

(Model.)

2 Sheets—Sheet 1.

R. D. GREEN.
PERMUTATION PADLOCK.

No. 262,406.

Patented Aug. 8, 1882.

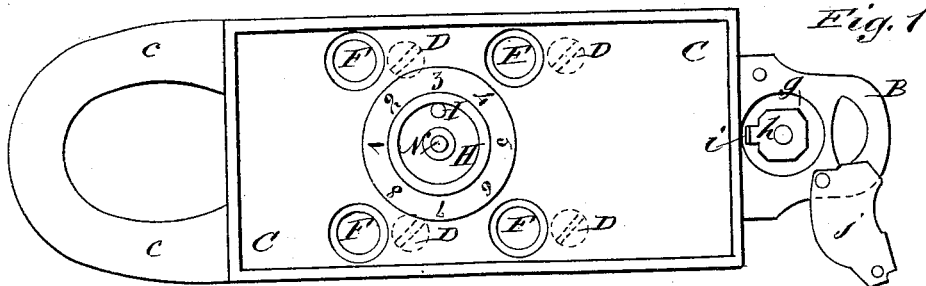


Fig. 2

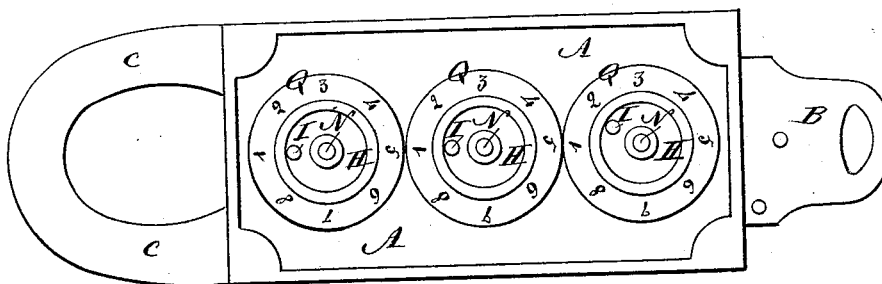


Fig. 3

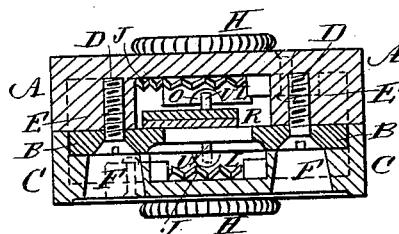


Fig. 6

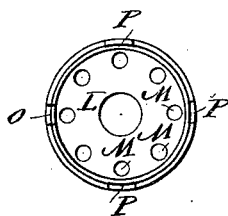


Fig. 5

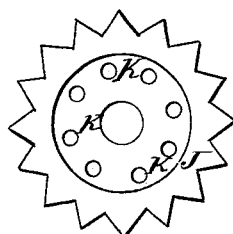
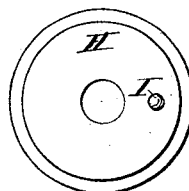


Fig. 4



WITNESSES:

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C. Sedgwick

INVENTOR:

