No. 880,102. PATENTED FEB. 25, 1908.

F. H. ROGERS.

KEY FASTENER FOR LOCKS.

APPLICATION FILED JULY 25, 1905.

Fig. 1.

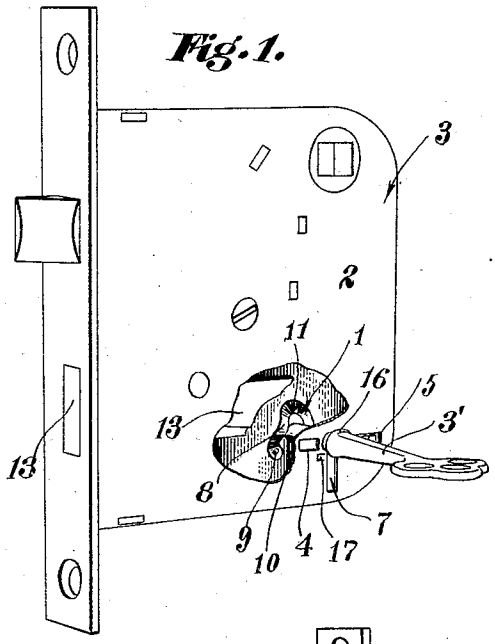


Fig. 2.

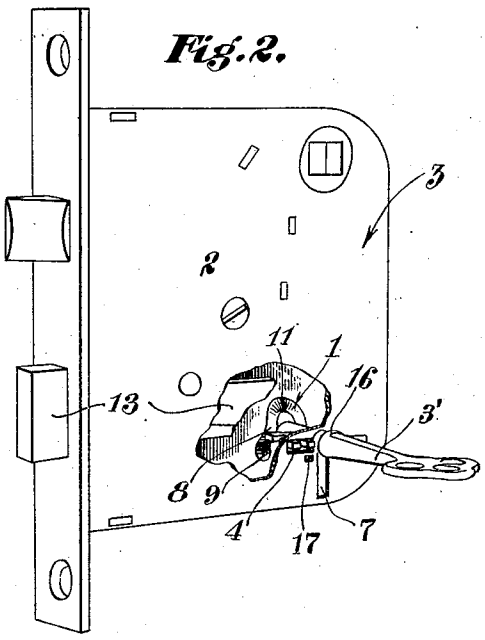


Fig. 3.

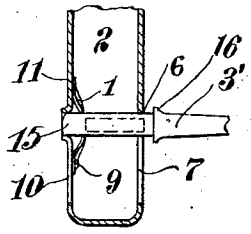


Fig. 7.

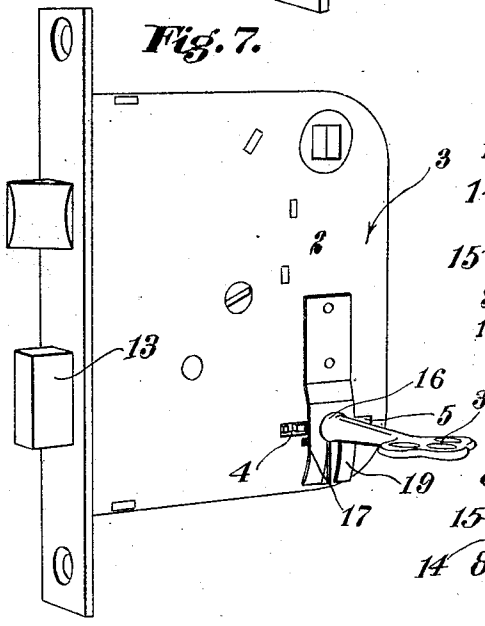


Fig. 5.

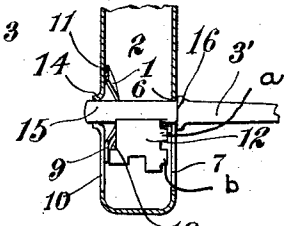


Fig. 4.

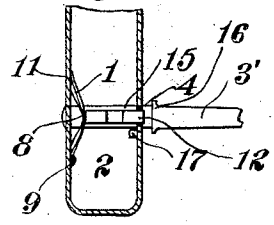
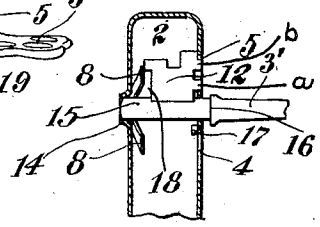


Fig. 6.



