Oct. 31, 1939. N. F. ANDERSON 2,178,132

LOCK

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Fig. 1

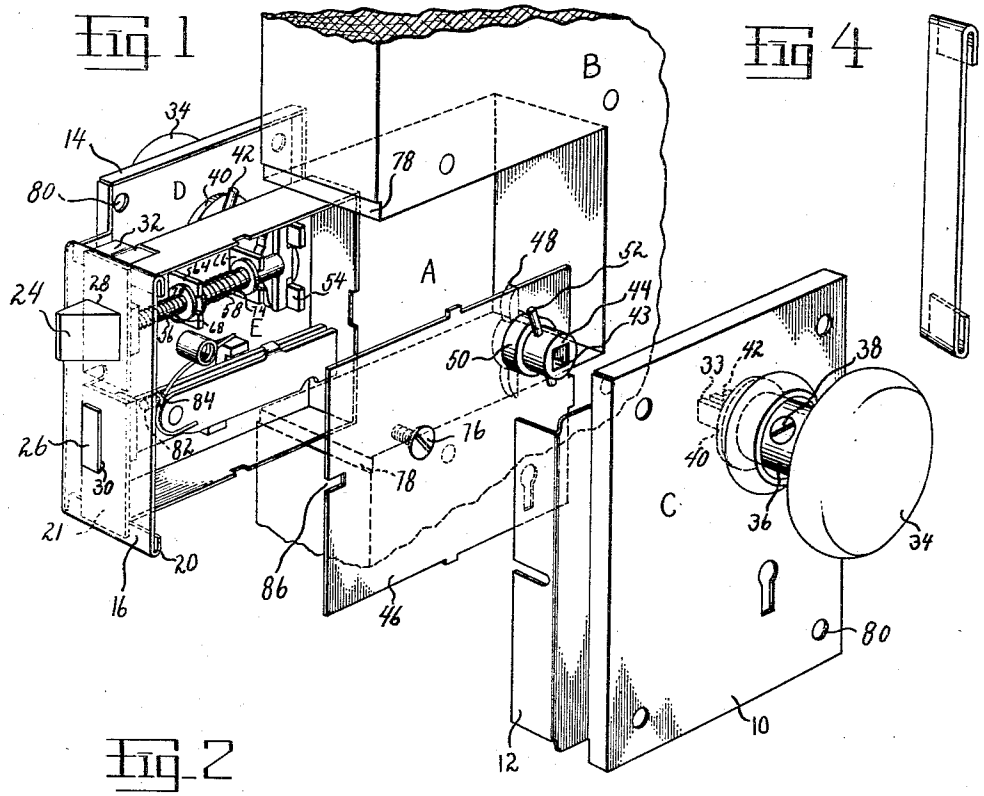


Fig. 4

Fig. 2

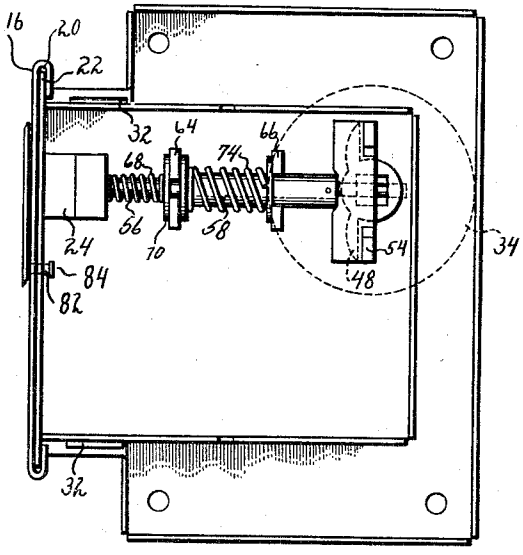
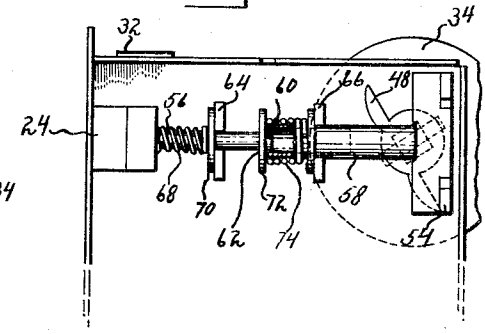


Fig. 3



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LOCK

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3 Claims. (Cl. 70—450)

The present invention relates to door locks and particularly to a lock wherein the face and escutcheon plates are made as a unit and are adapted to support a lock casing within a recess which is formed in the swinging edge of the door by cutting a rectangular block therefrom.

