

No. 885,924.

PATENTED APR. 28, 1908.

A. HOLLINGER.
SAFETY DEVICE FOR ELEVATORS.

APPLICATION FILED MAY 4, 1907.

Fig. 1.

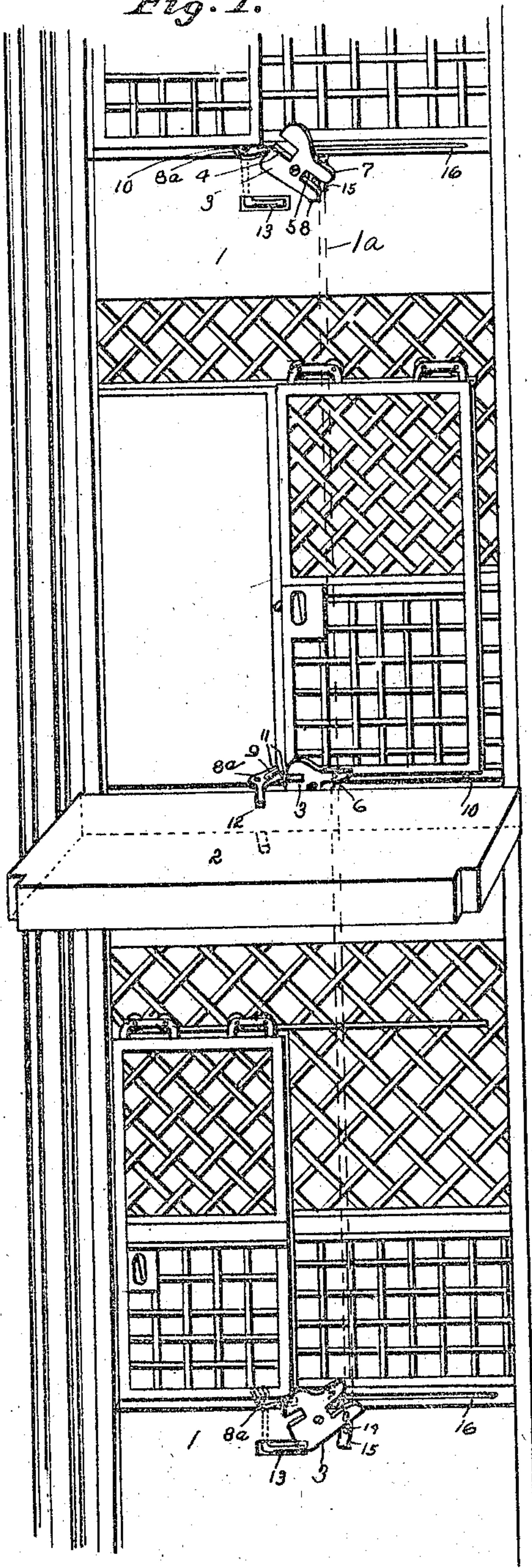


Fig. 2.

