T. Powers,

Lock.

No. 107,100. Patented Sept. 6. 1870.

Fig. 1.

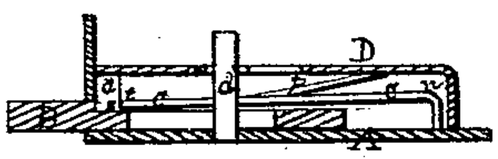

Fig. 2.

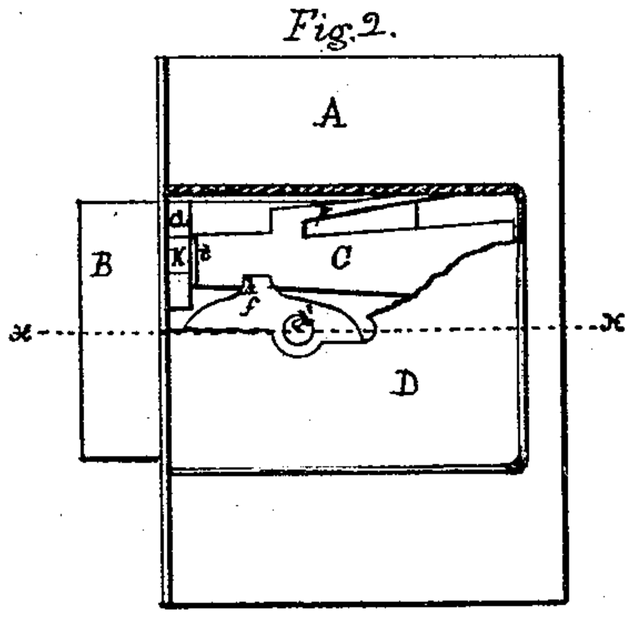

Fig. 3.

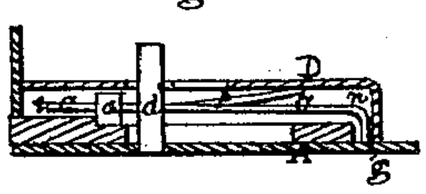

Fig. 4.

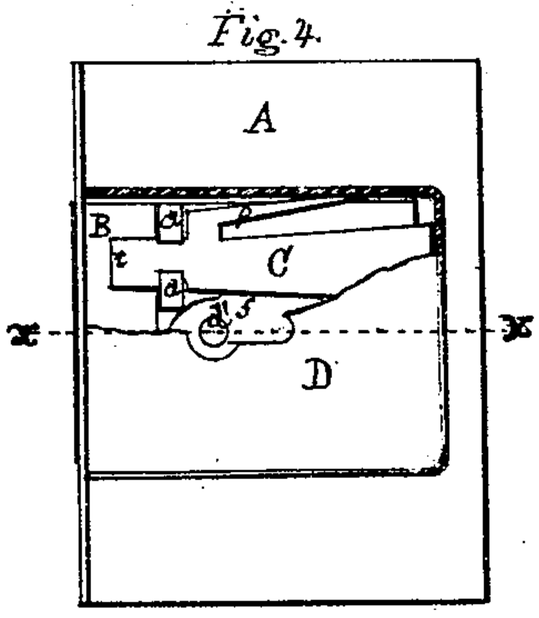

Fig. 9.

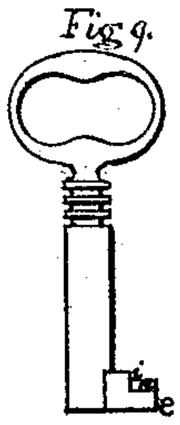

Fig. 10.

Fig. 8.

Fig. 7.

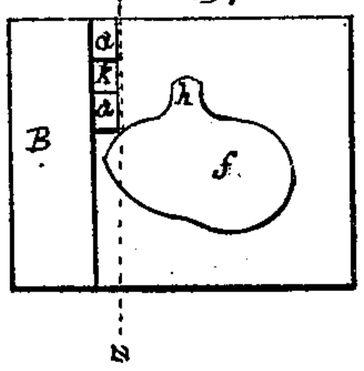

Fig. 5.

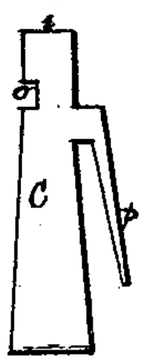

Fig. 6.

Witnesses

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Inventor

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TITUS POWERS, OF NEW YORK, N. Y.

Letters Patent No. 107,100, *dated September* 6, 1870.

IMPROVEMENT IN LOCKS.

The Schedule referred to in these Letters Patent and making part of the same

To all whom it may concern:

Be it known that I, TITUS POWERS, of the city of New York, in the State of New York, have invented a new and useful Improvement in Locks for Doors, Drawers, &c., of which the following is a specification, reference being had to the accompanying drawings forming a part thereof, in which—

Figure 1 is a sectional view of my lock, cut through on dotted line *x* in fig. 2.

Figure 2 is a plan of the back of my lock, having a portion of the case inclosing the working parts cut away, exposing the interior.

In both of these figures the bolt is shown thrown out.

