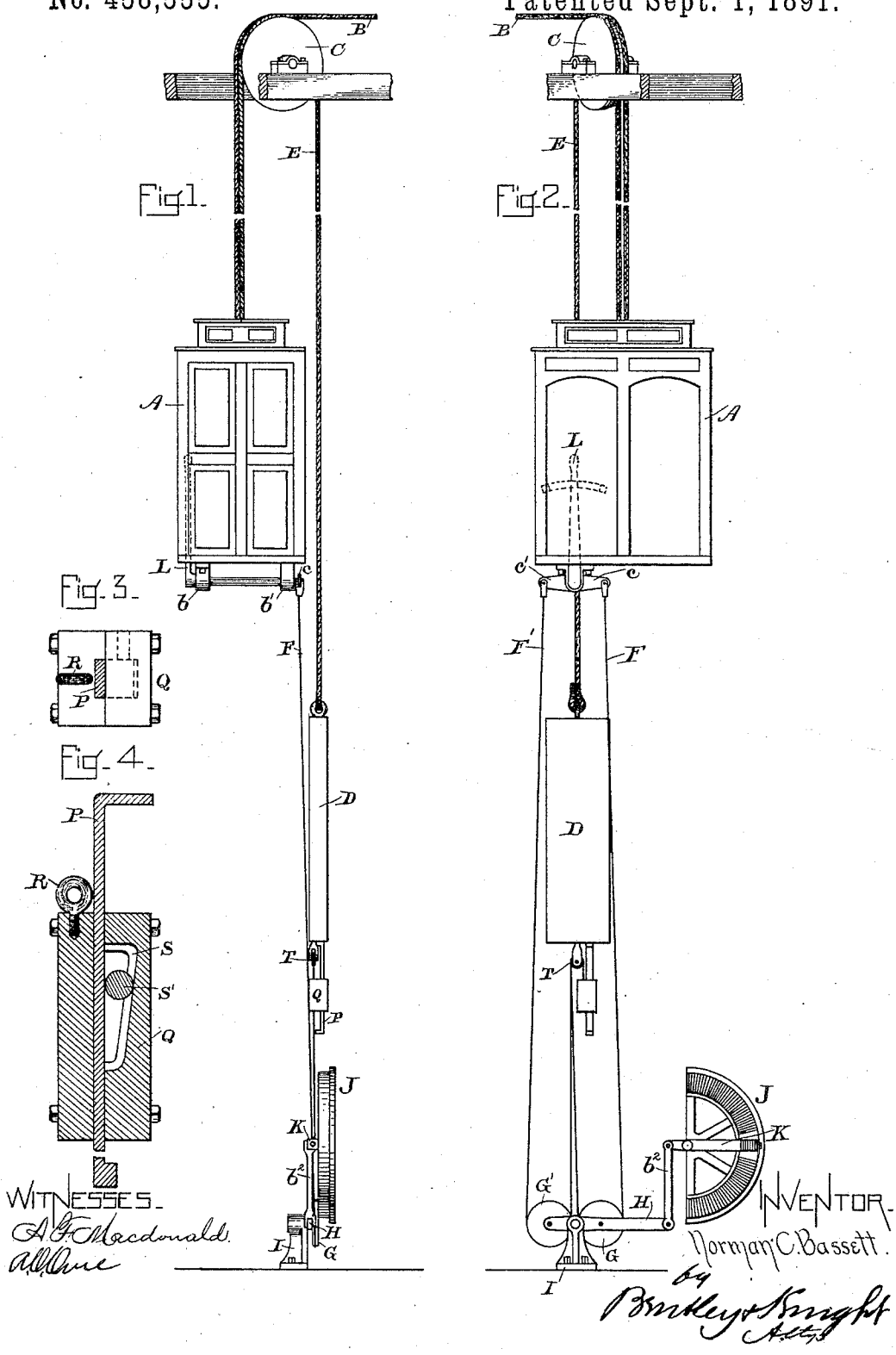


N. C. BASSETT.
ELEVATOR CONTROLLING MECHANISM.

No. 458,555.

Patented Sept. 1, 1891.



