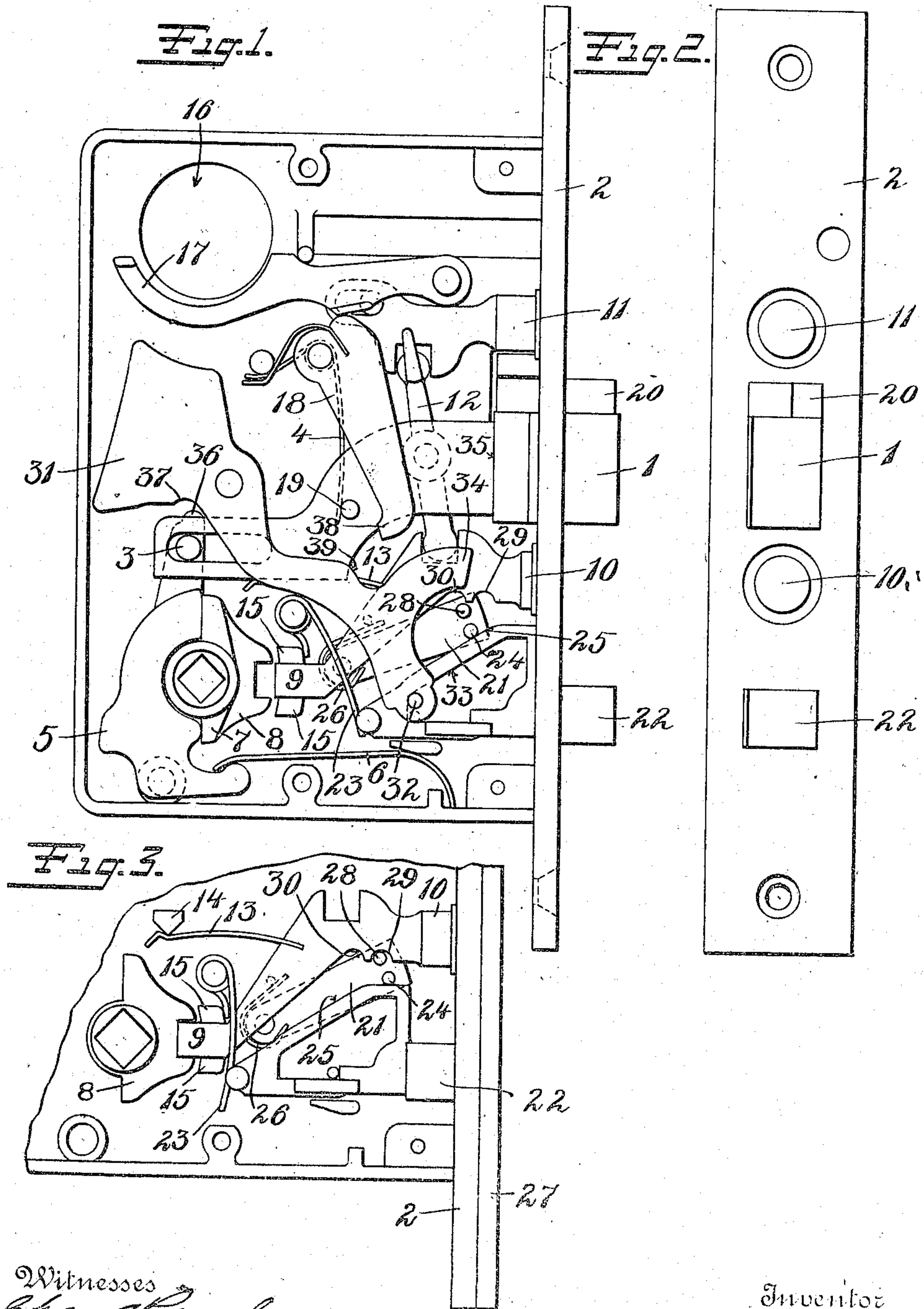


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 LOCK AND LATCH MECHANISM.  
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# UNITED STATES PATENT OFFICE.

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## LOCK AND LATCH MECHANISM.

932,730.

Specification of Letters Patent. Patented Aug. 31, 1909.

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*To all whom it may concern:*

Be it known that I, HENRY G. VOIGHT, a citizen of the United States, residing at New Britain, Hartford county, Connecticut, have invented certain new and useful Improvements in Lock and Latch Mechanism, of which the following is a full, clear, and exact description.

My invention relates to lock and latch mechanism.

The main object of the invention is to provide mechanism which when applied to a door, when the door is closed, cannot be tampered with by the insertion of any instrument at the edge of the door.

Front door locks are customarily provided with what is termed night latch mechanism, whereby the operation of the bolt by the outer knob may be prevented. It is possible, however, in some cases where the door or casing has shrunk and opened up a crack at the edge of the door, to insert an instrument and retract the night latch so that the bolt may be withdrawn by rotation of the outer knob. I have provided means for preventing such tampering with the mechanism. The operator for the safety device also brings into operation a blocking device for preventing the retraction of the bolt by the direct application of any instrument inserted at the edge of a door.

