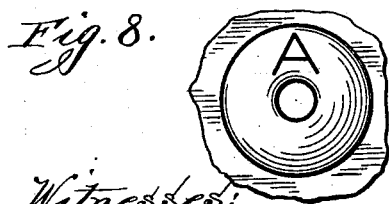
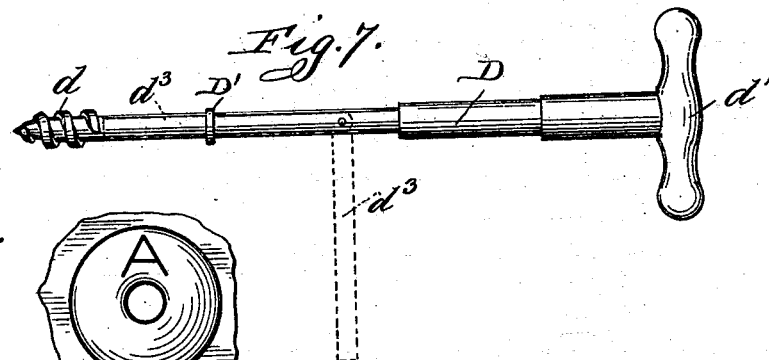
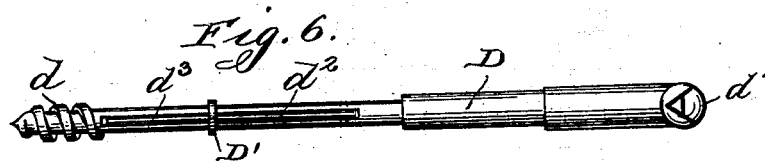
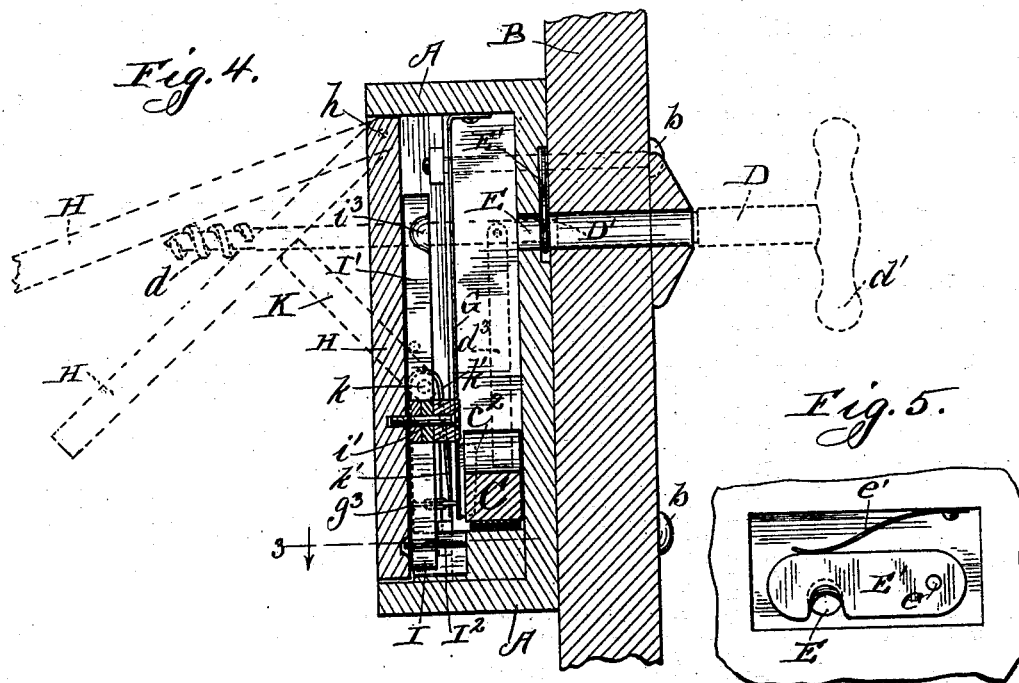


F. WRZESINSKI.
LOCK.

(Application filed Dec. 21, 1899.)