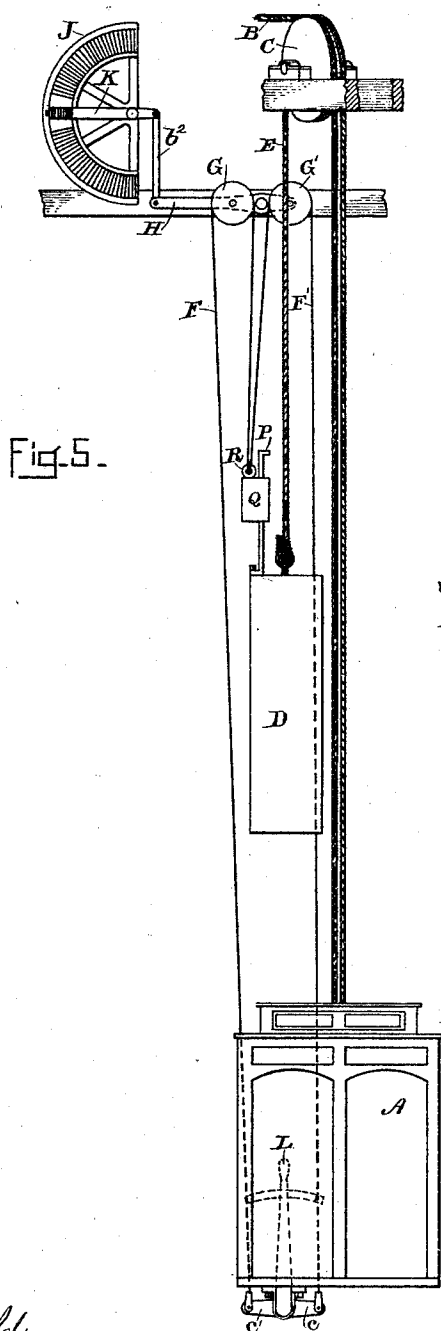
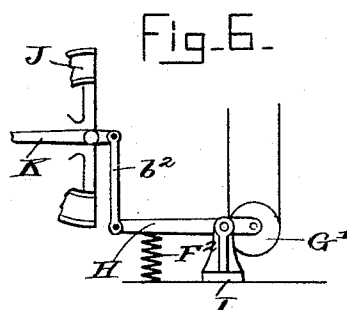
(No Model.)

2 Sheets—Sheet 2.

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WITNESSES.
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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. 458,555, dated September 1, 1891.

Application filed August 4, 1890. Serial No. 360,923. (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 certain new and useful Improvements in Controlling Mechanism for Elevators, of which the following is a specification.

My invention relates to means for operating the starting and stopping mechanism of elevators, and it belongs to that general class of devices in which a running rope traveling at the same speed as the car is connected to a lever or other operating device within the car, and thus furnishes means for operating the controlling mechanism.

The distinctive feature of my present invention lies in attaching the running rope or ropes, accordingly as one or more are used, to the car at one end and to the counter-weight at the other end, thus causing one end of the rope to move with the car, but the other in an opposite direction. In the preferred form of device shown two such ropes are present. They are provided with a take-up device and are connected to the starting and stopping mechanism in a manner hereinafter described, though I am aware that the same result can be accomplished by other connections as well, which are likewise to be included in the scope of my invention.

My improvements are illustrated in the accompanying drawings, wherein—

Figure 1 is a front view showing the car and running ropes connected to the controlling mechanism. Fig. 2 is a side view of the same. Fig. 3 is a plan of the take-up device. Fig. 4 is a vertical section of the same; and Fig. 5 is a view similar to Fig. 2, but showing a modified arrangement in which the starting and stopping mechanism is situated at the top instead of the bottom of the well.

The elevator-car A is adapted to travel in the well or hatchway in the ordinary manner and is moved by the cable B, which, after passing over sheave C, is drawn in and paid out by a suitable motor. The counter-weight D is likewise attached to the car by cable E, also passing around the sheave C, and travels at the same speed as the car, but in an opposite direction.

The car is started and stopped by means of two running ropes F F', one of which operates positively the controlling mechanism in one direction and the other in the reverse direction, though in certain circumstances one of these ropes may be dispensed with and the mechanism moved one way by other suitable means. For instance, one such means is shown in Fig. 5, consisting of a spring F², which is put under tension when lever H is moved to start the elevator, and will automatically restore it to its original position, thereby stopping the elevator.

