

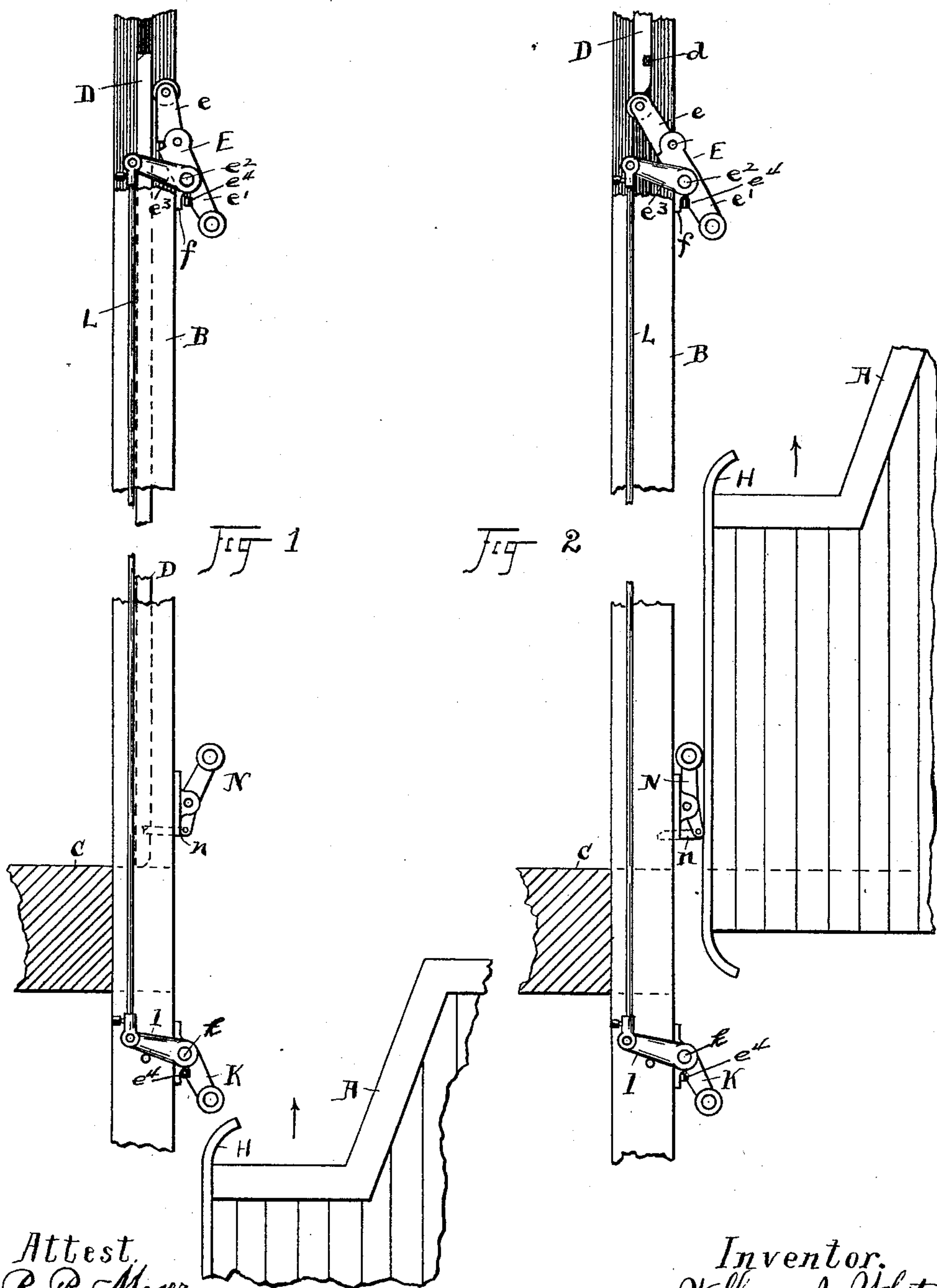
(No Model.)

2 Sheets—Sheet 1.

W. J. WHITE.
SAFETY ATTACHMENT FOR ELEVATORS.

No. 486,518.

Patented Nov. 22, 1892.



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R. B. Moser
A. J. Symes.

Inventor.
William J. White.
by H. T. Fisher
Attorney.

