

H. G. VOIGHT.

LOCK.

APPLICATION FILED JULY 1, 1908.

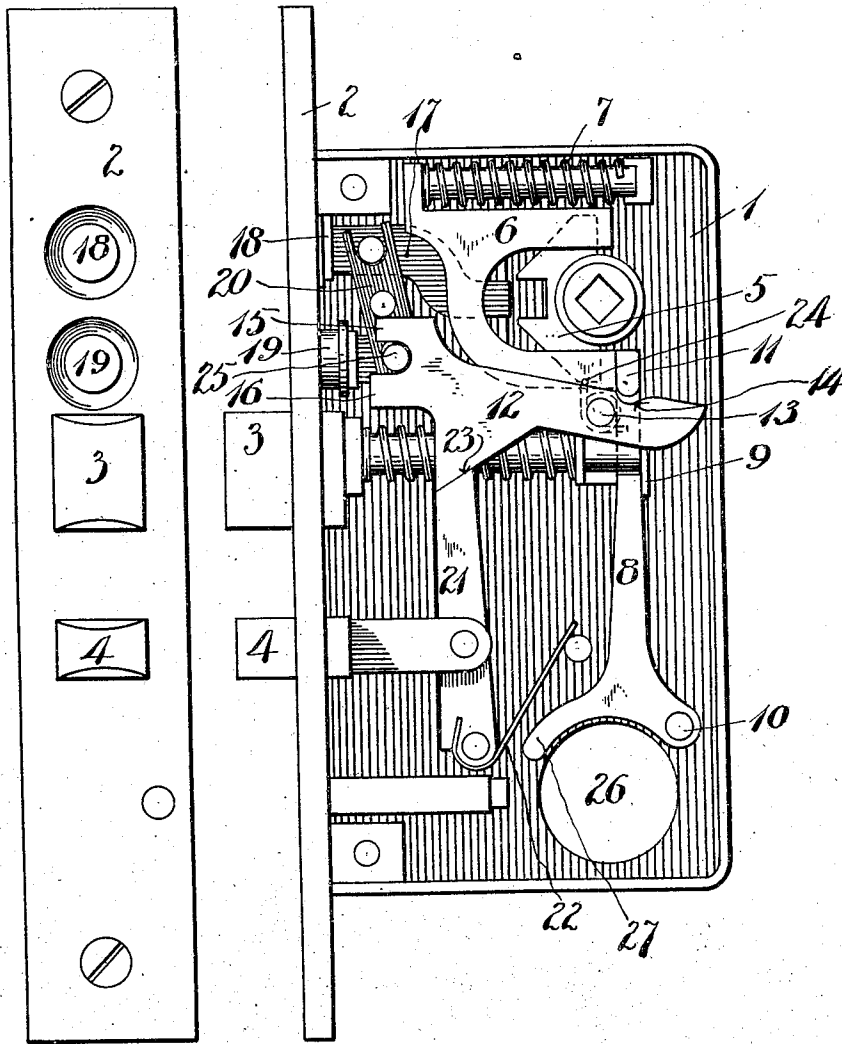
938,444.

Patented Oct. 26, 1909.

2 SHEETS—SHEET 1.

Fig. 2.

Fig. 1.



Witnesses:

