

Nov. 6, 1934.

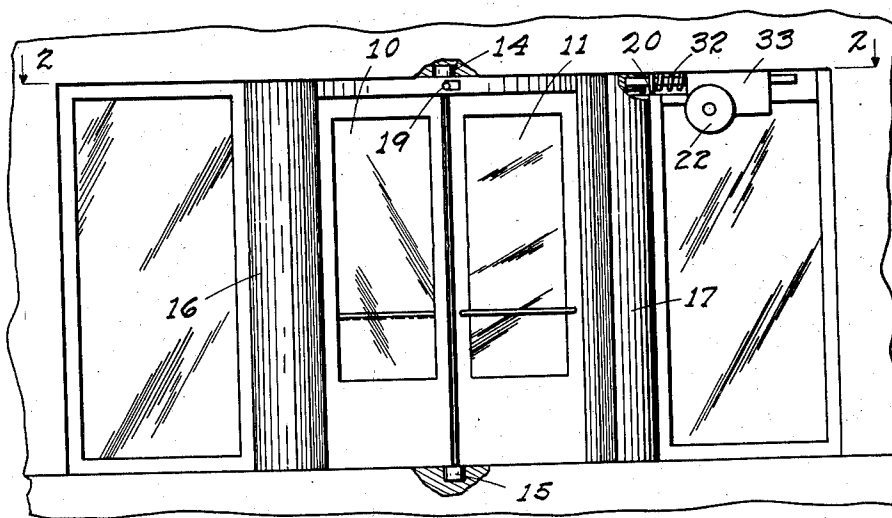
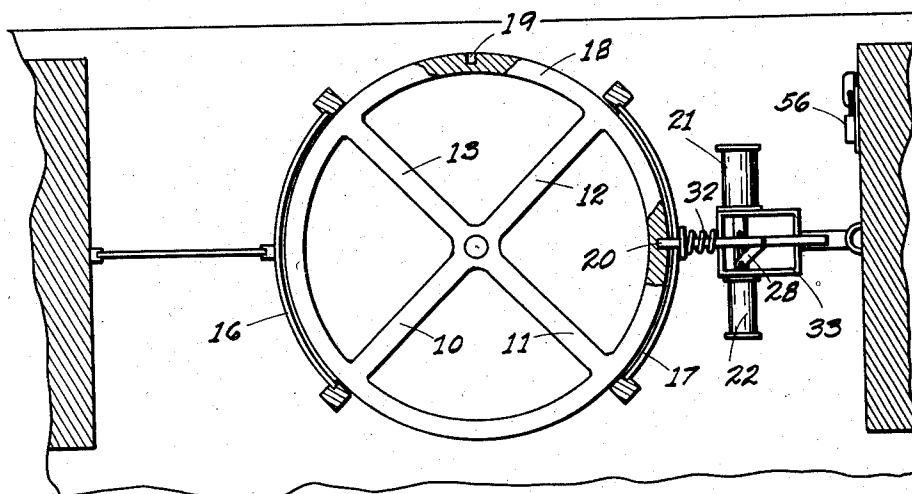
S. SCHNEIDER ET AL

1,979,497

LOCK FOR DOOR TRAPS AND THE LIKE

Filed Oct. 24, 1932

2 Sheets-Sheet 1



INVENTOR.
Simon Schneider
BY David F. Murphy
Harry Q. Schneider
ATTORNEY

Nov. 6, 1934.

S. SCHNEIDER ET AL

1,979,497

LOCK FOR DOOR TRAPS AND THE LIKE

Filed Oct. 24, 1932

2 Sheets-Sheet 2

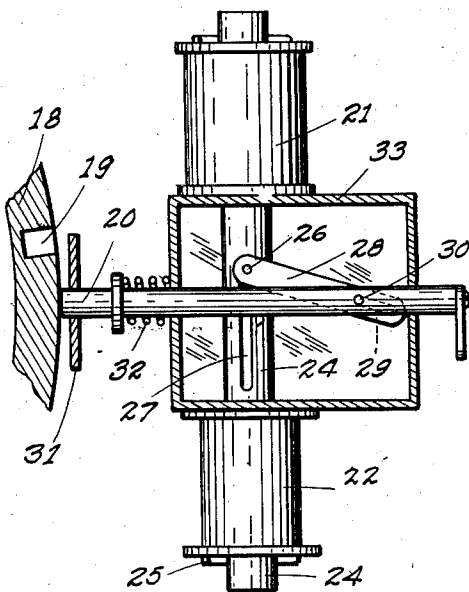


Fig. 3.

