P. F. AUGENBRAUN.

LOCK.

APPLICATION FILED JUNE 8, 1918.

1,278,561.

Patented Sept. 10, 1918

2 SHEETS—SHEET 1.

FIG. 1.

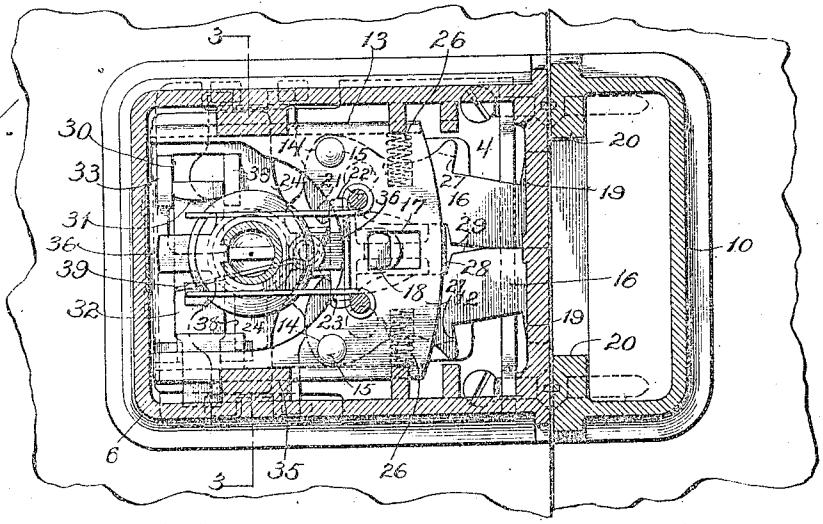


FIG. 2.

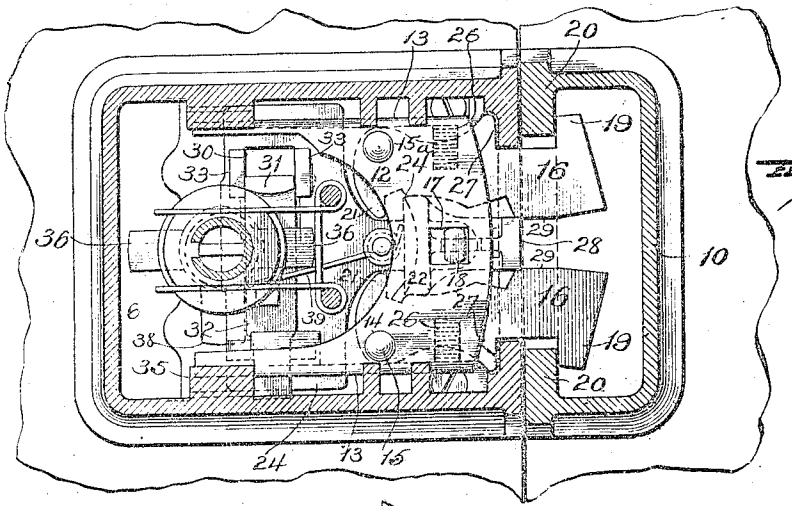
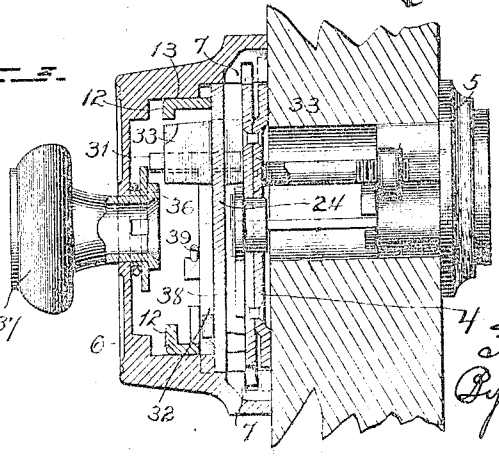


FIG. 3.



WITNESSES

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2 SHEETS—SHEET 2.

FIG. 4.

