W. R. WEST & G. C. BAKER.

SAFETY LOCK FOR ELEVATORS.

APPLICATION FILED JAN. 20, 1910.

968,907. Patented Aug. 30, 1910.

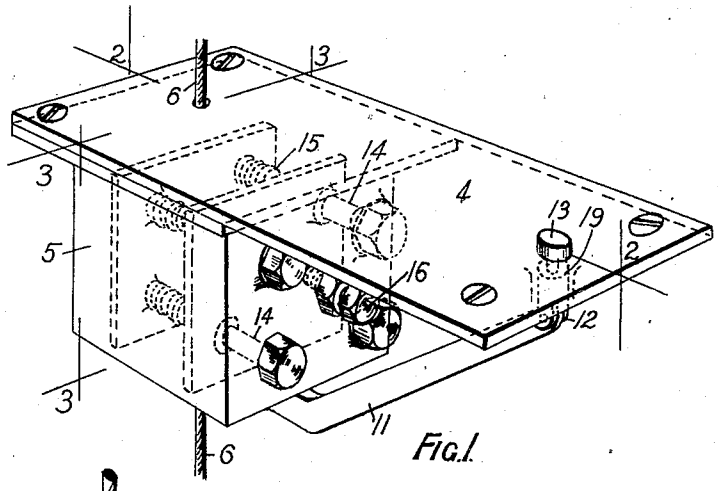

FIG. 1.

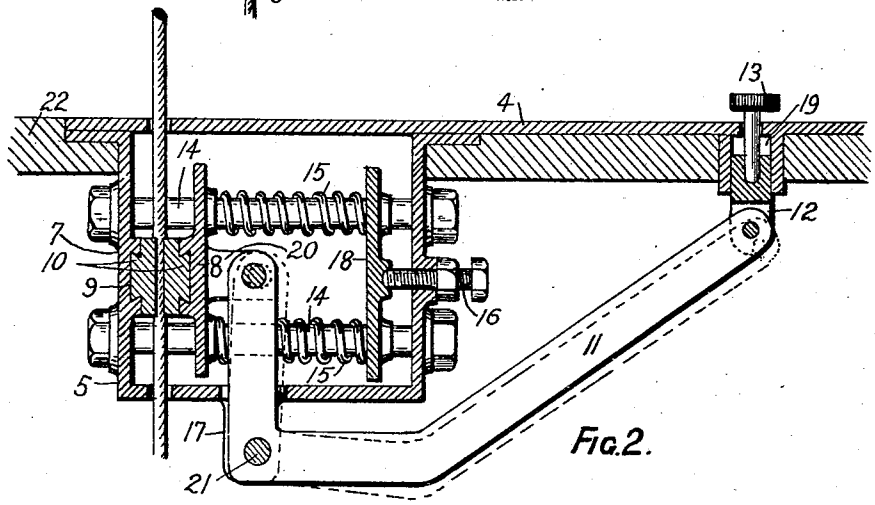

FIG. 2.

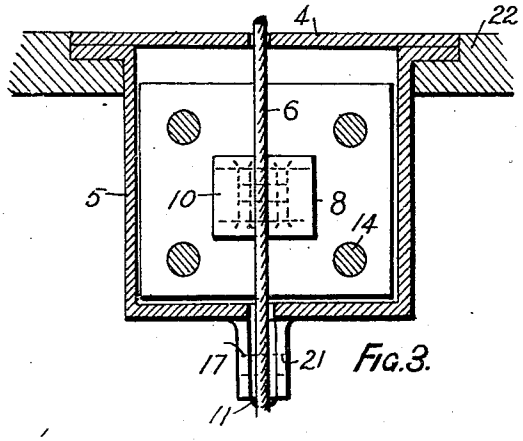

FIG. 3.

WITNESSES

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SAFETY-LOCK FOR ELEVATORS.

968,907. Specification of Letters Patent. **Patented Aug. 30, 1910.**

Application filed January 20, 1910. Serial No. 538,988.

To all whom it may concern:

Be it known that we, WILLIAM RICHARD WEST and GEORGE CLARKE BAKER, subjects of the King of Great Britain and Ireland, residing at Leichhardt, in the State of New South Wales, Commonwealth of Australia, have invented certain new and useful Improvements in Safety-Locks for Elevators, of which the following is a specification.

The invention relates to elevators. Our purpose is firstly to provide a safety device which will lock the elevator automatically so that the lives of the occupants cannot be jeopardized by the carelessness of an attendant—and secondly, by making the releasing of the grips dependent on the use of a detachable key, to prevent any unauthorized person from putting the elevator into motion during the absence of the attendant.

