

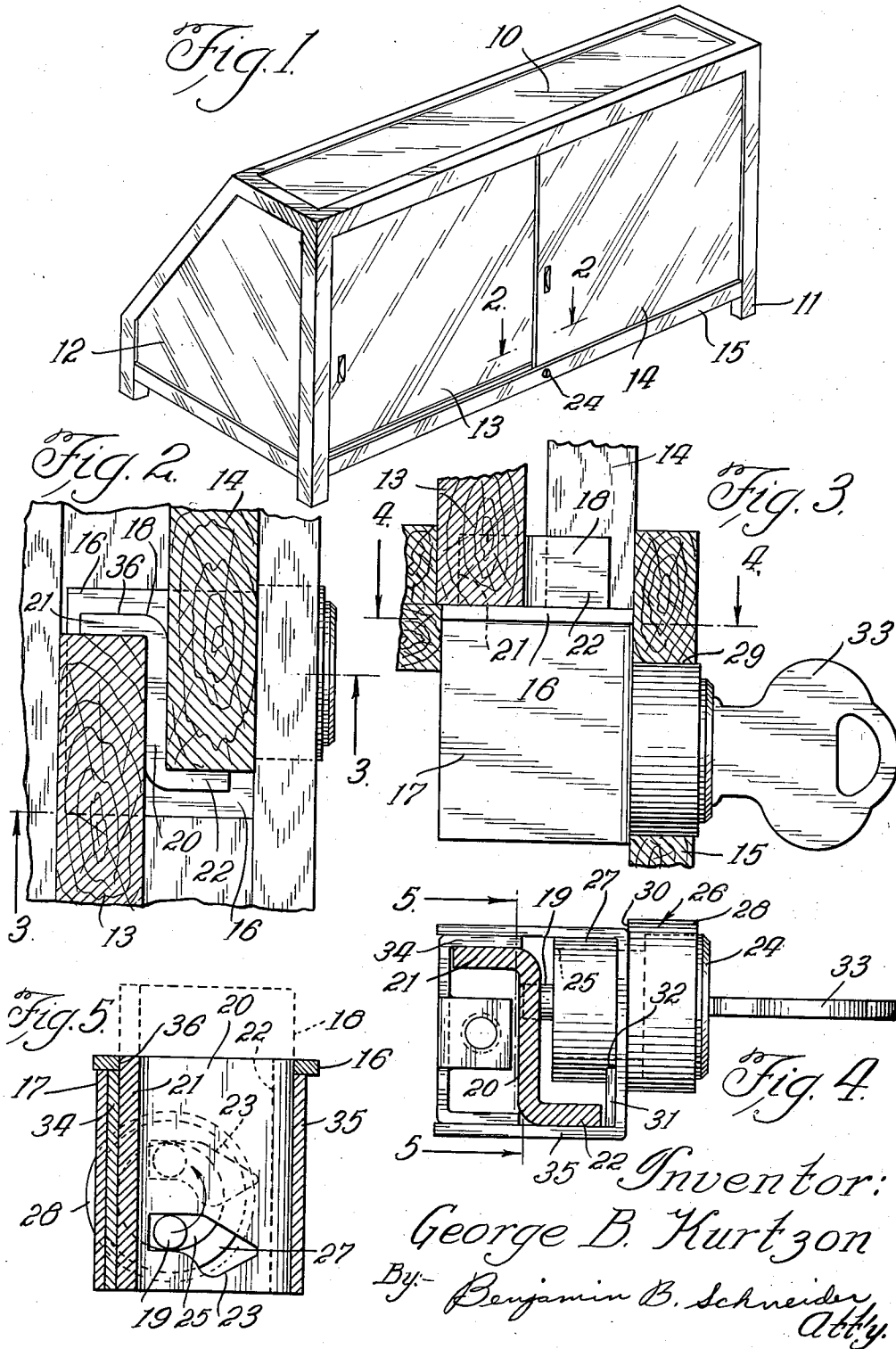
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SLIDING DOOR LOCK

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SLIDING DOOR LOCK

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4 Claims. (Cl. 70-100)

This invention relates to door locks and more particularly to a lock for sliding doors.

