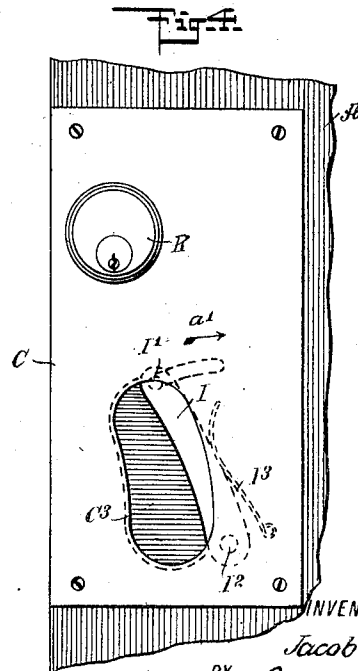
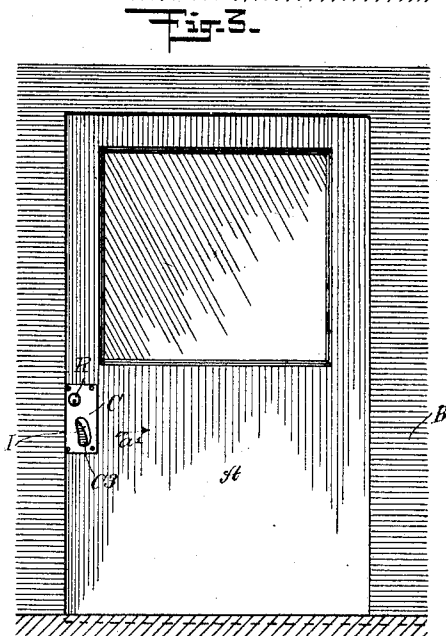
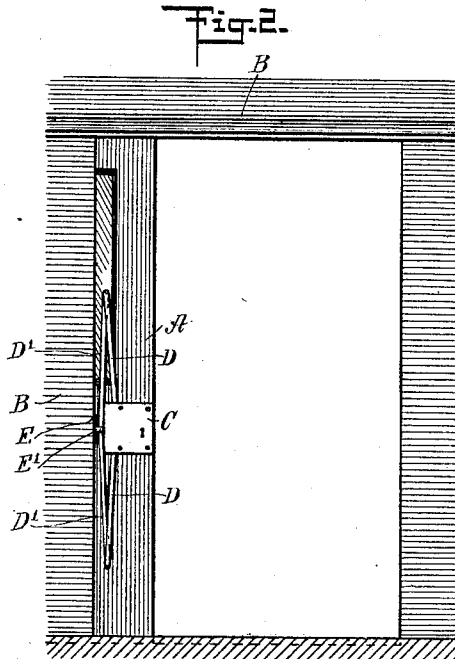
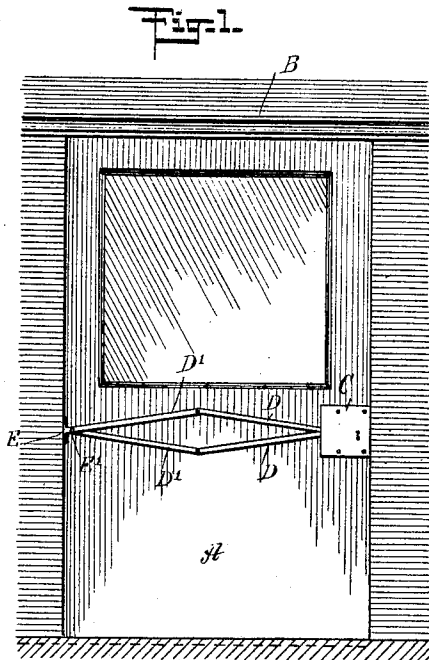


J. KOHN.
SLIDING DOOR LOCKING DEVICE.
APPLICATION FILED MAY 3, 1910.

967,787.

Patented Aug. 16, 1910.