Chas. A. Beard
Fred. H. Dammunfelser

Inventor

H. G. VOIGHT

By *his Attorneys*

Barlett, Brown & Whitaker

H. G. VOIGHT.

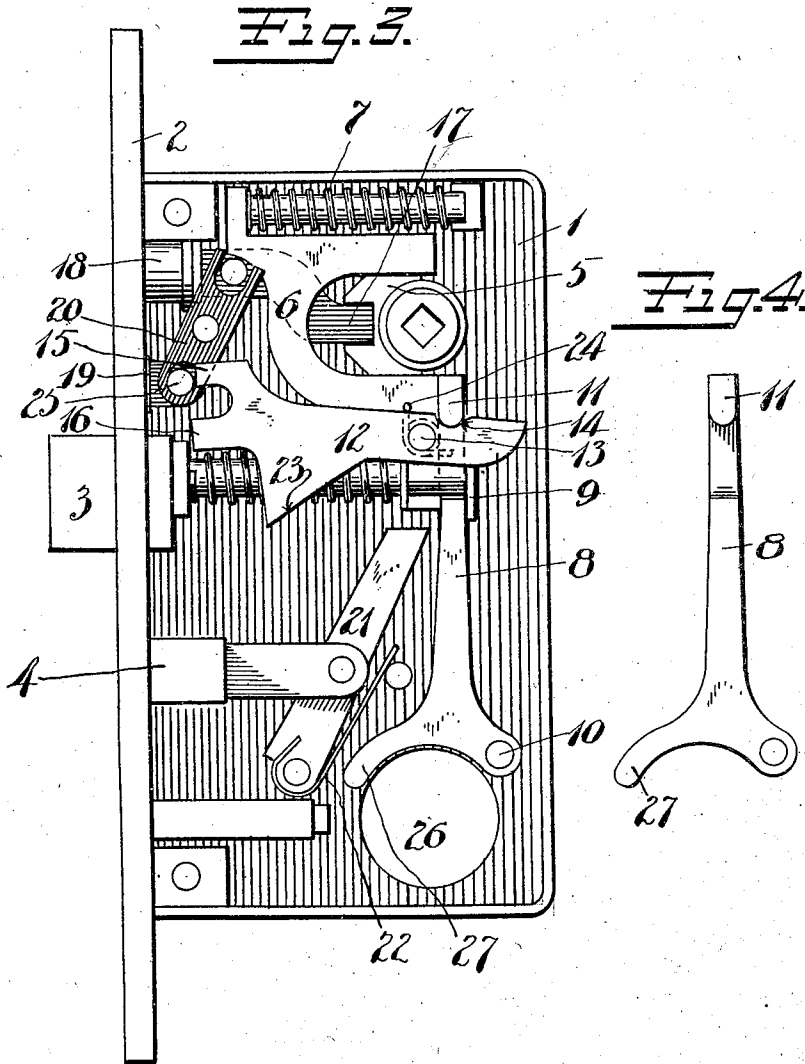
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2 SHEETS—SHEET 2.



Witnesses:
Chas. A. Read,
Fred. M. Dammefelver.

Inventor
HG VOIGHT
By his Attorneys
Banker, Pomeroy & Hutchins

UNITED STATES PATENT OFFICE.

HENRY G. VOIGHT, OF NEW BRITAIN, CONNECTICUT, ASSIGNOR TO RUSSELL & ERWIN MANUFACTURING COMPANY, OF NEW BRITAIN, CONNECTICUT, A CORPORATION OF CONNECTICUT.

LOCK.

938,444.

Specification of Letters Patent.

Patented Oct. 26, 1909.

Application filed July 1, 1908. Serial No. 441,362.

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, State of Connecticut, have invented certain new and useful Improvements in Locks, of which the following is a full, clear, and exact description.

My invention relates to improvements in locks, and particularly to an improved automatic dogging mechanism. In the particular form shown, the dogging mechanism is arranged to automatically block both the stop-work or "night latch", so-called, and the latch-bolt, when the door is closed, so that said parts cannot be operated by means of an instrument inserted between the edge of the door and the door casing.

In the accompanying drawings I have shown my invention as applied to a lock of the mortise type, and in said drawings Figure 1 is a side elevation of my invention, the cap of the lock being removed. Fig. 2 is a front edge view thereof. Fig. 3 is a view similar to Fig. 1, but showing the parts in a different position. Fig. 4 illustrates a detail of construction.

1 represents a lock case, 2 the face plate, 3 the spring latch-bolt.

4 is a controller for the dogging mechanism.

5 represents a roll-back controlled by one of the knobs. This roll-back engages a slide 6 normally pressed forward by spring 7. The slide 6 bears against a lever 8, which in turn bears against the tail 9 of the latch 3. The arm 8 is pivoted at 10, while its free end is provided with an offset or arm 11.

