





# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN SAFE-LOCKS.

*Specification forming part of Letters Patent No. 70,232, dated October 29, 1867.*

*To all whom it may concern :*

Be it known that I, REES LEWIS, of the city, county, and State of New York, have invented a new and useful Improvement in Safe-Locks; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 represents a front view of my improved safe-lock, the front or covering plate being removed. Fig. 2 is a vertical cross-section of the same, the plane of section being indicated by the line *xx*, Fig. 1. Fig. 3 is a side view, partly in section, of the key.

Similar letters of reference indicate corresponding parts.

This invention relates to a burglar-proof lock which is to be used on safes, vaults, and on such doors on which the key is only to be applied from one side; and consists in a novel construction of the key and lock, whereby feeling of the lock is prevented, and the insertion of any but the right key made impossible as long as the lock is not broken.

A is the case of the lock, made of wrought or malleable iron, or any other suitable material.

In the front plate *a* of the case is arranged a key-hole, *b*, of sufficient length to allow the insertion of the bit of the key B.

This key is provided with movable guards *c c*, which are concealed in the bit of the key when the same is not within the lock, being thrown in by means of spiral springs *d d*, as shown in Fig. 3.

The shank or spindle of the key is tubular, and the guard-plates project into the tube when rounded or beveled, as shown in Fig. 3.

C is an arbor or a pivoted pin, which is firmly attached to the back plate of the case, in line with the key-hole *b*. The spindle of the key, when the same is inserted, fits over and around the pin C, and when the key is pressed toward the back plate of the case the pointed end of the pin C will come in contact with the inner ends of the guard-plates *c*, and will move the same out so that their outer ends project from the bit of the key, as is clearly shown in Fig. 2.

No ordinary key fitting through the key-hole will reach far enough in the lock to operate the bolt and the tumblers.

Between the front and back plate of the lock is arranged, so as to surround the bit and spindle of the key, a revolving case or shell, D, the inside of which forms but a continuation of the inner edge of the key-hole.

This shell D is, when the key is out of the lock, arranged directly below the key-hole, and forms, in connection with the back plate of the case A, a chamber, which is completely closed on all sides and in the rear, and open only in front, to allow the insertion of the key.

This chamber is as long as the bit of the key, and is too large to permit the exploding of the lock by means of powder.

The lower side of this chamber is formed by a plate, E, which is secured to an arm or bar, F, which is pivoted by a pin, *e*, to the back plate of the lock.

It is pressed by a spring, *f*, against the lower open end of the shell D, and is locked to the same by a spring, *g*, which is secured to one side of the shell D, and which fits around the edge of the plate E, being provided with a catch, *h*, for the purpose.

A small tapering or rounded arm, *i*, projects from the spring *g*, through the side of the case D, into the chamber formed for the key.

At the other end of the plate E is arranged a small projecting stud or roller, *l*, which, when the key is not inserted, fits in a recess that is formed by two claws, *j j*, that project from the lower end of the shell D.

When the key is inserted it first presses upon the arm *i* of the spring *g*, and forces it out of the chamber, thereby releasing or unhooking the plate E from the shell D.

The guards or tongues *c c* of the key are then forced out by the arbor C, and they push the plate E away from the shell D.

The roller *l* is released from the claws *j*, and the shell D can then be turned with the key around the pin C, being fitted in the lock, so that it can be turned, unless it is locked to the plate E, by the spring *g* and jaws *j*.

The tumblers G G are arranged behind a semicircular or segmental guard-plate, H, which is arranged stationary in the case A,



above the pin C, as is clearly shown in Fig. 1, and which is provided with slots, as shown in Fig. 2.

The guards *c c* fit through these slots and raise the tumblers, while the jaws *j*, projecting from the shell D, fit through a slot near the back plate of the case A, and operate the bolt I.

The body of the bit of the key does not come in contact with the bolt and tumblers.

These can only be reached through the slots in the otherwise solid plate H, and no key can be inserted in the case D through the key-hole *b* that has projecting guards for operating the tumblers.

The locks can therefore be considered almost perfectly secure; and although it is so constructed as to successfully resist all attempts at picking, it is still of very simple and compact construction, and can be very cheaply made.

When the key is to be withdrawn from the case A, its bit must be brought directly below the key-hole *b*.

While being drawn out the guards *c* are again concealed as they pass the end of the pin C, and the spring *f* then throws the plate E against the shell D, and closes the chamber.

The spring will then lock the plate E to the

shell, while the roller *l* between the jaws prevents the shell from turning.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The key B, constructed as described, with one or more sliding guards C, which are operated by springs *d*, and which project into the tubular spindle of the key or form the bit of the same, as therein set forth, for the purpose specified.

2. The revolving shell D, in combination with the vibrating plate E, springs *f* and *g*, all made and operating substantially as and for the purpose herein shown and described.

3. The device herein shown and described for preventing the shell D from turning, consisting of the stud or roller *i* on the plate E, fitting between two jaws, *j j*, projecting from the shell D, substantially as set forth.

4. The key B, in combination with the revolving shell D, vibrating plate E, and slotted guard-plate H, all made and operating substantially as herein shown and described.

REES LEWIS.

Witnesses:

WM. F. McNAMARA,

ALEX. F. ROBERTS.