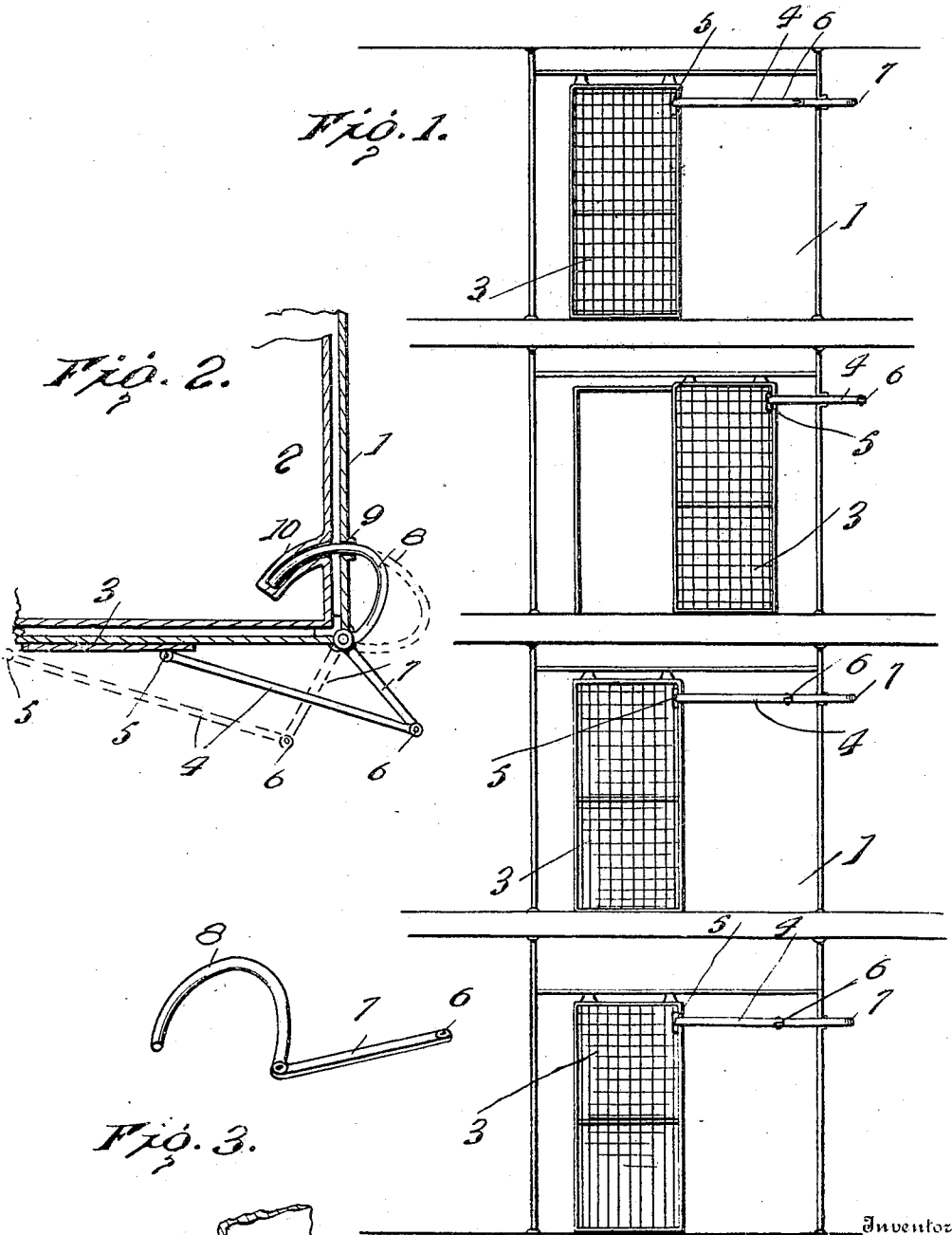


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PATENTED DEC. 18, 1906.

C. H. LEFFINGWELL.
SAFETY DEVICE FOR ELEVATORS.
APPLICATION FILED APR. 20, 1906.



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SAFETY DEVICE FOR ELEVATORS.

No. 838,726.

Specification of Letters Patent.

Patented Dec. 18, 1906.

Application filed April 20, 1906. Serial No. 312,880.

To all whom it may concern:

Be it known that I, CHARLES H. LEFFINGWELL, a citizen of the United States, residing at Cleo, in the county of Woods and Territory of Oklahoma, have invented certain new and useful Improvements in Safety Devices for Elevators, of which the following is a specification.