2 Sheets—Sheet 2.

(No Model.)



Witnesses:
W. J. Jacker;
H. P. Czarniecki

Inventor:
Frank Wrzesinski

UNITED STATES PATENT OFFICE.

FRANK WRZESINSKI, OF CHICAGO, ILLINOIS.

LOCK.

SPECIFICATION forming part of Letters Patent No. 648,451, dated May 1, 1900.

¹ Application filed December 21, 1899. Serial No. 741,109. (No model.)

To all whom it may concern:

Be it known that I, FRANK WRZESINSKI, 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.

The principal object of the invention is to provide a simple, economical, and efficient lock; and the invention consists in the features, combinations, and details of construction hereinafter described and claimed.

In the accompanying drawings, Figure 1 is an elevation of a lock constructed in accordance with my improvements looking at it from the back and with the back plate removed; Fig. 2, an inverted elevation of a portion of the catch mechanism of the lock, as hereinafter described; Fig. 3, a sectional detail of a portion of the lock, taken on line 3 of Fig. 4, looking in the direction of the arrow; Fig. 4, a vertical sectional elevation taken on line 4 of Fig. 1 looking in the direction of the arrow; Fig. 5, a detail view of the closing-plate hereinafter described; Figs. 6 and 7, detailed views of the key, and Fig. 8 a detail view of the key-plate.

In constructing a lock in accordance with my improvements I make a casing consisting of a main portion A, arranged to be secured to a door B or other desired element by means of the bolts *b*. This case is made of sufficient size, shape, and strength to hold and protect the operative and other mechanisms. Slid-
ingly mounted in this case is a dead-bolt C, arranged to extend out of one side of the case through an opening at or about *c* and into the door-frame or other desired element. In order to move this dead-bolt backwardly and forwardly whenever it is desirable or necessary to open or lock the mechanism, I provide a key D, consisting, preferably, of a round rod having a helical or threaded portion *d* at the front end thereof and a handle portion *d'* at the rear thereof. This key is slotted, as at *d*², so as to receive a lever-blade *d*³, which is pivotally secured to the key. A sliding ring or collar D' is mounted on one portion of the key, so as to surround the lever-blade and hold it in the position shown in Fig. 6.

When the key is inserted in the lock through the opening E, it raises the closing-

plate E', which is pivoted to the lock at *e* and held in closed position by means of a spring *e'*. The further insertion of the key into the lock causes the ring D' to contact the closing-plate, which action pushes the ring backwardly until it releases the lever-blade *d*, as shown in Figs. 4 and 7. The releasing of the lever-blade permits it to drop downwardly, as hereinafter more fully described, until it enters the space in the dead-lock, so as to contact either shoulder *c'* or *c*² and permit the key to move the bolt inwardly and outwardly, as may be necessary.

The locking-bolt is held in its closed position by means of the locking-springs G G', secured to the upper casing of the lock and having their lower free ends entering recesses *g* and *g'*, so that the bolt can neither be moved backwardly nor forwardly until the free ends of the locking-springs are removed from engagement therewith.

In order to remove the springs from engagement with the locking-bolt and enable it to be manipulated, the back plate H of the casing is pivotally secured thereto at *h* and is provided with a catch bifurcated or formed in two parts I and I', of which the part I is stationarily secured to the plate at *i* and the other pivotally secured at *i'*, so that it acts like the blade of a scissors. The lower ends of both these catches are notched, as at *i*², to receive a latch I², which is secured to the main casing. The upper part of one of these catches, preferably the movable part, is provided with a portion *i*³, adapted to be engaged by the helix or thread on the end of the key, and the other with a recess arranged opposite the part *i*³. As the end of the key enters between these two catches it forces the free end of the vibrating portion outwardly against the tension of the spring I³, which action permits the latch I² to be released, and thus enables the back plate to be swung outwardly when contacted by the end of the key to the position shown in dotted outline in Fig. 4.