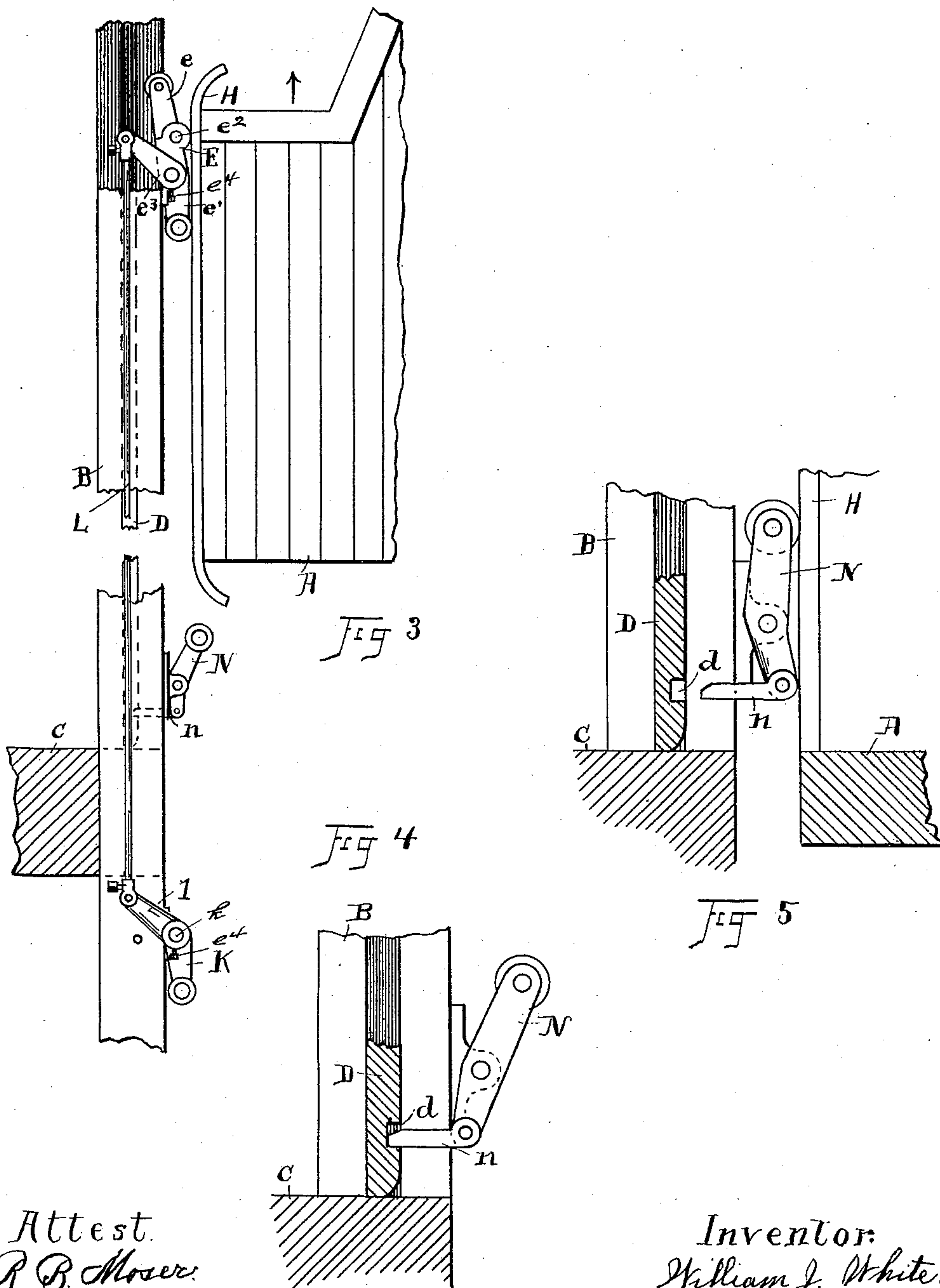
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UNITED STATES PATENT OFFICE.

WILLIAM J. WHITE, OF CLEVELAND, OHIO.

SAFETY ATTACHMENT FOR ELEVATORS.

SPECIFICATION forming part of Letters Patent No. 486,518, dated November 22, 1892.

Application filed October 21, 1891. Serial No. 409,362. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. WHITE, a-citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Safety Attachments for Elevators; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to that class of devices for securing the gates or doors of elevators in their open and closed positions which are released automatically upon the ascent or descent of the elevator carriage; and its object is to provide a simplified form of such devices.

To this end the invention consists in the construction hereinafter described, and particularly pointed out in the claims.

On the accompanying drawings, Figure 1 is a side elevation of the front framework of the elevator-shaft with my improvements attached and showing the gate down and locked and the elevator-carriage approaching from below, only a portion of the upper part of the gate being shown. Fig. 2 is a similar view of the framework with the carriage moved upward past the lower lever and in engagement with the door and showing the door raised and held in raised position by my improved mechanism. Fig. 3 is a view showing the carriage raised into contact with the upper lever and showing the door released from said lever and down in its lowered and locked position. Fig. 4 is an enlarged detail of the door-locking mechanism and showing the lock engaged with a section of the door. Fig. 5 is a view of the same parts as shown in Fig. 4 with the lock out of engagement with the door.