With these objects we construct a small metal box, adapted to be attached to the outside of the cage in any convenient position, containing a pair of jaws, designed to be brought into gripping contact with the control rope of the elevator by means of one or more springs. A lever-bar has one end connected to one of these jaws and the other to a cup-shaped plunger adapted to receive a detachable key passing through the floor of the lift and so arranged that the attendant, by pressing on the top thereof with his foot, can depress the plunger and by means of the said lever-bar pull the jaw to which it is attached out of contact with the rope, thus "unlocking" the elevator. But in order that our invention may be clearly understood we shall now refer to the accompanying drawings which show one of our locks secured on the under surface of the floor of the cage.

Figure 1 is a perspective view of our device in position. Fig. 2 is a section on line 2, 2, of Fig. 1. Fig. 3 is a section on line 3, 3.

The casing 5 containing the jaws 7 and 8 and the operating springs 15, 15, is securely attached to the top plate 4 which is fastened to the under side of the lift floor in such a position that the control rope 6 passes between the said jaws, and the head of the key 13 is in such position as to be easily reached by the foot of the attendant while handling the control rope and manipulating the door. These four springs 15, 15, are of sufficient strength to force the movable jaw 8 against the fixed jaw 7 so as to grip the rope between the pads 10, 10, with sufficient power to operate the valve and thus stop the movement of the elevator.

A bell-crank lever 11 connects pivotally with the movable jaw 8 and with the hollow plunger 12 adapted to receive the key and to move vertically in a hollow lug 19 provided therefor in the top plate 4. The bracket 17 attached to the casing 5 is for the purpose of carrying the pivot-pin 21 on which fulcrums the lever 11. The four horizontal bolts 14, 14, carry the operating springs 15, 15, and act as guides for the movable jaw 8 and for the tension plate 18 which latter is adjustable by the set screw 16. Each of the jaws is provided with a recess 9, for the purpose of receiving and holding a pad 10 of rubber, leather, wood, fiber or other suitable material. It is these pads, when the device is in operation, which are forced into contact with the control rope so as to stop the movement of the elevator. To the movable jaw 8 is attached the bracket 20 to which is pivoted the lever 11 as shown.

When the parts occupy the positions shown in the drawings the control rope is gripped by the jaws. As soon as it is desired to start the elevator car moving in either direction, the attendant, before pulling on the control rope, places his foot on the top of the key 13 thus depressing the plunger 12 and by means of the lever 11 overcoming the springs and pulling the movable jaw out of contact with the rope.

Obviously there are many possible modifications of the means of applying spring power to automatically close the gripping jaws, and also of releasing same. It might for instance be considered advantageous to make both jaws movable and under spring pressure, but we have shown one simple construction which we have found to work effectively in actual use.

When it is required that the lock should be on the side of the cage, as for instance when the control rope is without the cage, the operating lever bar in place of being directly pivoted to the plunger as in the construction shown in the drawings, is connected therewith by a suitable flexible connection, preferably a bicycle chain, passing around suitably arranged pulleys.

What we claim and desire to secure by Letters Patent is:—

1. In a locking device for elevators, the combination with an elevator car, of a casing arranged below the floor of the elevator car, a fixed jaw in the casing, parallel rods in the casing, a movable jaw slidably mounted on the rods, spring on the rods and pressing the movable jaw toward the fixed jaw, a tension device for the springs, a bell crank lever pivoted to the casing with one member projecting into the said casing and pivoted to the movable jaw, a depending hollow lug in the floor of the elevator car, a plunger in the said lug and to which the other member of the bell crank lever is pivoted, said plunger being provided with a recess in its upper face, and a removable headed key engaging the recess of the plunger.

2. In a locking device for elevators, a casing below the floor of an elevator car, a fixed jaw in the casing, parallel rods in the casing, a movable jaw slidable on the rods, springs on the rods and pressing the movable jaw toward the fixed jaw, a pivoted bell crank lever having one member connected with the movable jaw, a depending hollow lug in the floor of the elevator car, a plunger working in the lug and to which the other member of the bell crank lever is pivoted, said plunger having a recess in its upper face, and a removable key engaging the recess of the plunger.

3. In a locking device for elevators, a casing, a fixed jaw in the casing, parallel rods in the casing, a movable jaw slidably mounted on the rods, springs on the rods in the casing and pressing the movable jaw toward the fixed jaw, a tension plate slidable on the rods, a screw mounted in the casing and engaging said tension plate, a pivoted bell crank lever having one member connected with the movable jaw, and a reciprocating member to which the other member of the bell crank lever is pivoted.

Signed at Sydney, New South Wales, this 29th day of November, 1909.

WILLIAM RICHARD WEST.
GEORGE CLARKE BAKER.

Witnesses:
WILLIAM NEWTON,
CHARLES HATTON.