

(No Model.)

2 Sheets—Sheet 1.

F. A. WINSLOW.

LOCK OR LATCH FOR ELEVATOR OR OTHER DOORS.

No. 497,041.

Patented May 9, 1893.

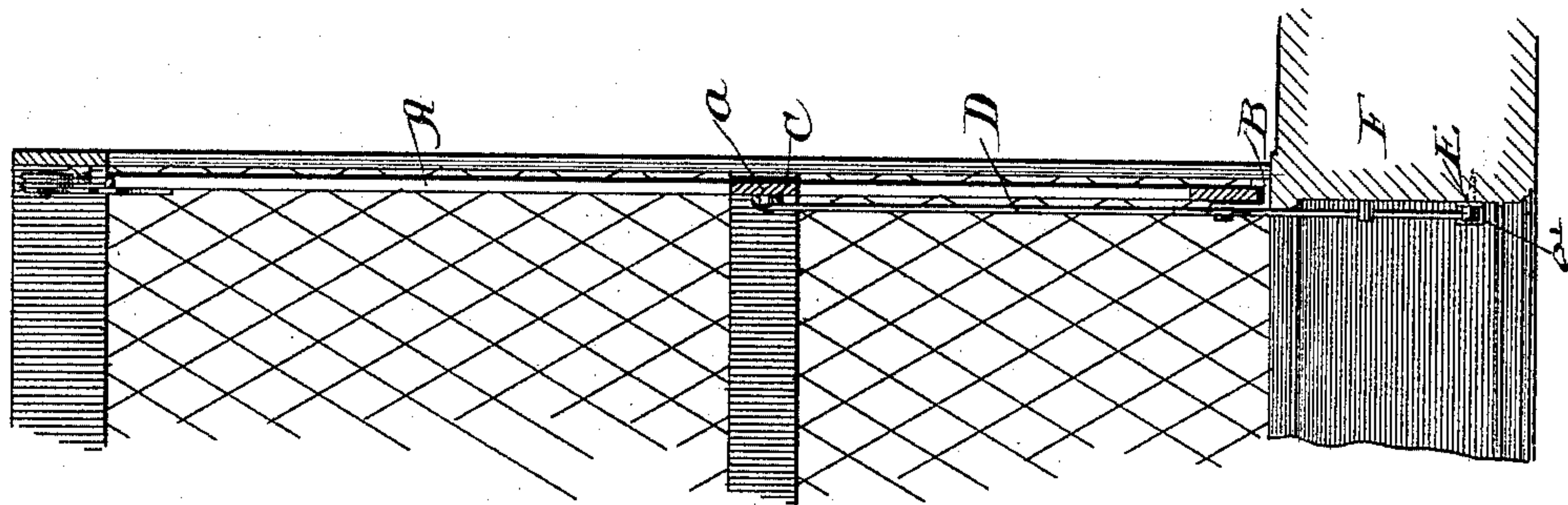
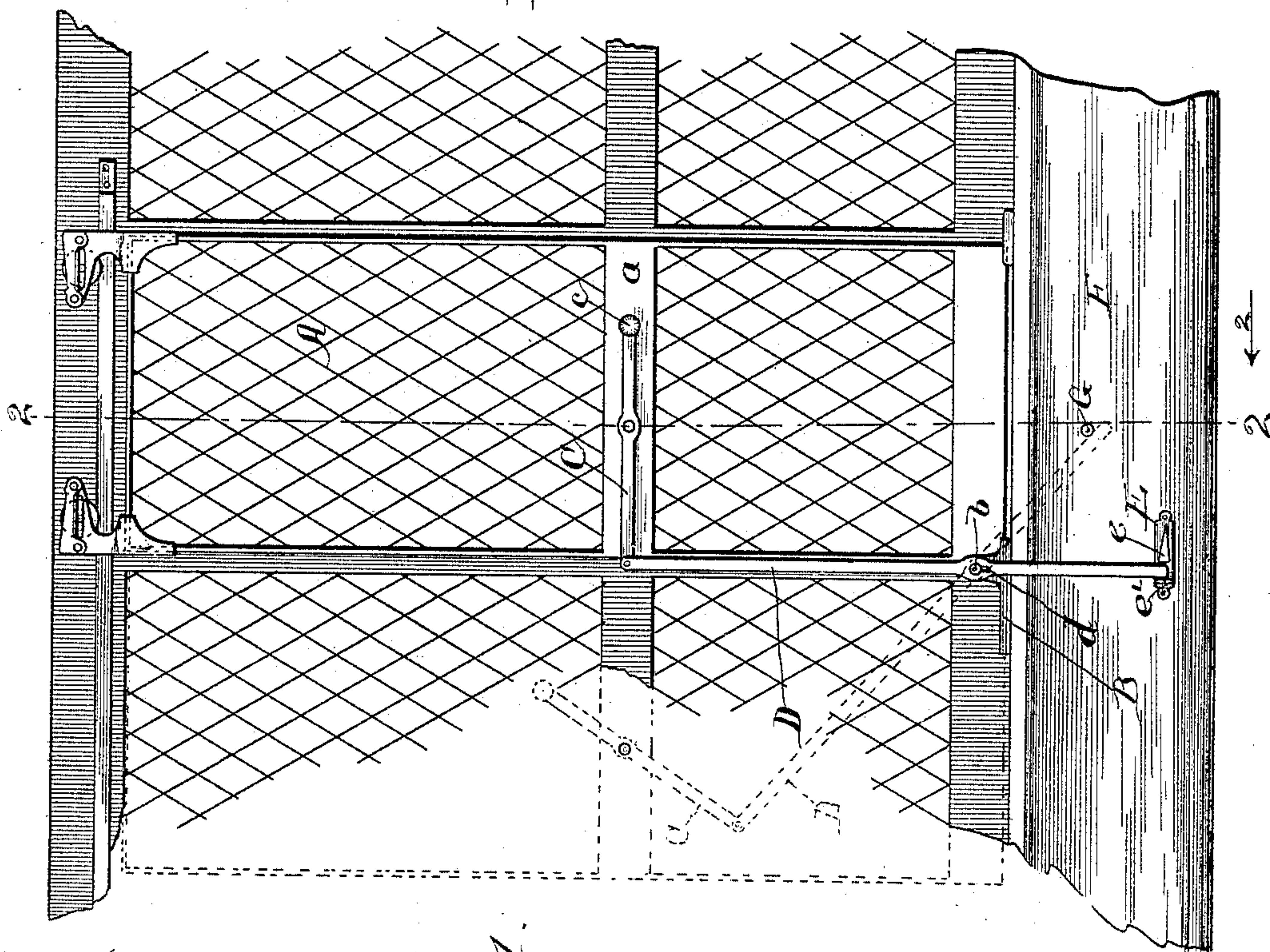


