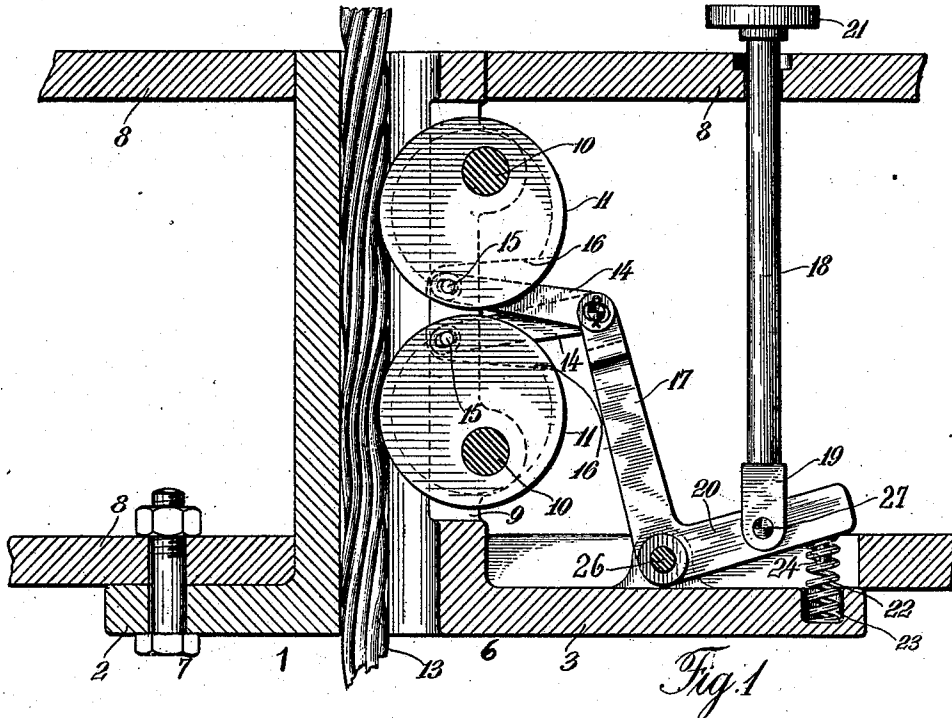
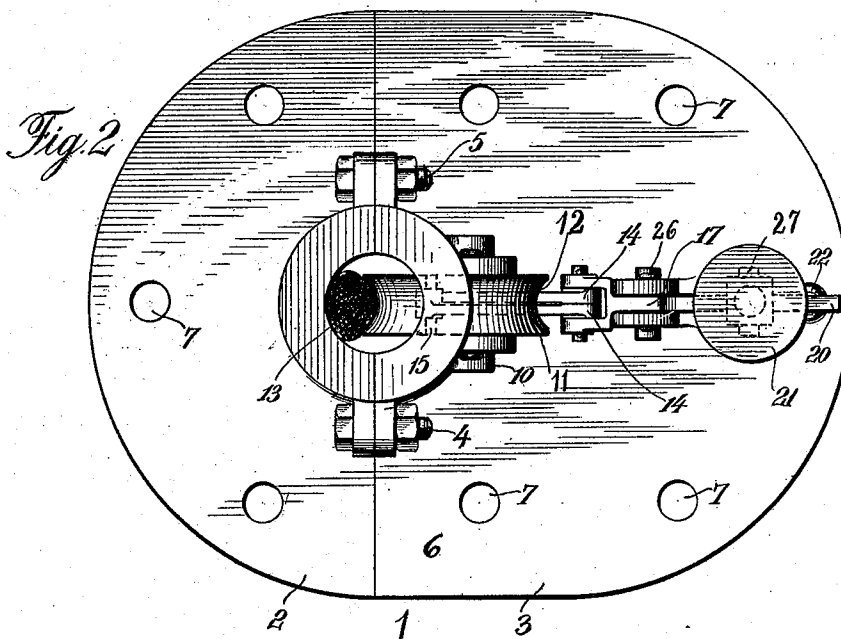


E. J. BROWN.
ELEVATOR SAFETY LOCK.
APPLICATION FILED AUG. 30, 1905.

920,820.

Patented May 4, 1909.



WITNESSES:
John E. Prager
H. Christaller

INVENTOR
Edward J. Brown
BY ATTORNEY
Samuel J. Hampton

UNITED STATES PATENT OFFICE.

EDWARD J. BROWN, OF BROOKLYN, NEW YORK.

ELEVATOR SAFETY-LOCK.

No. 920,820.

Specification of Letters Patent.

Patented May 4, 1909.

Application filed August 30, 1905. Serial No. 276,453.

To all whom it may concern:

Be it known that I, EDWARD J. BROWN, a citizen of the United States, and a resident of Brooklyn, county of Kings, State of New York, have invented new and useful Improvements in Elevator Safety-Locks, of which the following is a specification.

My invention relates to elevators and it has for its object to provide a safety means which will prevent the operation of the starting means except by the operator and only when the operator is in position to operate the car.

It has for its further object to provide an automatic means for stopping the car.