Certain features of the construction which I have selected for illustrating the principles of the invention are set forth in my former Patent No. 574,506, and hence need be referred to only briefly herein.

Figure 1 is a view of the lock and latch mechanism with the inner side of the case removed, the parts being in the position which they occupy when the door is open and the night latch is "off". Fig. 2 is a view of the face of the lock. Fig. 3 is a fragmentary view showing the safety device for the night latch and the operator therefor, the night latch being "on".

The customary bolt, the head 1 of which has a beveled outer face is guided in the face plate 2, and has a slotted shank guided on the pin 3, and is under pressure of the spring 4. The pivoted lever 5 which carries the pin 3 is held yieldingly by the spring 6 against the inner roll-back 7, and the outer roll-back 8. The two roll-backs are adapted respectively to be operated independently by the inner and outer knobs and spindles,

so that the bolt may be retracted from either side of the lock by the operation of the knobs. The outer roll-back 8 has a projection at the rear with a notch into which a portion 9 of the night latch mechanism is adapted to be protruded.

10 is an operating member or button, which in this form of mechanism is cast integral with the dogging portion 9. The dog may be put into operative position by pressing the operator 10 inward, and may be retracted by pressing inward the operator member 11 which tilts the lever 12 and moves the member 10 outward with the dog 9.

The night latch mechanism comprises the dog 9, the operators 10 and 11, and the connecting tilting lever 12. The spring 13, carried by the operator 10, engaging with the stationary projection 14, holds the parts yieldingly in their "on" or "off" position. The outer end of the operator 10 is guided in the face plate 2, and the inner end guided between the stationary lugs 15—15. When the night latch dog 9 engages the outer roll-back, the operation of the bolt by the outer knob is of course prevented. When the night latch is "on", the bolt may be retracted by a key from the outer side of the door. In this particular mechanism a cylinder lock is customarily screwed into the opening 16. Its roll-back is adapted to coact with the lever 17 and swing the lever 18 against the projection 19 on the bolt shank. This retracts the bolt, although the outer knob is dogged.

20 is a member which is pivotally mounted in the casing and connected to the bolt head so that the bolt will be retracted more easily when the door is closed.

21 is a safety guard.

22 is an operating member having a beveled outer face similar to the ordinary beveled latch bolt. The operator is normally pressed outward by the spring 23.

24 is a shoulder or projection carried by the guard 21 and held normally against the inclined portion 25 of the operator shank by the pressure of the spring 26.

27 indicates a fragment of the strike-plate, which is fastened to the door casing.

28 is a shoulder or projection carried by the guard 21.

When the door is closed, the operator 22 is forced inward by its contact with the



strike-plate 27. The shoulder 24 then rides up the incline 25 and the guard 21 is tilted so that the shoulder 28 is thrown into the notch 29 or the notch 30, depending upon the position of the night latch mechanism. When the night latch is "on", as shown in Fig. 3, the closing of the door retracts the operator 22 and throws the shoulder 28 into the notch 29, so that the operator 10 is held positively in position and cannot be forced outward to release the dog 9. When the night latch is in the "off" position, as shown in Fig. 1, and the door is closed, the retraction of the operator 22 will throw the shoulder 28 into the notch 30 and thus prevent the night latch from being thrown "on" by the use of any instrument at the edge of the door. The closing of the door, therefore, always sets the guard so as to prevent tampering with the night latch.

31 is a pivoted lever overweighted at the left, as seen in Fig. 1, so that its pin 32 is held against the incline 33 of the operator shank. When the operator is moved inward by contact with the strike-plate, gravity lifts the right hand end 34 of the lever 31 until it is brought into a position directly in the rear of the shoulder 35 of the bolt. It is therefore impossible, when the door is closed and the operator 22 retracted, to work back the bolt 1 by the insertion of any instrument at the edge of the door, since it is blocked by the lever 31. The bolt may always be retracted, however, by either knob or by the use of a key in the lock. When the blocking device is in position, the rotation of either the inner or outer roll-back tilts the lever 5 to the left, as viewed in Fig. 1, bringing the tip 36 against the shoulder 37, so that the blocking device is retracted before the pin 3 of the lever is brought into retracting engagement with the shank of the bolt. In a similar manner, the operation of the roll-back of the cylinder lock (not shown) in the opening 16 forces down the lever 17 and throws the lever 18 toward the left until its end 38 engages the shoulder 39 of the blocking lever, so that the end 34 of the blocking lever is retracted from the shoulder 35 of the bolt before the lever 18 comes into retracting engagement with the shoulder 19. The retraction of the operator 22 will therefore be seen to set a guard for the night latch and set a blocking device or dead lock for the bolt.

What I claim is:

1. In a lock and latch mechanism, a bolt, independently operable inner and outer roll-backs, means of connection between said roll-backs and said bolt, night latch mechanism for dogging one of said roll-backs, a guard device for preventing operation of said night latch mechanism, and a projecting operator for said guard.