3 SHEETS—SHEET 1.



WITNESSES:

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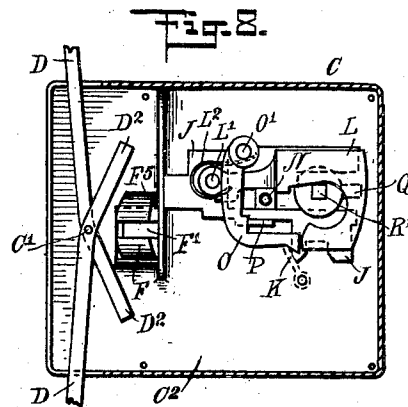
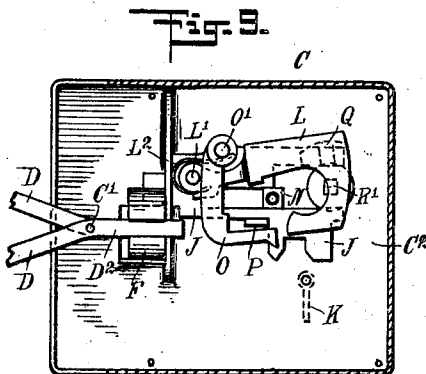
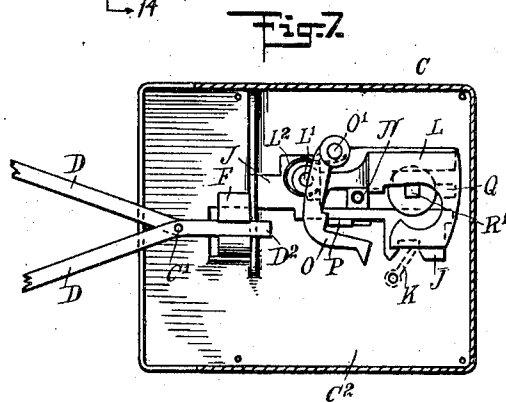
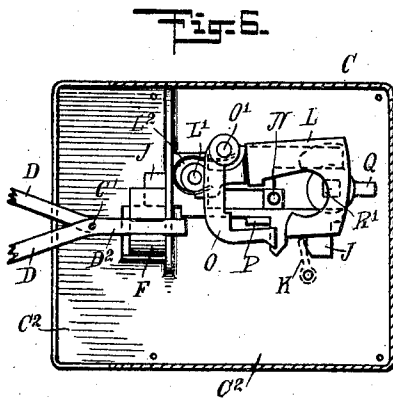
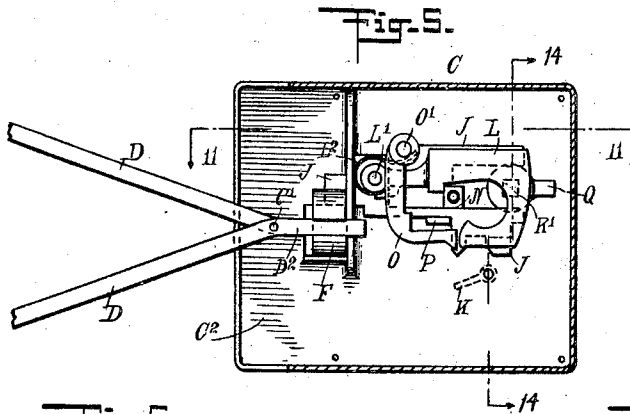
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3 SHEETS—SHEET 2.