Fig. 2.



Witnesses:

Charles Shervey  
H. J. Ebbesen

Fig. 1.

Inventor:  
Francis A. Winslow,

By Miles Muer Bitum  
Attys:



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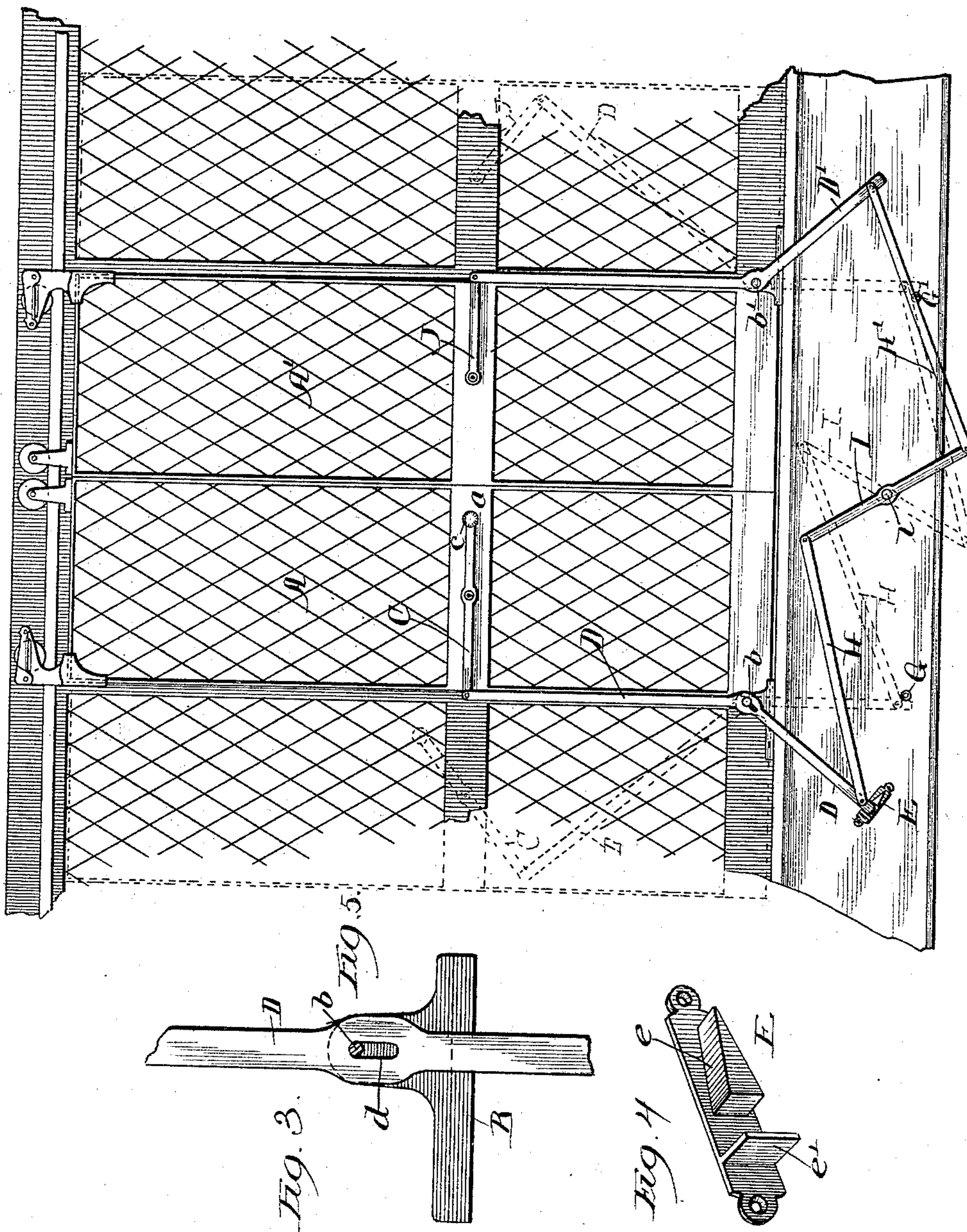
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# UNITED STATES PATENT OFFICE.

FRANCIS A. WINSLOW, OF CHICAGO, ILLINOIS.

## LOCK OR LATCH FOR ELEVATOR OR OTHER DOORS.

SPECIFICATION forming part of Letters Patent No. 497,041, dated May 9, 1893.

Application filed January 3, 1893. Serial No. 457,001. (No model.)

*To all whom it may concern:*

Be it known that I, FRANCIS A. WINSLOW, a citizen of the United States of America, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in a Lock or Latch for Elevator or other Doors or Inclosures, of which the following is a specification.

My invention relates to certain improvements in a locking device for elevator doors, or similar devices, designed especially with reference to strength, simplicity and noiseless operation. In addition to these ends, certain other advantages have been attained as will appear from the following description.

In a general way, my invention consists of a series of levers attached at one end to the elevator door and provided with a locking device located at such a point as to avoid any obstruction in the passage way, or the location of unsightly parts across the open work of the door or inclosure.

The drawings, presented herewith, illustrate the application of my improvements in their preferred form to both single and double elevator doors.

Figure 1 is an elevation of the inner side of a single door and adjacent portions of the inclosure. Fig. 2 is a vertical section in line 2—2, of Fig. 1, looking in the direction of the arrow, 2. Fig. 3 is a detail elevation of a portion of Fig. 1. Fig. 4 is a detail perspective of another portion of the same figure; and Fig. 5 is a view similar to Fig. 1, showing the application of the invention to double doors connected together so that the opening or closing of one automatically opens or closes the other.