Figures 3 and 4 are views similar to figs. 1 and 2, but showing the bolt thrown back into the lock.

Figure 5 is a side view of the tumbler.

Figure 6 is an edge view of the same.

Figure 7 is a side view of the bolt.

Figure 8 is a view of a section of the bolt cut through on the dotted line *z* in fig. 7.

Figure 9 is a side view of the key.

Figure 10 is an edge view of the same.

My invention consists in so combining within a lock a tumbler, bolt, fence, and double-acting spring, that when the tumbler is out of and free from the fence it is forced, necessarily, both laterally and vertically, away from the position in which it must be in order to enter the fence, thus making it necessary, in order to readjust the tumbler, to enter the fence, (and by that means permit the bolt to be thrown back into the lock after being thrown out,) to move the tumbler, both vertically and laterally, against the force employed to move it out of adjustment with the fence.

A is the face plate of the lock.

D is the back plate, forming with the face plate the case containing the working parts.

B is the bolt.

C is the tumbler, loosely fastened at the bent end *n* in the face-plate, so that it may swing a little laterally upon its fastening, the other end, *t*, resting on the face of the bolt.

a is a fence, standing up on the inner face of the bolt, having in it an opening, *k*, which may be of any shape desired; the ends *t* of the tumbler being made to correspond in shape with the opening. This opening does not extend, as will be noticed, quite to the face of the bolt, leaving a shoulder, *s*, between the opening and such face.

f is an opening through the bolt of an irregular shape, and large enough to permit the key to turn within it on the post *a'* without moving the bolt until it (the key) engages in the notch *h*.

When these several parts are combined and arranged, as shown in figs. 1 and 2, it is evident that the bolt, when thrown out, will be prevented from moving back into the lock by the end *t* of the tumbler *c*, which will rest against both the shoulders *s* and the portion of the body of the fence on the side of the opening *k* nearest the opening *f*, it being held down upon the face of the bolt, and at the same time forced to the side of the opening *k* by the spring *p*, the said spring acting in both directions for such purposes. If preferred, the spring *p* may be made to act only in one direction, and force the tumbler laterally parallel to the face of the bolt, and another spring may be employed to press the tumbler against the face of the bolt.

Now, in order to move the end *t* of the tumbler from this position to one coinciding with the opening *k*, it must be forced back against the spring *p*, and also lifted off from the face of the bolt, up just to the top of the shoulder *s*. The key is made to give to the tumbler these two motions.

The surface *c* of the bit of the key is an inclined plane, which, when the key is placed in the lock and turned, passes under the tumbler and lifts it up to the top of the incline, while the shoulder *i*, on the bit of the key, forces the tumbler back against the spring *p*, and the inclined surface *c* and the shoulder *i* are so made that they will carry the tumbler into a position exactly coinciding with the opening *k*. Then the key, engaging with the bolt in the notch *h*, throws it back into the lock.

If preferred, the end *t* of the tumbler may be forced out against the back plate D, and made to engage with a shoulder on the opposite side of the opening *k*, and then the wing of the key *c* must be made to pass in between the tumbler and the back plate D and force the end *t* of the tumbler toward the bolt and into range with the opening *k* in the fence.

When the bolt is thrown in the notch *o* in the tumbler engages with the fence, as shown, and locks the bolt in that position.

The several parts described are, of course, susceptible of a great variety of forms without departing from the spirit of my invention, the essential conditions being that the tumbler shall be forced both vertically and laterally out of adjustment with the fence when disengaged from it.

I do not claim broadly the combination in a lock of a bolt having upon it a fence with a tumbler arranged to pass through an opening; nor do I claim merely the controlling of the tumbler by the key, so as to guide it through the opening in the fence, where the tumbler, when out of the fence and uncontrolled by the key, is left free to fall or pass into any position to which its gravity may carry it, or where it is not forced by some means out of range, both vertically

and laterally, with the opening in the fence. As I am aware that such a construction and arrangement of tumblers in a lock is not new; but it is evident that when a tumbler is thus left free, it is more likely than otherwise when out of the fence and freed from the control of the key, to fall or move into a position in a line directly vertical or lateral to the opening in the fence, and from which it will only need to be moved back in such line to be brought in direct range with the opening in the fence, thus rendering the lock less secure against picklocks than where the tumbler is forced (when freed from the fence and keys) both vertically and laterally out of range with the opening in the fence. In my lock the tumbler is acted on by the double-acting spring *p*, or by two springs, one forcing it in a lateral and the other in a vertical direction, so as to force it both vertically and laterally away from the opening in the fence, and the key is made to to force the tumbler against the spring into range with the opening in the fence, and then to push the bolt back while the tumbler enters such opening. To this specific combination and arrangement of the bolt, fence, and springs, I confine my claim.

Claims.

What I do claim as my invention, and desire to secure by Letters Patent, is—

The combination in a lock of the bolt B, the fence *a*, the tumbler C, and the double-acting spring *p*, all constructed, arranged, and operating substantially as and for the purpose specified.

TITUS POWERS.

Witnesses:
WILLIAM H. DOW,
LEWIS A. DOW.