R. D. Green
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ATTORNEYS.

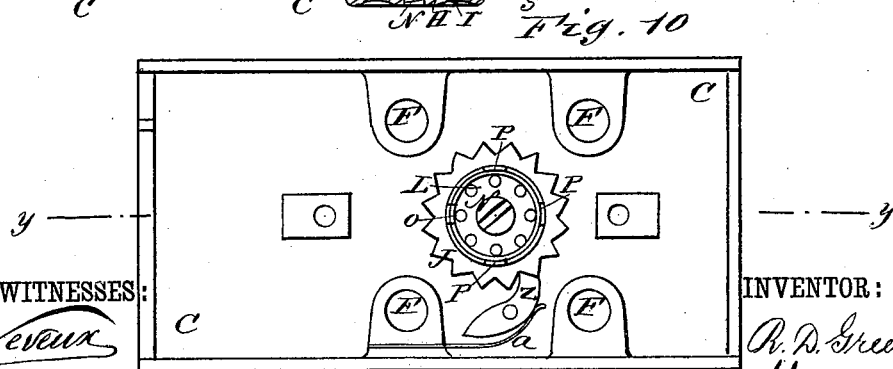
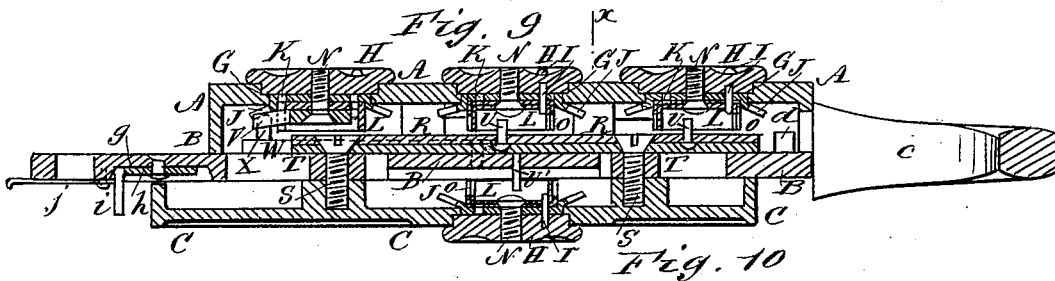
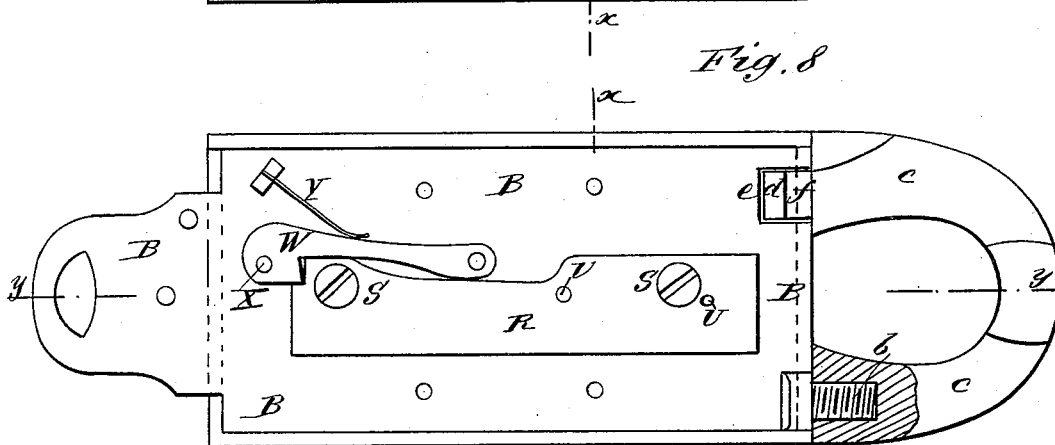
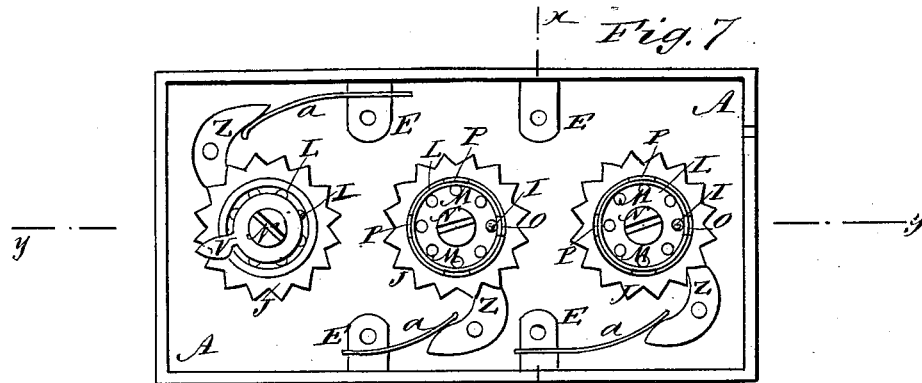
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WITNESSES:
C. Neveu
C. Sedgwick

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UNITED STATES PATENT OFFICE.

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PERMUTATION-PADLOCK.

SPECIFICATION forming part of Letters Patent No. 262,406, dated August 8, 1882.

Application filed November 25, 1881. (Model.)