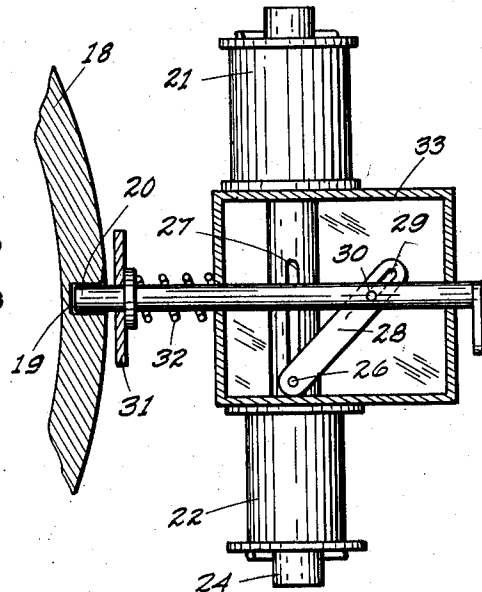


Fig. 4.

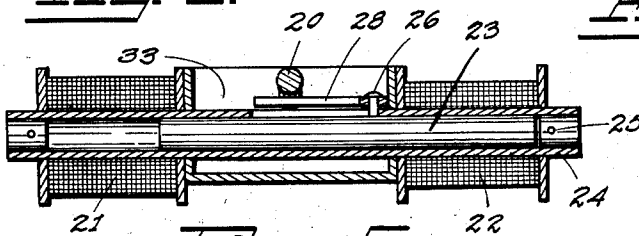


Fig. 5.

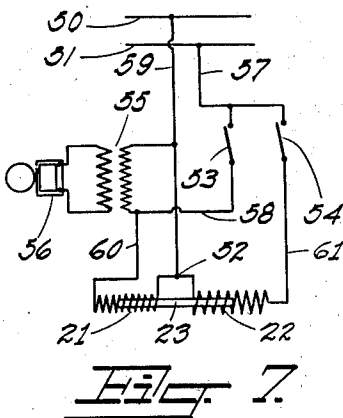


Fig. 6.

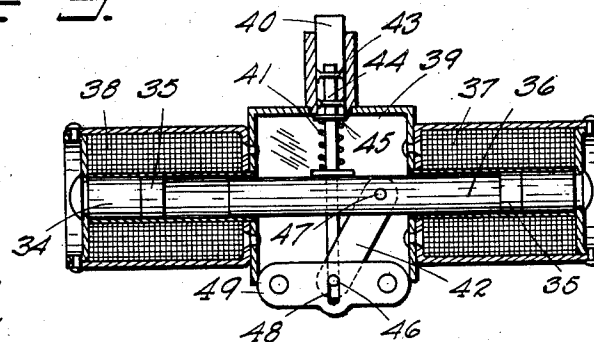


Fig. 7.

INVENTOR.
Simon Schneider
BY David F. Murphy
Harry C. Schneider
ATTORNEY

UNITED STATES PATENT OFFICE

1,979,497

LOCK FOR DOOR TRAPS AND THE LIKE

Simon Schneider and David F. Murphy,
Oakland, Calif.

Application October 24, 1932, Serial No. 639,245

5 Claims. (Cl. 70—50)

This invention is a door trap and is particularly directed to a door which may be locked from a remote point and which, when locked will trap anyone within the door, and is preferably directed to revolving doors to be used in banks and similar institutions for the purpose of trapping persons attempting malicious practice.