This invention relates to an improved safety device for elevators, designed to prevent movement of the elevator-cage while a door to the shaft is open, or, in other words, the invention necessitates the closing of the door leading to the elevator-cage before the latter can ascend or descend.

The aim of the invention is of course to prevent liability of accident, such as may be due to the inadvertent non-closing of a door of the elevator-shaft or movement of the elevator-cage before the door or doors have been entirely closed.

For a full understanding of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result reference is to be had to the following description and accompanying drawings, in which—

Figure 1 is a side elevation showing a portion of an elevator-shaft, the invention being applied at the several landings. Fig. 2 is a horizontal sectional view to bring out more clearly the mounting and connection of the parts comprised in the invention. Fig. 3 is a perspective view of the operating mechanism comprising the invention alone. Fig. 4 is a perspective view, broken away, showing the mounting of the antifriction-rollers near the entrance to the catch-receiving socket.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

In the drawings the numeral 1 designates the elevator-shaft, and the numeral 2 denotes the cage or car, which may be of the freight or passenger type within the contemplation of the invention. The shaft 1 is provided at each landing with a door 3, by which access may be had to the cage 2 and which is adapted to be closed and opened by the operator in the customary way. Said door 3 will have the usual lock or catch to hold the same closed.

The invention comprises means which is operable by the door to cause operation of a catch located at one side of the shaft 1 to ef-

fect engagement of said catch with the elevator car or cage 2 when the door 3 is opened, whereby the cage or car is prevented from movement until the door is entirely closed.

In carrying out the invention a bar 4 is pivotally connected at one end, as shown at 5, to the door 3, (the door being mounted for slidable movement back and forth in the usual way,) the opposite end of the bar 4 being pivotally connected at 6 to a lever 7, pivoted near one corner of the shaft 1. The lever 7 may be said to be of somewhat bell-crank form, the arms of said lever, however, extending at an obtuse angle instead of the usual right angle. The catch 8, by which movement of the car or cage 2 is prevented in the manner hereinbefore mentioned, is preferably carried by the lever 7 and may be integrally formed with this lever, if so desired. Said catch 8 comprises, preferably, a curved arm or member which when actuated will project through an opening 9 in a side of the shaft 1 and enter an opening or socket 10 in the upper side portion of the car or cage 2. The catch 8 is thus adapted to lock the car or cage 2 from ascending or descending while it is in engagement therewith, and said catch will be made very substantial, in any way, to answer the purposes of the invention. Where the upper portion of the cage or car 2 is constructed with the usual lattice-work, it is preferred that the socket or opening 10 be formed in a plate rigidly attached to the cage, this being necessary to subserve the rigidity of the temporary connection between the shaft and the cage under conditions hereinbefore set forth.

The mounting of the parts of the invention is such that in the operation thereof as the car or cage 2 reaches a landing the operator or conductor may readily throw the door 3 open, such movement actuating the bar 4, lever 7, and catch 8 in such a way that the catch is forced into the socket 10 now registering with opening 9, thereby locking the cage or car from movement. Before it is possible to move the car it will be apparent that the door 3 must be entirely closed to entirely disengage the catch 8 from the cage or car. The advantages of the invention are obvious. The opening 9, through which the catch 8 is adapted to pass, is provided at its upper and lower sides with rollers 11, suitably journaled for rotation about horizontal axes and arranged in spaced relation. The catch 8 passes into the socket 10 through the

space between the rollers, and should any pressure be brought to bear against the catch by the elevator-car as it ascends or descends initial to the movement of the car the anti-friction-bearings constituted by the rollers 5 11 will admit of free movement of the door without likelihood of binding because of friction between the catch 8 and the sides of the opening 9.

10 Having thus described the invention, what is claimed as new is—

In a device of the class described and in combination with the usual elevator-shaft, a car mounted therein, a lever pivoted between 15 its ends and mounted at a side of the shaft, a catch carried by one end of the lever and ar-

ranged to pass through a side of the shaft to engage the car, a door leading to the shaft, and a bar pivotally connected with the door and with the opposite end of the lever, 20 whereby on operation of the door the catch will be automatically operated, the catch above mentioned forming an integral portion of the lever, the door being provided with a socket to receive the catch when the 25 latter is actuated to engage the cage or car.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES H. LEFFINGWELL. [L. S.]

Witnesses:

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