

(Model.)

W. A. MARTIN.
LOCK.

No. 443,945.

Patented Dec. 30, 1890.

Fig. 1.

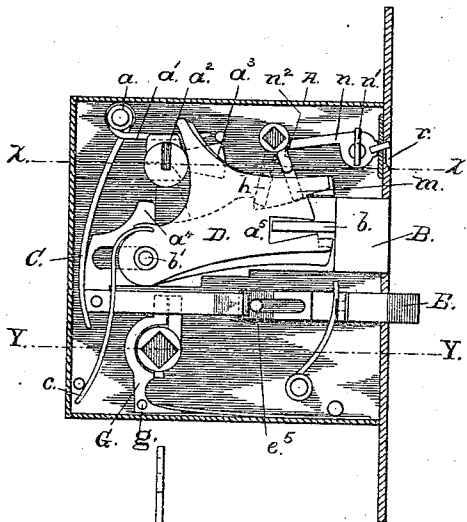


Fig. 2.

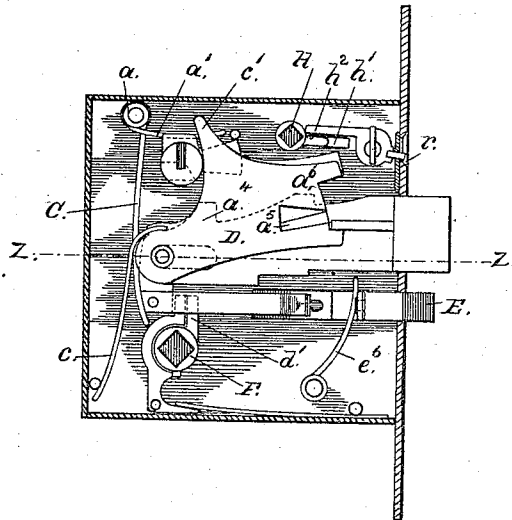


Fig. 3.

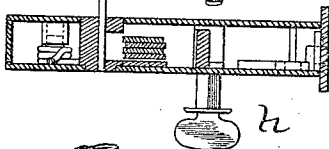


Fig. 5.

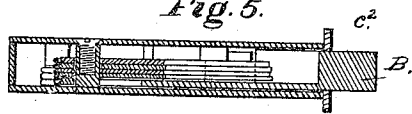


Fig. 4.

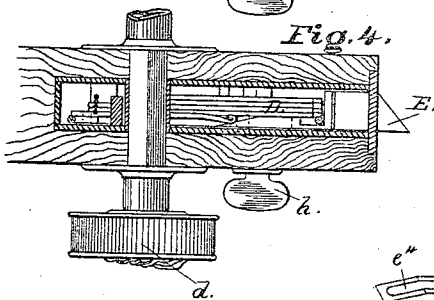


Fig. 6.

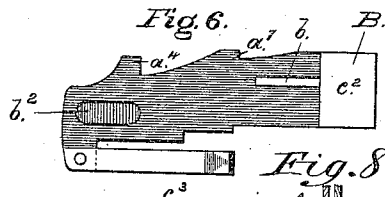


Fig. 8.

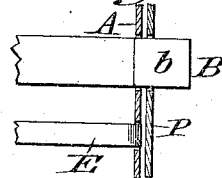
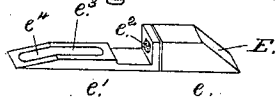


Fig. 7.



Witnesses
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By his Attorney Chas. C. Dillman

UNITED STATES PATENT OFFICE.

WASHINGTON A. MARTIN, OF CHICAGO, ILLINOIS, ASSIGNOR TO RUFUS H. PARK, HENRY REUTER, AND MARTIN T. COYNE, OF SAME PLACE.

LOCK.

SPECIFICATION forming part of Letters Patent No. 443,945, dated December 30, 1890.

Application filed June 6, 1890. Serial No. 354,511. (Model.)

To all whom it may concern:

Be it known that I, WASHINGTON A. MARTIN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Locks, of which the following is a specification.

My invention relates to certain improvements in locks, and more especially to that class of locks which are inserted into a suitable mortise of a door; and it consists in certain peculiarities of the construction and arrangement of the same, as will be hereinafter more fully set forth, and specifically claimed.

