

(No Model.)

P. P. QUACKENBOSS.
ELEVATOR.

No. 467,135.

Patented Jan. 12, 1892.

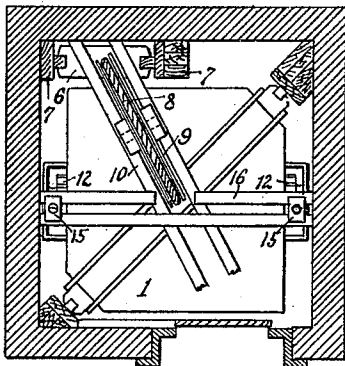


Fig. 2.

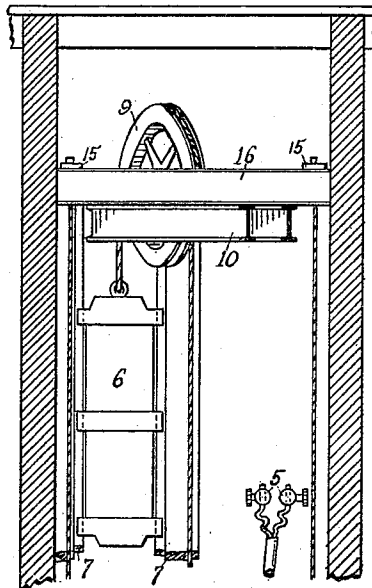


Fig. 1.

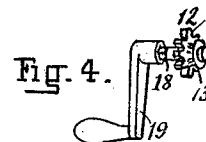
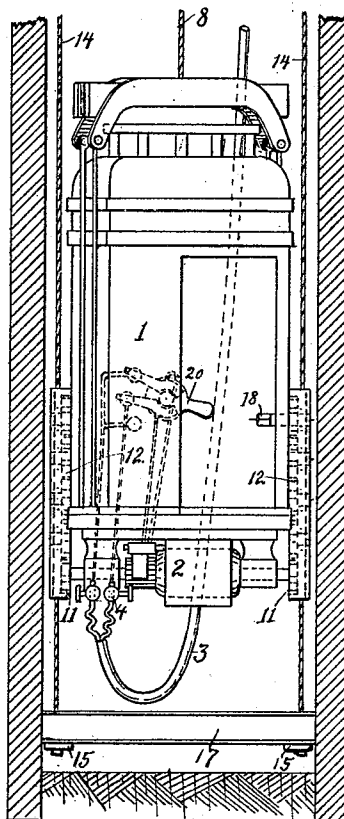


Fig. 4.

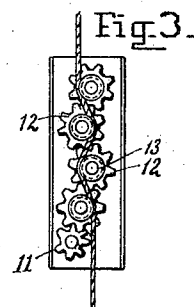


Fig. 5.

Witnesses:-

J. W. Balch

Emile C. Berthoud.

Inventor,
P. P. Quackenboss
by his attorney

Thomas Ewing, Jr.

UNITED STATES PATENT OFFICE.

PHILIP P. QUACKENBOSS, OF NEW YORK, N. Y.

ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 467,135, dated January 12, 1892.

Application filed May 16, 1891. Serial No. 392,952. (No model.)

To all whom it may concern:

Be it known that I, PHILIP P. QUACKENBOSS, a citizen of the United States of America, residing in the city, county, and State of New York, have invented certain new and useful Improvements in Elevators, of which the following is a specification.

My invention is an improved apparatus for lifting elevators, which consists in a friction grip or clamp traveling along one or more guide ropes or cables and operated by a motor on the car and in a device for placing the car under the control of the conductor when the motor fails to operate, as herein set forth.

In the accompanying drawings, Figure 1 is an elevation showing the complete apparatus. Fig. 2 is a plan of Fig. 1 seen from above. Fig. 3 is a detail of the friction-grip, and Fig. 4 is a detail of the auxiliary lifting device.

1 is the elevator-car; 2, the motor, which should travel with the car and is shown attached beneath it. Though any source of motive power may be used, I prefer a reversible electric motor. The current is fed through the cable 3, attached to the binding-posts 4 and 5, post 4 being on the motor. The weight of the car is balanced by the counter-weight 6, which travels in guides 7 and is connected with the car by cable 8, which passes over a sheave 9, supported by the girders 10.

Attached to or operatively connected with the shaft of the motor are the cog-wheels 11, which operate the series of cog-wheels 12 in the gear-boxes attached to the sides of the car. Each of the wheels 12 carries a sheaved block 13. Within these sheaves are laid the stationary guide ropes or cables 14, which by means of blocks 15 or other suitable device are firmly attached to and stretched taut between the girders 16 17, placed, respectively, above and below the extreme limits of the path of the car. These sheaves and train of gearing constitute the friction-grip. The co-operating contact-surfaces of the sheaves do not lie opposite each other across the cable, but at different points along its lengths. It will be observed that the cable is not wound entirely or in large part around the sheaves or either of them; but the sheaves are so set as to kink the cable within or little beyond the limits of its elasticity. Thus little or no permanent bend is made in the cable by the

grip and the cable is not subjected to the wear which results from bending or winding it around a drum or sheave, as has been heretofore done. The cable must be one which does not stretch readily along its length, and which therefore, when taut, offers considerable resistance to distortion or kinking. I recommend a metallic cable such as is commonly used with elevators. It is also obvious that the toothed wheels of the train need not be strictly cogged wheels. All that is essential is that they form a train of wheels. When the train is rotated by the motor, the sheaves, with their wheels, will travel along the cables, thereby lifting the car and its load. I have shown two sets of gripping-wheels and two lifting-cables; but I do not limit myself to the number shown, and where in the claim I speak of "guide ropes or cables" and "clutches" I mean one or more.

Attached to one of the wheels of the train or to the shaft of the motor is a square-headed post 18, which projects into the car. (See Figs. 1 and 4.) In case the motor should cease to operate while the car is passing between two stations or for any other reason it is desired to operate the car by hand, a crank may be fitted upon the head of this post and turned by the conductor, thus lifting or lowering the car. If it is desired to enlarge the sheaves, the post 18 can be placed upon an intermediate wheel of the train.

I am aware of the contents of United States Patents No. 259,190, to Meatyard, dated June 6, 1882, and No. 383,211, to Calkins, dated May 22, 1888, and I do not claim anything therein shown.

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

1. In an elevator, the combination of the car and a motor traveling therewith with one or more guide ropes or cables, and a friction-grip or friction-grips traveling thereon, consisting of a train of driven sheaved wheels about which the guide-ropes extend, said train of wheels being operated by the motor, substantially as described.

2. In an elevator, the combination of the car and a motor traveling therewith with a guide rope or cable and a friction-grip traveling thereon, consisting of a train of cogged and sheaved wheels about which the guide-rope extends, said wheels being operated directly

by a pinion on the motor-shaft, substantially as described.

3. In a elevator, the combination of one or more stationary guide ropes or cables with a car and a grip attached thereto, consisting of a train of driven sheaved wheels, about which wheels the guide-rope extends, substantially as described.

4. In an elevator, the combination of one or more taut and stationary metallic guide ropes or cables with a grip consisting of a train of driven sheaved wheels about which the guide-

rope extends, the co-operating contact-surface of the said wheels being set opposite different points along the line of the cable and arranged to grip the cable and bend it sufficiently out of the straight line to secure traction, substantially as described.

Subscribed by me this 15th day of May, 1891, in the city of New York.

P. P. QUACKENBOSS.

Witnesses:

THOMAS EWING, Jr.,
WILLARD P. SHAW.