

No. 835,440.

PATENTED NOV. 6, 1906.

I. W. KRAJKOWSKI.
LOCK.

APPLICATION FILED DEC. 11, 1905.

2 SHEETS—SHEET 1.

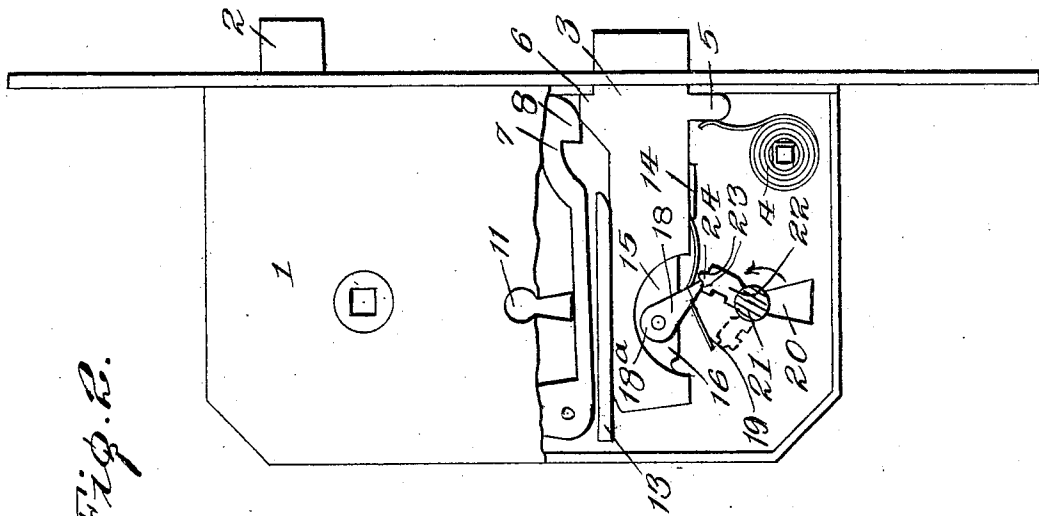


Fig. 2.

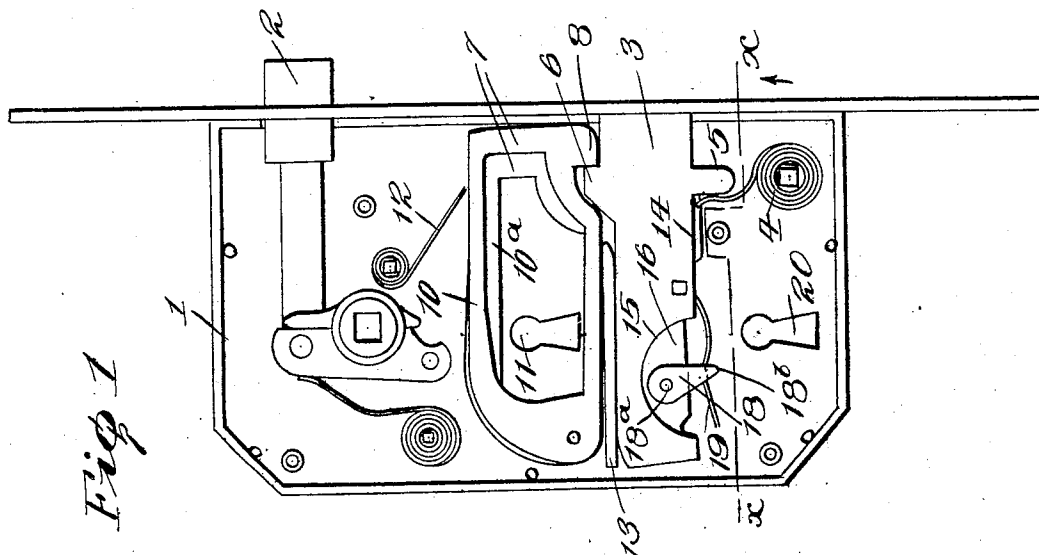


Fig. 1

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2 SHEETS—SHEET 2.

Fig. 3.