The main object of the invention is to provide means whereby a person attempting to pass through a revolving door may be entrapped between the wings thereof, the trapping means being controlled from a remote point.

Another object of the invention is to provide means as outlined controlled from a remote point, both for locking the door in predetermined position, and also for releasing the locking means from a remote point.

A further object of the invention is to provide such locking means which may also be used in association with any type of closure such as ordinary swinging doors, trap doors, and windows.

Other objects and advantages of the invention will become apparent as the following description is read on the drawings forming a part of this specification and in which similar reference characters are used to designate similar parts throughout the several views, of which:

Fig. 1 is a front elevation of a revolving door with the invention applied thereto.

Fig. 2 is a section taken on line 2—2 of Fig. 1.

Fig. 3 is a sectional view of the locking mechanism with the latch bolt in released position.

Fig. 4 is a view similar to Fig. 3 with the latch bolt in locked position.

Fig. 5 is a section taken through the solenoids to show the core and sleeve and the connection of the locking mechanism to the core.

Fig. 6 is a section through a modified form of the locking device.

Fig. 7 is a wiring diagram covering the invention.

The invention may be applied to any type of door or window and may be controlled from a remote point and may be operated either by alternating current or by current derived from a battery or any other source of electric current.

The invention is indicated in the drawings as applied to a revolving door having four wings 10, 11, 12 and 13 and being pivoted at top and bottom as indicated at 14 and 15, a partial enclosure being formed by walls 16 and 17 which are preferably made of bullet proof glass, and

extending to enclose the space between two of the wings.

A circular element 18 is provided with a bolt slot 19 for each wing and is preferably disposed at a point intermediate to the wings, and is adapted to cooperate with the latch bolt 20, which forms a part of the locking device.

The locking device consists of a solenoid, which in the drawings is wound for alternating current, and consists of a pair of opposed coils 21 and 22 having a common core 23 which is slidably mounted in a sleeve 24 and which sleeve is provided with stops 25 to limit the movement of the core. The pin 26 is secured in the core 23 and is adapted for reciprocating movement in the slot 27 formed in the sleeve 24, this slot extending beyond the axis of the latch bolt 20 so as to positively retain the latch bolt in inoperative or released position. Pin 26 forms a pivot for a link 28 which link is provided at its other end with a slot 29 cooperating with a pin 30 which is secured in the latch bolt 20. The latch bolt is slidable in a suitable aperture formed in the latch plate 31, and the latch bolt is urged to locking position by a spring 32.

The solenoid coils 21 and 22 are secured to a housing 33 which housing encloses the operating mechanism for the latch bolt.

The modification shown in Fig. 6 is similar in operation to that previously set forth except that the ends of the solenoid are closed by a fixed iron core 34 which is faced at its inner end with soft rubber or other resilient material 35 for the purpose of silencing the impact of the core 36 which core is reciprocal within the coils 37 and 38, the coils being mounted as indicated on a housing 39. The link 42 is adapted for positive locking and unlocking and with the arrangement shown the latch bolt 40 cannot be retracted except by operation of the core 36.

The latch bolt is slidably mounted in guides 43 and is secured to a plunger 44 which plunger is provided with a fixed collar 45 against which spring 41 acts.

The plunger 44 is provided with a pin 46 on which connection 42 is pivotally mounted, the other end of this connection being pivoted to core 36 at 47, and pin 46 being slidable in a slot 48 formed in the cross member 49 which is secured to housing 39 as shown.

The wiring diagram is indicated as connected to an alternating power supply 50 and 51, one side of the power supply having an intermediate connection between coils 21 and 22 as indicated at 52 and the other side of the power line being

connected to the opposite ends of the two coils through switches 53 and 54, a transformer 55 being connected through switch 53, this transformer being used to deliver current to an electric bell 56.