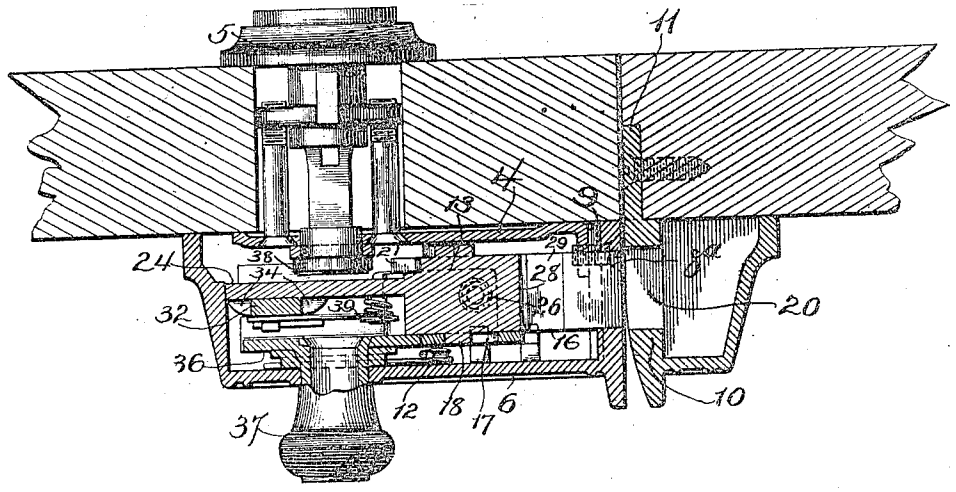


FIG. 5.

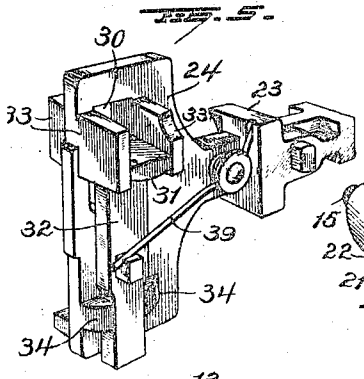


FIG. 6.

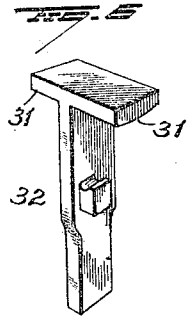
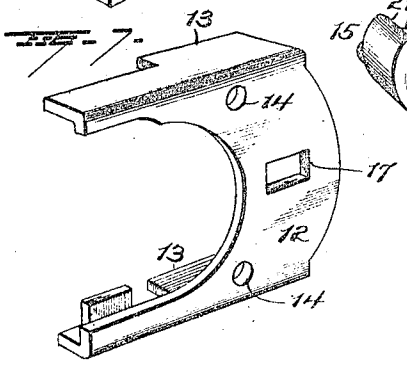


FIG. 7.



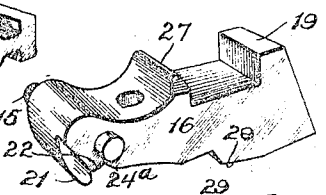
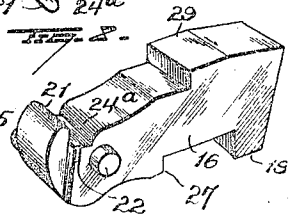


FIG. 8.



WITNESSES

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UNITED STATES PATENT OFFICE.

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LOCK.

1,278,561. Specification of Letters Patent. Patented Sept. 10, 1918.

Application filed June 8, 1918. Serial No. 238,932.

To all whom it may concern:

Be it known that I, PETER F. AUGENBRAUN, a citizen of the United States, and a resident of Stamford, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Locks; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to an improvement in locks, the object being to provide a lock the bolts of which when projected, interlock with the keeper and lock the jamb and door together so that they cannot be pried apart, or separated sufficiently to permit of any manipulation of the bolt or mechanism of the lock from the outer end or the exposed surfaces of the lock.

With these objects in view my invention consists in the parts and combinations of parts and in the details of construction as will be more fully explained and pointed out in the claims.

In the accompanying drawings; Figure 1 is a view in section through the lock case and keeper, the lock mechanism being in elevation and the bolts retracted; Fig. 2 is a similar view showing the bolts projected; Fig. 3 is a view in transverse section on the line 3—3 of Fig. 1; Fig. 4 is a view in longitudinal section, the bolts being retracted; Fig. 5 is a view in perspective of the bolts actuator and the tumbler; Fig. 6 is a perspective view of the tumbler; Fig. 7 is a view of the bolt carrier and Fig. 8 a view of the bolt.