In order to enable others skilled in the art to which my invention pertains to make and use the same, I will now proceed to describe it, referring to the accompanying drawings, in which—

Figure 1 is a plan view of my lock with the bolt drawn back and the covering-plate removed, to show the interior parts. Fig. 2 is a similar view with the bolt projected. Fig. 3 is a sectional view taken on line xx of Fig. 1. Fig. 4 is a sectional view taken on line yy of Fig. 1 and showing the lock inserted in the mortise of a door. Fig. 5 is a sectional view of Fig. 2, taken on line zz thereof. Fig. 6 is a detail view of the bolt; Fig. 7, a similar view in perspective of the trigger, showing the adjustable beveled end; and Fig. 8 is a view of a portion of the front part of the casing, bolt, and trigger, showing the bolt projecting into the socket in the strike-plate and the trigger retracted, as they appear when the door is closed.

Similar letters refer to corresponding parts throughout the different views of the drawings.

A represents the casing of the lock, which is made of suitable size, form, and material to contain the different parts of the mechanism and to protect them from exposure, and is usually fitted into a suitable mortise in the door, as is shown in Fig. 4 of the drawings.

B is the bolt which enters into engagement with an ordinary socket secured to the jamb of the door.

C is a spring to shoot the bolt forward and is secured at one end to a pin or lug a on the casing. To this pin or lug is also secured a

spring a' , which presses against a portion of the key-guide a^2 to prevent it turning in its bearings except when the key is inserted. This guide has its bearings in the front and back plates of the casing and is provided at its rear end with a projection a^3 to engage with the recess a^4 on the adjacent side of the bolt B when it is desired to retract the bolt, which is done by inserting the key into the slit of the guide-piece and turning till the projection a^3 engages in the recess a^4 , the bits on the key at the same time engaging with that portion of the tumblers near the guide-piece, which changes the combination of the tumblers from that shown in Fig. 2 to Fig. 1, thus allowing the lug b on the bolt to pass freely into the recess a^5 of the tumblers D, as is shown in Fig. 1, and will be readily understood by reference thereto. These tumblers are pivotally secured to the casing by a pin b' , which passes up through a slot b^2 in the rear portion of the bolt. To the rear portion of each of the tumblers is secured suitable springs c , which tend to hold the tumblers in the position shown in Fig. 1 when they are not otherwise controlled.

Each of the tumblers is made substantially of the form shown in the drawings, with an extension c' toward the key-guide, which engages with the bits on the key, and their front ends are formed with two recesses a^5 a^6 , the recess a^5 being longer than and uniting with the recess a^6 . In the drawings I have shown four tumblers; but it is obvious that I may use any desired number.

The bolt B is made, as shown in Fig. 6, with its rear portion flat and rests upon the back of the casing and has near its inner end a longitudinal slot b^2 , through which the pin b' passes. The front or outer end of the bolt is quadrilateral in form, and when projected passes through an aperture similar in shape in the front of the casing.

Just to the rear of the quadrilateral enlargement c^2 of the bolt is provided an upwardly-extending lug b , which catches on the recess a^5 of the tumblers when the bolt is projected, and operates in the recess a^5 when it is retracted. On the side adjacent to the key-guide the bolt is formed with two recesses a^4 a^7 , with which the projections of the key-guide

and thumb-bolt engage. On the opposite side and at the rear end of the bolt is secured a spring c^3 , which follows with the movement of the bolt and is tripped by the trigger E, as will be presently explained. The trigger E, as shown in Fig. 7, is preferably made in two pieces $e e'$, the piece e having its outer end beveled and secured at its rear end to the front end of piece e' by means of a pin e^2 , thus forming a swivel and permitting the bevel to be adjusted so as to operate on doors closing either to the right or left. The piece e' is formed near its rear portion with a longitudinal slot e^3 , and has its upper surface beveled, as at e^4 . When in position in the casing, the beveled end e operates in a suitable opening in the front of the casing, and is guided in its forward and backward movements by a pin e^5 , secured to the casing, which projects through the slot e^3 till flush with the upper portion of the bevel thereof. The spring e^6 , secured at a suitable point to the casing, serves to throw the trigger forward. When the door is open, the beveled end of the trigger projects from the casing, as shown in Fig. 1; but when it is being closed the beveled portion of the trigger will strike against the socket or strike-plate P, secured to the jamb, and into which the bolt only is socketed and will be retracted, as shown in Fig. 8, and there retained until the bolt B is retracted by turning the knob and the door is opened, when the trigger will again assume the position shown in Fig. 1. It will therefore be understood that the socket-piece P, into which the end of the bolt B is socketed when the door is closed, is formed so as to present a flat surface to the end of the trigger E, instead of a socket into which it might fit, thus keeping the trigger retracted while the door is closed.