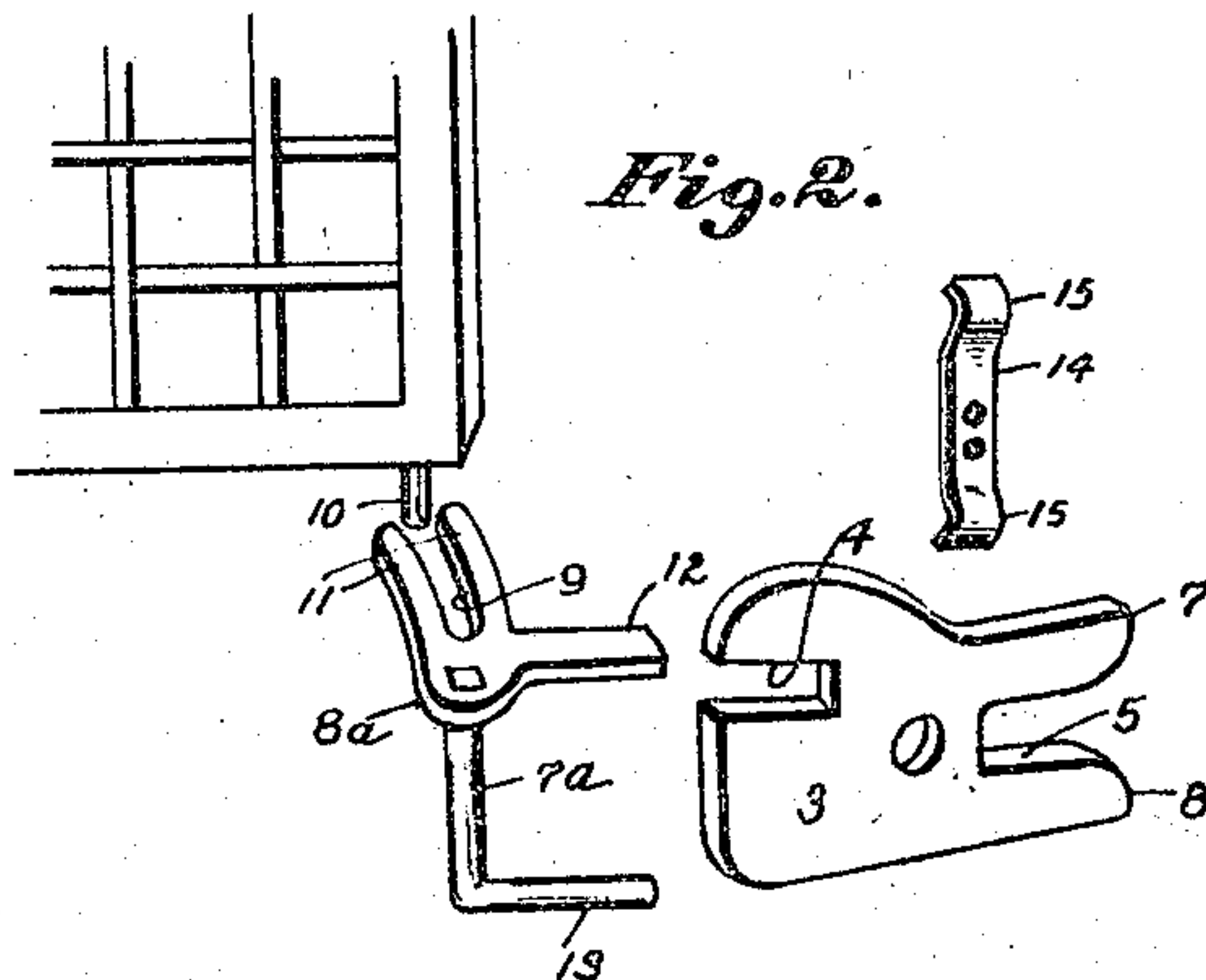


Fig. 3.