The operation of the device is as follows:

On closing switch 53 current passes from line 51 through wire 57, switch 53, wire 58, primary of transformer 55, wire 59 to line 50, and coincidentally through wire 60 to coil 21 and thence through wire 59 to line 50 driving the core 23 in a direction from top to bottom of slot 27 as viewing Figs. 3 and 4, thus changing the position of link 28 from that shown in Fig. 3 to that shown in Fig. 4. This permits latch bolt 20 to be urged against the member 18, and as the door is revolved, on registry of the aperture 19 with the latch bolt, the latch bolt enters the aperture and locks the door in position, coincidentally sounding the alarm 56, thus locking the person attempting to get through the door within the space between two wings, as indicated between 11 and 12 or between 10 and 13, and the arcuate wall 17.

The switches 53 and 54 are preferably of the push button type and to unlock the door it is merely necessary to close switch 54 whereby the circuit is completed from line 51 through wire 57, switch 54, wire 61, coil 22 and out through wire 59 to line 50, which operation does not include the transformer 55 or bell 56 in the circuit. This circuit actuates the solenoid to move the link 28 from the position shown in Fig. 4 to the position shown in Fig. 3, withdrawing the latch bolt 20 from recess 19, and as the pin 26 goes past the center of the latch bolt, it is retained in unlatched position.

With this invention, it is intended that the escape of bandits may readily be obviated and the bandit trapped within the revolving door between two wings and the arcuate wall associated therewith, as he attempts to pass through the door. It is merely necessary to close the switch 53 or press the button switch connected at this point to release the latch, so that as the bandits attempts to pass through the door, the door will be locked by the latch when one quarter turn has been made and which would lock the doors in the position shown in Fig. 2. The bandit could be retained therein until officers appeared on the scene at which time the switch 54 would be closed, unlatching the door and permitting the bandit to be removed therefrom.

Having described an operative method and means for trapping persons within a revolving door, and remotely controlled locking means for closures, it will be understood that variations in construction and arrangement of parts which are consistent with the appended claims may be resorted to without detracting from the spirit or scope of the invention or sacrificing any of the advantages thereof.

We claim:

1. A remotely controlled lock for closures com-

prising a solenoid, a core for said solenoid, a link pivotally connected at one end to said core, a latch bolt slidable transversely of said core, said link being pivotally and slidably connected at its other end to said latch bolt, said latch bolt being resiliently urged to locking position, and means for positively actuating said core in either direction.

2. An electrically actuated lock comprising a solenoid provided with a core, a latch bolt slidably mounted in transverse relation to said core and movable across the core, a link pivotally connected to said core and to said latch bolt at its opposite ends, and having sliding movement relative to said latch bolt being resiliently urged to locking position.

3. An electrically operated lock comprising two spaced apart solenoid coils and a common core cooperating therewith, a latch bolt extending transversely across the core and slidably mounted relative to said core, a link having one end pivotally connected to said core, the other end of said link having an elongated slot formed therein, a pin secured in said latch bolt and engaged in said slot to permit sliding of the link relative to the latch bolt, said latch bolt being resiliently urged to locking position.

4. In an electrically actuated lock, a housing, a sleeve extending through said housing and having end portions projecting from opposite sides thereof, a slot being formed in said sleeve within the housing, a solenoid disposed about each projecting end portion of said sleeve and seamed to the housing, an elongated core for both solenoids slidable in said sleeve, a pin carried by said core intermediate its length and projecting through the slot in the sleeve, a latch bolt slidable through said housing transversely across said sleeve with its end portions projecting from the housing and one end portion being adapted for engagement with a member to be secured, a spring yieldably holding said bolt in a normal position, and a link having one end pivoted to the pin carried by said core and its other end pivotally connected with a portion of the bolt within the housing.

5. In an electrically actuated lock, a housing, a sleeve extending through said housing and having end portions projecting from opposite sides thereof, a slot being formed in said sleeve within the housing, a solenoid disposed about each projecting end portion of said sleeve and seamed to the housing, an elongated core for both solenoids slidable in said sleeve, a pin carried by said core intermediate its length and projecting through the slot in the sleeve, a latch bolt slidable through said housing transversely across said sleeve, a spring yieldably holding said bolt in a normal position, and a link pivoted to the pin of said core and pivotally and slidably connected with said bolt.

SIMON SCHNEIDER.
DAVID F. MURPHY.