

O. E. PILLARD.

Improvement in Permutation-Locks.
 No. 125,905. Patented April 23, 1872.

Fig. 1.

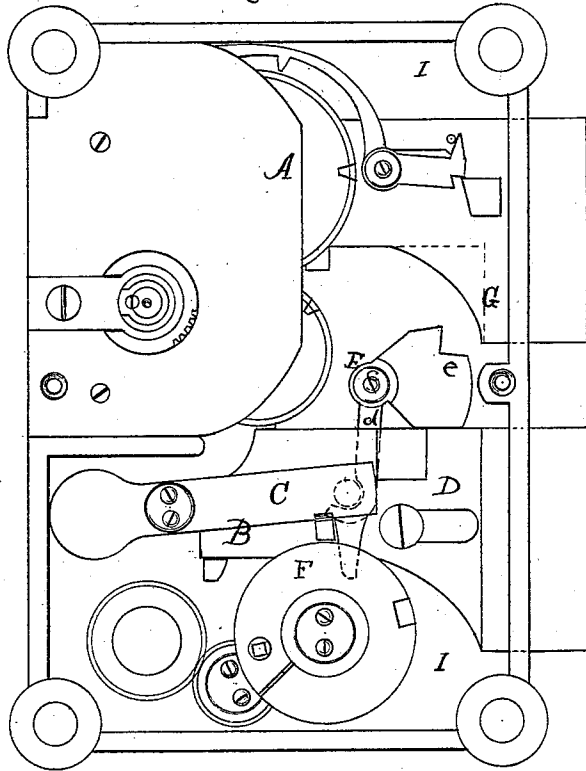
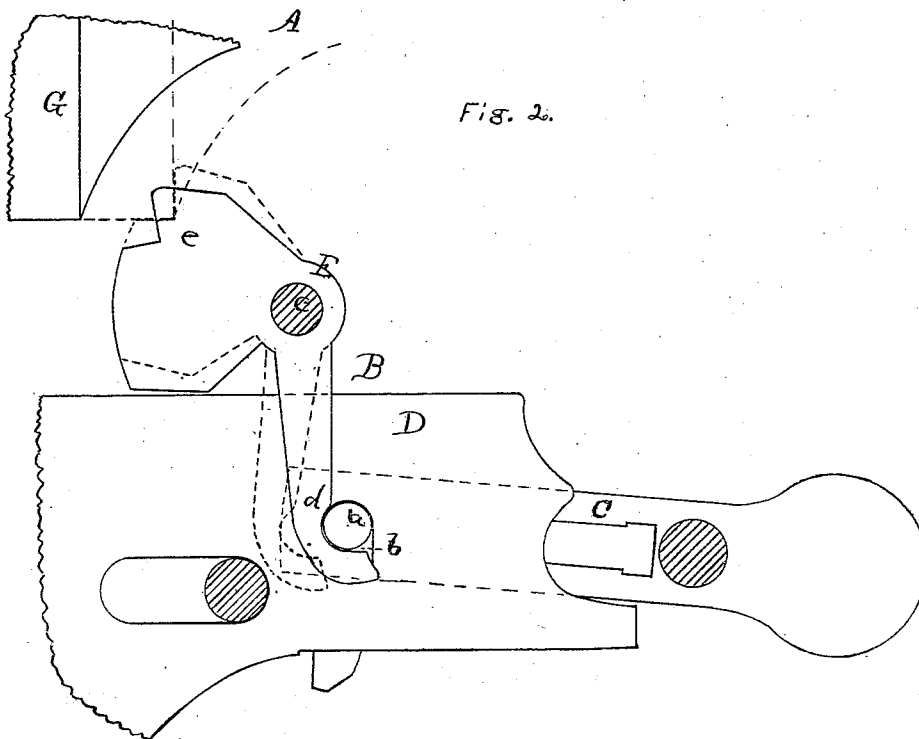


Fig. 2.



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Fig. 3.

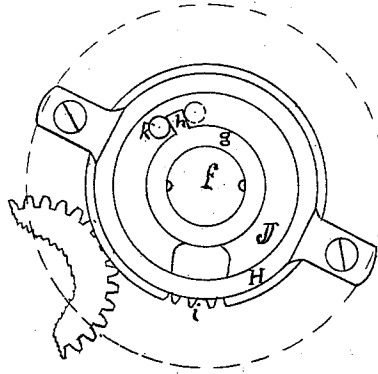
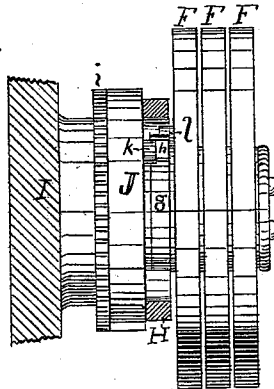


Fig. 4.



Witnesses,

James Shepard.
W. D. Fielding

Inventor,

Oliver E. Pillard.

UNITED STATES PATENT OFFICE.

