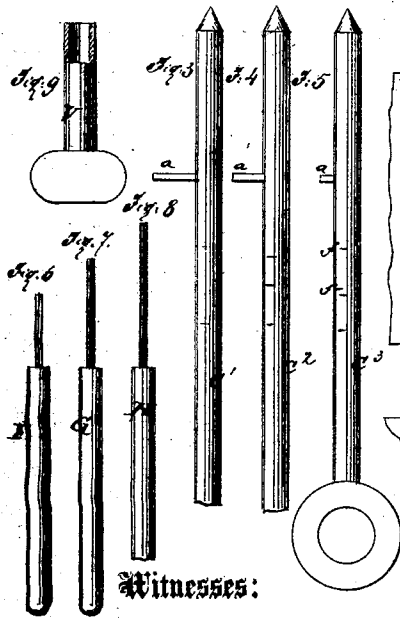
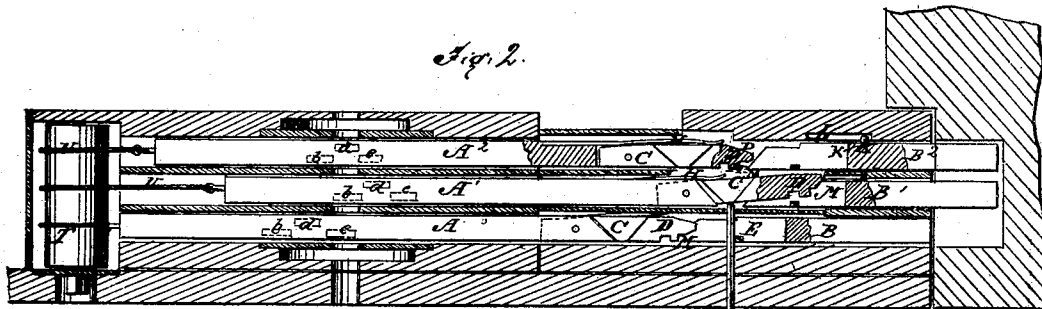
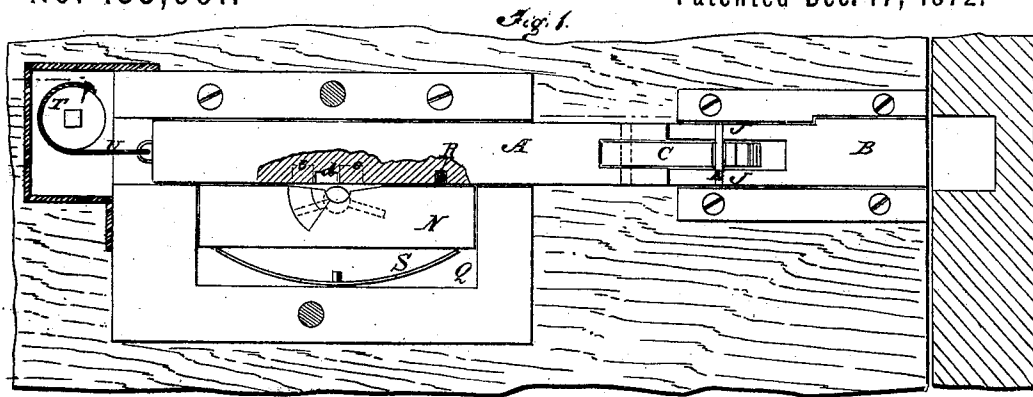


J. KEATH.  
Locks.

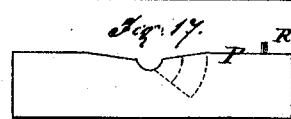
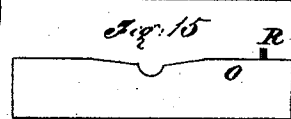
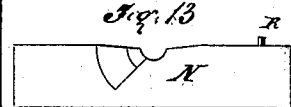
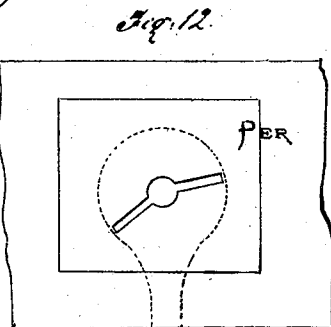
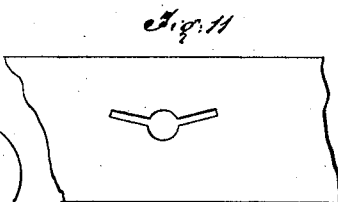
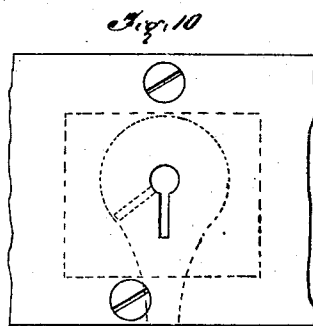
No. 133,991.

Patented Dec. 17, 1872.



Witnesses:

*Cros. Nida*  
*Conquick*



Inventor:

*J. Keath*  
*Wm. M. Munnell*  
Attorneys.

# UNITED STATES PATENT OFFICE.

JOSEPH KEATH, OF ASH GROVE, ILLINOIS.

## IMPROVEMENT IN LOCKS.

Specification forming part of Letters Patent No. 133,991, dated December 17, 1872.