The lock in accordance with the present invention is adapted particularly for use to lock sliding doors of the kind ordinarily used in show-cases, garment racks and like devices for the display of merchandise. The sliding door locks of the prior art are, in the main, rather complicated and costly and, moreover, are objectionable because they do not function effectively for protracted periods of time. The cheaper sliding door locks of the prior art are rather flimsy affairs and are objectionable because they break when subjected to any substantial strain or use and also because they can be opened or picked readily with a screw driver or like tool.

The sliding door locks embodying my invention are simple in design and construction and relatively inexpensive to manufacture. They are rugged and durable, cannot be readily picked and are capable of continued and effective use for indefinite periods of time. Moreover, they can be installed at a minimum of expense.

My invention possesses many other advantages which will be apparent readily from a consideration of a preferred embodiment thereof shown in the drawing and described herein. The detailed description of this embodiment will serve to illustrate the invention and it is to be understood that the invention is not to be limited to the details shown and described, except as set forth in the appended claims.

Referring to the drawing:

Figure 1 is a perspective view of a conventional showcase of the sliding door type which may be equipped with a lock in accordance with my invention;

Fig. 2 is a broken horizontal sectional view through the over-lapping ends of the sliding doors, taken along the line 2-2 of Fig. 1, showing the latch bolt in accordance with my invention in operative position to prevent opening of the doors;

Fig. 3 is a vertical sectional view taken along the broken line 3-3 of Fig. 2, the lock being shown in elevation;

Fig. 4 is a plan view of my lock taken immediately below the cover plate, along the lines 4-4 of Fig. 3, the frame and doors being omitted; and

Fig. 5 is a vertical sectional view through my lock taken substantially along the line 5-5 of Fig. 4.

In the drawing, the enclosure to which the invention may be applied may be, suitably, the

showcase shown in Fig. 1 having a glass top 10, legs 11, vertical glass ends 12, the usual glass front and an open back adapted to be closed by the sliding doors 13 and 14. The doors 13 and 14 are located in different vertical planes, door 13 being in the rear of door 14 with the adjacent vertical edge portions of the doors overlapping when the doors are closed. The showcase includes a lower horizontal frame member 15 having rails or tracks cooperating with corresponding rails or tracks in an upper horizontal frame member (not shown) or on the underside of top 10, within which the doors are slidably mounted. The details of this mounting are conventional and, since they form no part of my invention, are not illustrated.

The lock in accordance with my invention may be mounted in the central portion of either the lower or upper horizontal frame member. As shown, the lock is mounted in an opening in the central portion of the frame member 15 immediately below the overlapping end portions of the doors, with the removable top 16 of the latch bolt housing 17 flush with the bottom of the rails.

The lock includes a latch bolt 18 which is normally positioned within the housing 17. Latch bolt 18 is adapted to be moved vertically out of the housing by means of an eccentric pin 19, as hereinafter described, to engage the overlapping end portions of the doors and lock them. The locked position of the doors is shown in Fig. 2. Latch bolt 18 is of generally Z-shape having a central portion 20 and two end portions 21 and 22 bent oppositely at right angles; the whole latch bolt being formed from a single, rectangular piece of metal. The locking of the doors is accomplished by an upward movement of the latch bolt (as seen in Figs. 3 and 5) to an extent sufficient to permit bent end portions 21 and 22 thereof to engage the ends of the doors 13 and 14, respectively. As is apparent from Fig. 2, the central portion 20 of the latch bolt extends upwardly between the opposed, overlapping surfaces of the doors when the doors are locked.

Latch bolt 18 is provided with a cam slot 23, of the shape shown, adjacent the lower extremity of the central portion 20 thereof. The shape of the cam slot 23 and the arrangement of pin 19 with respect thereto is such that on counterclockwise movement of pin 19 (Fig. 5), latch bolt 18 is caused to move up smoothly and at a relatively uniform rate to lock the doors; the movement being from the position shown in full lines to the position shown in dotted lines. On reverse

movement of pin 19, the latch bolt is caused to move downwardly with a snap action to its normal unlocked position within the housing.

Pin 19 is so carried by a conventional key cylinder or tumbler 24 at one end 25 thereof that the free end of the pin normally plays within the slot. Cylinder 24 is rotatably mounted within a stationary barrel 26. The inner end 27 of the barrel extends within the latch bolt housing 17 and the outer end 28 extends through an opening 29 in frame member 15. A shoulder 30 on the outer end 28 of the barrel abuts one wall of the housing 17 and limits the extent of entry of the barrel within the housing. Barrel 26 is held against rotation as by a keying member 31 which is driven downwards through the housing, transversely of the barrel, and engages a slot 32 in barrel end 27 and wedges against one wall of the housing, as shown.