The improvement is equally applicable to rim locks and to mortise locks of swing and sliding doors, but for the purpose of illustration I have shown it as a rim lock applied to a swinging door.

4 represents a cover plate adapted to be secured to the inner face of the door and to the key lock 5 in the usual and well known manner. The lock casing 6 has lugs 7 which engage corresponding projections 8 on the cover plate 4, and holes for the screws 8^a which enter threaded holes in the outwardly turned lugs 9, so that when the lock casing is applied and secured to the cover plate, and the door closed, all the securing devices will be concealed.

The keeper 10 is provided with a flange 11 through which the securing screws pass so that when the door is closed these screws are also concealed.

Mounted to slide in the lock casing 6 is the bolt carrier 12, which is in the form of a U-shaped plate with inwardly projecting side flanges 13. This plate is provided with holes or recess 14 in which the pivot lugs 15 of the bolts 16 rest, and it is also provided centrally with the elongated guide slot 17 in which the lug 18 on the bolt actuator rests and moves.

There are two bolts pivotally mounted on the carrier 12, and each is provided with an outwardly projecting locking hook 19, adapted when the bolts are projected as in Fig. 2, to engage the walls 20 of the keeper 10 thus locking the lock to the keeper and absolutely preventing any separation of these parts while the bolts remain projected.

Each bolt is provided at its inner end at the rear of its pivot with a toe 21, and with a recess 22 immediately in front of the toe to receive the cross head 23 on the actuator 24. The toes 21 on the bolts project toward each other as shown in Figs. 1 and 2, and the cross head 23 is located within the space between the two bolts, and, as will be hereinafter explained, has a limited sliding movement between the bolts.

The free ends of the bolts are pressed inwardly toward each other and by the springs 26 each of which is seated at one end in a recess in a bolt and bear at its outer end against a side flange 13 of the carrier 12, thus holding the two bolts against the opposite edges of the cross head.

When the bolts are retracted as in Fig. 1 this cross head rests within the recesses 22 and against the front faces of the toe 21 on the bolts. When the bolt actuator is moved forwardly, the cross head 23 bearing against the curved shoulder 24^a on the bolts, immediately in front of the recesses 22, forces the bolts 16 and the carrier 12 to which the bolts are pivoted outwardly, the springs 26 holding the outer ends of the two bolts in contact so as to permit the latter to freely enter the keeper. The pressure of the springs is also sufficient to prevent the cross head from passing over the rounded shoulders 24^a on the bolts so long as the bolts are free to move outwardly with the actuator. After the bolts have been fully projected, and are restrained against further outward

movement by the contact of the shoulders 27 on the bolts with the inner face of the end wall of the casing, a further outward movement of the cross head 23 causes the latter to ride over the curved or rounded shoulders 24ª, thus forcing the bolts apart against the action of the springs 26, and carrying the forward end 28 of the actuator between the flat parallel faces 29 of the bolts.

The forward end 28 of the actuator constitutes a locking slide which holds the bolts in locking contact with the keeper.

At the beginning of the outward movement of the bolts, when the cross head 23, bolts 16 and carrier plate 12 move together, the lug 18 on the head of the actuator and locking slide 24 is within the slot 17 of the carrier and at the rear end of the said slot. After the bolts have been projected, and during the outward movement of the cross head 23 and locking slide 28, the lug 18 moves within the slot 17 in the carrier until the locking slide is in its locking position between the flat faces 29 of the bolts.

In unlocking, the cross head 23 and locking slide 28 first move rearwardly until the end of the locking slide clears the flat faces 29 of the bolts, and the cross head is in the plane of the recesses 22 thus permitting the springs 26 to force the free ends of the bolts together and in a position to move out of the keeper. The continued rearward movement of the cross head against the toes 21 of the bolts, pulls or draws the latter and the carrier plate 12 back to normal or unlocked position.

The actuator 24 is provided with a widened inner end as shown in Fig. 5, and this widened end is provided with an elongated slot 30 for the head 31 of the T-shaped tumbler 32. The head 31 of this tumbler rests between the shoulders 33 which project from both sides of the actuator 24 at the front and rear of the slots, as shown in Fig. 5, and the body or shank of the tumbler is guided in its movements by the ribs 34 on the actuator.