Witnesses
Frank E. Barkelew
J. Townsend

Inventor
Frederick H. Rogers
By James R. Townsend
Atty.

THE NORRIS PETERS CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

FREDERICK HORACE ROGERS, OF LOS ANGELES, CALIFORNIA, ASSIGNOR OF ONE-HALF TO THEODORE WIESENDANGER, OF LOS ANGELES, CALIFORNIA.

KEY-FASTENER FOR LOCKS.

No. 880,102. Specification of Letters Patent. Patented Feb. 25, 1908.

Application filed July 25, 1905. Serial No. 271,136.

To all whom it may concern:

Be it known that I, FREDERICK HORACE ROGERS, a citizen of Great Britain, residing at Los Angeles, in the county of Los Angeles and State of California, have invented a new and useful Key-Fastener for Locks, of which the following is a specification.

My invention has reference to a lock provided with means for automatically retaining a key and preventing it from being turned by nippers; and it is one of the objects of my invention to provide a lock with a simple and inexpensive device which will protect the key from being tampered with from the outside when the key is left inserted from the inside, and which will also prevent the key from being thrown from the lock by banging and jarring of the door on which the lock is placed.

Another object is to make provision whereby the occupant of a room cannot displace his key from the door while the door is locked.

I accomplish these objects by means of a lock provided with a retaining device adapted to retain the key when the bolt is shot; means also being provided to throw the key into such a position that it is impossible to be seized by nippers by anyone attempting to unlock the door from the outside.

The invention comprises a lock provided internally with a key-retainer.

My invention includes a spring adapted to exert a pressure on the key to hold it against the lock-case, or in position to be held by catches provided at proper places in or on the case.

Preferably, the key-holding protector spring is placed on the inside of the lock-case and presses against the web of the key, but it may be placed on the outside of the case to engage the guard of the key, or in any position where it can press on the key and hold the same in place when the bolt is locked or unlocked. Slots may be formed into which the web of the key will be forced by the spring; but these may or may not be used; in the latter case, the key being held in place by friction with the case and spring, or otherwise. It is to be understood, however, that for security against burglars or others who might attempt tampering with the lock, a catch is to be provided with which the web of the key will be forced to engage, as hereinafter set forth. The invention may be variously embodied.

The accompanying drawings illustrate the invention:—

Figure 1 is a broken perspective view of my improved door-lock with the bolt in the unlocked position, showing the web of the key secured in one of the protector slots. Fig. 2 is a broken perspective view of my improved door-lock with the bolt in the locked position, showing the web of the key secured in another protector slot. Fig. 3 is a fragmental, transverse, vertical section of the lock taken longitudinally of the key-hole, showing the key held in the unlocked position by the protector-spring. Fig. 4 is a somewhat similar view showing the key in the locked position. Fig. 5 is a section similar to Fig. 3, showing the key in the position for withdrawal, or immediately after insertion. Fig. 6 is a fragmental, horizontal section, showing the disposition of the protector slots and the key in the unlocked position. Fig. 7 is a perspective view of my improved door-lock equipped with a protector-spring of modified form, and showing the key in the locked position.

1 is a key-holding spring secured to the inside of case 2 for bolt of lock 3 provided with key 3′. Catches, as slots 4 and 5, are provided on each side of eye 6 of inside key-hole 7. The spring that forces the key to engage the key-retaining catch 4, or 5, may be of various forms.

Spring 1 is of double curvature, as shown in the drawings, with points 8 of maximum pressure, directly in front of the catches 4 and 5 in the side of the case opposite such spring. The spring engages the key-web on either side and frictionally holds the key in the case to prevent rotation of the key.

The protector-spring 1 is formed as a loop secured at its ends by rivets 9 to the case on opposite sides of outside key-hole 10, and the central portion 11 of the spring rests freely on the case above the outside key-hole. Upon insertion, the key is free from any pressure on the part of the spring, until the key is turned, whereupon the key-web 12 engages the spring and is thereby pressed against the inside wall of the case, and when turned sufficiently, as to the position shown

in Figs. 1, 3, and 6, is forced into the catch formed by slot 5 which engages each side of the key-web and prevents the key from turning when pressure is applied to turn the key This is the unlocked protected position. On being pushed inwardly from the protected position until the key-web clears the catch 5, the key may be again turned to shoot the bolt 13, and at the end of the bolt-shooting operation the key-web is in position in front of catch slot 4 into which the spring 1 then forces the key, where it remains, as shown in Figs. 2 and 4, and in a manner like that above-described with relation to catch-slot 5. The automatic locking of the key in the lock is thus accomplished by the action of the springs in automatically pressing the key into the slots respectively.