F is a piece having a square opening through which the rod of the knob d passes, and is provided with a projection d' , which projection passes under the spring c^3 and engages with the projection of the bolt to which the spring c^3 is secured. Partially encircling the piece F and pivotally secured to the casing, as at g , is a spring-actuated boss G, which returns the knob to its normal position.

H is a piece through which the rod of the thumb-bolt g passes, and, like the piece F, has its bearings in the casing. It is provided with a projection h' , having a shoulder h^2 . The projection passes under the tumblers and engages with the recess a^7 in the bolt, while the shoulder on the projection strikes against the tumblers and trips the recess a^6 thereof from the lug b and allows the lug to pass back into the recess a^3 . When it is desired, the projection may be placed in the position shown at m in Fig. 1, and retained there by the pawl n , which is pivotally secured to the casing, as at n' , and has one end fitting in an angular groove n^2 of the projection and the other end extending through a suitable opening r in the casing, as seen in Figs. 1 and 2. It will be readily understood that by turning the key

in the key-guide the bolt will be withdrawn to the position shown in Fig. 1, and may be retained in said position by placing and retaining the projection h' in the position shown at p , when the door may be opened and closed by using the knob d , the trigger E only entering into engagement with the socket on the jamb. When it is desired that the door shall be locked on closing, the projection h' may be placed and retained in the position shown at m , when the beveled portion of the slot of the trigger will cause the spring c^3 to rise above the pin e^5 and thus liberate the bolt, which is thrown forward by spring C.

It is evident that by using my swivel-end trigger I am enabled to apply my lock to either a right or left door by simply changing the bevel to suit.

Having thus 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 casing to contain the mechanism with a key-guide having its bearings in the casing and provided with a projection for retracting the bolt, the bolt having and carrying the spring c^3 , means for guiding the bolt, and the spring-actuating trigger having a guiding-slot and beveled swivel end, substantially as shown and described.

2. In a lock, the combination of the casing A with the key-guide a^2 , having the projection a^3 , the bolt B, having the recesses $a^4 a^7$, the lug b , the slot b^2 , and spring c^3 , the tumblers D, having the recesses $a^5 a^6$ and springs c and pivotally secured, as at b' , the trigger E, having the slot e^3 , beveled as at e^4 , and the beveled swivel end e , the springs e^6 , C, and a' , and the pin e^5 , all constructed, arranged, and operating substantially as shown and described.

3. In a lock, the combination of the casing A with the key-guide a^2 , having the projection a^3 , the bolt B, having the recesses $a^4 a^7$, the lug b , the slot b^2 , and springs C c^3 , the tumblers D, having the recesses $a^5 a^6$, springs c , and pin b' , the trigger E, having the slot e^3 , beveled as at e^4 , pin e^5 , and the beveled swivel end e , the springs $e^6 a'$, and the piece H, having the projection h' and shoulder h^2 , all constructed, arranged, and operating substantially as shown and described.

4. In a lock, the combination of the casing A with the key-guide a^2 , having the projection a^3 and spring a' , the bolt B, having the recesses $a^4 a^7$, the lug b , the slot b^2 , and springs C c^3 , the tumblers D, having the recesses $a^5 a^6$, springs c , and pin b' , the trigger E, having the slot e^3 , beveled as at e^4 , pin e^5 , and the beveled swivel end e , the springs e^6 , the piece H, having the projection h' and shoulder h^2 and groove n^2 , and the pawl or lever n , all constructed, arranged, and operating substantially as shown and described, and for the purpose set forth.

5. In a lock, the combination of the casing A with the key-guide a^2 , having the projec-

tion a^3 and spring a' , the bolt B, having the
recesses a^4 a^7 , the lug b , the slot b^2 , and springs
C c^3 , the tumblers D, having the recesses a^5
 a^6 , springs c , and pin b' , the trigger E, having
5 the slot e^3 , beveled as at e^4 , pin e^5 , spring e^6 ,
and the beveled swivel end e , the piece H,
having the projection h' , shoulder h^2 , and
groove n^2 , the pawl or lever n , pivoted as at
 n' , the piece F, having the projection d' , and
10 the spring-actuated boss G, all constructed,

arranged, and operating substantially as
shown and described, and for the purpose set
forth.

In witness whereof I have hereunto set my
hand and affixed my seal this 3d day of June, 15
1890.

WASHINGTON A. MARTIN. [L. s.]

In presence of—

C. C. TILLMAN,

F. L. HARTWELL.