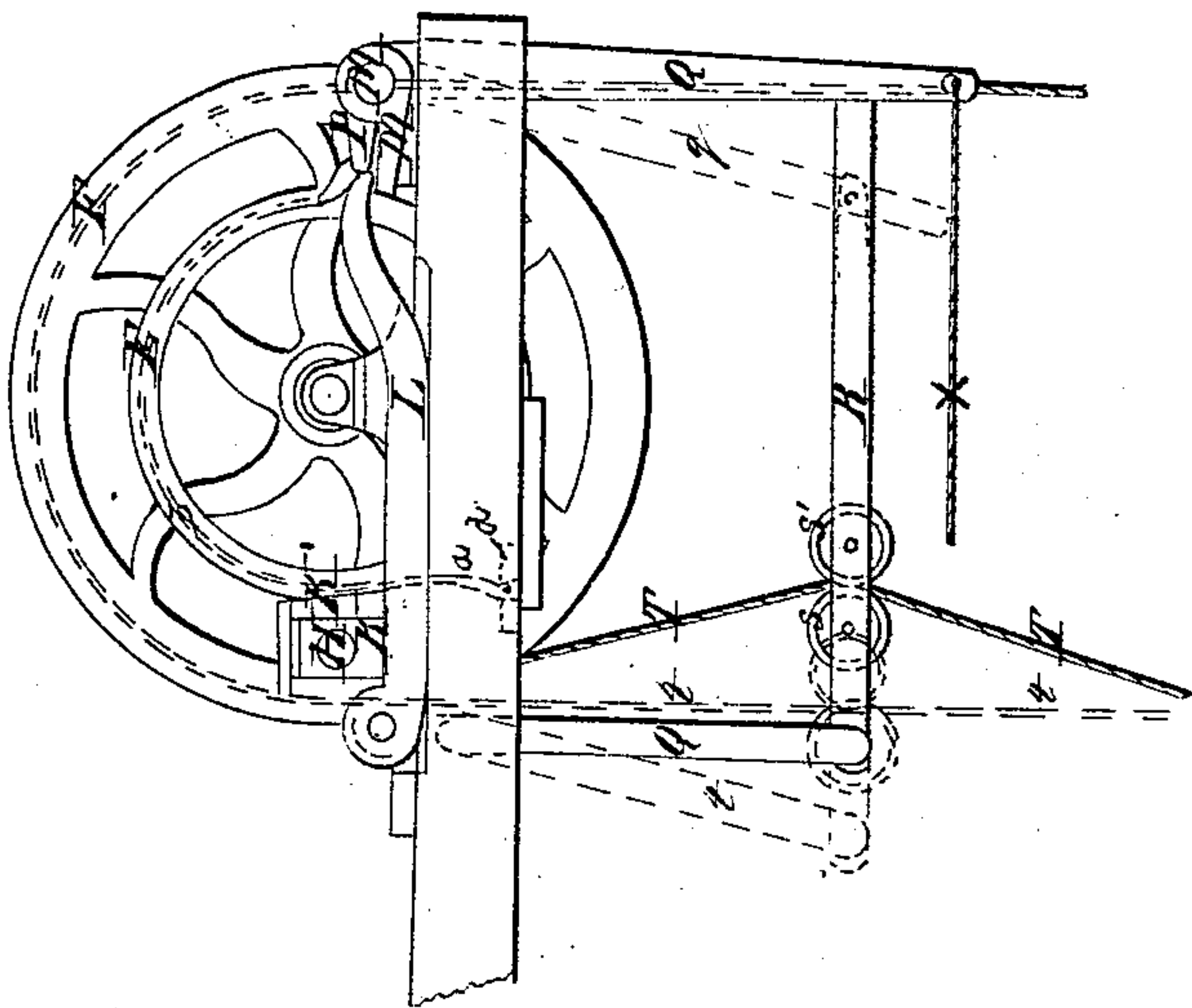
