

G. M. BLAIR.
SLIDING DOOR LOCK.

APPLICATION FILED MAR. 5, 1909. RENEWED JULY 13, 1910.

984,468.

Patented Feb. 14, 1911.

Fig. 1.

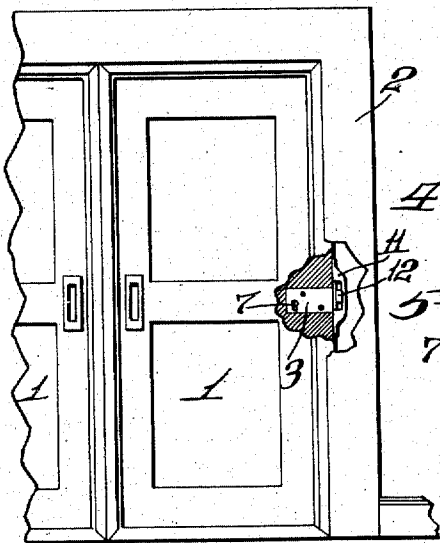


Fig. 2.

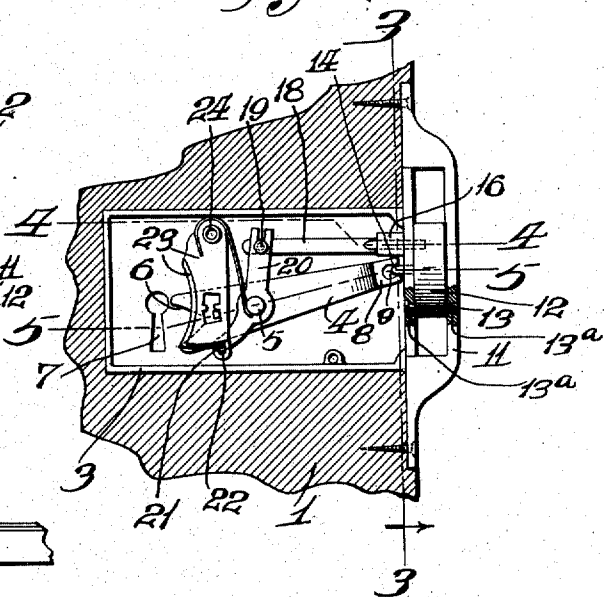


Fig. 3.

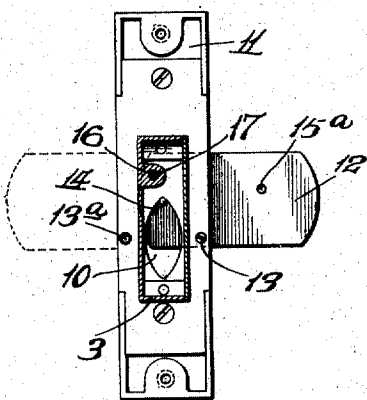


Fig. 4.

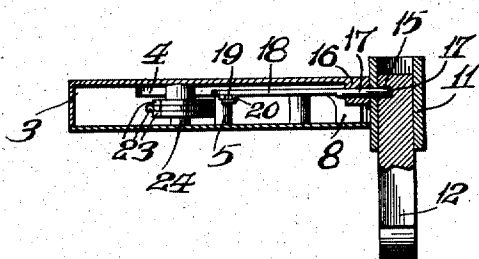


Fig. 5.

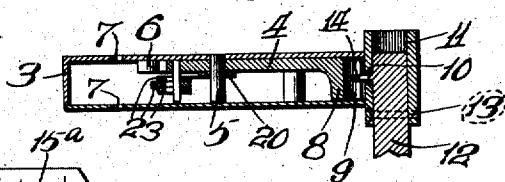
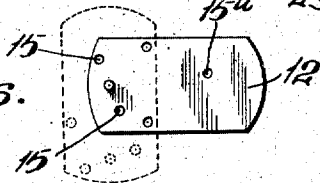


Fig. 6.



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GEORGE M. BLAIR, OF ST. LOUIS, MISSOURI.

SLIDING-DOOR LOCK.

984,468.

Specification of Letters Patent.

Patented Feb. 14, 1911.

Application filed March 5, 1909, Serial No. 481,436. Renewed July 13, 1910. Serial No. 571,844.