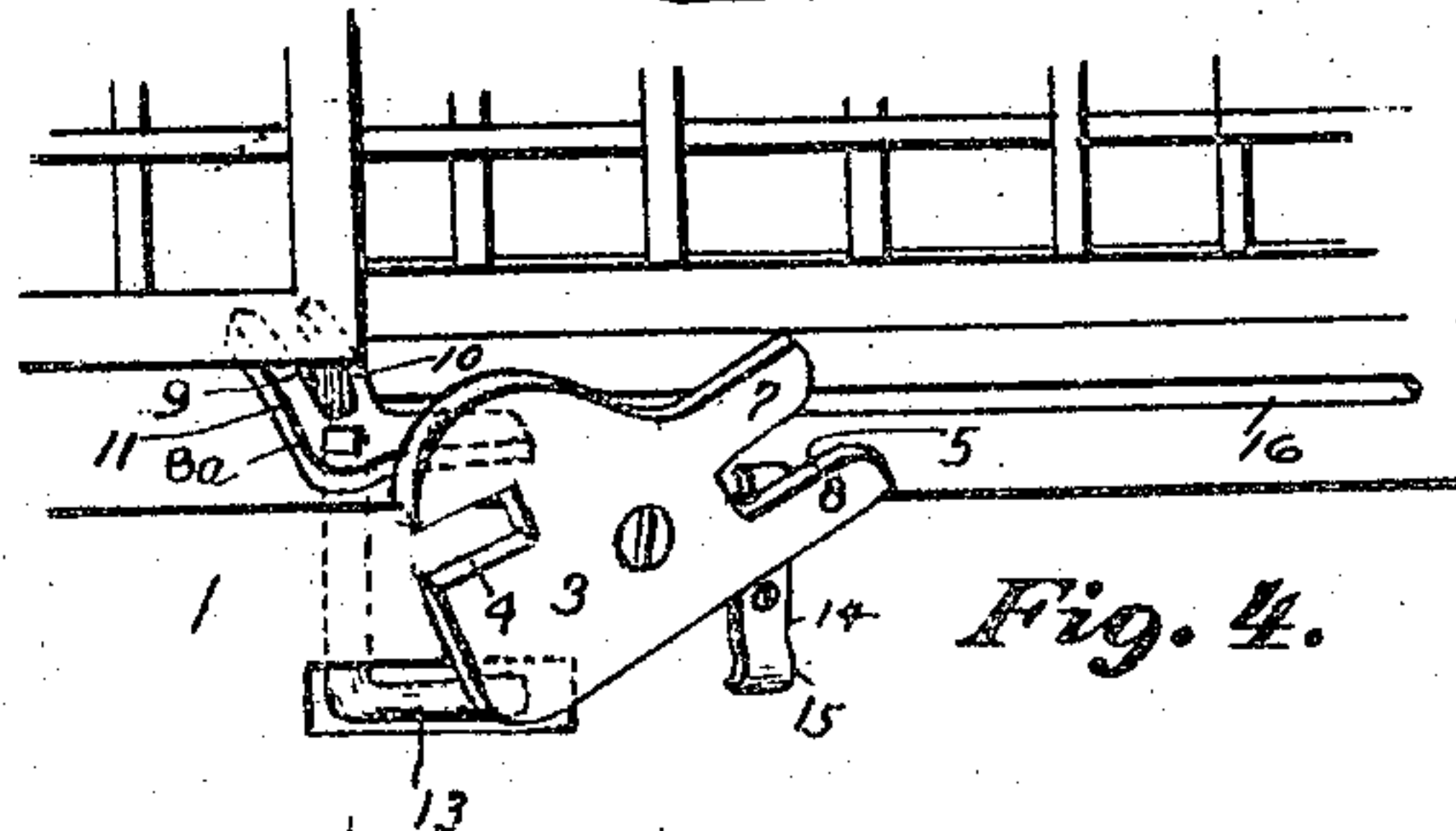
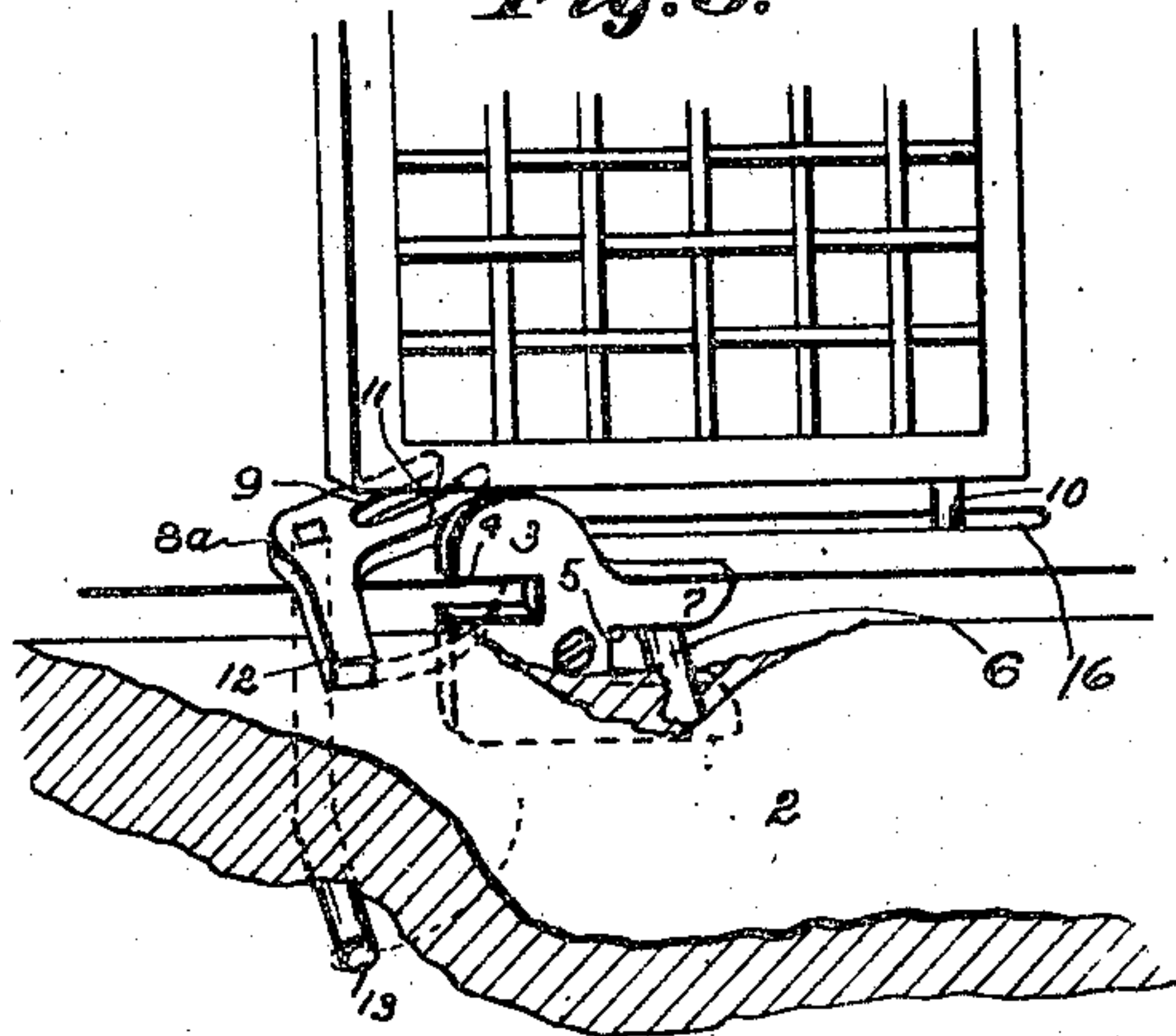
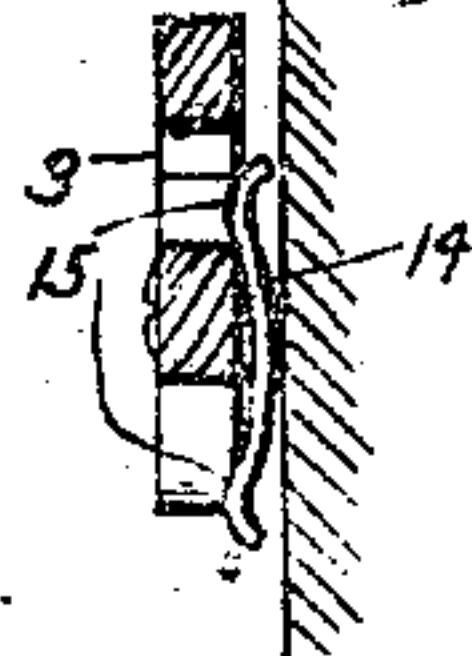


