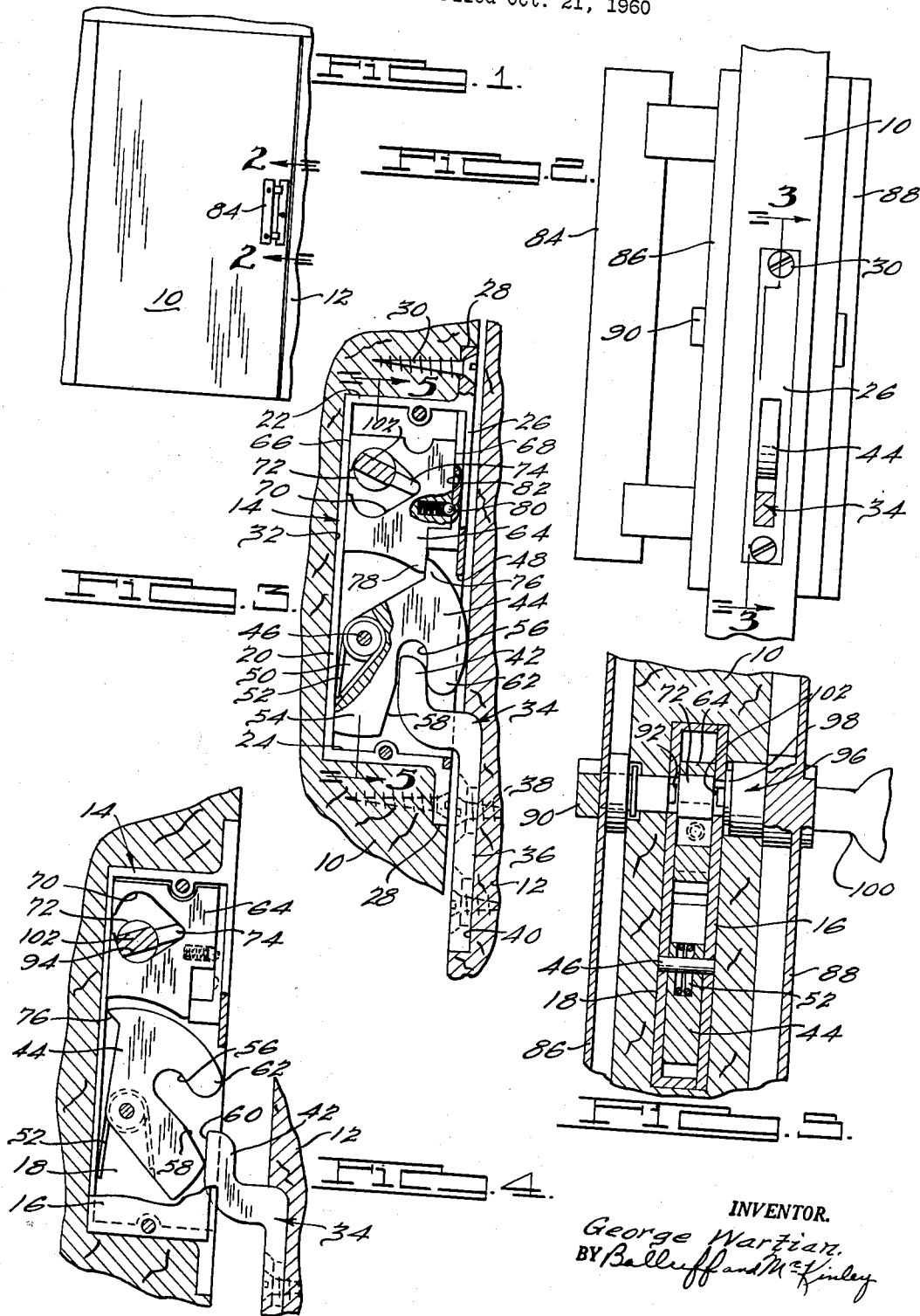


June 26, 1962

G. WARTIAN
SLIDING DOOR LATCH
Filed Oct. 21, 1960

3,040,555



INVENTOR.
George Wartian.
BY Balluff and McInley
ATTORNEYS.