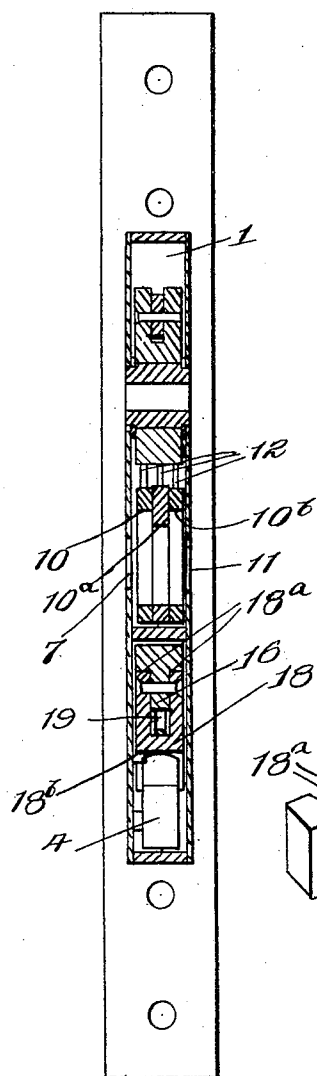


Fig. 4

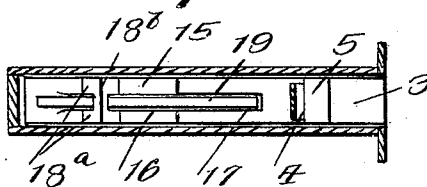
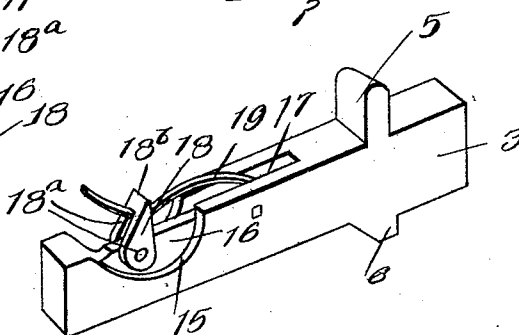


Fig. 5



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No. 835,440.

Specification of Letters Patent.

Patented Nov. 6, 1906.

Application filed December 11, 1905. Serial No. 291,309.

To all whom it may concern:

Be it known that I, IGNATZ W. KRAJKOWSKI, a subject of the Czar of Russia, residing at Bridesburg, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Locks, of which the following is a specification.

The object of my invention is to provide a novel and improved construction of lock of that character in which the parts are so arranged as to require a predetermined manipulation before the bolt can be successfully withdrawn, thereby providing against surreptitious or unauthorized actuation of the lock.

With this and other objects in view, as will hereinafter more fully appear as the description proceeds, my invention consists, primarily, in a novel and improved construction of lock of this type in which there is embodied a spring-shot bolt which is provided with a pivoted trigger adjacent the keyhole of the casing of the lock. This trigger is free to be moved in either direction by the bit of the key, so that the said bit may swing it aside and pass it when the key is turned in one direction or the other without effecting any movement upon the bolt itself, and this trigger is so arranged and correlated with respect to the key-bit that by a definite manipulation of the latter the edge of the trigger may be so brought to bear upon a shoulder of the bit when the key is turned in one direction that a subsequent movement of the key in the opposite direction will drive the trigger bodily backward, and thereby carry the bolt to a retracted position, where it is caught by one or more tumblers. This action of the bit of the key against the freely-swinging trigger is rendered possible by the fact that the bit acts upon the trigger along a certain definite line and it is impossible to move the bolt by means of the trigger if the trigger is pressed upon in a plane to one side of said definite line. The exact arrangement of the parts to accomplish this feature will be hereinafter fully described, and specifically pointed out in the appended claims.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result reference is to be had to the following description and accompanying drawings, in which—

Figure 1 is a view looking into a lock-cas-

ing embodying the improvements of my invention, the parts being shown in side elevation with the outer plate of the casing removed and with the bolt in the retracted position. Fig. 2 is a similar view, a portion only of the outer plate being broken away, and with the bolt in extended position. Fig. 3 is a vertical transverse sectional view. Fig. 4 is a horizontal sectional view on the line $x x$ of Fig. 1 and looking in the direction of the dart. Fig. 5 is a detail inverted perspective view of the bolt and its connected parts on an enlarged scale.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

Referring to the drawings, 1 designates the casing of the lock, which is provided with the usual spring-pressed latch 2, designed to be actuated by the door-knob in the customary manner, and 3 designates my improved bolt, which is spring-pressed into an extended position by means of a coil or other spring 4 acting against the wing 5 of the bolt. The bolt is provided on one side with a shoulder 6, designed to be engaged by one or more tumblers 7. In the present instance I have shown three tumblers, each of which is provided at one end with a stud or lug 8, designed to engage the shoulder of the bolt to hold the latter in the retracted position, and the tumblers in the present instance are in the form of pivoted levers or frames provided at one side with bearing-surfaces 10, 10^a, and 10^b, all in different planes in juxtaposition to a keyhole 11, registering with the boundaries or openings of the frames.