In many of the systems now known in the art, wherein the elevator is started by pulling a rope which passes the length of the elevator shaft, the motor may be started by any one located on any of the floors of the elevator shaft. This is sometimes done when the operator has left the car. The removal of the car at such a time endangers the life not only of the operator but also of any passengers who may wish to use the car. My invention provides means for preventing the movement of the car unless under the control of the operator. Furthermore, if the operator should fail in his duty for any reason whatever the elevator will be automatically stopped by my invention. Settling of the elevator car due to leaking of valves is also prevented. Thus the safety of all passengers using the elevator to which my invention is applied is greatly enhanced.

My invention comprises a means for operating and controlling the starting means of the motor. The controlling means is automatically operated to stop the car and the car is held stationary. The controlling means may be secured to the car and upon movement of the car the starting rope may be operated to bring the car to a standstill and to maintain it in that position.

The invention comprises other features which appear in the following description, are shown in the drawing and are claimed in the claims.

Referring to the drawing, Figure 1 illustrates a vertical sectional view taken through the center of the device embodying my invention. Fig. 2 illustrates the top view of the device.

1, Fig. 1, is the supporting frame of the automatic grip device. The frame 1 consists of two parts 2, 3, which are bolted to-

gether by means of bolts 4, 5, which pass through ears located on each side of the parts 2, 3. The frame 1 has a base plate 6 having holes 7 through which screw bolts 60 may be passed for securing the device to the floor of the elevator car or for securing it in any other proper position conducive to effectual working of the device.

A slot 9 is formed in part 3 of the frame 65 1. On each side of the slot 9 are located ears which form supports for pivot pins 10, 10 for wheels 11, 11. The wheels 11, 11 are located in the slot 9 and are eccentrically mounted on the pivot pins 10, 10. The 70 wheels or cams 11, 11 have in each case a groove 12 in the circumference.

13 is the starting rope well known in the art, which starts the elevator car up when it is pulled down and which starts the elevator car down when it is pulled up and which stops the car when pulled to an intermediate position. The starting rope 13 is located between the grooved cam wheels 11, 11 and the frame 1. As the cam wheels 11, 80 11 are turned they operate either to grip the starting rope or to release it.

The wheels 11, 11 are turned by the operation of links 14, 14 which are loosely attached to the wheels 11, 11 by means of 85 loosely mounted pins 15, 15 which pass through the links and wheels at points near the circumferences of the wheels. Channels 16, 16 are cut into the wheels 11, 11, which permit of movement of the wheels with respect to the links 14, 14. The links 14, 14 90 are also loosely attached to a bell-crank lever 17 which is pivoted at 26 to the base plate 6 of the frame 1. The bell-crank lever may be operated by hand or by foot. In 95 the form of device shown it is operated by foot. A pin 18 having a fork 19 is provided and is connected to the arm 20 of the lever 17 by the pin 27. The pin 18 passes up through the flooring 8 and is provided with 100 a head 21. The head 21 is adapted to be pressed downward by a foot of the operator.

The pivot connections of the different parts of the device are loose so that there is a free movement of one with respect to the 105 other. In the drawing slots are shown located in the parts in which the pivot pins are inserted to connect the said parts together. This allows a free movement of the cams with respect to each other. This is 110 true of all of the pivot pins of the device excepting the pivot pin about which the

lever moves and the pins about which the cams partially rotate when in operation.

A spring 22 operates to lift the arm 20 and the pin 18. It is located in a hole 23 formed in the base 6. The opposite end is placed over a lug 24 located on the arm 20. When the arm 20 is forced down by the operator the spring 22 is compressed and the cams 11, 11 are turned so that the starting rope 13 is released and it may then be operated. When the pressure on the lever arm 20 is removed the spring 22 lifts the lever arm 20 and causes the links 14, 14 to turn the cams 11, 11 so that they will grip the motor controlling rope 13. When the car is moving up the gripping mechanism will seize the motor controlling rope 13 and pull it up until the car stops. The same is true when the car goes down. The rope can not be again moved until the gripping mechanism is operated upon to release the rope when it may be pulled up or down according to the direction that it is desired to start the car. The rope can not therefore be moved unless it is done by some one in the car and then only upon the operation of the gripping mechanism to release the controlling rope 13.

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

1. In an elevator the combination of a

frame located on the elevator car, a starting rope movable in the said frame, a pair of cams mounted in the said frame, links attached to the said cams and adapted to operate the same, a lever also mounted in the said frame and attached to the said links and a manual means for operating the said lever.

2. In an elevator system the combination of a tubular frame having a slot, cams mounted in the said slot, links attached to the said cams and adapted to turn them, a lever attached to the said links, and a foot pin adapted to operate the said lever.

3. In an elevator the combination of a pair of cams, a starting rope, a spring for causing the said cams to frictionally engage with the said rope, a lever, links for connecting the said lever to the said cams and a manual means for withholding the operation of the said spring, a frame adapted to receive the said rope and to support the said parts, the said frame being located on the elevator car.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

EDWARD J. BROWN.

Witnesses:

FAUST F. CRAMPTON,
ALEX. BROUGH.