An object of the present invention is the provision of a pair of complementary members, each comprising a combined escutcheon and face plate and adapted when assembled to completely enclose and position a lock casing within the lock receiving recess.

A still further object is a lock of the aforementioned character wherein the lock casing may be removably supported by one of the members and may be assembled thereon without securing means.

A still further object is a lock of the foregoing character including an improved latching device which will insure engagement of the latch within the keeper whenever the door is swung to closed position.

Other objects will be in part obvious and in part pointed out more in detail hereinafter.

The invention accordingly consists in the features of construction, combination of elements, and arrangement of parts which will be exemplified in the construction hereafter set forth and the scope of the application of which will be indicated in the appended claims.

In the accompanying drawing:

Figure 1 is an exploded perspective view of a lock embodying the invention herein;

Fig. 2 is a side view with one of the complementary members and the side plate of the lock casing removed and with the latching bolt forced inwardly by abutting against a keeper plate;

Fig. 3 is a detail view partly in section of the latching mechanism; and

Fig. 4 is a perspective view of a filler piece.

In accordance with the present invention, there is provided a recess A, which is formed by cutting out a substantially rectangular block from the swinging edge of a door, and a pair of oppositely disposed complementary members C and D, each comprising a combined escutcheon and face plate and adapted to overlie and enclose the recess and to support and position a suitable lock casing E therein. The member C may be stamped from sheet metal and comprises a combined one-piece escutcheon plate 10 and face plate 12; the escutcheon plate being adapted to lie flush against one side of the door and the face plate being bent at right angles thereto and extending partially across the edge of the door.

The member D is of like construction and comprises an escutcheon plate 14 adapted to lie against the other face of the door and a face plate 16 bent at right angles thereto and adapted to extend substantially across the entire edge of a door of minimum thickness. The top and bottom edges of face plate 16 are bent inwardly and downwardly to provide top and bottom grooves 20 into which the face plate 12 of member C may telescope and thus provide a substantially unitary U-shaped structure which completely encloses the recess A.

The face plate 16 of member D also supports and positions the lock casing E within the recess A, and to accomplish this the forward end plate 21 of the casing E extends above and below the top and bottom plates thereof to provide supporting tongues 22 which are slidably received within the grooves 20 of the face plate 16. The casing E is transversely positioned relative to the face plate 16 to align the latch 24 and bolt 26 with suitable face plate openings 28 and 30 by the lugs 32 which may be struck out from the top and bottom plates of casing E and bent through approximately 180° into abutting engagement with the inner face of escutcheon plate 14. The rear of the casing E is transversely positioned by the knob spindles 33 which are rotatably mounted on members C and D and extend to either side thereof. The spindles are each positioned by a knob 34 having a shank 36 into which the end of the spindle 33 projects and to which the shank is secured by a set screw 38, with the end of the knob shank abutting against the outer face of the escutcheon plate. The spindle is secured against withdrawal from the escutcheon plate by a washer 40 positioned against the inner face of the plate and retained on the shaft by a pin 42 which is driven through a suitable opening in the spindle.

The inner end of each spindle is provided with a slotted rectangular end which projects into a rectangular bore 43 of a rollback sleeve 44 which extends through the side plate 46 of the casing E and carries on its inner end a suitable rollback 48. The roll back sleeve is positioned in the plate 46 by a collar 50 which abuts against the outer face thereof and is positioned on the sleeve by a locking pin 52 driven through the sleeve 44. As will be evident, when the spindle 33 is positioned within the sleeve 44, the pin 52 will enter between the slotted ends of the spindle, and upon rotation of the knob the rollback 48 will be actuated.

The rollback 48 is adapted to engage the cooperating roll back fingers 54 to move same rearwardly and thus actuate the latch 24. The latch 24 is interconnected to the rollback fingers 54 by a latching bolt 56 which projects rearwardly from the latch 24 and telescopes within a latching sleeve 58, which sleeve is fixed to the rollback fingers 54. The end of the latching bolt 56 is provided with a head 60 which is greater in diameter than the opening 62 in the end of the sleeve 58. The latching bolt and sleeve are positioned in the housing by the outwardly projecting lugs 64 and 66. Positioned intermediate of the lugs 64 and the rear of the latch 24 is a compression spring 68, the rear end of which abuts against a washer 70. The spring 68 tends to normally urge the latching bolt 56 to its forward position and maintain the rear head 60 thereof in engagement with the rear face of the head 72 of the latching sleeve 58 and thus normally urge the latch into latching position.

