

C. E. MOORE.
Elevators.

No. 146,699.

Patented Jan. 20, 1874.

Fig. 1.

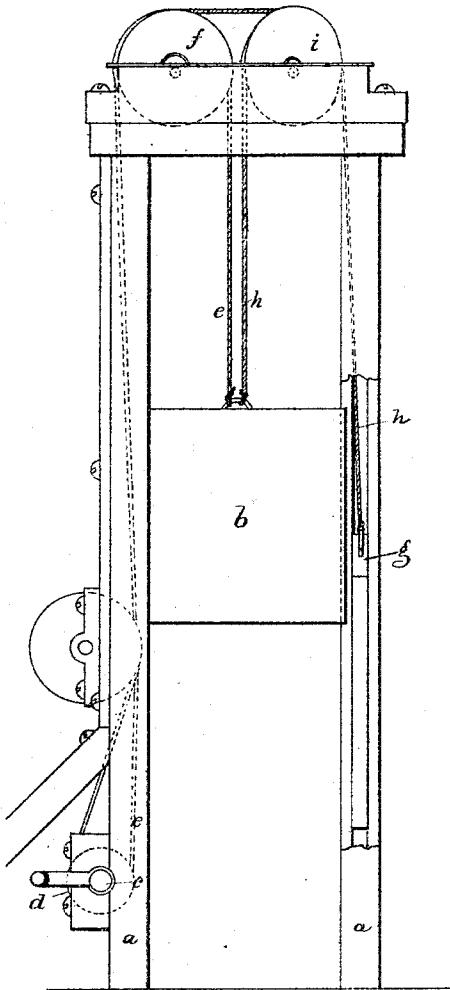


Fig. 2.

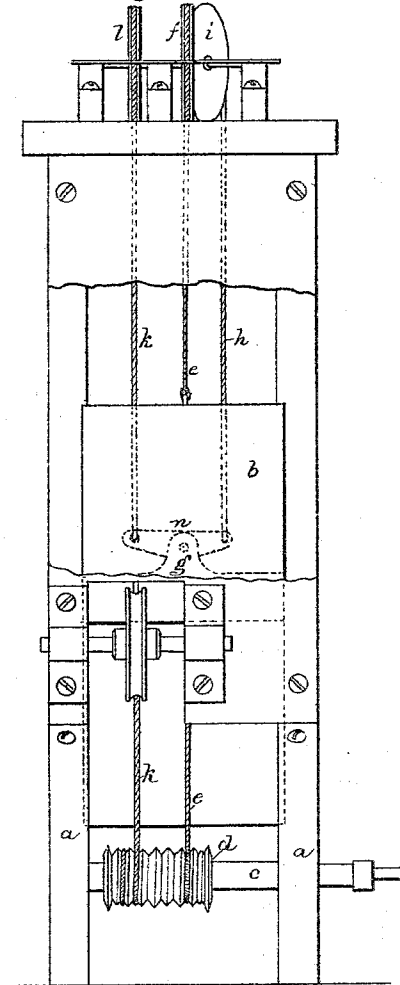
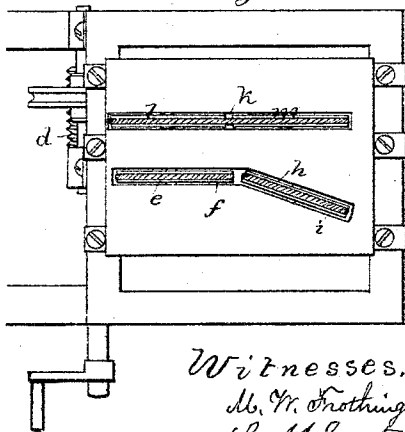


Fig. 3.



Witnesses,
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UNITED STATES PATENT OFFICE.

CHARLES E. MOORE, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN ELEVATORS.

Specification forming part of Letters Patent No. 146,699, dated January 20, 1874; application filed August 20, 1873.

To all whom it may concern:

Be it known that I, CHARLES E. MOORE, of Boston, in the county of Suffolk and State of Massachusetts, have invented an Improvement in Elevators; and I do hereby declare that the following, taken in connection with the drawings which accompany and form part of this specification, is a description of my invention sufficient to enable those skilled in the art to practice it.

The invention relates to that class of elevators in which a hoisting-drum is used upon which to wind the hoisting-rope.

In my invention I use a weight in counterbalancing the weight of the car; but, instead of supporting the car wholly by such weight, I extend a rope from the car over a sheave to the weight, and another rope from the weight over sheaves to the winding-drum, the latter rope winding upon the drum in a reverse direction to the hoisting-rope, which extends from the car over a sheave to the winding-drum.

By such arrangement the weight of the car is distributed between the counterpoise-weight and the drum, and in such manner as to make the whole mechanism run easily and with perfect balance, and to insure the descent of the car by its weight, and its rise without slackening of either of the ropes.

My invention consists in thus supporting a car partly by weight and partly by a rope extending around the winding-drum in a reverse direction to the hoisting-rope, or in an elevator having the counterbalancing mechanism thus arranged.

The drawing represents a construction embodying my invention.

Figures 1 and 2 show the mechanism in elevation. Fig. 3 is a plan of the same.

a a denote the posts or frame of the hoistway; *b*, the car; *c*, the drum-shaft, and *d* the rope-winding drum. From the top of the car the winding-rope *e* extends up and over a sheave, *f*, and thence down to the drum *d*. To transfer the

strain upon the rope, which it would have to bear if the weight of the car hung wholly upon the rope, and to lessen the weight to be raised, and the weight to fall, a counterbalancing-weight, *g*, is used, this weight being connected to the car by a rope, *h*, which extends from the car to the weight over a sheave, *i*; but, as it is not desirable to have the whole weight of the car counterbalanced by this weight, I also extend from the weight another rope, *k*, which passes from the weight to and over sheaves *l m*, down to the front of and around the drum *d*, winding thereupon in a direction reverse to the winding of the hoisting-rope *e*.

The connection of the ropes *k h* to the weight may be direct, but is preferably made through the intervention of a lever, *n*, pivoted to the car, and having the respective ropes joined to its respective arms. Without the lever the weight of the car will be borne equally by the weight *g* and the drum, or the weight employed will be about equal to half the weight of the car; but by means of the lever the weight may be distributed unequally, and is preferably so distributed as to make the weight nearly counterbalance the car, leaving enough weight to be borne by the drum to insure descent of the car and prevent slackening of the ropes.

Two or more ropes may extend from one of the lever-arms to the car, or there may be only one, as seen in the drawing.

I claim—

In combination with the car and its hoisting rope or ropes and drum, a counterbalance-weight connected to the car and to the hoisting-drum by separate ropes, respectively fastened to the opposite arms of a lever, *n*, joined to the counter-balance, substantially as described.

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Witnesses:

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