

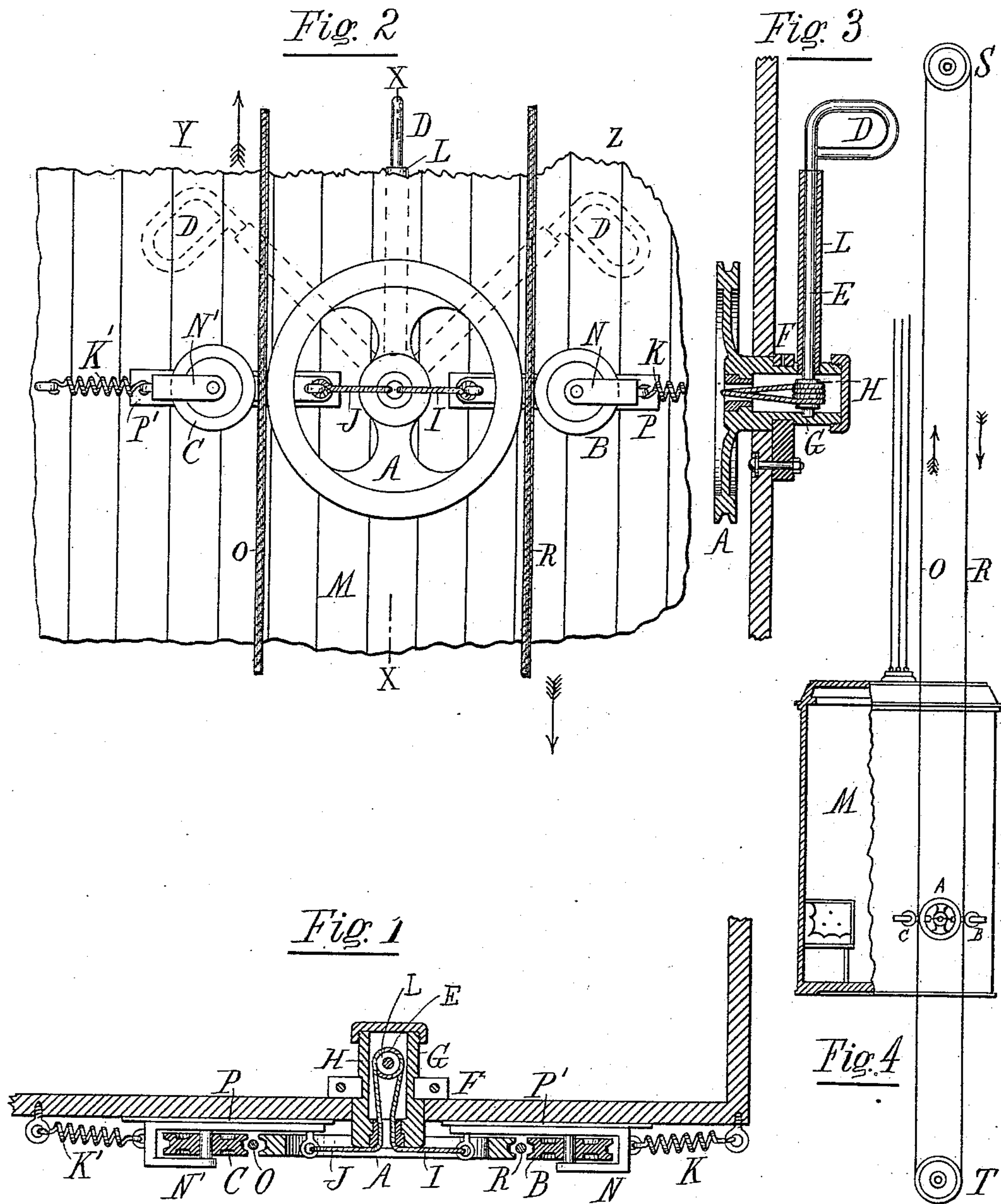
(No Model.)

Q. N. EVANS.

DEVICE FOR OPERATING ELEVATOR HAND ROPES.

No. 379,381.

Patented Mar. 13, 1888.



Witnesses

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DEVICE FOR OPERATING ELEVATOR HAND-ROPE.

SPECIFICATION forming part of Letters Patent No. 379,381, dated March 13, 1888.

Application filed October 15, 1886. Serial No. 216,365. (No model.)

To all whom it may concern:

Be it known that I, QUIMBY N. EVANS, of Brooklyn, county of Kings, State of New York, have invented an Improvement in a Device for
5 Operating the Hand-Ropes for Elevators, of which the following description, in connection with the accompanying drawings, is a specification.

My invention relates to that class of elevators
10 having a shifting-rope passing vertically through or adjacent to the car and connected to the actuating device of the motor, by the manipulation of which the car is operated; and it has for its object to provide a mechanical
15 shifting-rope-gripping device attached to the car and controlled by the operator within the car, whereby the car may be started, stopped, and its speed varied as desired without imparting undue strains to the hoisting-cables and
20 elevator-motor or sudden shocks to the car.