To all whom it may concern:

Be it known that I, GEORGE M. BLAIR, a citizen of the United States, and resident of St. Louis, Missouri, have invented certain new and useful Improvements in Sliding-Door Locks, of which the following is a specification containing a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates generally to sliding door locks of the type shown and described in Letters Patent No. 905,494 issued to me December 1st, 1908, and the object of my present invention is to generally improve the construction of the lock shown in the patent above referred to, and further, to provide a simple automatically operating auxiliary locking device for engaging and holding the main locking bolt while the same occupies either a locked or unlocked position.

To the above purposes my invention consists in certain novel features of construction and arrangement of parts which will be hereinafter more fully set forth, pointed out in the claims and illustrated in the accompanying drawings, in which:

Figure 1 is an elevation of a pair of sliding doors equipped with a lock of my improved construction; Fig. 2 is a vertical section taken through the lock housing, the same being positioned in the door stile; Fig. 3 is a vertical section taken approximately on the line 3—3 of Fig. 2; Fig. 4 is a horizontal section taken on the line 4—4 of Fig. 2; Fig. 5 is a horizontal section taken on the line 5—5 of Fig. 2; Fig. 6 is a detailed view of the locking bolt, the same being detached from the locking bolt housing.

Referring by numerals to the accompanying drawings; 1 designates the sliding doors which are of the usual construction, and which are arranged for operation in the usual manner in the door frame 2.

Seated in the rear stile of each door is a lock housing 3, and arranged to swing vertically therein is a plate 4 fulcrumed upon a pin 5, and the rear end of this plate is notched as designated by 6 in order to be engaged by a suitable key which enters the housing through a keyhole 7. Formed integral with the forward end of the plate 4 is a lug 8, in which is formed a horizontally disposed notch 9, and when the plate 4 is actuated by the key, the notched lug 8

moves vertically immediately adjacent the front end wall of the locking housing 3, and in which front end wall is formed a vertically disposed opening 10.

Fixed to the front end of the lock housing 3 is a bolt housing 11, which projects slightly beyond the edge of the sliding door and arranged for operation in this bolt housing is a vertically swinging locking bolt 12, which is pivotally mounted on a pin 13 passing through apertures 13^a, formed through the front wall of the housing 3 and the front wall of the housing 11. And in order to provide for the swinging of the bolt 12 in either direction, a second set of these apertures 13^a are located on the opposite side of the lock and a second aperture is provided in the bolt 12 for the reception of the pin 13.

Formed on or fixed to the locking bolt 12, is a lug or pin 14 which extends through the opening 10, and the end of said pin engages in the notch 9 in the lug 8.

Formed in the bolt 12 on opposite sides of the pin 14, are auxiliary locking bolt apertures 15, and arranged to slide through a perforated lug 16 formed integral with the housing 3, and through the front wall of said housing is an auxiliary locking bolt 17, the forward end of which is adapted to engage in one of the apertures 15. Either of these apertures 15 is adapted to receive the locking bolt 17 when the bolt 12 is in a horizontal or locked position, and when said bolt 12 is in a vertical or unlocked position, the forward end of the bolt 17 engages in a recess 15^a, formed in the side of the bolt 12. The auxiliary locking bolt 17 is carried by a horizontal moving plate 18 within the housing 3, and arranged on the end of said plate, opposite the bolt 17 is a pin 19, which is engaged by the bifurcated upper end of a lever 20, fulcrumed on the pin 5, and the lower end of this lever 20 carries a pin 21, which operates through an aperture 22 formed in the lower end of one of a series of tumbler plates 23, which occupy positions immediately over the notch 6 formed in the rear end of the plate 4, and said tumbler plates being pivotally mounted at their upper ends on a pin 24 within the housing 3.

When the sliding doors are unlocked, the locking bolt 12 occupies a vertical position in the housing 11, and the auxiliary locking bolt 17 engages in the apertures 15^a, thus positively holding the bolt 12 in its un-

