S. A. MANN.
Permutation-Lock.

No. 207,613 Patented Sept. 3, 1878.

Fig. 1.

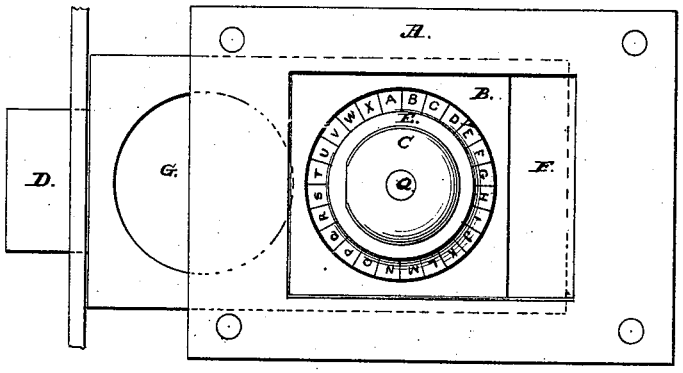


Fig. 10.

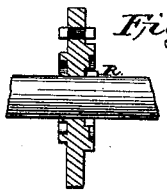


Fig. 11.

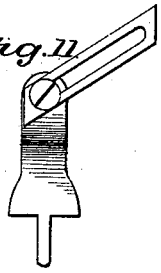


Fig. 3.

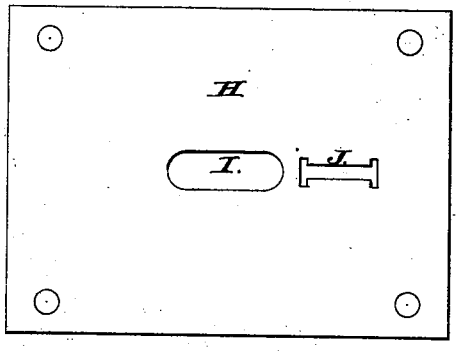


Fig. 2.

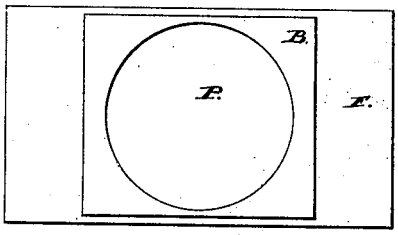


Fig. 4.

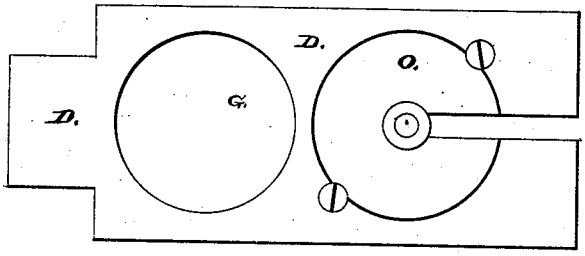


Fig. 5.

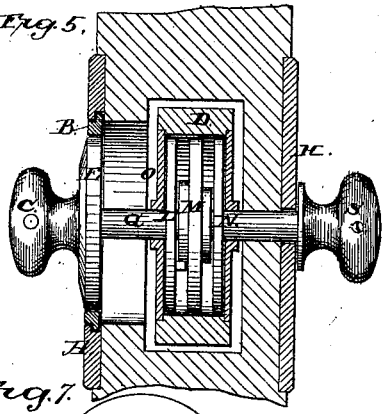


Fig. 6.

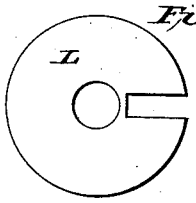


Fig. 7.

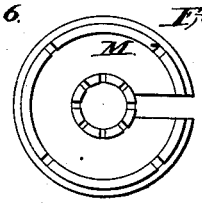


Fig. 8.

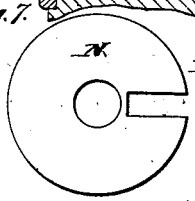
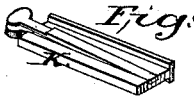


Fig. 9.



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Wm. H. Young

Inventor.
Stephen A. Mann

UNITED STATES PATENT OFFICE.

STEPHEN A. MANN, OF RENO, NEVADA.

IMPROVEMENT IN PERMUTATION-LOCKS.

Specification forming part of Letters Patent No. **207,613**, dated September 3, 1878; application filed December 4, 1877.

