

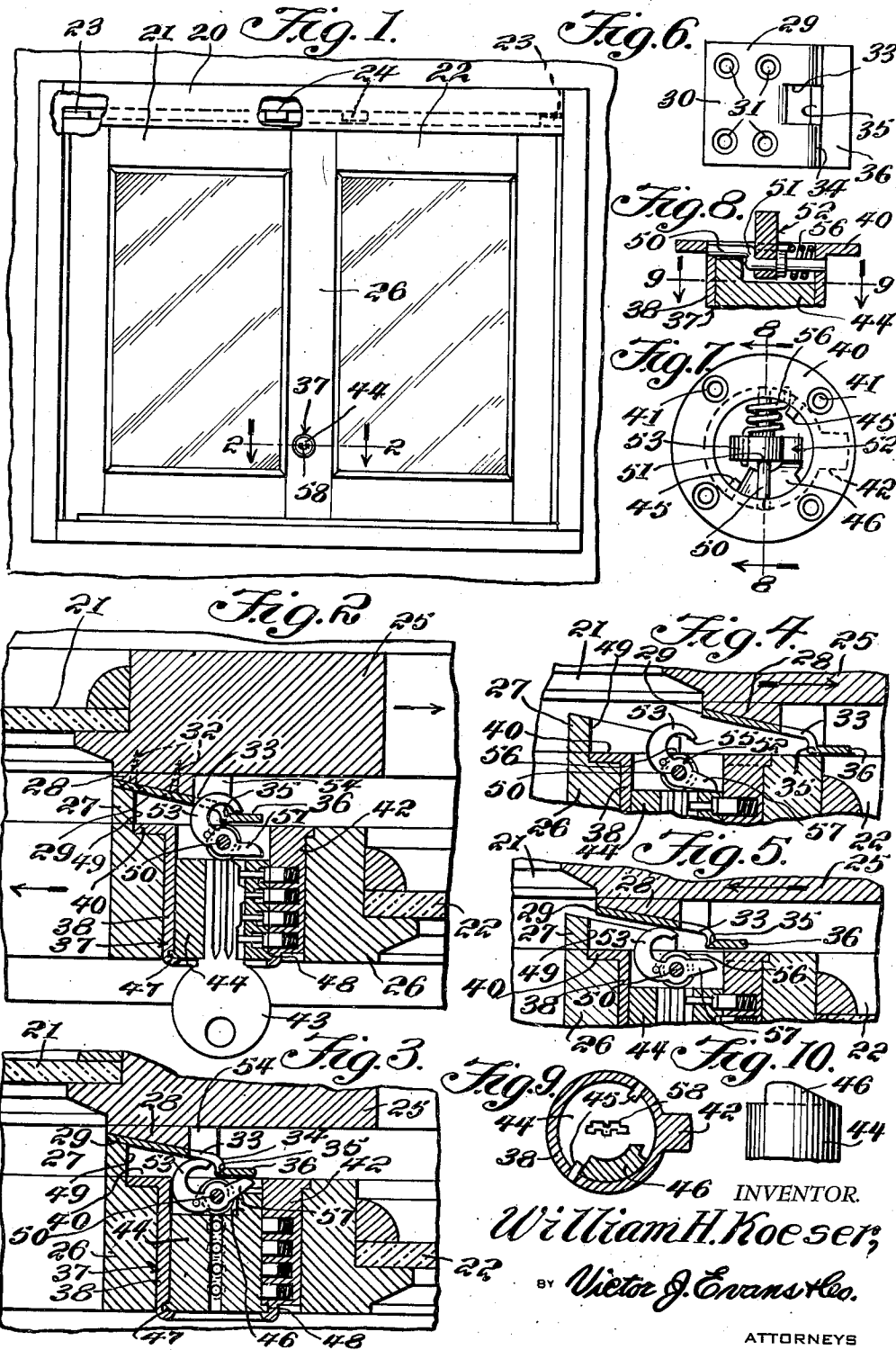
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SLIDING DOOR LOCK

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## UNITED STATES PATENT OFFICE

2,473,285

## SLIDING DOOR LOCK

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3 Claims. (Cl. 70-96)

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My present invention relates generally to closure fasteners for locking overlapped sliding doors, and more specifically to an improved sliding door lock of the type employing an extended keeper or strike plate and a projecting, partially rotatable, locking bolt for engagement with the strike plate.

The primary object of the invention is the provision of an automatically locking fastener that is composed of a minimum number of parts that may with facility be manufactured, assembled, and installed for use to assure a durable, strong and conveniently operated locking device for sliding doors employed in cabinets and similar articles of furniture or equipment.

The invention consists in certain novel features of construction and combinations and arrangements of parts as will be hereinafter described, and more specifically set forth in the appended claims.

In the accompanying drawings, I have illustrated one complete example of a physical embodiment of my invention in which the parts are combined and arranged in accord with the best mode I have thus far devised for the practical application of the principles of my invention. It will, however, be understood that changes and alterations are contemplated and may be made in these exemplifying drawings and mechanical structures within the scope of my claims, without departing from the principles of the invention.

Figure 1 is a view in front elevation, showing a pair of sliding doors closed, and fastened by a locking device in which my invention is embodied;

Figure 2 is an enlarged horizontal detail sectional view at line 2-2 of Figure 1, showing portions of the doors locked by the device of my invention;

Figure 3 is the same, showing portions of the door with the device in unlocked position;

Figure 4 is a sectional view of the doors in open position prior to being closed;

Figure 5 is a sectional view showing the action of the locking device as the doors are closed;

Figure 6 is a face view of the strike plate;

Figure 7 is a face view of the lock;

Figure 8 is a sectional view on the line 8-8 of Figure 7;

Figure 9 is a sectional view on the line 9-9 of Figure 8 and

Figure 10 is an elevational view of the cam end of the rotary bolt.