On the inner side of the case, a tongue 17 may be stamped and turned inwardly into the path of the key in the case. The position of the tongue is such that the key may not be turned past the locked position, and thus prevents the key being removed while the door is locked, as the key will have to be turned back to the initial position to be withdrawn. In this way I insure against the occupant of the room withdrawing the key while on the inside of the room. On the outer end of the key-web a cut 18 is provided to pass the tongue when the key is inserted from the outside of the door, thus allowing the key to be turned in any and all directions and withdrawn from the outside while the bolt is in locked position.

It will be understood from Figs. 4 and 6 that the spring means 8 will hold the key in the retaining slots whether the door is locked or not, and will also hold it so that none of the key will project on the outside of the lock. For this purpose a boss 14 may be provided on the outside of the case so as to allow of some longitudinal movement of the key in passing into and out of the retaining catch slots without the key-pin 15 leaving the outer key-hole 10.

In Fig. 7 is shown a modified form, in that a retaining spring 19 is mounted on the outside of the casing and bears against the guard or shoulder 16 of the key to force the key-web into the retaining slots. This form may be used to allow a mortise to be cut wider than ordinary; but for general purposes the inside spring is preferable.

It will be understood by reference to Fig. 6 that when the inmate of a room has turned his key on the inside of his room the key cannot be withdrawn while the lock is locked, but that if the key be turned so that its web comes into line with either catch slot 4 or 5, the key will be automatically locked and retained.

It is to be understood that by providing the catch slots 4, 5, the person locking the door from inside the room may secure the key against rotation by manually bringing the key to rest with its web within the appropriate slot when the bolt is in locked position, so that some security can be thus gained though the spring were omitted. Projection *a, b* are provided on the inner edge of the key-web to enter and be laterally engaged by the slots 4 and 5 when it is desired to hold the key against rotation. The side of curved leaf spring 1 forms a track upon which the edge of the key-web travels, and is formed and positioned to press the key into the slots 4 and 5.

What I claim is:—

1. The combination of a lock and key, said lock being provided internally with a key-retainer for engaging each side of the key-web to prevent rotation thereof.

2. The combination of a lock and key, said lock being provided internally with an automatic key-retainer for engaging each side of the key-web to prevent rotation thereof.

3. The combination of a lock and key, said lock being provided internally with a slot for the reception of a key-web when the bolt is in locked position, and means for automatically pressing said key-web into said slots.

4. A lock provided with retaining slots for a key-web, and a spring adapted to force the key-web into said slots.

5. A bolt, a key adapted to operate said bolt, a case for said bolt provided with slots into which the key is adapted to fit in the locked and unlocked position of said bolt, said slots constituting catches to prevent withdrawal or rotation of the key.

6. A bolt, a key adapted to operate said bolt, a case for said bolt provided with a slot for the reception of the key-web when the bolt is in the locked position, and a spring adapted to force the key-web into said slot.

7. A bolt, a key adapted to operate said bolt, a case for said bolt provided with slots for the reception of the key-web, and means for forcing said key-web into said slots respectively.

8. A bolt, a case for said bolt, a key for said bolt, catches adapted to hold said key against rotation, and a spring secured to said case and adapted to press said key into engagement with said catch.

9. A bolt, a case for said bolt, a key for said bolt, a spring secured to said case and of a form adapted to exert no pressure on the key in the position of its insertion, and to form an incline over which the web of the key travels in moving to another position.

10. In a lock, a spring forming a track for the web of the key and adapted to exert a pressure on the web of the key of said lock in the positions of the key at right angles to the insertion position.

11. A lock provided with key-retaining slots, and a curved leaf spring adapted to form a track for and exert a pressure on the

web of the key of the lock at a point opposite said slots.

12. In a lock, a key-retaining device, and means engaging the key-web laterally to prevent the key being rotated while the bolt of the lock is in the locked position.

In testimony whereof I have hereunto set my hand at Los Angeles, California this 19th day of July 1905.

FREDERICK HORACE ROGERS.

In presence of—
JAMES R. TOWNSEND,
JULIA TOWNSEND.