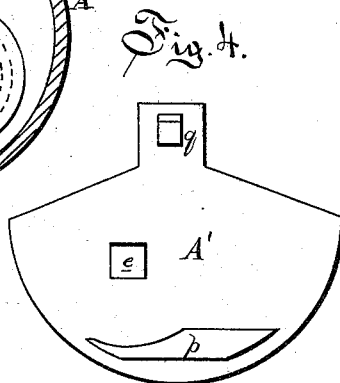
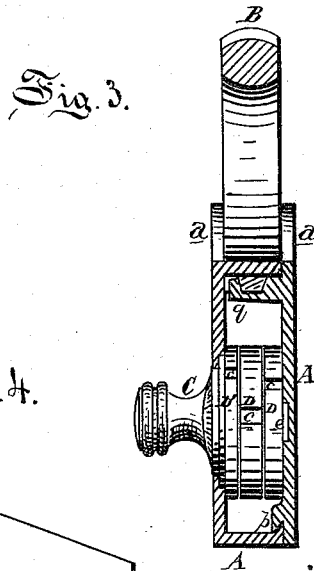
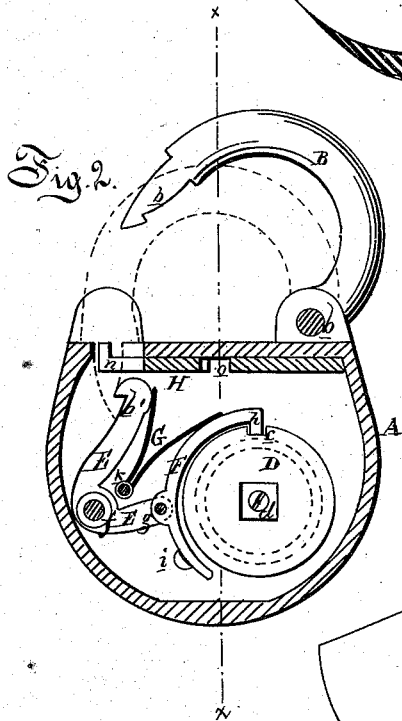
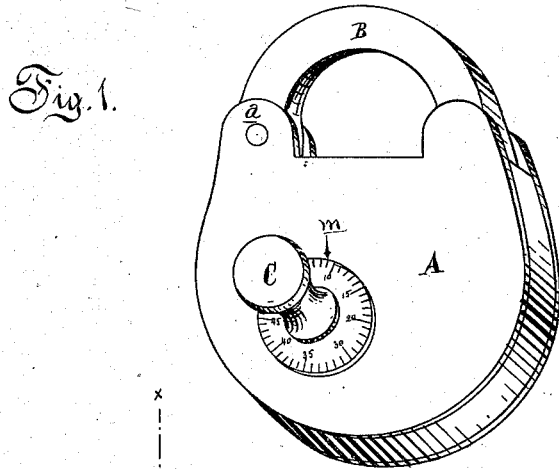


D. A. ROOT.
Combination Pad-Lock.

No. 162,952.

Patented May 4, 1875.



Attest:
Edward Parshel.
H. F. Everts.

Inventor:
Dexter A. Root.
per Attorney,
Wm. Sprague.

UNITED STATES PATENT OFFICE.

DEXTER A. ROOT, OF SOUTH BAY CITY, MICHIGAN.

IMPROVEMENT IN COMBINATION-PADLOCKS.

Specification forming part of Letters Patent No. **162,952**, dated May 4, 1875; application filed March 23, 1875.

To all whom it may concern:

Be it known that I, DEXTER A. ROOT, of South Bay City, in the county of Bay and State of Michigan, have invented a new and useful Combination-Padlock, of which the following is a specification:

The nature of my invention relates to an improvement in permutation-locks, more especially designed in its application to padlocks, and other locks having hasps and combination tumbler-wheels operated by a dial-knob, as more fully hereinafter set forth.

Figure 1 is a perspective view of my improved permutation-padlock. Fig. 2 is a vertical section of the case, showing the mechanism in elevation, looking at it from the back. Fig. 3 is a cross-section at *x x*. Fig. 4 is an elevation of the inner face of the detachable back plate.

In the drawing, A represents the case of the padlock, having a hasp, B, pivoted between the lugs at *a* in one corner, its free end being notched, as at *b*. C is a dial knob-spindle, journaled through a circular hole in the front plate. On the inner end of the spindle is a sleeve, on which two tumbler-wheels, D D, are mounted, and next the front plate there is a tumbler-wheel, D', fast on the spindle, each tumbler-wheel having a notch, *c*, cut in its periphery. The back end of the sleeve has a square head, *d*, which is received in a socket, *e*, in the back plate A', to prevent said sleeve from turning with the spindle. E is a V-shaped dog, having arms of unequal length, and pivoted at its angle to a stud, *f*, on the front plate; its longer arm has a hook, *b'*, at its head, to engage with the notch *b* of the hasp. F is a segment-shaped fence-lever, pivoted at *g* to the short arm of the dog E; its upper end has a fence, *h*, turned in it, to drop into the notches of the tumbler-wheels when said notches are brought into line under it. Below the pivot *g* there is a stop-stud, *i*, projecting from the front plate, against which the said fence-lever lies. G is a bent leaf-spring slipped over a stud, *k*, on the front plate, the ends bearing against the upper parts of the dog and lever, respectively, throwing the former toward the entering hasp, and the fence into the notches of the tumbler-wheels when in line.

I do not claim the invention of any particular form of combination or tumbler wheel, as it is evident that any form of such may be used for the purpose.

Supposing the tumbler-wheels to be so arranged as to bring their notches in line on the combination of the numbers 17, 38, 50, and the hasp to be locked, to unlock it, the case should be taken in the left hand, and the dial-spindle in the right; then turn the knob three times to the left, stopping with the number 17 under the line *m* on the face-plate; then turn the knob once around to the right, passing number 17, and continue on to 38, thence to the left, stopping at 50; then, with the index-finger of the left hand, press down the hasp, while turning the knob two numbers to the right. The fence having in the meantime dropped into the notches, this last movement to the right of the knob will carry the fence-lever in that direction, and with it the dog, thus releasing the hasp. The stud *i* serves as a stop or fulcrum for the fence-lever.

H is a flat bolt sliding in a groove in the under side of the top wall of the lock-case, with a T-head, *n*, turned up into the hasp-opening. There is a transverse notch, *o*, cut in the under side, about the middle of the case-top, as shown in Fig. 2. When the bolt is slid forward (the hasp being open) across the hasp-opening, the notch will be open, and the hasp cannot be inserted in its opening. The back plate A' has a dovetail clip, *p*, on its inner face near the bottom, which engages with a corresponding lip in the bottom of the case. At the top of the said plate there is an inward-projecting hook, *q*, in line with the notch, and, when the plate is inserted and in position, it is secured by pushing back the bolt H, which engages with the hook *q*, uncovering at the same time the hasp-opening.

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

1. The combination of the locking-dog, having the fence-lever pivoted thereto, with the hasp, notched tumbler-wheel, spring G, and knob C, whereby the dog is released from the notch in the hasp by turning the knob, substantially as described.

2. The bolt H, arranged to slide in the top of case A, and held in position by the hasp, in combination with the clip *p* and hook *q* on the back plate A', for securing the latter to the lock-case, substantially as described.

DEXTER A. ROOT.

Witnesses:

H. F. EBERTS,
C. E. HUESTIS.