This tumbler 32 locks the actuator in its two positions by its engagement with the front and rear walls of the lug 35 formed integral with the lock casing 6, and is actuated by the roll back or cam 36 carried in the shank of the knob 37, and also by a cam 38 actuated by the key lock 5.

If the parts of the lock be in the position shown in Fig. 1 and the cam 38 or cam 36 be turned to the right, the cam so turned will first engage the head 31 of the tumbler and force the latter against the action of spring 39, longitudinally until its free end clears the lug 35 on the lock case. After this movement has been accomplished the end of the cam, while still holding the head 31 of the tumbler, engages the rear shoulder 33 on the actuator 24 and moves the latter, the carrier 12 and bolts forward, after which the tumbler will be released and be moved by its spring into a position in front of the lug 35 thus locking the bolts in their projected positions.

It is evident that many slight changes might be resorted to in the relative arrangement of parts shown and described without departing from the spirit and scope of my invention. Hence I would have it understood that I do not wish to confine myself to the exact construction and arrangement of parts shown and described, but—

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

1. In a lock, the combination of a lock casing, two pivoted bolts, springs for yieldingly holding the outer ends of the bolts in position to enter a keeper, a carrier for the bolts, the said carrier being wholly confined within the casing, movable means for first moving the bolts and carrier longitudinally and then turning the bolts on their pivots, and means for locking the bolts against movement when in their projected positions.

2. In a lock, the combination of a lock casing, two pivoted hook shaped bolts, the hooks projecting outwardly in opposite directions, springs for yieldingly holding the outer ends of the bolts in position to enter a keeper, a carrier for the bolts, the said carrier being wholly confined within the casing, and movable means for first moving the bolts longitudinally and then turning them on their pivots, and means for holding them separated against the action of the springs.

3. In a lock, the combination of a lock casing, two pivoted bolts each having a hook shaped end, the hooks projecting outwardly in opposite directions, a carrier for the bolts, the said carrier being wholly confined within the casing, springs for yieldingly holding the outer ends of the bolts in contact, movable means actuated by a knob or key mechanism for first moving the bolts outwardly and then turning them on their pivots to cause the hooks to engage a keeper, means for holding the hooks separated against the action of the springs, and means for locking them in their projected positions.

4. In a lock, the combination with two pivoted bolts each having a hook shaped outer end, means actuated by the key or knob mechanism of the lock for moving the bolts outwardly; for turning them on their pivots; for holding their outer ends separated when projected and for locking them in their projected positions.

5. In a lock, the combination of a carrier, two bolts pivoted thereto, springs carried by the carrier and engaging the bolts for holding them together, means for moving the bolts and carrier outwardly, movable means for separating the bolts at their outer ends

and for holding them separated while the bolts are projected, and means for locking the bolts in their projected positions.

6. In a lock, the combination of a carrier, two bolts pivoted thereto, a sliding actuator engaging the bolts for moving the same longitudinally and for turning them in their locking positions and knob or key actuated means for locking the actuator.

7. In a lock, the combination of a carrier, two bolts pivoted thereto, each bolt having a hook shaped end, a sliding actuator engaging the bolts for moving them longitudinally; for turning them on their pivots, and for holding them in locking position and a knob or key actuated tumbler carried by the actuator for locking the latter against movement.

8. In a lock, the combination of a carrier, two bolts pivoted thereto, a sliding actuator having a cross head engaging the bolts for moving the latter longitudinally and for turning them on their pivots, and also provided with a part adapted to enter between the bolts for holding them in their locking position, and a knob or key actuated tumbler carried by said actuator for locking the same in its two positions.

9. In a lock, the combination of a carrier, two bolts pivoted to the latter, each bolt having a hook at its outer or locking end and a toe at its inner end, a sliding actuator engaged by knob or key mechanism for moving the bolts longitudinally, the said actuator having a cross head to engage the bolts in advance of the toes for moving the latter longitudinally and for turning them on their pivots, and also provided with a part to enter between the outer ends of the bolts when the latter are in locking position, and a key or knob actuated tumbler on the actuator for locking the latter against movement.

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

PETER F. AUGENBRAUN.

Witnesses:
C. P. WICKS,
CHARLES A. BERRY.