In the drawings, A represents the carriage, B the framework of the elevator-shaft, C a floor or landing, and D the gate or door. I lay no claim whatever to invention in any of these parts in themselves, and they are illustrated here simply to show the relation, use, and operation of my improvements in connection therewith. My devices are designed to release the elevator gate or door by means of the carriage immediately upon the carriage leaving a landing, whether it travel up or

down, to the end that accidents from open gates may be prevented. In this instance the attachment is shown as applied to a gate or door which slides up and down in its bearings or guideways and which is counter-weighted so that while the weight of the door exceeds the counter-weight the door will not close abruptly or with a violent jar when it is allowed to drop into closing position. Assuming, therefore, that the door is closed, when the carriage arrives at a landing the operator raises the door by hand to the open position—say as seen in Fig. 2—and the supporting-lever E drops automatically beneath the door against the framework, serving then as a support for the door and preventing the door from dropping while the lever remains in that position. This lever, as here shown, has a pivoted upper section *e* and a lower section or portion *e'*, rigid with its spindle, and is fastened at or near its center upon a spindle *e*², and the spindle is held by a suitable bearing *f*, fixed permanently to one of the front corner-pieces of the framework of the elevator-well. By this construction and arrangement the lever E can be brought into such position that the pivoted extremity *e* will drop automatically beneath the door when the door is raised, as shown in Fig. 2. Now in order that the movement of the said lever may be effected automatically by the elevator-carriage and without thought or attention from the elevator-man I have so constructed and arranged the said lever E, with respect to the carriage and the gate that when the lever is in supporting position, as in Fig. 2, the lower portion *e'* thereof will lie into the pathway of the carriage. Then in order to make the carriage do the work of withdrawing said lever from beneath the door, as described, I attach a shoe H to the front corner of the carriage corresponding to the corner of the shaft having the lever. This shoe has a smooth bearing-surface and is curved back at its ends, so as to make easy engagement with the lever E whichever way the carriage travels. The lever is shown here as having an antifriction-roller to make the contact with the shoe an easy one. When the shoe has made engagement with said lever, whether the carriage be ascending or descending, the parts are in the position substantially as

shown in Fig. 3, and the lever is forced from beneath the gate to a nearly-vertical position. When this occurs, the door or gate is released and it immediately falls to closed position by its own gravity, as seen in Fig. 3. If, however, the carriage descends after it has made a landing and the door is open, the shoe H being below the lever E, it cannot operate directly thereon. Hence I have provided a second lever K, which is secured to the post B just below the plane of the corresponding landing C, and has on the opposite end of its spindle k an adjustable arm l , connected by a rod L with a similar arm e^3 on the spindle of lever E. The arms l and e^3 are rotatable on their spindles, so as to give them the proper adjustment with respect to the levers E and K, and are held in their adjusted position by set-screws e^4 , passing through the hubs of the arms and engaging the spindles. It follows when the cage descends that it will strike lever K as it did lever E, through its shoe or equivalent construction, and thus operate said lever E through rod L and release the door or gate the same as if it moved the lever E itself. The upper lever therefore serves the purpose, through the action of shoe H, of releasing the gate when the cage ascends, and the lower lever serves the same purpose when the cage descends. The door or gate D has a notch or its equivalent d , adapted to be engaged by a locking bolt or catch n , connected with a lever N, pivoted in position to be moved by shoe H very much as levers E and K are moved. The door D is beveled or rounded on its lower edge, so that when it descends it will force bolt n back out of the way and leave said bolt free to engage a notch d and hold the door closed. The operator has nothing to do with this catch or lock nor with the closing of the door, both of which work automatically. The arm N of the lock is weighted at top, so as to drop outward by gravity as soon as the arm is free from the shoe. When the lever E is beneath the gate in supporting position, its upper end rests against the door-casing, so that it cannot swing in past that point. Each landing is provided with these safety devices. In lieu of the separate plate forming the shoe H the

elevator-carriage may be built with a bearing-surface corresponding to the shoe, and the shoe may be regarded practically as forming a part of the carriage. A chain or flexible connection might be made between the arms E and K; but this is not deemed desirable as a rod connection.

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

1. In elevators, the gate, means secured to the shaft or way for holding the gate in its open position and to be engaged by a part or shoe on the elevator-carriage, another device upon the shaft or way connected with said means for operating the same, and said part or shoe on the elevator-carriage adapted to engage said means and device, respectively, to release the gate upon the ascent or descent of the carriage, substantially as shown and described.

2. In elevators, the gate, a lever pivoted to the shaft or way and adapted to hold the gate in its open position, another lever also secured to the shaft or way, means connecting said levers, so that the operation of the last-mentioned will release the first-mentioned lever, and a part or shoe on the elevator-carriage adapted to engage the levers, respectively, to release the gate upon the ascent or descent of the carriage, substantially as shown and described.

3. In elevators, the gate, means secured to the shaft or way for holding the gate in its open position and adapted to be engaged by a part or shoe on the elevator, another device on the shaft or way connected with said means for operating the same, a latch for locking the gate in its closed position, and said part or shoe on the carriage adapted to release the latch and also to engage said means and device, respectively, to release the gate upon the ascent or descent of the carriage, substantially as shown and described.

Witness my hand to the foregoing specification.

WILLIAM J. WHITE.

Witnesses:

H. T. FISHER,
R. B. MOSER.