To all whom it may concern:

Be it known that I, ROBERT D. GREEN, of Columbus, in the county of Lowndes and State of Mississippi, have invented certain new and useful Improvements in Permutation-Locks, of which the following is a full, clear, and exact description.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1, Sheet 1, is a rear elevation of my improvement. Fig. 2, Sheet 1, is a front elevation of the same. Fig. 3, Sheet 1, is a sectional end elevation of the same, taken through the line *x x*, Figs. 7 and 8. Fig. 4, Sheet 1, is a plan view of the inner side of one of the rotating pin-disks. Fig. 5, Sheet 1, is a plan view of one of the perforated cup-shaped ratchet-wheels. Fig. 6, Sheet 1, is a plan view of one of the perforated, slotted, and recessed cups. Fig. 7, Sheet 2, is a plan view of the inner side of the front plate. Fig. 8, Sheet 2, is a plan view of the center plate and its attachments, and showing the flange edges of the back plate. Fig. 9, Sheet 2, is a sectional elevation of the improvement, taken through the line *y y*, Figs. 7, 8, and 10. Fig. 10, Sheet 2, is a plan view of the inner side of the back plate.

The object of this invention is to promote security in the use of padlocks and other locks.

The body, case, or shell, of the lock is made in three parts—a front plate, A, recessed upon the inner side, a center plate, B, and a back plate, C, recessed upon the inner side and rabbeted to receive the center plate, B, so that the said plate B will be entirely covered, except at its projecting ends.

The center plate, B, is secured to the front plate, A, by four screws, D, which pass through the said center plate, B, and screw into lugs E, formed upon the interior surface of said front plate, A.

In the back plate, C, are formed four holes, F, in such positions that the heads of the screws D will be covered when the lock is fastened and uncovered when the lock is unfastened, so that the lock can be readily taken apart to change the combination.

In the front plate, A, are formed one, two, or more circular apertures, G, which are rabbeted to receive the rabbeted edges of the disks H. The outer part of the edges of the disks H are milled for convenience in turning them.

To each disk H, near one side, is attached a pin, I, which projects through the aperture in the plate A, in which the said disk H works.

J J are ratchet-wheels, which are placed upon the inner side of the front plate, A. The middle parts of the ratchet-wheels J are depressed into cup shape to fit into the apertures G of the plate A, and rest against the inner surfaces of the disks H. In the depressed or cup-shaped parts of the ratchet-wheels J are formed annular rows of perforations K, in such positions as to receive the pins I, attached to the disks H.

Into the depression or cup of each ratchet-wheel J is fitted a cup, L, in the bottom of which is formed an annular row of perforations, M, corresponding in number and position with the perforations of its ratchet-wheel J. The cups L and the ratchet-wheels J have perforations through their centers, and the disks H have screw-holes through their centers to receive the screws N, by means of which the said three parts are secured to each other and to the plate A. The rims of the cups L project above the ratchet-wheels J, and have each a notch, O, formed in it for the passage of pins, hereinafter described, and one, two, three, or more recesses, P, formed in their outer sides, to serve as blinds to prevent any one who may attempt to open the lock without knowing the combination from feeling when the notch of the cup has been turned opposite the said pin.

For convenience of manufacture the rims of the cups L may be made in two parts and secured to each other with the notch in the rim of the inner part opposite one of the notches in the outer part; or each ratchet-wheel J and its cup L can be made in one piece. With this construction the combination is changed by changing the relative positions of one or more of the disks H and cups L, so as to bring the head of the pins I, or other pointers or indicators formed upon or attached to the said disks H, opposite another point in the scales

Q, of division-marks formed upon the face of the plate A, around the apertures G, when the notches or slots O are in the required position for unlocking the lock. The division-marks of the scales Q can be indicated by figures, letters, or other marks or symbols.

In an aperture in the back plate, C, is secured a disk, H, provided with a pin, I, and having a depressed and perforated ratchet-wheel, J, and a slotted, recessed, and perforated cup, L, connected with it by a screw, N, in the manner hereinbefore described with reference to the front plate, A.

The rear plate, C, slides upon the center plate, B, and is kept in contact with the said plate B by the bar R and the screws S. The bar R is placed upon the plate B, within the recess of the front plate, A. The screws S pass through holes in the ends of the bar R, through short slots in the center plate, B, and screw into holes in the back plate, C. Washers T can be placed upon the screws S, within the slots of the plate B, to prevent the bar R and the plate C from being drawn so close together by tightening the screws S as to clamp the center plate, B, and prevent the back plate, C, from moving easily.

To the bar R are attached pins U, and to the center plate, B, is attached a pin, U', in such positions as to be at the outer side of and close to the rims of the cups L, so that the plate C cannot be slid back unless the slots of the cups L be in line with the said pins U U'.