OLIVER E. PILLARD, OF NEW BRITAIN, CONNECTICUT, ASSIGNOR TO
FREDERICK H. NORTH, OF SAME PLACE.

IMPROVEMENT IN PERMUTATION LOCKS.

Specification forming part of Letters Patent No. 125,905, dated April 23, 1872; antedated April 3, 1872.

I, OLIVER E. PILLARD, of New Britain, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Locks, of which the following is a specification:

My invention consists of the combination of two or more permutation locks with an intermediate mechanism that operates to disconnect all communication between the bolt of one of said locks and its tumblers, as hereinafter more fully described. Also, in the employment of a washer, provided with an arm, and swinging freely between the connecting-pins of the dead-tumbler and tumblers proper of a permutation lock, as hereafter described, whereby an extra revolution of the dial-shaft is necessary in operating the tumblers.

In the accompanying drawing, Figure 1 is a front elevation of a lock embodying my invention, the cap being removed. Fig. 2 is a detached portion of the same as viewed from the back side. Fig. 3 is a front elevation, and Fig. 4 a side elevation, partly in section, of detached portions of a lock, showing the second part of my invention.

The drawing shows an Isham and a Pillard lock, designated, respectively, A and B. Other permutation locks will answer the purposes of this combination equally as well, but of course they must be complete and independent locking mechanisms. C designates the latch of the lock B, as shown in the patent to myself December 7, 1869. From the latch C a pin, *a*, (shown in Fig. 2, and designated by broken circle in Fig. 1,) extends through the slot *b* in the bolt D. The intermediate mechanism consists of a lever, E, pivoted to the back of the case by a stud, *c*. The lower arm *d* of the lever E is curved, so as to hook under the latch-pin *a* and hold up the latch C, as shown in Fig. 2, and indicated by broken lines in Fig. 1. The upper arm *e* of lever E is sufficiently heavy to hold the latch C in an elevated position unless released by other means, as hereafter described.

The lever E may, of course, be made to operate with a spring instead of by gravity; or

may be so connected to the upper bolt as to make its movement positive. By simply locking or throwing the bolts outward, the lever E engages with the pin *a* and holds the latch C free from the tumblers F in the lock B, so that by no manipulation of the tumblers will the latch engage with them and allow the parts to be unlocked. By turning the knob-shaft of the lock A its bolt G is thrown inward, when a lower corner thereof engages with the arm *e* of lever E, and causes the arm *d* to release its hold on the pin *a*, as indicated by broken lines in Fig. 2, which will allow the lock B to be operated in the usual manner and unlock its bolt.

The number of locks thus combined may be multiplied as desired, and connected substantially as described, so that the bolt of a certain lock or locks in said combination must be thrown inward before the parts of the other locks can be operated.

By my improvement two or more complete and independent lock mechanisms are so combined that a certain one of said mechanisms must be operated before the other can be picked, and as there is nothing on the outside of the locks that indicates such fact, and, if known, a person unfamiliar with the lock would not know which lock to operate first, it follows that additional security against picking the locks is insured.

In Fig. 3 the tumblers F are removed to better show the other parts, their position being indicated by the broken circle. H designates a stationary yoke or ring, secured to the lock-case I, concentrically with the tumblers F. On the tumbler-stud *f*, and inside of the ring H, is a loose washer, *g*, provided with an arm, *h*. Back of the washer *g* is the "dead-tumbler" J and its gear *i*, by which it is connected to the dial-shaft. In the dead-tumbler J is the usual pin *k*, and in the first of the tumblers F is a similar pin, *l*, the position of which is indicated by broken lines in Fig. 3. These pins are so short as to pass each other, as shown in Fig. 4, but of such length as to engage with the arm *h* of the washer *g*. By

rotating the dial-shaft and dead-tumbler J in one direction the pins *k* *l* and arm *h* assume the relative positions shown in Figs. 3 and 4. To reverse the movement of the tumblers F, the dead-tumbler J will revolve nearly a whole revolution, when the pin *k* strikes the arm *h* of the washer *g*, and carries said arm nearly another revolution before it engages with the pin *l*, thus requiring nearly two revolutions of the dead-tumbler, instead of one, as usual, in order to reverse the movement of the tumblers F. By this arrangement the revolutions of the dial-shaft necessary to pick the lock by a person not knowing the combination on which it is set will be so greatly multiplied as to discourage one in such an attempt.

I claim as my invention—

1. Two or more permutation locks, in com-

bination with an intermediate mechanism that operates to disconnect all communication between the bolt of one of said locks and its tumblers, in the manner and for the purpose set forth.

2. The pins *k* and *l* of the tumblers J and F, of such length as to pass each other, in combination with the loose washer *g*, having an arm, *h*, said arm making nearly a complete revolution between the pins *k* and *l*, thus necessitating an extra revolution of the spindle in setting the tumblers, in the manner and for the purpose described.

OLIVER E. PILLARD.

Witnesses:

JAMES SHEPARD,
W. I. FIELDING.