United States Patent Office

3,040,555

Patented June 26, 1962

1

3,040,555

SLIDING DOOR LATCH

George Wartian, Detroit, Mich., assignor to Wartian Lock Company, St. Clair Shores, Mich., a corporation of Michigan

Filed Oct. 21, 1960, Ser. No. 64,132
3 Claims. (Cl. 70-97)

This invention relates to a door latch and has particular reference to a new and improved latch for a sliding door having a locking mechanism associated therewith and operable from either side of the door.

A principle object of the invention is to provide a new and improved latch and lock mechanism for a sliding door.

Another object of the invention is to provide a novel door latch and keeper construction and a locking mechanism associated therewith.

Other and further objects of the invention will be apparent from the following description and claims and may be understood by reference to the accompanying drawing, which by way of illustration shows a preferred embodiment of the invention and what I now consider to be the best mode of applying the principles thereof. Other embodiments of the invention may be used without departing from the scope of the present invention as set forth in the appended claims.

In the drawing:

FIG. 1 is an elevational view of a sliding door provided with the latch mechanism of the present invention;

FIG. 2 is an end elevational view on an enlarged scale taken on line 2-2 of FIG. 1;

FIG. 3 is a sectional view taken on line 3-3 of FIG. 2;

FIG. 4 is a view similar to FIG. 3 showing a different relationship of the keeper and latch bolt; and

FIG. 5 is a sectional view taken on line 5-5 of FIG. 3.

The latch and locking mechanism comprising this invention is adapted for use on a sliding door of any conventional type and includes a latch shown in FIG. 1 as mounted on a door 10, with the keeper mounted on the door jamb 12 against which the door 10 engages when closed. Referring to FIG. 3, the latch comprises a hollow casing 14 having opposed side walls 16 and 18, a rear wall 20, top and bottom walls 22 and 24, and a cover plate 26. The casing is provided with attaching flanges 28 apertured to receive screws 30 and means of which the latch assembly may be mounted in a recess 32 in the edge of the sliding door 10.

The keeper 34 is a cast or stamped part having a base portion 36 provided with apertures receiving the screws 38 by means of which the keeper may be secured to the door jamb 12 with the base portion 36 seated within a recess 40 formed in the jamb 12. The keeper is provided with an upwardly extending keeper portion 42 which is offset from the base portion 36 so as to be spaced from the door jamb 12.

The latch mechanism includes a latch bolt 44 pivotally mounted within the casing 14 on a pin 46 which is supported at its opposite ends in the side walls 16 and 18 of the casing. The cover plate 26 of the casing is provided with an opening 48 therein through which the keeper portion 42 may extend when the door is closed. The latch bolt 44 is provided with a recess 50 receiving a spring 52 which is wrapped around the pin 46 and engages the lower end 54 of the latch bolt and the back wall 20 of the casing to urge the latch bolt to the retracted position thereof shown in FIG. 4.

The latch bolt 44 is provided with a downwardly opening slot 56 one edge 58 of which defines a cam surface adapted to be engaged by the outer surface 60 of the upwardly extending portion 42 of the keeper 34. As the door is closed the surface 60 of the keeper engages the

2

cam surface 58 on the latch bolt to pivot the latch bolt in a clockwise direction against the spring 52 until the portion 42 of the keeper is received with the slot 56 in the latch bolt in the manner shown in FIG. 3 so that the latch bolt has the portion 62 engaging behind the upwardly extending portion 42 of the keeper and disposed between such portion of the keeper and the door jamb 12.

A lock plate 64, consisting of a block having its opposing sides 66 and 68 slidably engaging the front and back walls of the casing 14, is slidable between the locked position thereof shown in FIG. 3 and the unlocked position shown in FIG. 4. In the latter position the latch bolt is free to pivot into the casing to its unlatched position. The lock plate 64 is provided with an opening 70 therein and a rotatable locking operating member 72 extends through the opening 70 and through aligned openings in the opposing sides 16 and 18 of the casing 14. The operating member 70 is provided with a radially extending lug 74 projecting therefrom and engaging in the opening 70 in the lock plate 64 so that the lock plate may be slid to its locked or unlocked position by rotation of its operating member 72.