To one of the cups L is attached a finger, V, which projects through the slot O of the said cup L so as to strike the latch W or a pin, X, attached to the said latch, and raise the latch out of contact with the bar R. The latch W is pivoted at one end to the center plate, B, and has a hook or shoulder formed upon its free end to engage with a rabbet or recess in the bar R and hold the said bar R, and with it the back plate, C, from sliding until the said latch is raised, so as to relieve the pins U from the strain.

The engaging end of the latch W is held against the edge of the bar R by a spring, Y, attached to the plate B, and which bears against the rear edge of the said latch W.

The ratchet-wheels J, and with them the disks H and cups L, are held in any position into which they can be turned, by pawls Z, pivoted to the inner sides of the plates A C, and which are held against the teeth of the said ratchet-wheels J by springs a, attached to the said plates.

In the drawings the pawls Z are represented as being so formed that the ratchet-wheels J can be turned in only one direction; but the said pawls can be so formed, if desired, as to allow the ratchet-wheels to be turned in either direction.

Upon one corner of the forward end of the center plate, B, is formed, or to it is rigidly attached, a screw, b, to enter a screw-hole in the end of the bow or shackle c. The screw

b is made with a right or left thread, according as it is attached to one or the other of the corners of the center plate, B, so that when the free end of the bow or shackle c is swung into a locking position its other end will be screwed up against the base of the screw b. Upon the free end of the bow or shackle c is formed a tenon, d, which, when the back plate, C, is drawn back, can be swung into and out of a slot, e, in the end of the center plate, B; but when the back plate, C, is pushed forward the tenon d cannot be swung out of the slot e of the said center plate. In the forward side of the tenon d is formed a cross-groove, f, to receive the end flange of the front plate, A, so that the bow or shackle c cannot be straightened and the tenon d drawn out of the slot e. The rear end of the center plate, B, projects, and in its rear side is formed a depression or recess, g, in the bottom of which is pivoted a disk, h. The disk h is made a little smaller than the recess g, and upon its edge is formed, or to it is attached, an arm, i, of sufficient length to project above the plate B and serve as a handle for turning the said disk. With this construction, when the padlock is locked the disk h is turned to bring the handle i against the end of the sliding back plate C, as shown in Fig. 1. A wax or other suitable seal is then placed in the recess g over the disk h. When thus arranged the back plate, C, cannot be slid back, even when unlocked, without first turning the handle i to the outer side of the recess g, and this cannot be done without breaking or marring the seal, so that it can be known when the seal is next examined whether the lock has been tampered with, even if it has not been opened, and the person having charge of the lock since the last examination can be held responsible. The recess g is covered to protect the seal from accidental injury by a plate, j, pivoted at one end to the outer part of the plate B in such a position that it can be swung over the recess g, where it is held in place by a pin attached to the plate B, and which enters a hole in the said guard-plate j, or by some other suitable fastening.

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

1. In a permutation-lock, the case constructed substantially as herein shown and described, and consisting of the slotted center plate, B, the front plate, A, connected with the center plate, B, by screws D, and the sliding back plate, C, connected with the center plate, B, by the bar R and screws S, whereby the said back plate can be moved to secure and release the bow or shackle, as set forth.

2. In a permutation-lock, the combination, with the stationary side plate A, the movable side plate C, and the center plate, B, having screw b and slot e, of the bow or shackle c, having a screw-hole in one end and a grooved tenon, d, at the other end, substantially as herein shown and described, whereby the said

bow can be fastened and released by moving the said side plate, as set forth.

3. In a permutation-lock, the combination, with the stationary side plate A; the movable side plate C, and the center plate, B, of one or more disks, H, having pins I, depressed ratchet-wheels J, having annular rows of perforations, the cups L, having slots O and annular rows of perforations, the spring-pawls Z a, and the pins U, substantially as herein shown and described, whereby the sliding side plate is held from moving until the slots of the said cups are brought into the line of movement of the said pins, as set forth.

4. In a permutation-padlock, the combination, with the plate C and cups L, of the plate B, having the pin U', and the bar R, having pins U U, as and for the purpose specified.

5. In a permutation-padlock, the latch W, pivoted at one end to plate B, and having a shoulder at the other end, in combination with the plate C and bar R, having a rabbet to engage said shoulder, as and for the purpose specified.

6. The combination, with the plate B, having a rearward projection and recess, g, adapted to receive a seal, of the disk h, pivoted in said recess and provided with an arm, i, extending above said plate, as and for the purpose specified.

ROBERT D. GREEN.

Witnesses:

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C. SEDGWICK.