

(No Model.)

R. F. LE BROcq.

AUTOMATIC SAFETY ATTACHMENT FOR ELEVATORS.

No. 561,232.

Patented June 2, 1896.

Fig. 1

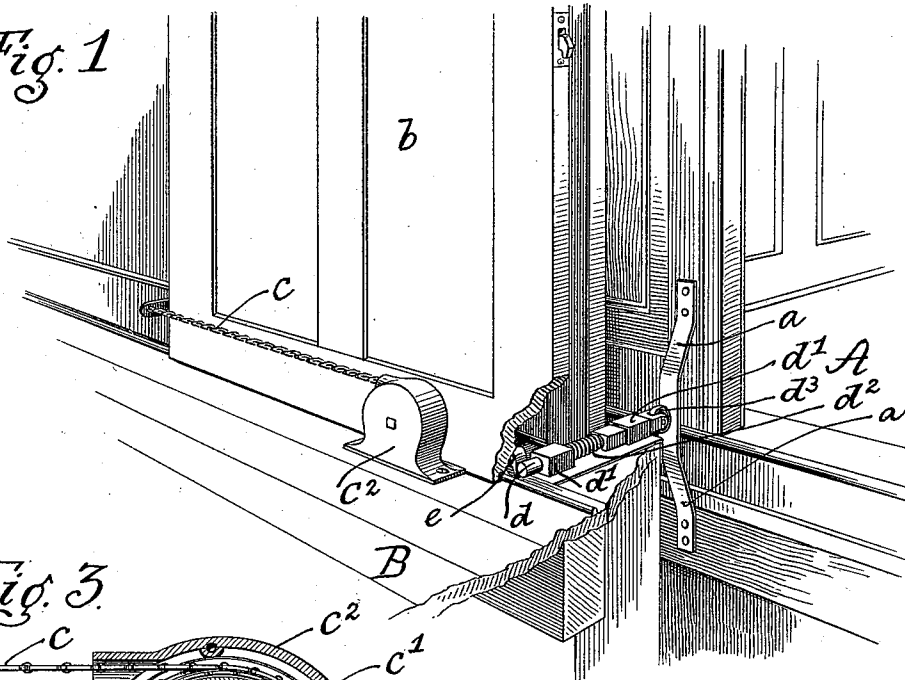


Fig. 3

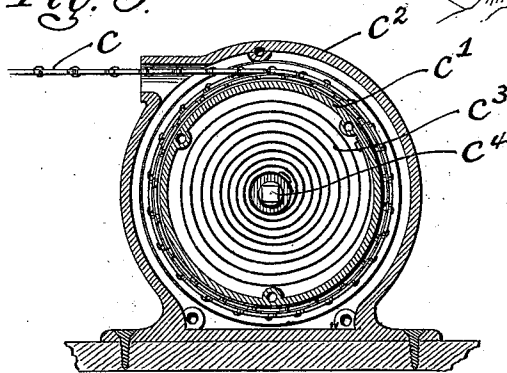
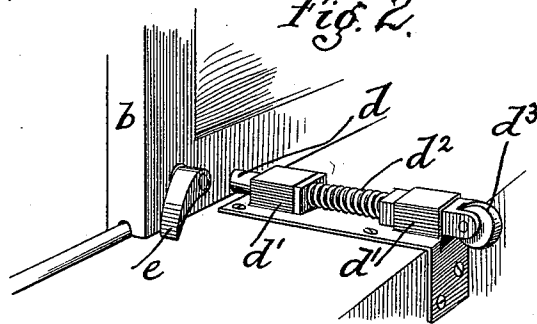


Fig. 2

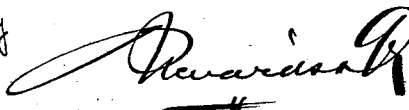


WITNESSES.

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AUTOMATIC SAFETY ATTACHMENT FOR ELEVATORS.

SPECIFICATION forming part of Letters Patent No. 561,232, dated June 2, 1896.

Application filed May 24, 1895. Serial No. 550,510. (No model.)