Fig. 5.



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UNITED STATES PATENT OFFICE.

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SAFETY DEVICE FOR ELEVATORS.

No. 885,924.

Specification of Letters Patent.

Patented April 28, 1908.

Application filed May 4, 1907. Serial No. 371,906.

To all whom it may concern:

Be it known that I, ANDREW HOLLINGER, a citizen of the United States, residing at Canton, in the county of Stark and State of Ohio, have invented certain new and useful Improvements in Safety Devices for Elevators; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawing, making a part of this specification, and to the numerals and figures of reference marked thereon, in which—

Figure 1 is a view showing the door side of an elevator shaft and illustrating my improved device properly connected, showing the floor of an elevator cage stopped at the center door. Fig. 2 is a view showing a portion of an elevator door, the door locking plate and the cage locking member, and the door locking plate retaining springs detached from each other. Fig. 3 is a view showing a portion of the elevator cage door, the door locking plate and the cage locking device in released position. Fig. 4 is a view showing the position of the door locking plate, after the cage has ascended and the position of the cage locking device. Fig. 5 is a transverse section of the door locking plate showing its spring in proper relative position.

The present invention has relation to safety device for elevators, and it consists in the novel arrangement hereinafter described, and particularly pointed out in the claims.

Similar numerals of reference indicate corresponding parts in all the figures of the drawing.

In the accompanying drawing, 1 represents the elevator shaft, which is constructed in the usual manner. An elevator cage is provided which is to be connected in the usual manner to hoisting devices, such as are common in elevators. The floor 2 which constitutes the floor of the cage is shown, but no part of the cage is illustrated, owing to the fact that the cage within itself forms no part of the present invention. At the various floor levels of the building are pivotally attached the door locking plates 3, which locking plates are provided with the recesses 4 and 5, said recesses are located upon the opposite sides of the pivotal points of the door locking plates 3 and are for the purpose hereinafter described. To the cage floor 2 is attached the door locking plate operating pin 6, which pin is for the purpose of engaging the arms 7 and 8 of the locking plates 3.