My invention is particularly adapted to be applied to elevators in which the shifting-rope extends down the elevator shaft or well in two parts connected at their lower ends to the actuating device of the motor, and for convenience
25 of description I shall here adhere to the terms generally used in designating the two ropes or two parts of the shifting-rope—viz., “front rope,” or that part of the rope which when
30 pulled down causes the car to ascend, and “back rope,” or the other part of the same.

The invention consists of a shifting-rope controller composed of a friction-sheave on the outside of the car, located between the two
35 ropes, and provided with a handle within reach of the operator in the car, gripping-pulleys held in sliding frames diametrically arranged in relation to the sheave, and connecting devices between the frames of the gripping-pul-
40 leys and the handle.

Normally the gripping devices of the shifting-rope controller are entirely free from the shifting-ropes when the car is starting or moving, and they are brought into action by the
45 manipulation of the handle to grip and move the back rope to cause the car to start, to grip the front rope to stop the car, and to grip either of the ropes to vary the speed of the car, according to the direction of travel.

50 In the accompanying drawings, forming part of this specification, Figure 1 is a horizontal

central section of my shifting-rope-controlling device and part of an elevator-car to which it is attached. Fig. 2 is an elevation of the device on the outside of an elevator-car. Fig. 3
55 is a vertical section on the line X X, Fig. 2; and Fig. 4 is a view of the elevator and my shifting-rope-controlling device on a reduced scale.

The shifting-rope O R is represented in Fig. 60 4 as consisting of one piece of rope passing over the pulley S at the top of the elevator-well and connected at its ends to the pulley T of the motor-controlling device at the bottom of the well.

R is the front rope, and O the back rope, both
65 of which lie in close proximity to the car M, at the outside thereof, and between these ropes, held in a bearing, F, on the side of the car M, is the friction-sheave A. The hub G of this sheave A is hollow and extends within the in-
70 terior of the car, and is there provided with the arm L. Through this arm L passes the rod E, provided at its upper exposed end with the handle D and at its lower end, within the hub G, with the small drum H, passing around
75 which, with their ends secured thereto, are the two ropes I and J. These ropes I and J pass through an eye having a rounded edge in the center of the friction-sheave A, and are connected, respectively, to the small frames N and
80 N', which are fitted to slide in the guides P and P', secured to the sides of the elevator on opposite sides of the sheave A. Small gripping-pulleys B and C are carried on shafts in the frames N and N', respectively, and between
85 these pulleys and the sheave A the ropes R and O pass.

The frames N and N' are drawn back by the springs K and K', so that normally the pulleys B and C are held away from the ropes R and O.
90

The operation of the device is as follows: Assume that the car M is stationary and it is required to cause it to ascend. The arm L is, by means of the handle D, moved over into the position Y. (Shown by dotted lines in Fig. 2.)
95 The handle D is now rotated, so as to wind up the rope J on the drum H, thereby drawing the pulley C toward the sheave A and causing the rope O to be firmly gripped between the pulley C and the sheave A. The arm L being now
100 moved quickly into the position Z, the sheave A is thus partly rotated, carries the rope O up-

wardly, as indicated by the arrow, and actuates the device T to start the motor, but not under full headway. The operator now, by holding the handle in this position, causes the car to carry the rope O up with it, and when the car has acquired the desired speed the rope O is released by simply turning the handle into the central position, as shown at Figs. 1, 2, and 3. To stop the car, the operator holds the handle in its central position and rotates it, so as to shorten the rope I, thereby causing the rope R to be gripped between the sheave A and pulley B. The upward movement of the car then actuates the device T to shut off the power, which may be done in as gradual a manner as desired by regulating the force applied to draw the pulley B toward the sheave A. To cause the car to descend and to stop its downward movement, the handle D is actuated in directions reverse to those just described.

This device provides the operator with a means by which he has perfect control of the elevator to start and stop it gently without shock, to regulate the speed, and to vary the work done by the motor in accordance with the load carried.

Having now described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a gripping device for actuating the shifting-ropes of elevator-cars, in combination,

a friction-sheave fitted in a bearing on the side of the car, gripping-pulleys arranged diametrically to the friction-sheave, between which and the friction-sheave the parts of the shifting-rope pass, and a handle located inside the car attached to the friction-sheave, so as to rotate it, but free to be turned on its own axis independently thereof, and connected to the gripping-pulleys, so as to cause them to separately move toward the friction-sheave and press the respective parts of the shifting-rope into contact with the friction-sheave, whereby the parts of the shifting-rope are moved when the friction-sheave is rotated by the handle.

2. In a gripping device for actuating the shifting-ropes of elevator-cars, in combination, a friction-sheave having a hollow hub fitted in a bearing on the side of the car, a handle attached thereto inside the car and provided with a drum in the hollow hub of the sheave, sliding frames fitted on the side of the car, gripping-pulleys fitted to rotate in the sliding frames, between which and the friction-sheave the parts of the shifting-rope pass, springs attached to the frames to draw the pulleys away from the sheave, and ropes connecting the drum on the handle to the frames.

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Witnesses:

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