### *To all whom it may concern:*

Be it known that I, JOSEPH KEATH, of Ash Grove, in the county of Iroquois and State of Illinois, have invented a new and useful Improvement in Locks, of which the following is a specification:

My invention consists of a series of bolts in two parts arranged for being separated after they are shot by a peculiar detaching apparatus, so that the parts of the bolts whereon the keys act may be moved without affecting the parts by which the door is secured, and the bolts cannot be withdrawn till the two parts are connected again. My invention also consists of a regulator combined with the bolts in a manner to readjust the bolts after being disarranged and confused to prevent the picking of the lock.

Figure 1 is a front elevation of the lock with the front plate removed and part of one of the bolts sectioned. Fig. 2 is a horizontal section. Figs. 3, 4, and 5 represent the keys. Figs. 6, 7, and 8 represent awl-shaped instruments, to be used in connecting and disconnecting the bolts. Fig. 10, an elevation of the front plate of the lock. Fig. 11 is an elevation of the plates which separate the bolts. Fig. 12 is an elevation of the back plate; and Figs. 13 to 18, inclusive, represent the tumblers in elevation and plan views.

Similar letters of reference indicate corresponding parts.

A, A<sup>1</sup>, and A<sup>2</sup> represent the parts of a series of three bolts on which the keys act. B, B<sup>1</sup>, and B<sup>2</sup> represent the parts which project from the lock to fasten the door. The parts A, A<sup>1</sup>, and A<sup>2</sup> have each a hinged piece, C, pivoted to the end next the parts B with a notch, D, which hooks upon a cross bar or pin, E, on the parts B, &c., for connecting both parts of the bolts together. These parts C swing laterally on their pivots to pass the bars or pins E for connecting and disconnecting the two parts. They are pushed back by the awl-shaped instruments F G H, one for each bolt, so arranged in respect of its length that, when pushed into the lock-case till the shoulder comes against the case, it deflects the piece C sufficiently to pass the bar E, with which it engages. The said pieces are pushed back again, and held in connection with the parts B, &c., by springs H. The cross-bars E ex-

tend from one to the other of the two prongs, J, between which the pivoted pieces C enter for engaging them, and the rods of the instruments for pushing the pieces C of the second and third bolts back also pass between these prongs. A stop-pin, K, on each of the parts B, &c., projecting into a slot, L, in the plates of the lock limits the movement of the said parts and prevents them from being displaced. The pieces C have a square shoulder, M, in advance of the notches for acting on the cross-bars E, to prevent them from being pushed back so as to pass by and connect with the parts B, &c., when pushed forward with the keys. For three bolts I propose to have three keys, and to use two keys with each bolt; also, to arrange the bolts to have three movements, two being imparted by one key and one by the other. C<sup>1</sup>, C<sup>2</sup>, and C<sup>3</sup> represent the keys. Each one has a stud or arm, a, for throwing the bolts, exactly alike in all respects, except as to length, in which they all differ. Each bolt has three notches, b d e, in which the arms of the keys work to throw it. In this example the notches of the front bolt A—also, the second one A<sup>1</sup>—are adjusted for using the keys C<sup>1</sup> and C<sup>3</sup>, and those of the third bolt A<sup>2</sup> are adjusted for keys C<sup>1</sup> and C<sup>2</sup>. N represents the tumbler for the front bolt, O the tumbler for the middle bolt, and P the one for the rear bolt. They are arranged in a case, Q, below the bolts, and have a stud-pin, R, for entering them to fasten the bolts when shot, in case it is not desired to detach the two parts. Sufficient space is provided in the case Q to allow the tumblers the requisite movement for engaging and disengaging the bolts, and a spring, S, is provided under each to throw the pin into the hole when they coincide.

To lock the lock, begin with the front bolt, using key C<sup>1</sup>, which moves the bolt outward one stage; then use key C<sup>3</sup>, moving it another stage; then use key C<sup>1</sup> again, giving it the last outward movement; then detach the part C by the short instrument F, and throw the part A of the bolt back one stage by key C<sup>1</sup>; then throw it back another stage by key C<sup>3</sup>; and, lastly, another stage by key C<sup>1</sup>. The tumblers are detached by the shanks of the keys, which press them down in the case Q. The other bolts will be actuated in the same way with the appropriate keys, which will be known by

the marks *f* on the sides to indicate when they are inserted far enough for the pins or arms to enter the notches in the bolts. The different marks show the positions of the keys for the different bolts they are to act upon.

The regulator consists of the cylinder T with connecting-cords U and a key, V, Fig. 9. The cylinder is turned by the key to the right after the key C<sup>2</sup> has been put in to detach all the tumblers; and when all the bolts are disconnected the cylinder, being turned as far to the right as it can go, will bring all the bolts so they can be actuated properly for locking or unlocking.

It will be seen that when the bolts are shot, and the parts on which the keys act detached from the other parts, the lock cannot be unlocked even though that part of the case containing the said parts acted on by the keys be blown off.

I propose to have holes in the lower edge of the case, so that powder poured in at the key-hole for blowing up the lock will run through to a space below.

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

1. A series of bolts for a lock, constructed in two parts and arranged for disconnecting the parts acted upon by the keys from the parts which lock the door after being shot, substantially as specified.

2. The combination, with a series of lock-bolts constructed and arranged in two parts for being disconnected as described, of a regulator, substantially as specified.

JOSEPH KEATH.

Witnesses:

ZIMRI HOCKETT,  
JAS. G. HOCKETT.