To all whom it may concern:

Be it known that I, RICHARD F. LE BROCCQ, a citizen of the United States, residing at New York, county of New York, and State of New York, have invented certain new and useful Improvements in Automatic Safety Attachments for Elevators; and I do hereby declare the following to be a full, clear, and exact description of the same.

This invention relates to automatic safety attachments for elevators, and has particular reference to self-closing hatchway-doors and means for automatically keeping the door opened when the elevator-car is on a level with the floor upon which the door is, and for closing the door when the elevator moves away from the floor in either direction.

The invention will be particularly described with reference to the accompanying drawings, in which—

Figure 1 is a perspective view, partly in section, of the invention; Fig. 2, a perspective view showing the operation of the bolt and catch on the door, and Fig. 3 a sectional view of the door-closing apparatus.

A represents the elevator-car, and *a* a projecting cam or shoe on the elevator-car, so placed that when the car is on a level with the floor the cam will be directly opposite and resting against the bolt for holding the door open, as will be presently described.

D represents one floor of the building, and *b* a sliding door opening into the elevator-shaft. Attached to the door at any suitable place, preferably at the rear thereof, is one end of a cord or chain *c*, the other end of which is attached to a revolving drum *c'*, mounted in a casing *c''*. When the drum *c'* is revolved, chain *c* is wound thereon, drawing the door *b* closed. A coiled spring *c'''* has one end attached to the drum *c'* and the other end attached to the bearing *c''* thereof, and normally expends sufficient force to revolve the drum *c'* and cause the winding thereon of the chain *c*. Instead of using a spring *c'''*, however, any suitable device may be utilized for rotating the drum. A sliding bolt *d* is mounted in bearings *d'* *d''*, fixed to the floor of the building opposite the elevator-shaft, and in such a position that one end will normally project into the elevator-shaft and impinge

against the cam *a* when the latter is opposite the bolt. A suitable spring *d'''* normally holds the bolt in position shown in Fig. 2—*i. e.*, away from the door—and its end, which projects into the shaft, is provided with a friction-roller *d'''*, which bears against the cam when the latter is in position. A suitable catch or pawl *e* is attached to the door and is so arranged that the latter may be opened at will; but when the catch has passed the end of the bolt *d* the former will fall into the position shown in Fig. 1, thereby holding the door open when the bolt is pressed in, as hereinafter described.

The operation of the invention is substantially as follows: The elevator-car being at a point other than opposite the door, spring *d* will hold the bolt away from the door, one end thereof projecting into the shaft. There then being nothing against which catch *e* can rest, chain *c* will be wound upon the drum *c'* by the force of the spring *c'''* and the door will be held closed. When the elevator arrives opposite the doorway, the cam *a* strikes the friction-wheel *d* and pushes the bolt inward. The door is then opened by hand and catch *e* falls behind bolt *d*, holding the door open. As soon as the elevator passes up or down, spring *d'''* throws bolt *d* away from catch *e* and the door is closed by the door-closing device above described—*i. e.*, by chain *c* being wound upon its drum by the force of spring *c'''*. It is obvious that, although the device has been described with reference to a horizontally-sliding elevator-door, it can be applied to a vertically-sliding or to any swinging hatchway, door, or gate. Furthermore, the respective location of the various parts herein described may be varied without departing from the spirit of the invention.

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

In combination, the elevator having the cam thereon, a horizontally-sliding door carrying a pawl pivoted thereto to have free movement in one direction, means for keeping the door closed normally and for returning it to closed position, a bolt arranged to slide in bearings on the door-frame independently of the pawl and transversely to the movement of the door, and a spring for forc-

ing the bolt away from the door and out of
the path of the pivoted pawl, said bolt being
in the path of the cam on the elevator whereby
it will be moved toward the door upon the ar-
5 rival of the elevator ready to catch the pawl
when the door is opened, substantially as de-
scribed.

In witness whereof I have hereunto set my
hand in presence of two witnesses.

RICHARD F. LE BROCC.

Witnesses:

JAMES P. NIEMANN,
WILLARD S. BOONE.