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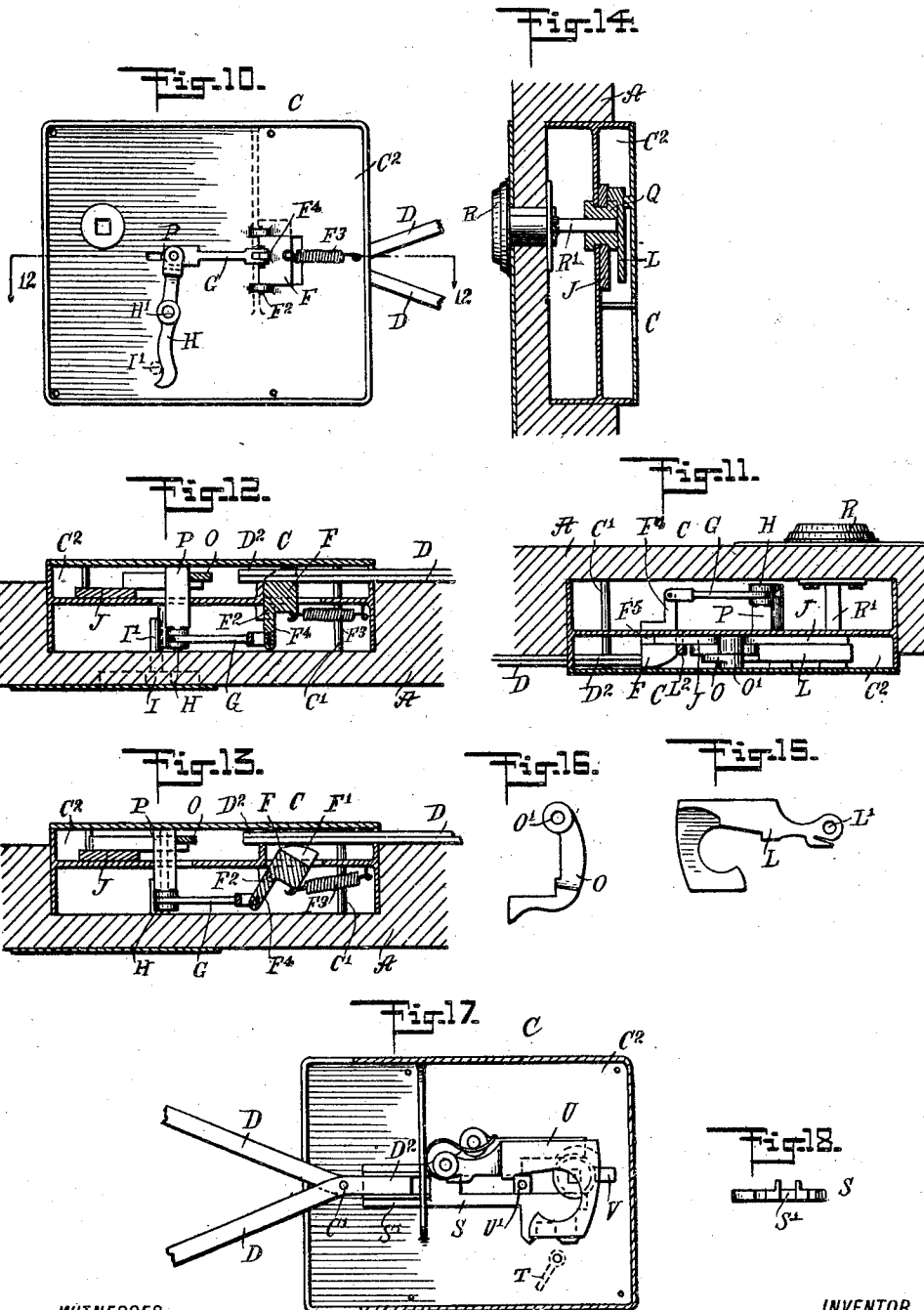
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

JACOB KOHN, OF NEW YORK, N. Y.

SLIDING-DOOR-LOCKING DEVICE.

967,787.

Specification of Letters Patent.

Patented Aug. 16, 1910.

Application filed May 3, 1910. Serial No. 559,056.

To all whom it may concern:

Be it known that I, JACOB KOHN, a subject of the King of Hungary, and a resident of the city of New York, borough of Manhattan, in the county and State of New York, have invented a new and Improved Sliding-Door-Locking Device, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved sliding door locking device, more especially designed for use on the doors leading to elevator shafts and the like, and arranged to securely hold the door locked against opening by a person intending to make use of the elevator, to allow the elevator attendant to readily unlock the door and open the same for the ingress and egress of the passengers, and to permit of locking the door for the night both from the loft side of the building and the elevator cage, to prevent opening of the door from either side by unauthorized persons. For the purpose mentioned, use is made of pivotally connected links, of which one is the door casing link and is pivoted on the door casing, and the other is the door link and is pivoted on the door, the said links when extended standing at an obtuse angle at the time the door is closed, and the said links when closed standing at an acute angle at the time the door is open, and the said door link is adapted to be locked against movement when the door is closed by a lock on the door.

A practical embodiment of the invention is represented in the accompanying drawings forming a part of this specification in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a face view of the door and door locking device from the inside of the loft of the building, and showing the door and locking device in closed or locked position; Fig. 2 is a like view of the same showing the door and locking device in open position; Fig. 3 is a face view of the door from the inside of the elevator shaft and showing the door and locking device in closed position; Fig. 4 is an enlarged face view of the same; Fig. 5 is an enlarged face view of the lock as viewed from the loft side, the lock casing being shown in section; Figs. 6, 7, 8 and 9 are like views of the same, showing the parts in different positions; Fig. 10 is a face view of the lock as viewed from inside

the elevator shaft, the cover being removed; Fig. 11 is a sectional plan view of the lock on the line 11—11 of Fig. 5; Fig. 12 is a similar view of the same on the line 12—12 of Fig. 10; Fig. 13 is a like view of the same showing the parts in unlocked position; Fig. 14 is a cross section of the lock on the line 14—14 of Fig. 5; Fig. 15 is a rear face view of the lock tumbler; Fig. 16 is a similar view of the key-controlled lever for opening the locking bolt from the loft side of the door; Fig. 17 is a face view of a modified form of the lock, the casing being shown in section; and Fig. 18 is an edge view of the sliding catch for the lock shown in Fig. 17.