To lock the doors 13 and 14, they are first closed as shown in Figs. 1 and 2, and key 33 is turned to revolve cylinder 24 and thereby carry pin 19 and, in turn, latch bolt 18 from the positions shown in full lines to the positions shown in dotted lines (Fig. 5). The latch bolt 18 is guided for straight-line movement by the housing walls 34 and 35, against which bent end portions 21 and 22, respectively, bear, and by a slot 36, in removable housing top 16, conforming generally to the contour of the generally Z-shaped latch bolt. To unlock the doors, it is merely necessary to turn the key in the reverse direction.

While in the description of the preferred embodiment of my invention I have made reference to certain details of design and construction, it is, of course, obvious that my invention is not to be construed as limited thereto since the details may be altered, without departing from the scope of my invention. It is to be understood that the locking device of my invention is of general applicability and may be used in connection with sliding drawers, hinged doors and the like.

I claim:

1. A lock adapted for use in combination with an inner and an outer sliding door to lock the same comprising a latch bolt of generally Z-shape having a central portion and two end portions bent oppositely at right angles, said latch bolt having a cam slot, a rotatable member and an eccentric pin at one end thereof in operative relation with said cam slot, said central portion of said Z-shape latch bolt being adapted to extend between overlapped ends of said sliding doors and said bent end portions of said Z-shape latch bolt being adapted to engage the adjacent free ends of the doors whereby relative sliding movement between said doors is prevented.

2. A lock adapted for use in combination with an inner and an outer sliding door to lock the same comprising a housing, a latch bolt of generally Z-shape normally positioned within the housing, said latch bolt having a central portion and two end portions bent oppositely at right angles, and said central portion having a cam slot adjacent the lower extremity thereof, a rotatable

member and an eccentric pin carried thereby at one end thereof, said pin being adapted to play in said cam slot and to urge said latch bolt out of said housing on rotation of the pin in one direction and to retract said latch bolt to its normal position within the housing on rotation of the pin in the opposite direction, said central portion of said Z-shape latch bolt being adapted to extend between overlapped ends of said sliding doors and said bent end portions of said Z-shape latch bolt being adapted to engage the adjacent free ends of the doors whereby relative sliding movement between said doors is prevented.

3. A lock adapted for use in combination with an inner and an outer sliding door to lock the same comprising a housing, a latch bolt of generally Z-shape normally positioned within the housing, said latch bolt having a central portion and two end portions bent oppositely at right angles, and said central portion having a cam slot adjacent the lower extremity thereof, a rotatable member and an eccentric pin carried thereby at one end thereof, said pin being adapted to play in said cam slot and to urge said latch bolt out of said housing on rotation of the pin in one direction and to retract said latch bolt to its normal position within the housing on rotation of the pin in the opposite direction, said latch bolt cooperating with the walls of said housing and being guided thereby for straight-line movement, said central portion of said Z-shape latch bolt being adapted to extend between overlapped ends of said sliding doors and said bent end portions of said Z-shape latch bolt being adapted to engage the adjacent free ends of the doors whereby relative sliding movement between said doors is prevented.

4. A lock adapted for use in combination with an inner and an outer sliding door to lock the same comprising a housing, a latch bolt of generally Z-shaped normally positioned within the housing, said housing including a top plate member having a slot conforming generally to the contour of said latch bolt, said latch bolt having a central portion and two end portions bent oppositely at right angles, and said central portion having a cam slot adjacent the lower extremity thereof, a key-operated rotatable member and an eccentric pin carried thereby at one end thereof, said pin being adapted to play in said cam slot and to urge said latch bolt out of said housing on rotation of the pin in one direction and to retract said latch bolt to its normal position within the housing on rotation of the pin in the opposite direction, said latch bolt cooperating with the walls of said housing and the walls of the slot in said top plate member and being guided thereby for straight-line movement, said central portion of said Z-shape latch bolt being adapted to extend between overlapped ends of said sliding doors and said bent end portions of said Z-shape latch bolt being adapted to engage the adjacent free ends of the doors whereby relative sliding movement between said doors is prevented.

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