From the foregoing it will be understood that a key inserted in the keyhole 11, if provided with the proper bit, will upon being turned ride against the bearing-surfaces 10, 10^a, and 10^b and raise the tumblers against the action of the springs 12, so as to free all three of the lugs from the shoulder of the bolt and allow the spring of the latter to shoot the same into a locked or projected position. The bolt 3 reciprocates back and forth in the casing, with its upper edge bearing against a partition wall or ledge 13 and with its lower edge bearing against a ledge 14, the two ledges constituting a guideway for the bolt. At its rear end the bolt is provided with a curved recess 15 in its lower side, a longitudinal wing or plate 16 in and extending across said recess, and a socket 17 in advance of said

wing or plate. To the wing or plate 16 there is pivoted a V-shaped trigger 18, which is provided with two spaced upper members 18^a, embracing the said wing or plate, and has its pointed or comparatively sharp edge 18^b outermost. A leaf-spring 19 has one end secured in the socket 17 of the bolt, and the free end of said spring 19 extends into and through the trigger, between the members 18^a thereof, and bears against the cross-bar of the trigger, as shown. The action of the said leaf-spring is to return the trigger to the same position after it has been moved to one side or the other by the bit of the key, and by the arrangement described the said trigger may be moved in either direction against the action of said spring, so that the bit of a key may pass the trigger without effecting the movement of the bolt 3. The keyhole 20 is arranged in the casing in proper relation to the edge of the relatively movable trigger.

21 designates a key which is provided with a bit 22, having two shoulders 23, facing oppositely and separated by a ridge 24. When the key is inserted in the keyhole, the bit thereof as the key is turned will merely move the trigger to one side or the other, and thus effect no movement whatever of the bolt unless the key is properly manipulated. If a person is advised how to manipulate the lock, he will first insert the key into the keyhole with the bit of the key to the left of the trigger, as shown dotted in Fig. 2. He will then turn the key, so that the bit will engage with the edge of the trigger, and the said edge will ride over with a click into the shoulder 23, as illustrated in full lines in Fig. 2. As soon as the operator hears this click he will understand that the key and trigger are in the proper position for the retraction of the bolt and will then turn the key in the reverse direction, (indicated by the arrow in Fig. 2,) and the trigger will be moved bodily in a rearward direction and carry the bolt with it into retracted position, whereupon the tumblers will be forced into engagement with the bolt and hold it retracted.

From the foregoing description, in connection with the accompanying drawings, it will be seen that the bolt can be retracted only when the trigger is actuated upon by the shoulder of the key-bit in the one direction above set forth and that unless a person is advised of the proper position to insert the

key and the proper manipulation of the same he will in all probability merely swing the trigger from one side to the other without effecting the retraction of the bolt.

While the present embodiment of the invention discloses the tumblers as being actuated by a different key or keyhole from the block itself, it is evident that my invention is not limited to this exact construction.

Having thus described the invention, what is claimed as new is—

1. A lock of the character described, comprising a casing, a bolt for said casing, said bolt being provided at its rear end with a trigger embodying spaced-apart members pivotally connected to the bolt and a tapered cross-bar connecting said spaced-apart members, a spring secured at one end to the bolt, the free end of said spring extending between said spaced-apart members of the trigger and across the cross-bar thereof and curved whereby to hold the trigger in one position in a yielding manner, and a key provided with a bit having a shoulder and a ridge designed to extend into the path of said trigger, substantially as described.

2. A lock of the character described, comprising a casing, a spring-pressed bolt in said casing, means for holding the bolt retracted against the action of its spring and means for releasing said holding means, the bolt being provided at its rear end with a recess and a longitudinal wing extending across said recess and the bolt being further provided with a socket in advance of said wing, a wedge-shaped trigger embodying spaced-apart members embracing said wing and pivotally connected thereto, and a cross-bar connecting the ends of said spaced-apart members, a spring secured at one end in said socket with its free end extending through the space produced by said members of the trigger in engagement with the cross-bar thereof, and designed to hold the trigger yieldingly in one position, and a key provided with a bit having a shoulder and a ridge designed to extend into the path of said trigger, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

IGNATZ W. KRAJKOWSKI. [L. s.]

Witnesses:

ALEKSI OZECOWSKI,
ADAM ZULTANSKI.