Positioned intermediate of the lug 66 and the rear face of the head 72 of the latching sleeve is a second compression spring 74 which normally tends to urge the latching sleeve 58 to its forward position and maintain the rollbacks 48 in vertical position. When the latch sleeve 58 is in its forward position with the head 72 thereof abutting the rear face of the lug 64, the latch 24 will project out of the face plate and when the door is swung to closed position the lug will be cammed rearwardly, and as only the tension of the spring 56 must be overcome it will readily move to unlatched position as it rides over the keeper and then be urged into engagement with the keeper to secure the door. However, as the pressure of spring 68 would be insufficient to return the latch to its forward position and the rollbacks to their vertical position, upon actuation of the knob to the position shown in Fig. 3 both springs 68 and 74 will be compressed, and upon release of the knob the combined tension thereof will return the latch to its forward position. As indicated, the latch casing also has positioned therein a lock bolt 26 which may be of any desired construction.

In assembling the device, the side plate 46 of the lock casing E will normally be positioned and secured to the casing by the screw 76 and the entire lock casing may be positioned by sliding the tongues 22 into the grooves 20. The member D may then be positioned against the side of the door B with the lock casing E positioned in the recess A, and in order to assure proper alignment there may be cut in the forward edge of the door the top and bottom shoulders 78 into which the top and bottom edges of the front plate 16 may be positioned. When so positioned, the plate 14 may be secured to the side of the door by any suitable screws which project through the spaced openings 80 in the corners of the plate. When thus secured, the member C may then be positioned against the opposite plate with the face plate 12 thereof telescoped within the face plate 16 and the escutcheon plate 10 secured to the door in like manner to the escutcheon plate 14. If the door is of minimum thickness, the face plate 16 will extend entirely across the front edge thereof. However, if it is above minimum thickness the face plate 12 will extend slightly outwardly from the face plate 16 and thus assure complete coverage of the recess. There may also be provided a filler piece such as shown in Fig. 4 which could be slipped over the face plate 12 and cut to the proper width to hide that part of plate 12 which does not telescope within plate 20 and thus enhance the appearance of the device. If desired, the front plate may have one or more rivets 82 having an enlarged head 84, which rivets extend rearwardly from the face plate, and the lock casing E is provided with slots 86 which will enable it to be assembled past the rivet head 84. The face plate 12 will also be provided with a slot having the same width as the rivet 82, and thus when the members are telescoped the rivet head 84 will serve to maintain the plate 12 in close engagement with the plate 16 intermediate of the top and bottom edges thereof.

When positioned on the door, the latch mechanism will operate as above described upon the rotation of either of the knobs 34 to draw the latch 24 into the casing.

Although the assembling of the device has been described with particular reference to the order in which it is shown in Fig. 1, it is apparent that the entire lock could be pre-assembled prior to leaving the factory and positioned directly on the door as a unit.

As many changes could be made in the above construction and many apparently widely different embodiments of this invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawing shall be interpreted as illustrative and not in a limiting sense.

It is also to be understood that the language used in the following claims is intended to cover all of the generic and specific features of the invention herein described and all statements of the scope of the invention which, as a matter of language, might be said to fall therebetween.

I claim as my invention:

1. A lock of the character described, comprising a pair of oppositely disposed complementary members, each member comprising an escutcheon plate and a face plate, one of said face plates having top and bottom grooves, a lock casing supported by said face plate and having tongue members received within said grooves, said other face plate being adapted to be received within said grooves to position same relative to the first face plate and provide a continuous face plate intermediate of the escutcheon plates.

2. A lock of the character described, comprising a pair of oppositely disposed escutcheon plates, a face plate extending at right angles to one of said escutcheon plates and provided with grooves at its top and bottom edges, a latch casing having upper and lower tongues adapted to be received within said grooves to support said casing, and a complementary face plate extending from said other escutcheon plate and adapted to be received in said grooves to provide a continuous face plate intermediate of the side plates.

3. In a lock of the character described, a pair of oppositely disposed escutcheon plates, a face plate extending inwardly from one of said escutcheon plates, a latch casing supported on said face plate and extending rearwardly therefrom, a complementary face plate extending inwardly from the other escutcheon plate, and means for telescoping said face plates together to provide a continuous face plate intermediate of the escutcheon plates.

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