The latch bolt is provided with a projection 76 on its upper end adapted to be engaged by the portion 78 of the lock plate 64 when the latch bolt is pivoted to its latched position in engagement with the keeper 34. By this engagement the latch bolt is prevented from pivoting in a counterclockwise direction and the door is securely locked by the engagement between the latch bolt and the keeper. When the operating member 72 is rotated in the opposite direction, the lock plate is slid upwardly to disengage the projection 76 and permit pivoting of the latch bolt to release the keeper. A detent mechanism in the form of a spring-pressed ball 80 and recesses 82 in the front plate of the casing 14 yieldably retain the lock plate in its locked and unlocked positions.

A handle 84 mounted on a supporting plate 86 is secured in a suitable manner on one side of the door, while a handle 88 is secured in any suitable manner on the opposite side of the door. A manually operable locking member 90 is rotatably mounted on the handle supporting plate 86 and is provided on its inner end with a rib 92 engaging within a slot 94 formed in one end of the rotatable operating member 72. The locking element 90 may be rotated in either direction from one side of the door to slide the lock plate 64 to its locked or unlocked position.

The handle 88 on the opposite side of the door is provided with a key-operated lock mechanism 96 having a locking member 98 rotatable in either direction by a key 100. A rib 102 on the member 98 engages in a slot 94 in the opposite end of the rotatable operating member 72 so that the lock plate may be operated by the key 100. The key lock 96 may be of any conventional construction and, when the door has been locked by the key, the lock plate cannot be released from the other side of the door by the manually operable member 90.

While in the illustrated embodiment of the invention the keeper is shown as applied to a door jamb and the latch mechanism to the door, it will be apparent that this arrangement might be reversed if desired.

While I have illustrated and described a preferred embodiment of my invention, it is understood that this is capable of modification, and I therefore do not wish to be limited to the precise details set forth but desire to avail myself of such changes and alterations as fall within the purview of the following claims.

I claim:

1. In a latch for a sliding door cooperable with a keeper having an upwardly extending keeper portion, a hollow casing, a latch bolt pivoted in said casing on a

3
horizontal axis, a cam surface on said latch bolt engageable with said upwardly extending portion of said keeper upon closing of the door to pivot said latch bolt to its latched position, said latch bolt having a downwardly opening slot therein one edge of which provides said cam surface, the upwardly extending portion of said keeper being received within said slot when the latch bolt is in its latched position so that a portion of said latch bolt engages behind said portion of said keeper whereby the engagement of said portion of said latch bolt with said keeper pivots said latch bolt to its unlatched position upon opening of the door, a lock plate slidably mounted within said casing and having a portion movable into engagement with said latch bolt to prevent pivoting thereof when said latch bolt is in its latched position, a rotatable operating member extending through said lock plate and journaled in the opposing side walls of said casing and operable upon rotation thereof to slide said lock plate into and out of said engagement with said latch bolt, and manually operable means engageable with said operating member for rotating the same to lock and unlock said latch bolt.

2. A latch according to claim 1 including yieldable detent means between said lock plate and said casing for holding said lock plate in said locked and unlocked positions. 25

3. In a latch for a sliding door a keeper having a base portion for attaching said keeper to the door jamb and a keeper portion offset from said base portion toward the door, a hollow casing adapted to be mounted on the door, 30

a latch bolt pivoted in said casing, a cam surface on said latch bolt engageable with said keeper portion of said keeper upon closing of the door to pivot said latch bolt to its latched position, said latch bolt having a slot therein one edge of which provides said cam surface, the keeper portion being received within said slot when the latch bolt is in its latched position so that a portion of said latch bolt is disposed between said portion of said keeper and said door jamb, a lock plate slidably mounted within said casing and having a portion movable into engagement with said latch bolt to prevent pivoting thereof when said latch bolt is in its latched position, an elongated opening in said lock plate, a rotatable operating member extending through said opening in said lock plate and journaled in the opposing side walls of said casing, said operating member having a radially extending arm thereon engaging said lock plate and operable upon rotation thereof to slide said lock plate into and out of said engagement with said latch bolt, handles adapted to be mounted on opposite sides of the door, a manually operable member on one of said handles engageable with said operating member for rotating the same, and a key-operated member mounted on the other handle and engageable with said operating member for rotating the same.

References Cited in the file of this patent

UNITED STATES PATENTS

1,596,242	Dunn	Aug. 17, 1926
2,668,071	Adams et al.	Feb. 2, 1954
2,917,915	Rainman	Dec. 22, 1959