It will be understood that after the cage has been lowered or passed below a given door the locking plate will assume the position shown at the upper door of Fig. 1, and when the cage has moved upward and above a given door the locking plate will assume the position shown at the bottom of Fig. 1, and when the elevator cage is brought into the same plane with a given floor the locking plate will be in the position shown in Fig. 3, and the position shown in Fig. 1, the center locking plate shown in Fig. 1 illustrating its position when the door locking plate is brought into the position to release the cage locking device.

Within the wall of the elevator shaft and out of the way of the cage, is journaled the shaft 7^a; the top or upper end of which is provided with an L-shaped lever 8^a, one arm of said lever being provided with spaced arms adapted to engage the pin 10, which pin is secured to the door in any convenient manner and will engage the spaced arms 11 when the door is opened and closed, thereby rocking the L-shaped lever 8^a, but it will be understood that the L-shaped lever will not be permitted to rock unless the opposite locking plate 3 is brought into such a position that the notch 4 will register with the arm 12, at which time the door can be opened and closed, and when the door is opened or brought into the position illustrated in Fig. 3, the cage will be locked against movement either up or down by reason of the arm 12 passing through the slot 4 and on top of the cage floor 2, which locks the cage against any upward movement, and for the purpose of locking the cage against downward movement, the lower angle arm 12 is provided, which arm is preferably formed integral with the shaft 7^a thereby locking the cage against movement in both directions.

When the door has been closed or brought into the position illustrated at the top and bottom of Fig. 1, the L shaped lever 8^a and the angled arm will be moved so as to be disengaged from the cage floor and when the cage is moved in either direction the pin 6 will rock the plate 3, so as to throw the slot out of alinement at which time the door is locked against any movement of the arm 12, owing to the fact that the L shaped lever 8^a cannot be moved by reason of the arm 12 striking the plate 3, by which arrangement there can be no accidental movement of the cage when the door is opened nor can any

given door be opened until the cage floor 2 is brought into the same plane with the various floors of the building and stopped.

For the purpose of preventing any accidental displacement of the locking plate 3 after it has been set to lock the L shaped lever and the angled arm 13 against movement the spring 14 is provided, which spring is secured to the wall of the elevator shaft in any convenient manner and is provided with the curved portions 15, which engage the recesses 5 of the locking plates 3 when said locking plates are rocked in either direction. For the purpose of providing room for the pin 10 the floor of the building is provided with the slot or way 16.

In Fig. 1 the controlling rope 1^a is shown in dotted lines, which controlling rope is connected and operated in the usual manner, but has no specific reference to the present invention, except a controlling rope must necessarily be used.

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

1. In a safety device for elevators, an elevator cage, and a door, a pivoted door locking plate provided with recesses upon opposite sides of its pivotal point, a shaft provided with an L-shaped lever, one of the arms of the L-shaped lever adapted to pass through one slot of the door locking plate, and means carried by the elevator door and the elevator cage to actuate the locking plate and the L-shaped lever, substantially as and for the purpose specified.

2. In a safety device, the combination of

an elevator cage, and a door, a pivoted plate located in the elevator shaft, means carried by the cage adapted to actuate the pivoted plate, an L-shaped lever, one arm of said lever adapted for engagement with the pivoted plate and the other arm of said lever adapted to be actuated by the elevator door, said plate provided with a recess adapted to release the L-shaped lever, substantially as and for the purpose specified.

3. In a safety device for elevators, the combination of an elevator cage and a door, a pivoted locking plate located in the shaft of the elevator near the elevator door, said plate provided with spaced arms, means carried by the cage adapted to engage the arms of the locking plate, cage locking devices, and means carried by the door adapted to actuate the cage locking devices, substantially as and for the purpose specified.

4. In a safety device for elevators, the combination of an elevator cage and a door, a pivoted locking plate located in the shaft, said plate provided with spaced arms, means carried by the cage adapted to engage the arms of the locking plate, cage locking devices, means carried by the door adapted to actuate the cage locking devices, and a spring adapted to engage the pivoted locking plate, substantially as and for the purpose specified.

In testimony that I claim the above, I have hereunto subscribed my name in the presence of two witnesses.

ANDREW HOLLINGER.

Witnesses:

J. A. JEFFERS,
F. W. BOND.