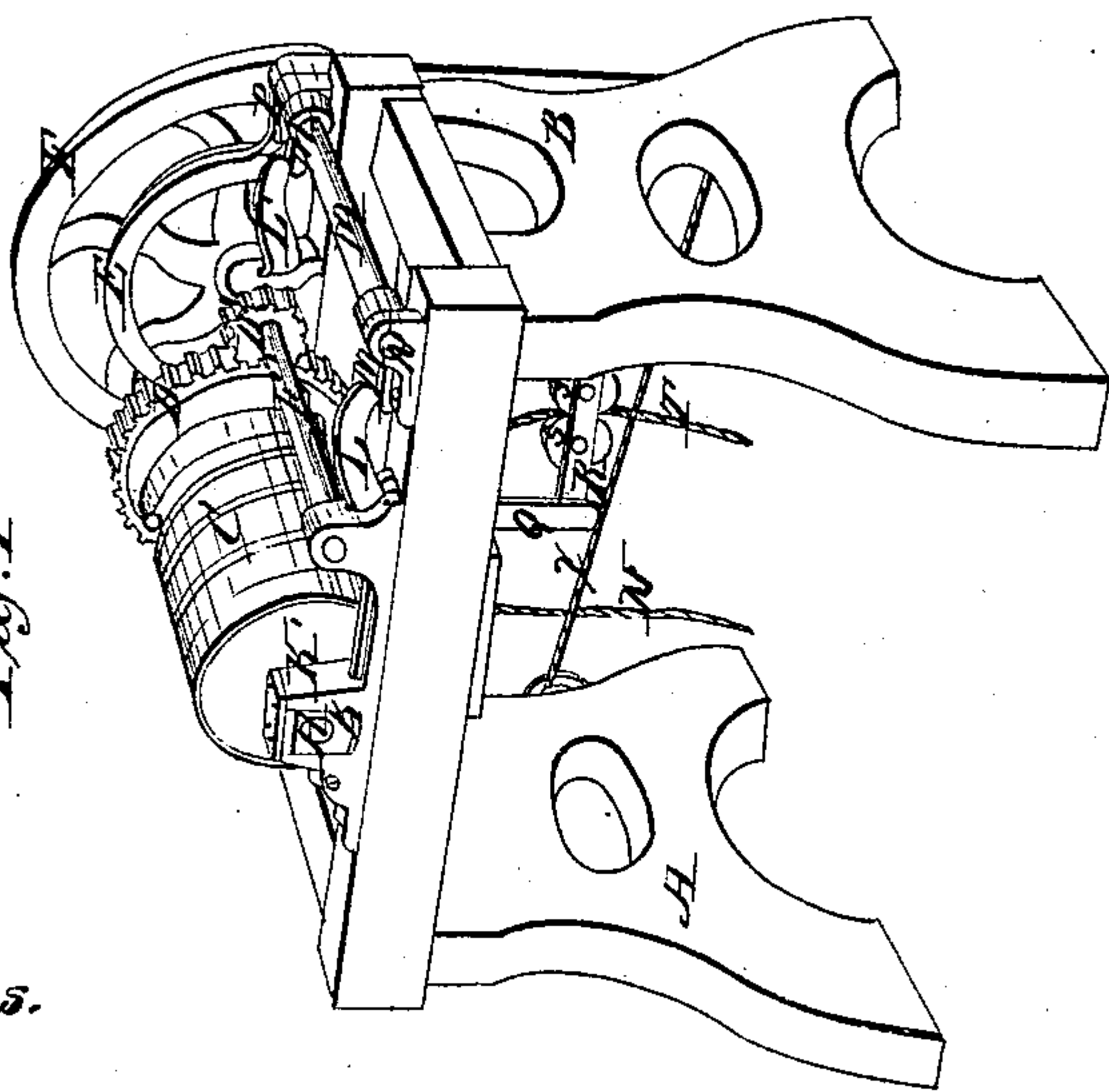