12 is the dogging member pivoted at 13 and having a cam shoulder 14 adjacent to the offset 11. The dog 12 is provided with the two noses 15—16.

17 is a stop slidably mounted in the case 1 and suitably connected with an operating part 18, which in this instance is a press-button exposed through the face plate 2 of the lock. The inner end of the stop 17 is arranged to engage with a notch in the roll-back 5 (as shown in Fig. 3) when said button 18 is pressed in. When, however, the button 18 stands in its outer position, as indicated in Fig. 1, said stop is free of said roll-back.

When the stop is free of the roll-back, the latter may be turned to retract the latch-

bolt 3. When it is desired to prevent the operation of the latch-bolt 3 by means of the roll-back 5, the button 18 would be pushed in, causing the stop to engage the same, as previously described.

19 is a button connected by a "walking-beam" 20 with the stop 17. By pressing in the button 19, the stop 17 may be retracted.

21 is a blocking-out device pivoted at one end and connected with the controller 4. 22 is a spring by which said blocking device 21 is actuated. The free end of this blocking device 21 is preferably beveled and is arranged to engage with a corresponding bevel 23 on the dog 12 at such time as the latch 4 is extended, as indicated in Fig. 1. At such time it will be seen that the blocking device 21 will lift the stop 12 against the action of its spring 24.

25 is a stud at the inner end of the button 19, which, when the stop 17 is withdrawn, projects into the space between the noses 15—16, as shown in Fig. 1.

Having thus described the main parts of my invention I will now explain the operation. Assuming the parts are in the position shown in Fig. 1, the operator may readily withdraw the latch 3 by simply turning the knob connected with roll-back 5. This action first moves back the slide 6, which in turn encounters the lever 8, moving its free end back, and thereby withdrawing the latch 3, since said lever engages the tail 9 thereof.

In Fig. 1 the parts stand in the position in which they would appear when the door is open and the "stop-work" is in the "off" position. In Fig. 3 the parts are shown in the position in which they would stand when the "stop-work" is "on." In this view the controller 4 is shown as pressed back, which would be its position if the door to which the lock was applied were closed. Since when the "stop-work" is "on" and the latch dog 12 is disconnected therefrom, it follows that when the blocking-out device 21 is moved back by the controller 12, as shown in said Fig. 3, said latch dog will move to the position indicated in said figure, in which its forward nose 16 blocks the latch 3 against being pressed back. In such locks it is customary to provide a second roll-back to be operated freely by one knob. This roll-back may correspond to the roll-back 5, excepting that it is not adapted to be en-

gaged by the stop 17, but is free at all times. This construction is so well understood as to require no additional illustration, being found in practically every front door lock in which the inner and outer knobs are adapted to work independently and in which stop-work is provided to lock the outer knob against rotation. Assuming such a roll-back were provided, the rotation of the same would retract slide 6 and arm 8, as before. The very first part of this retraction of arm 8 would cause the offset 11 to ride down the incline 14 at the tail of the latch dog 12, thus tilting the latter so as to free the latch bolt 3, whereupon a continued rotation of said roll-back would retract said latch bolt in the usual way.

If the parts stood in the position shown in Fig. 3, in which the stop 17 is shown as pressed in to engage the roll-back 5, and in which it may be assumed the door is closed so that the strike-plate is holding back the bolt 4; in this position it will be seen that the dog 12 has dropped down so that the nose 16 stands to the rear of the latch bolt 1, while the nose 15 stands to the rear of the stud 25. It follows that the latch bolt 1 cannot be forced back by any pressure applied to the outer end, nor can the button 19 be pressed in by any like pressure, these movements being prevented by the dog noses 16—15 respectively. If one desired to get past the lock, the only way now possible would be by operating the same properly, either through the medium of another roll-back or a key.