The sliding door A, for connecting and disconnecting a loft with an elevator shaft, is mounted to slide in the usual manner on suitable guideways arranged on the door casing B, and on the door A is attached a lock C connected at the loft side of the door A by pairs of links D, D' with a bracket E attached to the jamb of the door casing B, as plainly shown in Figs. 1 and 2. The links D are the door links, while the links D' are the door casing links, and the links D, D' of each pair of links are pivotally connected with each other, and the links D are pivoted at their free ends on a pivot C' fixed in the casing C² of the door lock C, while the free ends of the door casing links D' are pivoted on the pivot E' of the bracket E. When the door A is closed, as shown in Fig. 1, then the links D, D' are extended and stand at an obtuse angle one to the other, and when the door A is open, as shown in Fig. 2, and the links D, D' are closed or folded they stand at an acute angle one to the other. The links D, D' are provided with extensions D², projecting beyond the pivot C' into the lock casing C², and when the door A is in a closed position then the extensions D² overlap one the other, that is, are folded or closed (see Figs. 5, 6, 7, 9, 11, 12 and 13), and when the door A is opened then the said extensions D² are swung apart into an open oblique position, as indicated in Fig. 8. The extensions D² when folded one on the other are adapted to be engaged by a catch F, having a longitudinally-extending groove F' for receiving the folded extensions D², to hold the links D, D' locked in extended position and thus hold the door closed and locked. The catch F is pivoted at F² on the casing C² (see Figs. 10, 12 and 13) and is pressed on by a spring F³, to normally hold

the catch F in the path of the link extensions D², and the catch F is beveled on opposite sides of the groove F', so that when the door A is moved into a closed position then the extensions D² engage the beveled sides of the catch F and impart a swinging motion to the latter against the tension of the spring F³ (see Fig. 13), and when the link extensions D² finally pass into the closed position one over the other, in register with the groove F', then the catch F swings back to its normal position by the action of the spring F³, to engage the cam groove F' with the link extensions D² and thus lock the links D, D' in the extended position, that is, at the time the door A is closed.

The catch F is provided with a lug F⁴ connected by a link G (see Figs. 10, 11, 12 and 13) with a lever H fulcrumed at H' on the casing C², and the free end of the lever H is engaged by a transverse pin I' projecting from a hand lever I, fulcrumed at I² on the lock casing C² (see Fig. 4), and pressed on by a spring I³, to normally hold the hand lever I in a forward position, a portion of the hand lever projecting into a recess C³ formed in the lock casing C² at the shaft or elevator side of the door, so that the elevator attendant can engage and press the hand lever I in the direction of the arrow a' (see Figs. 3 and 4), to swing the catch F out of engagement with the link extensions D², with a view to allow the elevator attendant to slide the now unlocked door open on further pressing in the direction of the arrow a'. When the door is moved shut, then the links D, D' are extended and consequently the link extensions D² engage the spring-pressed catch F and impart a swinging motion thereto, until the extensions D² overlies each other, at which time the catch is returned by the pressure of its spring F³, to snap the catch F in engagement with the said overlying extensions D², thus locking the door against opening. When the door is not to be used, say overnight, and it is desired to lock the door against opening by unauthorized persons either from the loft side or from the elevator shaft, use is made of key-controlled mechanisms presently to be described in detail.

On one side of the catch F is formed an under cut or a notch F⁵ (see Figs. 8 and 11) adapted to be engaged by a bolt J, mounted to slide in the casing C² and controlled in the usual manner by a key K inserted in the lock casing from the loft side of the building. The bolt J is normally locked in either of its two positions by a tumbler L, controlled by the key K and pivoted at L' in the casing C² and pressed on by a spring L². The tumbler L engages a post N when in the locked or unlocked position (see for

comparison Figs. 5 and 8), it being understood that in order to move the bolt J into and out of engagement with the under cut F⁵ by the use of the key K, the latter lifts the tumbler L out of engagement with the post N prior to sliding the bolt J forward or backward. The key K may be used to impart a swinging motion to the catch F to disengage the same from the extensions D² after the bolt J is withdrawn from the under cut F⁵, and for this purpose use is made of a lever O, fulcrumed at O' on the bolt J and moving with the same, the said lever O being adapted to engage an arm P secured to the link G at its pivotal connection with the lever H. The lever H stands in active position at the time the bolt J is withdrawn, so that on giving the key K a further half turn it engages the lever O and imparts a swinging motion thereto, thus pushing the arm P to the right and thereby moving the link G in a like direction, to swing the catch F into disengaging position relative to the link extensions D², to permit of opening the door A from the inside of the loft by a person having possession of the key K. The tumbler L is also adapted to be engaged by an arm Q attached to the spindle R' of a Yale or a similar lock R, mounted on the casing C² and extending to the loft side of the door, so that the elevator attendant by the use of a key can manipulate the lock R, to swing the arm Q in engagement with the tumbler L to unlock the bolt J and to shift the latter forward or backward to engage or disengage the under cut F⁵, that is, to lock or unlock the catch F. When the catch F is unlocked by the attendant, the latter can swing the catch into an open position by actuating the lever I, as previously explained.

