(No Model.) 2 Sheets—Sheet 1.

N. C. BASSETT.

ELEVATOR CONTROLLING MECHANISM.

No. 458,556. Patented Sept. 1, 1891.

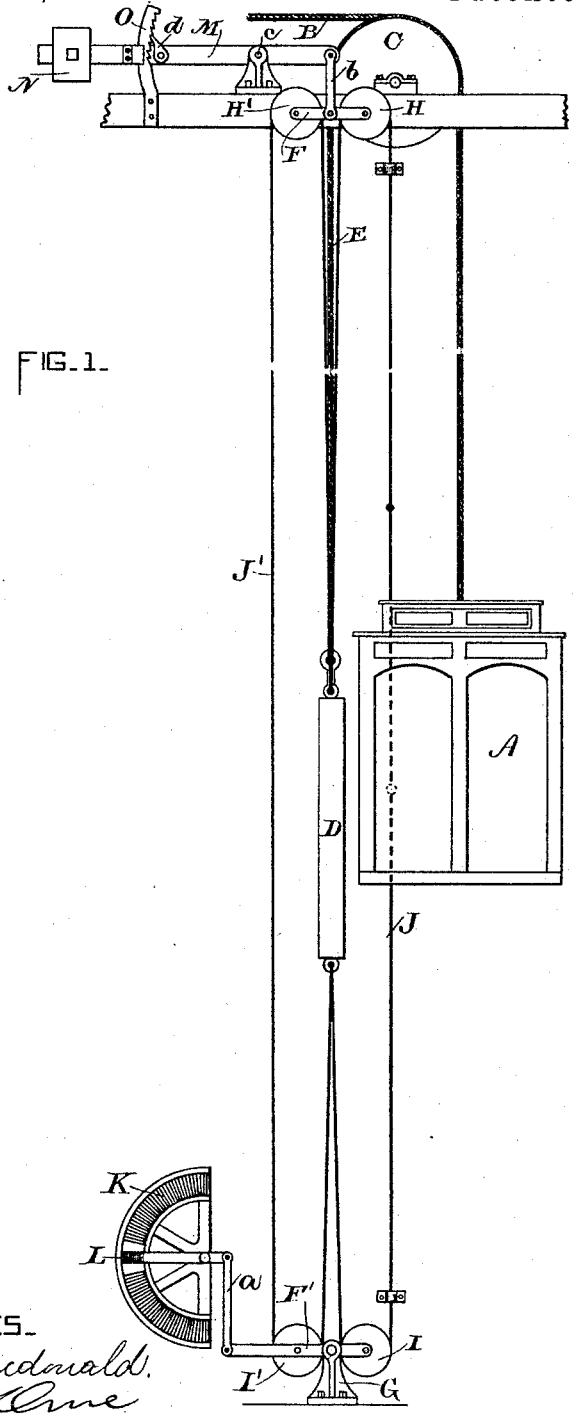

FIG. 1.

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(No Model.)

2 Sheets—Sheet 2.

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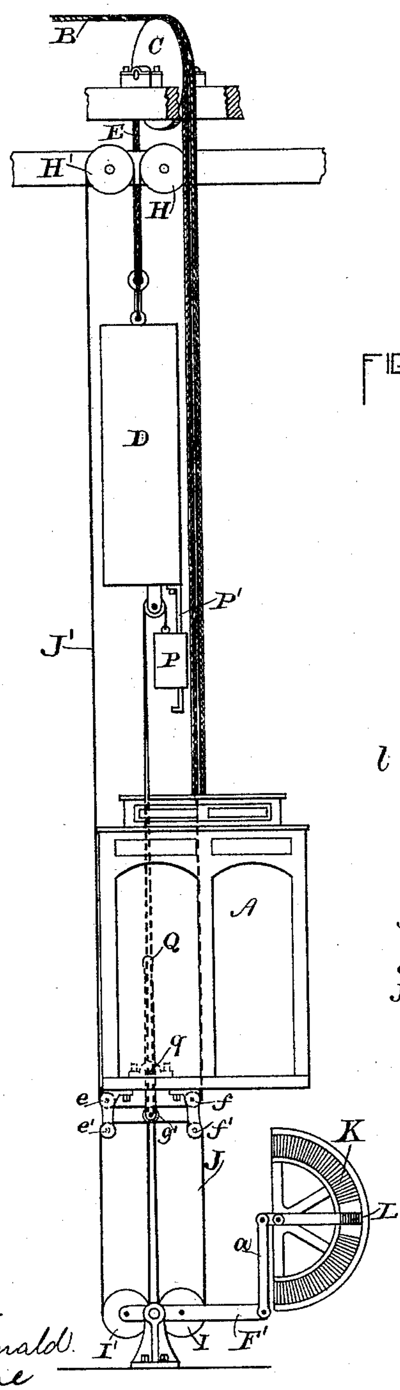

FIG. 2.

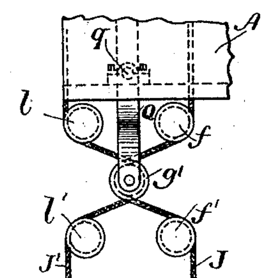

FIG. 3.

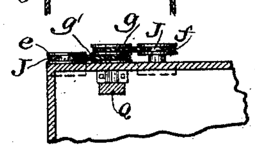

FIG. 4.

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UNITED STATES PATENT OFFICE.

NORMAN C. BASSETT, OF LYNN, MASSACHUSETTS, ASSIGNOR TO THE THOMSON-HOUSTON ELECTRIC COMPANY, OF CONNECTICUT.