Directly to the rear of the roll-back 5 in Fig. 3 is another similar roll-back which it may be assumed is controlled by a knob located, say, at the inner side of the door (these locks being usually applied to corridor doors or outside doors). If one were to turn this second roll-back (not held by the stop 17), this action would retract the slide 6, which in turn would press back the lever 8, which movement would instantly cause the offset 11 to ride down incline 14, tilting dog 12 from the position shown in Fig. 3 to that shown in Fig. 1, thus freeing the latch-bolt which, as the knob continues to turn, would be withdrawn by the swinging back of the arm 8 as before described. It should be stated that the parts are so fitted that the dog 12 is moved away from the latch 3, under these conditions, before the latch has made any substantial rearward movement, a suitable clearance being provided, as indicated in Fig. 3 to guarantee that said dog 12 will be lifted out of the way of the latch before it has been retracted to any substantial extent.

In the drawings I have illustrated a perforation 26 in the lock case. This represents the space which might be occupied by a cylinder lock, such as is commonly provided

in present practice at the outer side of the lock. When such a provision is made, the lever 8 is provided with an extension 27, so that when the operated member of the cylinder lock is turned in the right direction and sufficiently far, it will engage said arm 27 and swing back the lever 8 without the assistance of either of the knob roll-backs.

From the foregoing it will be apparent that this arrangement provides a very simple and efficient dogging device for both the stop-work or "night-latch", so-called, and the latch bolt 3. Hence the lock is rendered absolutely secure at such times as it is desired to prevent intrusion. By this arrangement it is entirely unnecessary to provide a dead-bolt, the ordinary latch bolt 3 performing the dual function of latch bolt and dead-bolt.

With such a lock as described herein, if the "night-latch" is thrown on and the door is closed, the dog 12 moves automatically into such a position as to absolutely prevent the pushing back of the latch bolt 3 by the insertion of a thin instrument at the edge of the door, a practice frequently resorted to by "crooks". At the same time the stop-work mechanism cannot be cast off by a similar method of attack because the dog 12 blocks the same in the manner described.

What I claim is:

1. In a lock, a latch-bolt, a roll-back for actuating said latch-bolt, a stop-work for said roll-back operable from outside the lock, a dogging device for said stop-work and latch-bolt, and means for operating said dog including a movable arm arranged to engage and operate the same so long as the door stands open and being free of said dog when said door stands closed and an externally projecting device for actuating said arm.

2. In a lock and latch mechanism, a latch-bolt, a slide therefor, a roll-back for operating the same, a stop work device for said roll-back including means accessible from the outer side of the lock for operating said stop-work, a single dogging device for both the latch-bolt and the stop-work, means for actuating said dogging device to move the same out of its dogging position while the door is opening and to allow the same to move into said position while the door is closing, and means for operating said dog through the medium of said slide when said stop-work is on and the door is closed.

3. In a lock, a latch mechanism, including a latch bolt, a slide therefor, a roll-back for operating the slide, a stop-work device for said roll-back, means accessible from the outer side of the lock for manually operating said stop-work, a single dogging device for both the latch bolt and the stop-work, means to allow the same to move to the dogging position while the door is closing, and

means for operating said dogging device from the roll-back through the medium of said slide, including a retractor and cooperating cam shoulders upon said retractor and dog whereby, when said roll-back is turned and slide retracted, the dogging device will be retired to the inoperative position.

4. In a lock of the character described, a latch-bolt, means for operating the same, stop-work mechanism for the latter, a dogging device for both the stop-work mechanism and the latch bolt including a single pivoted plate, a swinging arm arranged to engage said dogging device and throw it out of action while the door is opening, and an operating device connected to said swinging arm and projecting through the face of the lock adjacent to said latch-bolt.

5. In a lock of the character described, a latch-bolt, two separate means for operating said latch-bolt from one side of the lock, one of said means being knob-controlled, the other being arranged to be operated by key, a stop-work for the knob operating means, a single dogging device arranged to block both the stop-work and the latch-bolt when the door is closed and the stop-work is on, and means of connection between both the key-actuated means and said dogging means whereby when the key-actuated means is actuated the dog will be thrown off.

HENRY G. VOIGHT.

Witnesses:

M. S. WIARD,
CHAS. E. RUSSELL.