locked position. When the parts are thus positioned the doors are free to be opened and closed as desired. When the doors are closed and it is desired to lock the same, the key is inserted through the keyhole 7, and as said key is turned the tumbler plates 23 will be engaged and shifted slightly prior to the time the key engages in the notch 6 and the plate 4, and as said tumbler plates are shifted, the lever 20 will be swung on its fulcrum in such a manner as to shift the plate 18 and withdraw the forward end of the bolt 17 from the aperture 15^a. A continued movement of the key shifts the plate 4 upon the pin 5 and the notched lug 8 engaging the pin 14 causes the locking bolt 12 to swing upon the pin 13, and said locking bolt shifts from a vertical to a horizontal position, and the end of said locking bolt passes into a suitable notch or recess formed in the wall of the sliding door pocket, thus effectually locking the doors. A reverse movement of the key actuates the bolt 17 so that the forward end thereof is withdrawn from the aperture 15^a, after which the bolt 12 is shifted into a vertical or unlocked position and as soon as this movement is accomplished the forward end of the bolt 17 will engage in the corresponding one of the apertures 15, thus engaging and holding the bolt 12 in its unlocked position.

As hereinbefore stated, there is a pair of apertures provided for the pin 13, and there is a pair of apertures 15 provided in order that the bolt 12 can be arranged to swing outward from either side of the housing 11, and this arrangement is brought about by changing the pin 13 from one set of apertures 13^a to the other.

While I have described my improved lock as to be particularly adapted for sliding doors, it will be readily understood that a lock constructed substantially as herein described can be advantageously used for locking any form of door or sliding panel.

I claim:

1. A lock of the class described, comprising a lock housing, a locking bolt pivotally arranged therein, and adapted to swing in a vertical plane at right angles to the plane occupied by the housing, means whereby the locking bolt is swung from one position to another, and auxiliary locking means for engaging the locking bolt while the same is in a locked or unlocked position.

2. The herein described lock, comprising a housing, a locking bolt pivotally arranged therein and adapted to swing in a vertical plane at right angles to the plane occupied by the lock housing, key operated mechanism within lock housing for shifting the locking bolt from one position to another, and auxiliary locking means for engaging the locking bolt after movement.

3. The herein described lock, comprising

a housing, a locking bolt pivotally arranged therein and adapted to swing in a vertical plane at right angles to the plane occupied by the lock housing, key operated mechanism within the lock housing for shifting the locking bolt from one position to another, and auxiliary locking means operated by the key actuated mechanism for engaging the locking bolt while the same is in a locked or unlocked position.

4. The combination with a sliding door of a lock arranged on the rear stile of said sliding door, a locking bolt arranged to swing in a vertical plane at right angles to the plane occupied by the housing, key operated means within the housing for actuating the locking bolt, an auxiliary locking bolt adapted to engage the locking bolt while the same is in a locked or unlocked position and movable tumbler plates arranged to be engaged by the key to actuate the auxiliary locking-bolt.

5. The herein described lock comprising a housing, a bolt housing arranged at one end thereof, a locking bolt pivotally arranged in the bolt housing and adapted to swing vertically in a plane at right angles to the plane occupied by the first mentioned housing, key operated mechanism within the first mentioned housing for actuating the locking bolt while the same is in a locked or unlocked position and movable tumbler plates arranged to be engaged by the key to actuate the auxiliary locking-means.

6. The herein described lock comprising a housing, a bolt housing arranged at one end thereof, a locking bolt pivotally arranged in the bolt housing and adapted to swing vertically in a plane at right angles to the plane occupied by the first mentioned housing, key operated mechanism within the first mentioned housing for actuating the locking bolt auxiliary locking means within the first mentioned housing a movable tumbler arranged to be engaged by the key, a lever connecting the movable tumbler with the auxiliary locking means whereby when the key is turned the tumbler and lever will move the auxiliary locking means into positions holding the locking bolt in either a locked or unlocked position.

7. A lock of the class described, comprising a housing, a locking bolt pivotally arranged therein and adapted to swing in a vertical plane at right angles to the plane occupied by the lock housing, key operated mechanism within the lock housing for shifting the locking bolt from one position to another, said key during the locking and unlocking operations occupies a plane parallel with the plane through which the locking bolt swings.

8. A lock of the class described, comprising

ing a housing, a locking bolt pivotally arranged therein and adapted to swing in a vertical plane at right angles to the plane occupied by the lock housing, key operated
5 mechanism within the lock housing for shifting the locking bolt from one position to another, said key during the locking and unlocking operations occupies a plane parallel with the plane through which the locking
10 bolt swings, and auxiliary locking means

for engaging the locking bolt after movement.

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

GEORGE M. BLAIR.

Witnesses:

M. P. SMITH,
E. L. WALLACE.