Thus from the foregoing it will be seen that by the mechanism described, the door is securely held against opening by a person intending to make use of the elevator, and the owner of the loft, by the use of the proper key, can lock the door against opening overnight, to prevent unauthorized persons from opening the door, and the elevator attendant can unlock the door by the use of the proper key from inside of the shaft, as before explained.

In the modified form shown in Figs. 17 and 18, the link extensions D² are adapted to be engaged by a guideway S' formed in a bolt S, mounted to slide in the casing C², the said bolt S being controlled by a key T, which also controls a tumbler U engaging a fixed post U', to lock the bolt S in either of its two positions, until the tumbler U is swung open by the use of the key T. The key T is to be used from the inside of the loft, while a Yale lock, such as the lock R previously described, is employed at the elevator side of the door for manipulating the

arm V, to actuate the tumbler U, and to shift the bolt S so as to move the guideway S' thereof into or out of engagement with the overlying extensions D² of the links D, D.

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

1. A locking device for sliding doors of elevator shafts, comprising a door casing link and a door link, the links being pivotally connected with each other, and the door casing link being pivoted at its outer end to the door casing, and the door link being pivoted at its outer end on the sliding door, the said links when extended standing at an obtuse angle at the time the door is closed, and the links when closed standing at an acute angle at the time the door is open, and means on the door engaging the door link at the door to lock the links in the extended position and holding the door against opening.

2. A locking device for sliding doors of elevator shafts, comprising pivotally connected links, of which one is the door casing link and pivoted on the door casing, and the other is the door link and is pivoted on the door, and a key and hand-controlled lock on the door and having means for engaging the door lock to lock the links in an extended position and thereby holding the door closed, the said means when disengaged from the door link allowing of closing the links and opening of the door.

3. A locking device for sliding doors of elevator shafts, comprising pivotally connected links, of which one is the door casing link and pivoted on the door casing, and the other is the door link and is pivoted on the door, the said links when extended standing at an obtuse angle at the time the door is closed and the links when closed standing at an acute angle at the time the door is open, the said door link having an extension projecting beyond the pivot on the door, a catch on the door for engaging the said link extension, and a hand lever on the door connected with the said catch for withdrawing the latter from the link extension.

4. A locking device for sliding doors of elevator shafts, comprising pivotally connected links, of which one is the door casing link and pivoted on the door casing, and the other is the door link and is pivoted on the

door, the said links when extended standing at an obtuse angle at the time the door is closed and the links when closed standing at an acute angle at the time the door is open, the said door link having an extension projecting beyond the pivot on the door, a catch on the door for engaging the said link, and key-controlled means on the door for locking and unlocking the said catch.

5. A locking device for sliding doors of elevator shafts, comprising pivotally connected links, of which one is the door casing link and pivoted on the door casing, and the other is the door link and is pivoted on the door, the said links when extended standing at an obtuse angle at the time the door is closed and the links when closed standing at an acute angle at the time the door is open, the said door link having an extension projecting beyond the pivot on the door, a catch on the door for engaging the said link, key-controlled means on the door for locking or unlocking the said catch, and key-controlled means for actuating the said catch, both key-controlled means being actuated by the same key.

6. A locking device for sliding doors of elevator shafts, comprising pivotally connected links, of which one is the door casing link and pivoted on the door casing, and the other is the door link and is pivoted on the door, the said links when extended standing at an obtuse angle at the time the door is closed, and the links when closed standing at an acute angle at the time the door is open, the said door link having an extension projecting beyond the pivot on the door, a spring-pressed catch on the door for engaging and disengaging the said link extension, a hand-controlled device connected with the said catch for disengaging the said catch from the link extension, a key-controlled bolt on the door for locking the catch in locking position, and a key-controlled tumbler for locking the said bolt against movement when the bolt is in either of its locked or its unlocked positions.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JACOB KOHN.

Witnesses:

THEO. G. HOSTER,
PHILIP D. ROLLHAUS.