Fig. 1.



Witnesses.

Frank G. Parker
Alfred Bony

Inventor.

F. P. Canfield

United States Patent Office.

F. P. CANFIELD, OF BRIGHTON, MASSACHUSETTS.

Letters Patent No. 82,799, dated October 6, 1868.

IMPROVED HOISTING-APPARATUS.

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, F. P. CANFIELD, of Brighton, in the county of Middlesex, and State of Massachusetts, have invented certain new and useful Improvements in Hoisting-Apparatus; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

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

The nature of my invention consists—

First, in suspending the rope-barrel of a hoisting-apparatus upon levers, said levers being so arranged, in combination with a friction-brake device, that the weight on the hoisting-barrel shall, acting through said levers and brake-device, cause sufficient friction on the brake-wheel to hold it, so that the machine will always hold the suspended weight.

Second, in combining, with the above-mentioned brake-device, levers, so connected with the pull-rope, that, when sufficient power is exerted on said pull-rope to lift the weight, the friction will be taken from the brake-wheel.

Drawings.

Figure 1 is a perspective view.

Figure 2 is a vertical section.

A B represent a frame, to which all parts of the machine are attached.

C is the rope or winding-barrel, revolving on a journal, H. The journals H, at each end of the winding-barrel, run in boxes, which rest upon levers L L', but are supported laterally by the housing K'. The ends of the levers L L' rest upon short arms M' M', projecting from the shaft M. This shaft M has also an arm, P, to which one end of the brake-strap *a b c*, fig. 2, is made fast, the other end of the strap being attached to the frame of the machine, as shown at *d*, fig. 2. As the brake-strap passes over the brake-wheel, it will be seen that any pressure brought upon the levers L L' will act, through the arms M' M' and P, upon the brake-strap *a b c*, and thus cause friction upon the brake-wheel E.

Since the journals of the winding-barrel C rest upon the levers L L', it is obvious that the greater the weight upon C, the greater will be the friction exerted upon the brake-wheel.

The winding-barrel C is driven by the pinion D', which meshes into the spur-gear D, the pinion D' being driven by a rope-wheel, F, constructed in the usual manner.

I will now proceed to describe the second part of my invention, that is, the device for removing the friction on the brake-wheel E.

Q Q' are parallel levers, one of which, Q, is attached to the shaft M, and, through the shaft M, serves to operate the arm P, and thus to act upon the brake-strap *a b c*. The lever Q' is hung to the frame of the machine.

R is a parallel bar, carrying two grooved pulleys, S S'. Between these pulleys the pull-rope T passes. When there is no tension upon the pull-rope, the levers Q Q' will assume the vertical position, and allow the whole weight on the barrel C to rest upon the levers L L', and thus to act on the brake; but when force is exerted upon the pull-rope T, it will straighten, as represented by *t t*, and cause the levers Q Q' to assume the position represented by *q*, fig. 2, which action throws up the arm P, and loosens the brake-strap *a b c*, thus freeing the brake-wheel from all friction.

X is a rope, attached to the lever Q, for the purpose of relieving the brake-wheel of friction when it is desired to have the load lowered.

Various forms of mechanism might be employed, any one of which would effect a transfer of a portion of the weight from the barrel to the brake-device, for the purposes of this apparatus. I have contemplated several modifications, among them, an inclined plane, as a substitute for the levers L L', for that purpose. The

specific mode of effecting this transfer is not the essence of my invention, and therefore I do not limit myself to the particular device described for accomplishing that object.

I am aware that a number of hoisting-machines have been made, in which the weight, acting, not through the barrel and its journals, but through return-rope, &c., actuates some brake-device. I therefore limit my claim to the use of the weight on the journals of the winding-barrel for this purpose.

Claims.

What I claim as my invention, and desire to secure by Letters Patent of the United States, is—

1. The hoisting-barrel C, when supported independently of the fixed bearings K K', arranged and operating substantially as shown, and for the purpose set forth.

2. The levers L L', when so arranged, in relation to the winding-barrel C, as to convey a portion of the weight suspended therefrom to act upon the brake-device, substantially as described, and for the purpose set forth.

3. The general arrangement of the levers Q Q', bar R, and guide-rollers S S', when acted upon by the lateral motion of the pull-rope T, substantially as described, and for the purpose set forth.

F. P. CANFIELD.

Witnesses:

WILLIAM EDSON,
FRANK G. PARKER.