Looking at Figs. 1 and 2, a door, A, is seen, of ordinary construction, carried by rollers running upon a suitable track at the top and sliding in a guide, B, at the bottom. This door, A, has a solid cross-bar or plate, a, at about the height of the ordinary latch, and upon this plate is pivoted a horizontal lever, C, having at the end toward which the door closes, a handle, c, and pivoted at its opposite end to a vertical lever, D. This lever, D, is pivoted upon a pin, b, carried by the guide, B, and extends beyond said pin to a catch, E, secured to the floor, F. At the pin, b, the lever, D, has a slot, d, (see Fig. 3) to allow it a

vertical motion upon said pin and the catch, E, has a projecting lug, e, (see Fig. 4) the upper surface of which is inclined so as to allow the free end of the lever, D, to slide over it as the door closes, but to prevent its return after it is once passed. The catch has also a stop, e', to prevent the lever from swinging any farther than necessary to engage with the lug, e. This stop, e', is preferably formed upon the body of the catch, E, but such arrangement is merely a matter of convenience as must be perfectly obvious to one who understands the function and operation of said stop.

The door is opened by pressing downward upon the knob, c, which raises the lever, D, bodily until its lower end is free from the catch, E, when the door can be pushed open without resistance. A pin, G, is also provided to act as a stop upon the lower end of the lever, D, when the door is fully open. The position of the levers, C, D, when the doors are thrown back is indicated by dotted lines. In closing the door again, the handle, c, is pressed forward carrying the door with it and whatever slight pressure may be exerted aids the lever, D, in sliding up the inclined lug, e.

In the application of the improvements to double doors sliding away from each other the lever, D, is bent at the pivot, b, and the catch, E, moved toward the left and tilted so as to bear the same relation to the bent end of the lever as before. There is pivoted to the extremity of this bent end a connecting bar, H, pivoted at its opposite end to one end of a lever, I, pivoted centrally at i, and having its opposite end jointed with a second connecting bar, H', reaching to the lower end of a lever, D', similar to the lever, H, but bent in the opposite direction. This lever is pivoted upon a pin, b', and has its upper end connected with the door, A', by means of a link, J. In operation, the system of connecting bars and levers between the lever, D, and the lever, D', transmits the force applied to the door, A, to the lever, D', swinging the door, A', open along with the door, A.

It should be noticed that in both of the constructions described, none of the levers are in view from the outside of the inclosure when the doors are shut. The levers, D, D', are of



considerable length and the stops, G, G', are applied to the opposite ends from those connected with the doors. This enables the spring of the entire length of the levers to be utilized to prevent jolting when the doors are thrown open and slamming it when they are closed.

The principal advantages of my device are its combined strength and simplicity, being at the same time much stronger and more durable than the ordinary latch, and also extremely simple, doing away with all necessity for bumpers, springs, and, in fact, all complicated devices liable to get out of order, or to render great care necessary on the part of the operator. Moreover, the forward edge of the door is perfectly plain, having no bolt or latch projecting to catch upon the clothing in passing in or out of the car.

While the above improvements have been described only in connection with elevator doors, it is, of course, obvious that they may be applied to all manner of sliding doors, having the necessary places of attachment for the different parts.

I claim as new and desire to secure by Letters Patent—

1. The combination with a sliding door, of a substantially horizontal lever pivoted thereto, and adapted to be grasped by the hand, a substantially vertical lever pivoted to the horizontal lever and also pivoted between its ends to a portion of the frame of the inclosure and capable of motion against the influence of

gravity at the latter pivot, and a catch adapted to be engaged by the free end of the vertical lever so as to permit the door to be closed, but to prevent movement in the opposite direction; substantially as described.

2. The combination with a sliding door, of a substantially horizontal lever pivoted thereto and adapted to be grasped by the hand, a substantially vertical lever pivoted to the horizontal lever and also pivoted between its ends to the frame-work of the inclosure and capable of a movement against the influence of gravity at the latter point, a catch adapted to be engaged by the free end of the vertical lever so as to permit the door to close easily, but to resist its opening, and two stops respectively arranged to engage with said free end when the door is fully closed and wide open; substantially as described.

3. The combination with the sliding door, A, of a lever, C, pivoted thereto, a lever, D, pivoted to the frame of the inclosure and movable vertically upon its pivot and a catch, E, and a stop  $e'$ , substantially as described.

4. The combination with the doors, A, A', of the lever, C, the arm, J, the levers, D, D', the catch, E, the connecting bars, H, H', and the interposed lever, I; substantially as described.

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Witnesses:

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ROBT. BALLANTINE.