3 Sheets—Sheet 1

A. SCHNEIDER.

Lock.

No. 206,044. Patented July 16, 1878.

Fig. 1.

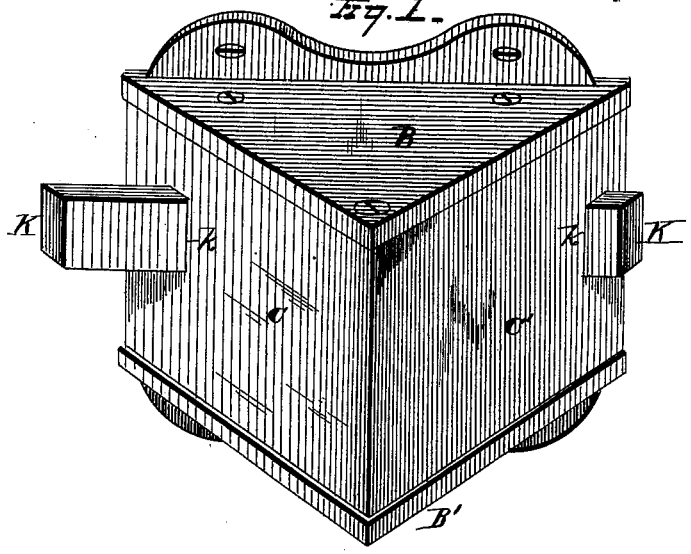
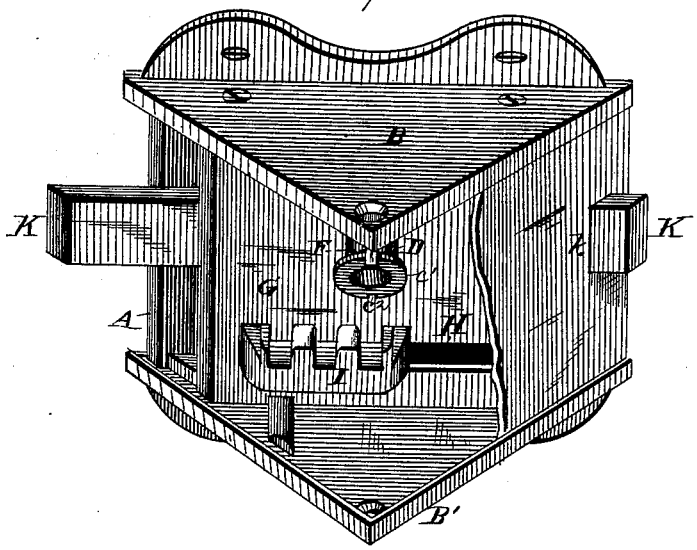


Fig. 2.



WITNESSES

E. F. Nottingham

A. W. Bright.

INVENTOR

A. Schneider.

By H. A. Seymour.

ATTORNEY

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Fig. 3.

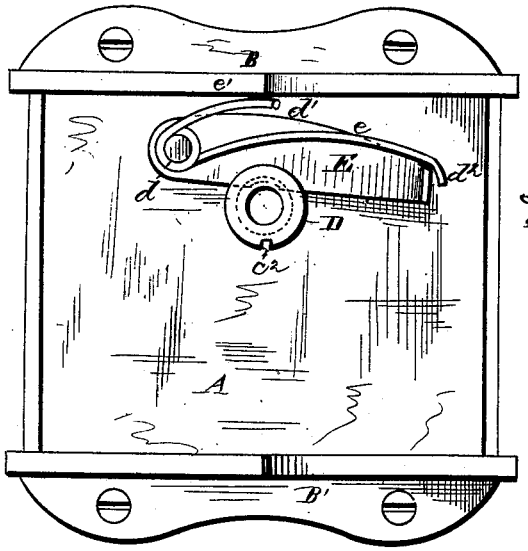


Fig. 5.