In examining Figs. 2 and 4 it will be seen that the locking-springs are secured to the swinging back plate at *g*² and *g*³, so that the free ends of these locking-springs, which ends are connected with the hinge-plate H, are also drawn outwardly, thereby releasing the dead-bolt and enabling the key, when the parts

are in the position shown in Fig. 4, to manipulate the dead-bolt.

When the parts are in the position shown in Fig. 4, the key may be withdrawn by simply pulling it out, which will leave the parts exactly as shown. It is often desirable to leave the back plate open, as shown in Fig. 4, so that the interior of the lock may be accessible. In order to accomplish this result, a swinging block K is provided and pivotally secured to the back plate at *k*, so that when the swing-plate is pushed backwardly, as shown in Fig. 4, a spring *k'* moves the swinging block up to the position shown in Fig. 4 and enables the back plate to be kept in such position until some extraneous device is used to bring the said block back into position. (Shown in solid lines in Figs. 1 and 4.)

I claim—

1. In a lock of the class described, the combination of a casing, a dead-bolt movably mounted therein, a swinging back plate secured to the casing and means connected with said back plate for engaging the dead-bolt to prevent it from being operated until after the swing-plate is operated, substantially as described.

2. In a lock of the class described, the combination of a casing, a dead-bolt slidably mounted therein, a swinging back plate, spring mechanism secured to the casing and having its free ends adapted to engage with the dead-bolt to lock it in its closed position, means connecting the free end of the mechanism with the swinging back plate, whereby when the swinging plate is moved backwardly the springs are operated to release the dead-bolt, substantially as described.

3. In a lock of the class described, the combination of a casing, a sliding dead-bolt provided with a notch in its upper portion forming two shoulders, a swinging back plate pivoted at its upper end to the casing, spring mechanism secured to the casing and having the free ends thereof engaging with the dead-bolt to prevent the movements of the same, means connecting the spring mechanism with the swinging plate so that as such plate is swung outwardly the dead-bolt is released, a catch mechanism on the swinging plate, a latch arranged on the casing adapted to engage the catch mechanism and hold the catch mechanism and plate in closed position until a proper key be inserted in the lock to release the catch and back plate and permit the parts to be operated, substantially as described.

4. In a lock of the class described, the combination of a casing, a dead-bolt slidably mounted therein, a swinging plate pivotally secured at its upper end to the casing to form the back thereof, two flat springs secured to the upper part of the case, the free end of which engages with the dead-bolt, means connecting the free end of the flat springs with the swinging plate, a bifurcated catch secured to the swinging plate and arranged to be operated by a proper key, a latch arranged on the casing and adapted to engage the catch to hold the parts in closed position and be released by the operation of a proper key, a perforation in the casing arranged opposite the bifurcated catch through which a key may be inserted, and a closing plate arranged to open and close the keyhole partially or entirely, substantially as described.

5. In a lock of the class described, the combination of a casing, a dead-bolt slidably mounted therein and provided with a recess on its upper side forming two shoulders against which a key may impact to operate the dead-bolt, a swinging plate forming the back of the casing and pivotally secured at its upper end to the casing, two flat steel springs secured to the upper portion of the casing and engaging with a dead-bolt at their free ends, means connecting the free ends of the springs to the swinging plate to operate the same and release the dead-bolt, a bifurcated catch secured to the swinging plate and arranged to be operated by the proper key, a latch secured to the casing arranged to engage the bifurcated catch, hold the parts in their closed position, or release them by the insertion of the proper key, and a holding-block K pivotally secured to the casing to hold the back plate in its open position, substantially as described.

6. In combination with a lock of the class described a key provided with a helical end and a longitudinal groove, a lever-blade pivotally secured to the key and adapted to be folded within the longitudinal groove, and a movable ring D' adapted to hold the parts in closed position so that when the key is inserted in the lock it may be moved backwardly to release the lever-blade and operate the lock, substantially as described.

FRANK WRZESINSKI.

Witnesses:

K. B. CZARNECKI,
A. L. SMITH.