To all whom it may concern:

Be it known that I, S. A. MANN, of Reno, in the county of Washoe and State of Nevada, have invented a new and useful Improvement in Locks, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a front view of the lock and outside plate with my combination-bolt. Fig. 2 is a front view of the outside slide-plate. Fig. 3 is a front view of the inside plate. Fig. 4 is a view of the bolt. Fig. 5 is a section through the knobs, shaft, and dial-plate, with the tumblers attached. Figs. 6 and 8 are views of the outside tumblers. Fig. 7 is a view of the center tumbler. Fig. 9 is a view of a pin which enters the inside plate, Fig. 3, at J, and which, when removed, allows the bolt to slide back without the use of the combination. This is to allow the lock to be opened from the inside; and the back or thick portion of the pin turned toward the letter I will prevent any one knowing the combination from opening the lock from the outside. Fig. 10 is a front view of a section of the center tumbler with the shaft passing through it, showing the pin which catches the center tumbler and causes it to revolve with the shaft and dial-plate. Fig. 11 is a front view of a guide by which the combination can be worked in the dark.

The object of my invention is to furnish a combination-bolt at so small expense as to bring it into common use for safes, doors, drawers, trunks, chests, padlocks, &c., which obviates the necessity of having a key, and which can only be opened from the outside by a knowledge of the combination, which can be opened in the dark by the use of the guide-key, Fig. 11, and which can be worked and the combination changed with more ease than in the ordinary combination-lock.

In the drawings, A is the outside plate, with an opening through it which admits the sliding plate B, which, when the combination is set, passes over the space F, the bolt D, the dial-plate E, and the shaft Q Q, at the same time moving back. C is the knob by which the combination is worked. D is the bolt which contains the tumblers L, M, and N. E is the dial-plate. G is an opening in the bolt, which lightens it and economizes the metal. H is the inside plate, with an opening at I to admit the shaft Q Q. I is an opening in the plate, in which the shaft Q Q moves backward and forward to lock and unlock. J is the aperture in which the pin K, Fig. 9, is inserted. L, M, and N are the tumblers, which are revolved by the shaft Q, being separated by a spiral spring on either side, and which are inserted into the bolt D at the opening O, and the tumbler M being placed between the tumblers L and N and held in position by means of plate O, which is fastened to the bolt by two screws, as represented in Fig. 4, and also by a similar plate on the opposite side of the bolt. P is an opening in the outside slide-plate, in which the dial-plate revolves. Q is the shaft which revolves the tumblers and dial-plate, and which is fastened to tumbler M by means of pin R. R is the pin which catches the center tumbler, causing it to revolve with the dial, and which catches and turns the other tumblers by means of pins placed in the same near the circumference. S is the inside knob, which is adjusted on the shaft Q Q by means of a set-screw, and which, when the lock is in position on the door, is set up against the plate H loosely, so as to allow the slide-plate B and the bolt D, containing the tumblers, and the shaft Q Q, and the dial-plate to slide back, when the tumblers are in position, and unlock.

When the knob S is removed from the shaft Q Q the knob C and dial-plate E can be pulled to the front, which removes the pin R from the notches in tumbler M and allows the shaft and dial-plate to revolve, and by this means the combination of the lock is changed to different letters.

Fig. 11 is the guide-key, which is inserted into the knob C, and which, being set by means of the set-screw T, set or pointed to some object on the plate or door, and, when turned to said objects, will bring the first two letters of the combination in turn to their proper position, the knob being then turned and gently pressed to the right. As soon as the third letter of the combination is reached the lock will open. A very little practice will familiarize one with the use of this key, so that the lock can be as readily opened by night as by day.

It is obvious that this device is applicable

to locks used for any purpose; and I claim the herein-described invention, whether applied to safes, doors, trunks, drawers, chests, padlocks, or any other kind of locks, and whether the lock is manufactured containing two, three, or more tumblers.

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

1. In combination with the sliding bolt, the permutation-tumblers arranged within and moving within it, all as and for the purposes described.

2. The combination, with the spindle, of the series of tumblers, the center one of which sets the other tumblers, avoiding the necessity of turning the dial-plate more than once to any given letter.

3. The combination of the permutation-tumblers, the case slotted at J, and the reversible spring stop-key K, for permanently locking both the tumblers and the bolt, or for allowing the bolt to be unlocked from one side only by the combination, all as and for the purposes set forth.

4. In combination, with the permutation-tumblers and disk, the jointed and slotted guide or indicator-figure T, for setting combination in the dark, all as and for the purposes set forth.

STEPHEN A. MANN.

Witnesses:
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