2. In a lock and latch mechanism, a bolt,

independent operating devices for said bolt accessible from opposite sides of the mechanism, means for dogging the operation of said bolt by one of said devices, and means automatically operable upon the closing of the door to which the lock is attached for preventing operation of said dogging means.

3. In a lock and latch mechanism, a bolt, a roll-back adapted to be rotated by a knob and spindle, means of connection between said roll-back and said bolt, night latch mechanism for dogging the operation of said bolt by said roll-back, and an automatically operable guard for preventing operation of said dogging mechanism.

4. In a lock and latch mechanism, a bolt, means for retracting said bolt, night latch mechanism for dogging said retracting means, a guard device for said night latch mechanism, a blocking device for said bolt, and an operator adapted to be automatically set upon the closing of the door to which the mechanism is attached for setting said guard and said blocking device.

5. In a lock and latch mechanism, a bolt, means for retracting the bolt, night latch mechanism for dogging the retracting means, a guard device for preventing operation of said night latch mechanism, and a projecting operator for setting said guard device.

6. In a door lock and latch mechanism, a casing having a face plate, a bolt normally projecting through the face plate, means for retracting the bolt, manually operable night latch mechanism having a member projecting through the face plate and means for preventing operation of said night latch mechanism when the door is closed.

7. In a lock and latch mechanism, a spring-pressed bolt, a roll-back, operative means of connection between the roll-back and the bolt, manually operable mechanism accessible at the face of the lock for dogging the operation of the bolt by said roll-back, and a guard device for preventing the operation of said dogging mechanism when the door to which the lock and latch mechanism is attached is closed.

8. In a lock and latch mechanism, a bolt, means for retracting said bolt, a dogging device for said retracting means, a guard device and an operator therefor, said guard device being interposed between a portion of the operator and said dogging device.

9. In a door lock and latch mechanism, a locking bolt, night latch mechanism for preventing the retraction of said bolt, and stop mechanism for automatically preventing the operation of said night latch mechanism when the door is closed.

10. In a door lock and latch mechanism, a bolt, a roll-back, operative means of connection between said roll-back and said bolt, a dogging device for dead-locking said bolt



when extended, manually operable means for preventing the retraction of said bolt by said roll-back, a dogging device for said preventing means, and means for setting the dogging device for the bolt and the dogging device for the preventing means.

11. In a lock and latch mechanism, a bolt, means for retracting said bolt, manually operable means for preventing the action of said retracting means and automatically operable means for preventing the operation of said manually operable means.

12. In a lock and latch mechanism, a casing having a face plate with a plurality of openings, a bolt normally protruding through one of said openings, means for retracting said bolt, a dogging device therefor, means operable through another of said openings for setting said dogging device, a guard for preventing operation of said dogging device, and means operable through another of said openings for operating said guard.

13. In a lock and latch mechanism, a bolt, manually operable means for retracting said bolt, means for dogging said retracting means for said bolt including an operator accessible through the face plate of the mechanism, and means operable upon closing the door for positively preventing the operation of said operator.

14. In a lock and latch mechanism, a bolt, a knob-operable roll-back, operative means of connection between said roll-back and said bolt, means for positively dogging said roll-back, and means operable upon closing the door for preventing the movement of said dogging means.

15. In a lock, the combination with a bolt, and knob mechanism for retracting the bolt, of a slide for deadlocking the outer knob, and means actuated by the closing of the door for deadlocking said slide.

16. In a lock, the combination with a bolt, and knob mechanism for retracting the bolt, of a slide for deadlocking the outer knob, one end of said slide projecting through the face plate of the lock whereby the slide may

be moved longitudinally, and means actuated by the closing of the door for deadlocking said slide.

17. In a lock, the combination with a main bolt, an auxiliary bolt, the latter adapted to be forced inwardly by the closing of the door and remain in such position while the door is in its closed position, and knob mechanism for retracting the main bolt, of a slide for deadlocking the outer knob, and means actuated by the auxiliary bolt upon the closing of the door for deadlocking said slide.

18. The combination with a latch bolt, of independently operable inner and outer roll backs, means of connection between said roll backs and bolt, mechanism for dogging one of said roll backs, means accessible from the outside of the lock for actuating said dogging mechanism, and means for preventing the unlocking movement of said dogging mechanism when the door is closed.

19. The combination with a bolt and independent operating devices for said bolt, accessible from the opposite sides of the lock, of means for dogging one of said operating devices and means automatically operable upon the closing of the door for preventing an unlocking movement of said dogging means.

20. The combination with a bolt, a roll back and means connecting the roll back and bolt, of means for dogging said roll back, and automatically operated means for preventing an unlocking movement of said dogging means.

21. The combination with a bolt and means for retracting same, of a dogging device for said retracting means, means accessible from the outside of the lock for moving said dogging means into and out of its dogging position, and means actuated by the closing of the door for preventing an unlocking movement of said dogging means.

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Witnesses:

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