(No Model.)

G. H. REYNOLDS.

MEANS FOR CONTROLLING ELEVATORS.

No. 456,124. Patented July 14, 1891.

Fig. 1.

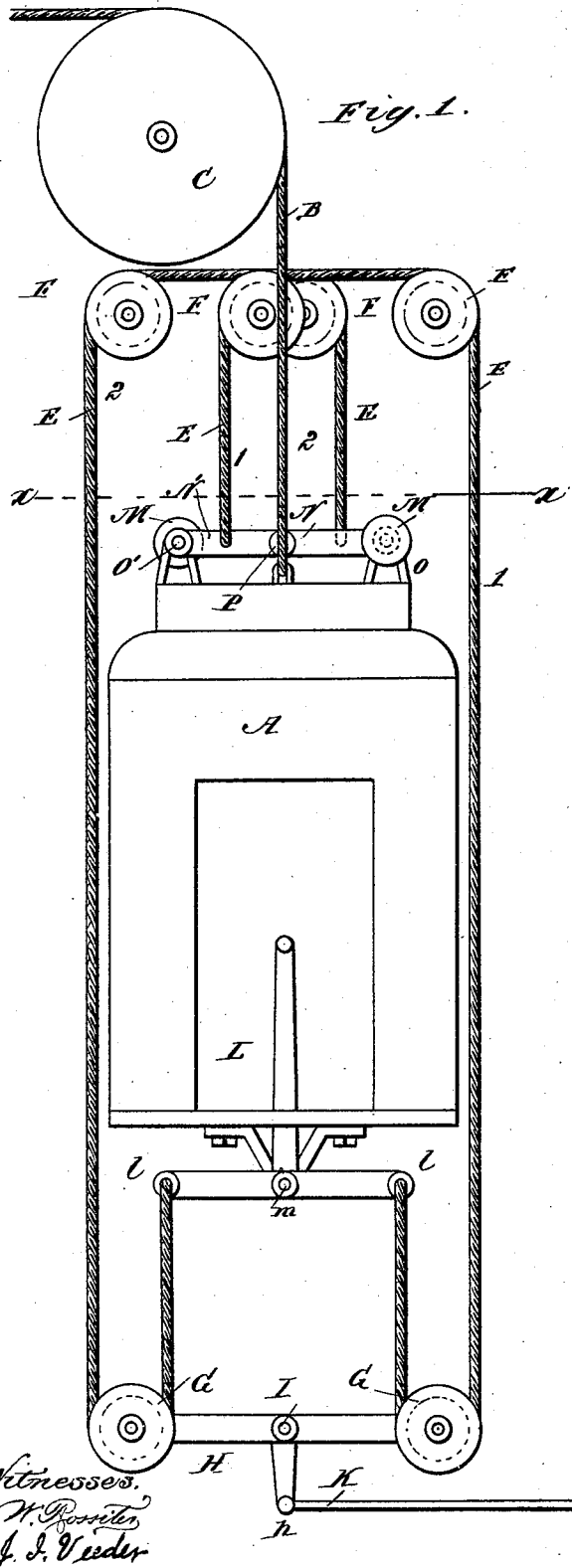
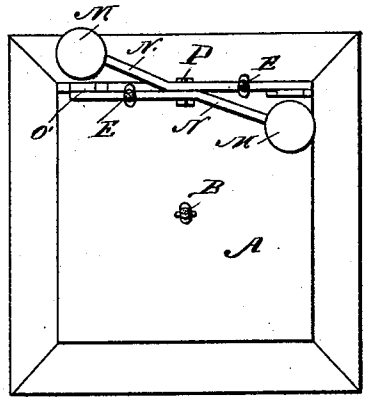


Fig. 2.



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UNITED STATES PATENT OFFICE.

GEORGE H. REYNOLDS, OF NEW YORK, N. Y., ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE NATIONAL COMPANY, OF ILLINOIS.

MEANS FOR CONTROLLING ELEVATORS.

SPECIFICATION forming part of Letters Patent No. 456,124, dated July 14, 1891.

Original application filed January 26, 1887, Serial No. 225,538. Divided and this application filed July 7, 1887. Serial No. 243,694. (No model.)

To all whom it may concern:

Be it known that I, GEORGE H. REYNOLDS, of the city, county, and State of New York, have invented certain new and useful Improvements in Means for Controlling the Operation of Elevators, of which the following is a full specification.

My invention relates to that class of valve-operating devices in which cables running with the car are employed, and more especially to those devices in which the ends of each cable are attached to the car.

It is necessary in all cases where cables running with the car are employed that one end at least of each cable should be attached directly or indirectly to the car.

My invention consists in providing a yielding connection of the cables at one end to the car, whereby an equable tension is maintained on the cables, notwithstanding variations in their length.

In the drawings, Figure 1 is a side view of an elevator-car, the control-cables, and connections. Fig. 2 is a plan view taken on line *x x*, Fig. 1.

A, Fig. 1, is the car.

B is the hoisting-rope.

E E are the control-cables which pass over the fixed pulleys F F F F and around the pulleys G G at the extremities of the lever H, pivoted at I. One end of each cable is secured to the end *l* of the lever L, which is pivoted to the car at *m*. The other end is secured to one of the levers N N′, which are fulcrumed at O O′ to the car and pivoted to each other at P. To allow the levers N N′ to move freely, the holes for the pivots O O′ or P should be slightly elongated horizontally. At the outer ends of levers N N′ are weights M M. By this arrangement slack will be taken up alike on both cables, the two levers acting together and the two weights acting as one. In fact, one weight made as heavy as the two and applied to either lever would be as effectual; but by dividing the weight between both levers less strain is brought on the pivot P and strains are better distributed. It is to be understood that a spring connection of the levers N N′ to the car could be substituted for the weight M and would be an equivalent therefor.

To the arm *h* of lever H is attached the rod K, the other end of which is attached to the valve-gear. The control-valve gear may be of any desired sort and forms no part of the present invention.

The operation of the device is like that of others of its class, that is to say, the movement of the lever L upon the car produces a corresponding movement of the lever H by the shortening of the bight of one cable E and the simultaneous lengthening of the other, the control-valve being thus put in any desired position.

Other applications now pending in the Patent Office, as Serial Nos. 225,538, 242,858, 242,859, 242,860, and 242,862, show combinations which are substantially shown herein, and this patent is taken out without prejudice to, but the rather reserving all rights under, said pending applications.

I claim—

1. In an elevator starting and stopping device, the combination of two cables and a yielding tension connection between each of said cables and the car, substantially as described.

2. The combination, in a controlling apparatus for elevators, of a car, the weighted levers N N′, and two valve-operating cables connected with the car and with said levers, said weighted levers being adapted to maintain an equable tension on the cables, all substantially as described.

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Witnesses:

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