ELEVATOR-CONTROLLING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 458,556, dated September 1, 1891.

Application filed August 4, 1890. Serial No. 360,926. (No model.)

To all whom it may concern:

Be it known that I, NORMAN C. BASSETT, a citizen of the United States, residing at Lynn, county of Essex, and State of Massachusetts, have invented a certain new and useful Improvement in Controlling Mechanism for Elevators, of which the following is a specification.

My invention relates to means for controling the starting and stopping mechanism of elevators. It belongs to that general class of devices in which two running ropes traveling at the same rate of speed as the car are used to operate the said controlling mechanism positively in both directions, and it differentiates from other constructions now known in having the running ropes attached to the counter-weight instead of to the car itself.

My improvements are illustrated in the accompanying drawings, wherein—

Figure 1 is a side view. Fig. 2 is a similar view showing a modified form of take-up device and an operating-lever within the car. Fig. 3 is a detail side view showing the manner in which the running ropes are connected with the operating-lever, and Fig. 4 is a sectional view showing in plan the pulleys illustrated in Fig. 3.

The elevator-car A travels up and down in the hatchway in the ordinary manner and is moved by the cable B, passing around sheave C and connected to a suitable form of motor. The counter-weight D is also attached to the car in the ordinary manner by a cable E, which runs over sheave C.

Referring to the arrangement shown in Fig. 1, there are located at the top and bottom of the hatchway, respectively, vibrating two-armed levers F F′, the former being carried by a take-up device, hereinafter described, and the latter being journaled to a bracket G. Upon the lever F and vibrating with it are two pulleys H H′, and similarly upon the lever F′ are journaled two corresponding pulleys I I′. A running rope J extends up through the car, where it is provided with a button or other operating device, and after passing around the pulleys H and I its two ends are attached to the counter-weight D. Passing around the other set of pulleys H′ and I′ is a similar rope J′, which also is attached to the counter-weight. The starting and stopping mechanism K is illustrated conventionally as consisting of a resistance for an electric motor over which sweeps a pivoted contact-arm L, joined to the lever F′ by an intermediate link *a*. If now the rope J be drawn up or down by the attendant, it vibrates the levers F and F′ to the right or left of the horizontal position shown according as the case may be, and this will result in causing the contact-arm to sweep over resistance K, thus controlling the movement of the elevator in the manner desired. In order to take up any slack occasioned by the stretch of the running ropes, the lever F is suspended by a link *b* from the outer end of the horizontal lever M, pivoted at *c*, and having an adjustable counter-weight N upon its other arm. A pivoted pawl *d* upon the lever engages a segmental ratchet-bar O, concentric with the pivot *c*, and thus allows the lever F to be raised automatically in order to keep the connections taut, but prevents all movement in the reverse direction.

In Fig. 2 the mode of operation is the same; but the pulleys at the top of the hatchway are journaled in a fixed position instead of being carried on the vibrating lever. The slack of the running ropes is taken up by a take-up weight P, free to slide downward upon a bar P′, attached to the counter-weight, but prevented from rising by a suitable clutch. The two running ropes are connected with a single lever Q, pivoted to the car at *q* in such a manner that as one is lengthened to vibrate lever F′ in a given direction the other is correspondingly shortened. For this purpose two sets of rollers *l l′* and *f f′* are journaled in suitable brackets projecting from the car, and upon the lower end of the operating-lever, which extends down between these two sets of pulleys, are journaled the two pulleys *g g′*. Each of the running ropes passes over one set of the fixed pulleys and is looped around one of the movable pulleys upon the operating-lever in the manner shown. It will be evident, therefore, that as the lever is thrown to the right or left the starting and stopping mechanism will be operated in the same manner as already described in connection with Fig. 1. This lever constitutes a convenient form of actuator for the attendant,

but may of course be replaced by others, many of which are well known.

In using the word "ropes" in this specification I intend to include also all such equivalents as a belt, chain, or other flexible power-transmitting connection which will pass freely around the pulleys without impeding the travel of the car up and down in the hatchway.

I am also aware that other arrangements of the running ropes and pulleys may be used and I therefore do not intend to be limited to the precise construction illustrated.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination of an elevator-car, counter-weight, and starting and stopping mechanism with two running ropes passing around suitable pulleys above and below the car and attached to the counter-weight, which ropes furnish means for positively operating the starting and stopping mechanism in both directions.

2. The combination of an elevator-car, counter-weight, and the two running ropes for operating the stopping and starting mechanism, passing around suitable pulleys above and below the car and attached to the counter-weight, with an actuator on the car for the attendant, to which both ropes are so connected that a given movement of the one causes a corresponding reverse movement of the other.

3. The combination of an elevator-car and counter-weight with the vibrating levers at the top and bottom of the hatchway, respectively, carrying pulleys upon their opposite arms, and the two running ropes for operating the starting and stopping mechanism, passing around the said pulleys, as described, and attached to the counter-weight.

4. The combination of the two running ropes for operating the starting and stopping mechanism, passing around suitable pulleys and having both ends connected to the counter-weight, with a take-up device taking the slack of the ropes, as described.

5. The combination of the vibrating lever connected with the starting and stopping mechanism and carrying pulleys with the two running ropes passing around said pulleys and attached to the counter-weight, and the operating-lever upon the car having two pulleys around which the said running ropes are looped in opposite directions, as described.

NORMAN C. BASSETT.

Witnesses:
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