Within the car there is placed an actuator L for working the ropes, such as a hand wheel or lever, the latter being the form shown in the drawings. This lever is journaled in stirrups bb', and has a double-crank arm cc', to which are attached the ends of the ropes F F', as shown. The ropes are then passed around pulleys G G', upon the opposite arms of a vibrating lever H, pivoted upon a bracket I, set in the hatchway, and have their other ends secured to the counter-weight. In this way a movement of one rope always occasions a corresponding reverse movement of the other rope, and a power-transmitting connection is established between the operating-lever L and vibrating lever H, which is unaffected by and does not impede the travel of the car, but which enables the attendant, by throwing lever L, to move the pulleys G G' correspondingly up or down, and thus operate the starting and stopping mechanism J, connected therewith. This last mechanism is herein conventionally illustrated as a resistance for an electric motor over which sweeps a contact-arm K, joined to lever H by a link b²; but it will of course be varied according to the style of motor employed.

In order to take up the slack occasioned by the stretching of the running ropes, I have provided the following take-up device: To the counter-weight is attached a bar P, upon which slides a weight Q freely in one direction. The running ropes are attached to an eye R upon this weight, and as they stretch the weight moves downward upon the bar P, thus preserving them always taut. In the interior of the weight there is a groove S, wider at the top than at the bottom, and a ball or

roller S', placed in said groove, forms a clutch, preventing upward movement of the weight Q.

In Fig. 2, where the vibrating lever H is at the bottom of the hatchway, the take-up weight is attached to the bottom of the counter-weight and the running ropes pass over pulleys at T, attached to the counter-weight.

In Fig. 5, where the pulleys and lever are at the top of the hatchway, the take-up device is attached to the upper part of the counter-weight, as is shown, and the additional set of pulleys is unnecessary.

I am aware that modified ways of arranging the running ropes and connecting them with the starting and stopping mechanism may be used, and hence I do not intend to be limited to the precise construction shown; also, instead of ropes, strictly considered, straps, belts, or other flexible power-transmitting connections may be employed in certain cases; but all of these I consider as mechanical equivalents for one another, and hence are included when speaking of "ropes" as the word is used in this specification.

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

1. The combination, with an elevator-car and counter-weight for the car connected therewith, of a running rope attached to said car and counter-weight and passing around a pulley connected to the starting and stopping mechanism of the elevator, whereby the car can be controlled by the said rope from within the car, substantially as described.

2. The combination, with an elevator-car, a counter-weight connected therewith, and a running rope attached to the said car and weight and passing around a movable pulley connected to the starting and stopping mechanism of the elevator, whereby the said mechanism may be operated one way by the rope, of means for positively operating the said mechanism the other way, likewise controlled from within the car.

3. The combination of an elevator-car, a counter-weight connected therewith, and the starting and stopping mechanism, with two running ropes attached to the said car and weight and operating the said mechanism positively in reverse directions.

4. The combination of an elevator-car, the

counter-weight connected therewith, and the vibrating lever connected to the starting and stopping mechanism and provided with pulleys, as described, with the two running ropes passing around said pulleys, respectively, and attached to the said car and counter-weight.

5. The combination of an elevator-car, the counter-weight connected therewith, and two running ropes, each passing around a pulley connected with the starting and stopping mechanism and attached to the said counter-weight, with an actuator on the said car, to which both ropes are so connected that a given movement of the one causes a corresponding reverse movement of the other, for the purpose described.

6. The combination of the pivoted lever connected to the starting and stopping mechanism of the elevator and having a pulley on each side of the pivot, with a pivoted operating-lever within the car and the two running ropes, each passing around one of the said pulleys and attached to the counter-weight and lever, as described, whereby the said mechanism can be operated positively in each direction.

7. The combination of the running rope attached to the car and counter-weight and passing around a pulley connected to the starting and stopping mechanism, for the purpose described, with a take-up device for taking the stretch of the rope.

8. The combination of the two running ropes connected with an elevator-car and counter-weight and furnishing means for operating the starting and stopping mechanism, as described, with a single take-up device attached to the counter-weight and arranged to take the slack of both ropes.

9. The combination, with an elevator-car and counter-weight, of a running rope for operating the starting and stopping mechanism connected to a take-up weight sliding on a bar attached to the counter-weight, as described.

Signed at Lynn, county of Essex, and State of Massachusetts, this 26th day of July, A. D. 1890.

NORMAN C. BASSETT.

Witnesses:

JOHN W. GIBBONEY,
DUGALD MCKILLOP.