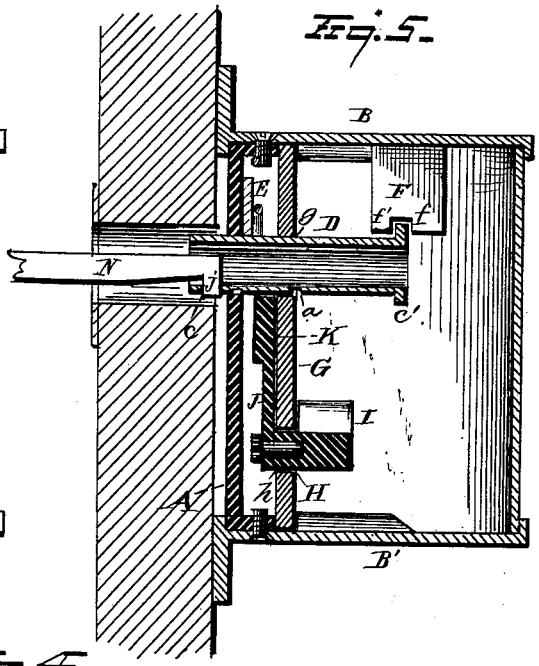


Fig. 4.

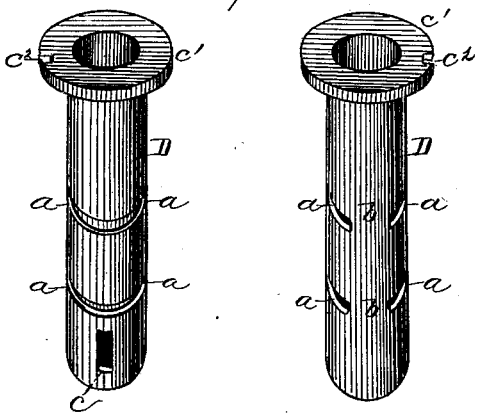
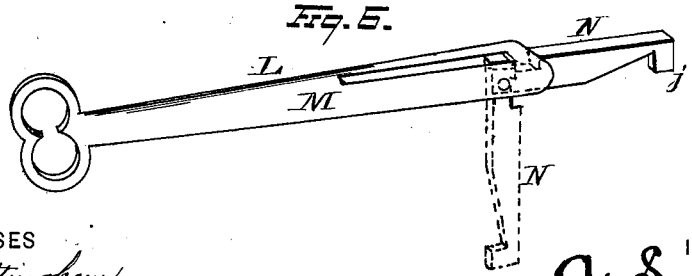


Fig. 6.



WITNESSES

E. F. Nottingham

A. W. Bright

INVENTOR

A. Schneider.

By H. A. Seymour.

ATTORNEY

3 Sheets—Sheet 3.

A. SCHNEIDER.

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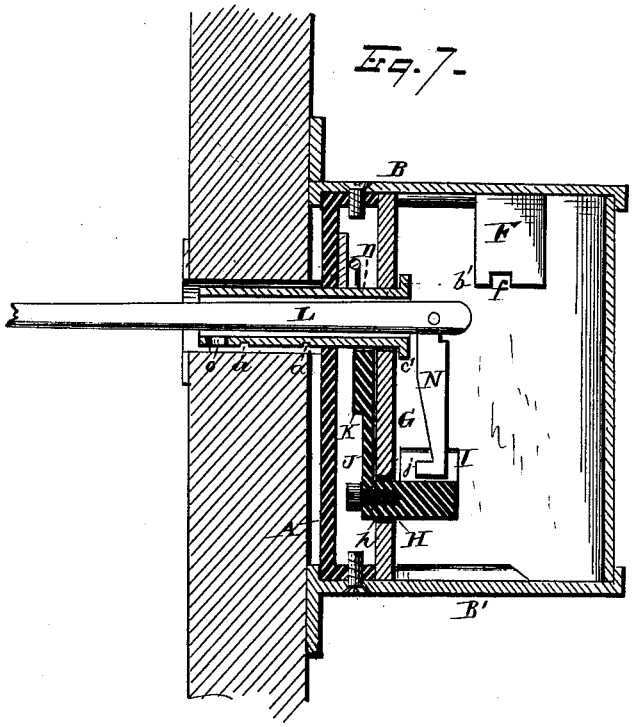

WITNESSES

E. J. Nottingham

A. M. Bright

INVENTOR

A. Schneider.

By H. A. Seymour.