In order that the general assembly and relation of parts may readily be understood, I have shown in Figure 1, a rectangular frame 20 that

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may form part of a cabinet or other structural appliance, which is provided with a pair of overlapped sliding doors, the left hand door being designated by the reference numeral 21, and the right hand door indicated by the reference numeral 22.

The two doors, which are shown in closed and locked position, are slid inwardly across the center of the cabinet for opening, that is, the door 21 slides to the right, and the door 22 slides to the left, spaced stops 23 and 24 being indicated by dotted lines for co-action in limiting the opening movement of the doors.

The inner edges of the doors are provided with the usual stiles 25 and 26 respectively, and the stiles are provided with bevelled dust strips 27 and 28 vertically arranged and attached to the inner adjoining faces of the stiles, and the doors, when closed, overlap to bring the dust strips into alignment.

As best seen in Figures 2 to 5, inclusive, the adjoining vertical faces of the dust strips are arranged on parallel oblique lines, and the bevelled face of the strip 28 is cut out to facilitate installation of the strike plate 29. The strike plate includes a flat portion 30, provided with holes 31, to accommodate the screws 32 that rigidly attach the plate to the strip 28 and door 21.

The portion 30 of the strike plate is fashioned with a preferably rectangular socket or hole 33 and an offset vertical rise 34 so constructed as to form a cam face 35 as one wall of the socket or opening 33. A horizontal flange 36 which extends from the rise 34 on the portion 30 is free, and is resiliently flexible for the locking and unlocking movements of the fastener.

A rotary lock of the barrel type, indicated at 37, has a cylindrical housing 38 which is fitted in a mortise of the stile 26. The housing 38 has an annular flange 40 provided with opening 41 to receive screws whereby the housing is secured in place. The housing 38 is also provided with the tumbler portion 42 for coaction with the key 43.

The rotary bolt 44 of the lock is given a quarter turn for locking and unlocking the fastener, such rotation being limited by the stops 45 formed on the inner wall of the housing engaging the cam 46 on the bottom face of the bolt. The bolt 44 is also provided with an annular flange 47 which is engaged in the annular groove 48 in the housing 38, whereby the bolt is retained in the housing and the flange 40 of the housing 38 is seated in the recess 49 of the dust strip 27.

The housing 38 has a pin 50 journaled transversely thereof, which is offset at 51 to mount the

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projecting catch 52 having a rounded head or hook 53 that protrudes into the recess 49 of the dust strip 27 and recess 54 in the dust strip 28, and through the socket 33 of the strike plate 29, and the hook 53 is fashioned with a flat under edge or face 55 that projects across the cam face 35 of the strike plate 29 when the parts are in locked position as indicated in Figure 2. A spring 56 mounted on the pin 50 engages the catch 52 and the housing 38 to force the hook into the socket 33 at all times, and the catch 52 is provided with a tongue 57 which engages the cam 46 when the key 43 is rotated, to force the hook 53 out of engagement with the socket 33, to unlock the doors for movement.

The bolt 44 is turned to right or left by use of a key in the key hole 58, and a quarter turn of the key engages the cam 46 with the catch to move the hook 53 out of the socket 33 to disengage the catch from the rise 34 for unlocking the fastener. When the catch is thus turned, the resilient flange springs to open position, thereby permitting the door 22 to be slid to the left, or the door 21 to be slid to the right, for opening. When the door 22 is slid from open position to the right for closing, the vertically arranged catch is engaged by the cam face 35 and slips through the socket 33, and then the doors are locked. Then a quarter turn of the key 43 to swing the catch over the rise 34, as indicated in Figure 3, will unlock the door, and the same effect and operation is produced when the door 21 is slid from open position to the left with the catch in the position shown in Figure 5, and then in closed position, as shown in Figure 2, and the key is given a quarter turn to swing the catch into unlocked position.

In installing the fastener, the two dust strips are correctly attached to the stiles for alinement when the doors are closed and by mounting the strike plate 29 in the dust strip 27, the right hand stile 26 may be bored or mortised for the lock so that the catch is in perfect alinement with the strike plate for co-action in locking the doors.

While the catch is engaged in the strike plate, the catch can be turned for release, only by the

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use of the key in the lock, thereby preventing unauthorized access to the lock and also preventing unauthorized opening of the closed doors.

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

1. In a closure fastener for two overlapped sliding doors, the combination with a strike plate mounted on one door and provided with a socket and a resilient offset flange, of a lock housing mounted on the other door and having a partially rotatable bolt in said housing, means for operating the bolt, a hooked catch carried by said housing and a cam on a protruding end of the bolt engaging said catch to disengage said catch from said socket.

2. In a closure fastener for two overlapped sliding doors, the combination with a recessed dust strip mounted on one door, a strike plate mounted on the recessed strip and provided with a socket and a resilient offset flange, of a recessed dust strip mounted on the other door, a lock housing mounted on the second door and having a partially rotatable bolt, means for operating the bolt, and a spring tensioned hooked catch protruding from the housing into the recessed strips and engaged in said socket.

3. In a closure fastener for two overlapped sliding doors, the combination with a strike plate mounted on one door and provided with a socket, an offset resilient flange on the plate, and a vertical rise between the socket and flange, of a lock of the rotary type mounted on the other door and operating means therefor, and a hooked partially rotatable catch protruding from the lock and engaged in said socket.

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