ATTORNEY

UNITED STATES PATENT OFFICE.

ALEXANDER SCHNEIDER, OF YOUNGSTOWN, OHIO, ASSIGNOR OF ONE-HALF HIS RIGHT TO LOUIS WELLENDORF, OF SAME PLACE.

IMPROVEMENT IN LOCKS.

Specification forming part of Letters Patent No. **206,044**, dated July 16, 1878; application filed June 19, 1878.

To all whom it may concern:

Be it known that I, ALEXANDER SCHNEIDER, of Youngstown, in the county of Mahoning and State of Ohio, have invented certain new and useful Improvements in Locks; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in locks, the object being to provide a lock of such construction that the lock-bolt cannot be tampered with or moved except by the aid of a peculiar form of key, which serves the double purpose of actuating a sliding key-tube, through which access is had to the lock-bolt, and also the bolt of the lock; and to this end my invention consists, first, in the combination, with the casing of a lock, of a sliding key-tube, located above the lock-bolt, and provided with one or more grooves, partly surrounding the same, and a spring-pressed catch, which engages in the groove in said tube, whereby access to the lock-bolt is prevented when the key-tube is forced within the lock-casing, and not until the tube has been partly rotated to disengage the spring-catch from the groove in the tube can the latter be drawn outwardly to allow of the insertion of the key and the moving of the lock.

My invention further consists in the several details in construction and combinations of parts, as will more fully appear from the following description and claims.

In the accompanying drawings, Figure 1 is a view, in perspective, of my improved lock. Fig. 2 is a similar view, with the rear portion of the casing removed to show the interior mechanism of the lock. Fig. 3 is a plan view of the front plate of the lock with the sliding tube inserted therein, and the spring-catch engaging one of the grooves in said tube. Fig. 4 is a view, in perspective, of the sliding tube. Fig. 5 is a vertical section of the lock. Fig. 6 represents the key. Fig. 7 is a vertical section with parts in position for operating the bolt.

A represents the front plate, B and B′ the top and bottom plates, and C C′ the side plates, of the casing of the lock.

My improvement is represented as being embodied in a lock of triangular form, although I do not limit myself to this particular shape of casing, as it is evident that it may be of square, rectangular, semi-spherical, or other like equivalent in form without departing from the spirit of my invention.

D is a sliding key-tube, which is inserted through the front plate A, said tube being nearly equal in length to the thickness of the lock-casing. The rear end of tube D is provided with a collar, c^1, to prevent its complete withdrawal or removal from the lock. The periphery of tube D is provided with one or more grooves, *a*, which extend only partly around the same, thus leaving a smooth surface, *b*, extending the length of the tube. In the forward end of the tube is formed a slot, *c*, for a purpose hereinafter described.

To the rear surface of front plate A is pivoted a catch-plate, E, by the pivot or stud *d*. A wire or other spring, *e*, is coiled around stud *d*, one end, d^1, of the spring resting against the flange e' on the front plate, while the opposite end, d^2, rests upon the free end of the catch-plate, and operates to depress the same, thus causing the plate E to be forced into one of the grooves *a* in the tube D. When the catch-plate is in engagement with one of said grooves it will be impossible to move the tube in either direction without rotating the same sufficiently to bring the smooth surface *b* on the tube in line with the catch-plate.

Another provision is also made for preventing the endwise movement of the tube. To the top plate of the lock-casing is secured a depending bar, F, having a slot, *f*, formed in its lower end, and the collar c^1 is formed with a slot, c^2. By rotating the tube and causing the slot c^2 to register with the projection f' on the bar F the tube may be withdrawn; but the tube being forced back so that the collar *c* enters the slot *f* in the bar F, and then the tube being given a part rotation, the projection or guard f' serves to effectually prevent the withdrawal of the tube.

When the tube is provided with two grooves, *a*, as in the form of lock illustrated in the draw

ings, the operation of retracting or withdrawing the tube for inserting the key to engage with the lock-bolt is as follows: The tube is first partly rotated, to disengage the friction-plate from the forward groove *a*, and then given a half-turn and withdrawn from engagement from the depending bar, and then given another half-turn to disengage the next catch-plate from the groove *a*, next to the collar.

Having described the construction and operation of the sliding key-tube, I will now describe the other portions of the lock.

G is a partition-plate, provided with a hole, *g*, for the passage of the key-tube, and also with an elongated slot or opening, H, within which slides the shank *h* of a rack, I. To the rear face of the shank *h* is secured a bar, J, attached to the lock-bolt K, the ends of which latter project through openings *k* in the sides of the casing of the lock.

It will be observed that the rack I, and by means of which the lock-bolt K is operated, is located beneath the key-tube and near the front plate of the lock, so that it is out of reach of any ordinary key.

L is the key, consisting of the handle portion M and the pivoted bit N, the latter having a hook, *j*, formed on its outer end. The hook *j* is adapted to be inserted in the slot in the end of the key-tube for rotating and withdrawing said tube in the manner hereinbefore explained.

The operation of the lock is as follows: When the lock-bolt is in its locked position, the key-tube should properly be forced into the casing as far as possible. To unlock the lock or shift the lock, the key is opened and the hook *j* inserted into the slot in the end of the sliding key-tube, and the latter turned part way and withdrawn slightly, then turned partly and again withdrawn part way, and again given a part revolution and withdrawn its full extent. The key is then turned so that the bit portion N will fall when the key is inserted its full extent; and as the key is forced into the key-tube the bit N falls between two teeth of the rack I connected with the lock-bolt, and by simply turning the key the bolt may be readily operated. When it is desired to lock the bolt the latter is forced outwardly into the jamb of the door and the key then extracted. The key-tube is then manipulated in the manner heretofore described, and forced into the lock, thus effectually preventing the tampering with or access to the lock-bolt.

My improved lock may be manufactured at small initial cost, as it is composed of few parts, which are simple in construction and durable in use. The several parts are so arranged that it is practically impossible to pick the lock with any of the ordinary implements of burglars' use.

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

1. The combination, with the casing of a lock, of a sliding key-tube provided with one or more grooves that partially surround said tube and a spring-pressed catch-plate, adapted to engage with said groove or grooves, substantially as set forth.

2. The combination, with a sliding key-tube provided with a collar on its rear end, said collar having a slot formed therein, of a depending slotted bar, substantially as set forth.

3. The combination, with the casing of a lock, of a sliding key-tube and a lock-bolt provided with a rack located beneath said tube and near the front plate of the lock, substantially as set forth.

4. The combination, with the front plate of a lock-casing, of a partition-plate having an elongated slot formed therein, and a lock-bolt located on one side of said partition, and a rack for actuating said lock-bolt on the other side of the same, substantially as set forth.

5. The combination, with a sliding key-tube, of a lock-bolt located beneath said tube and a two-part key, the several parts being constructed so that the key-bit cannot engage with the rack until the key-tube is withdrawn, substantially as set forth.

6. The combination, with a sliding key-tube and means for securing it in place, of a key provided with a projection for engagement in a slot formed in the outer end of the key-tube, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 10th day of June, 1878.

ALEXANDER SCHNEIDER.

Witnesses:

J. GEORGE KRICHBAUM,

D. N. SIMPKINS.