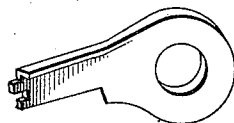
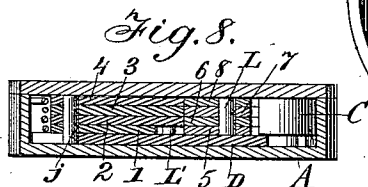
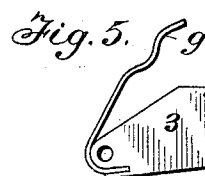
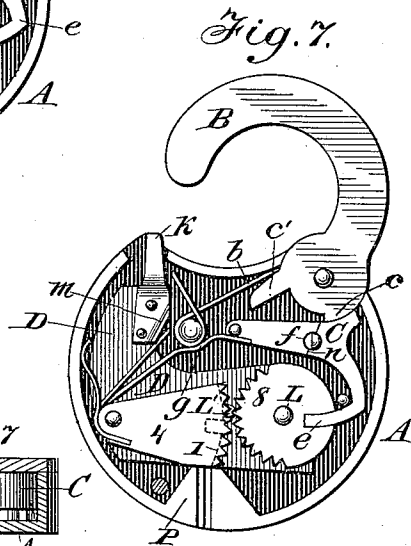
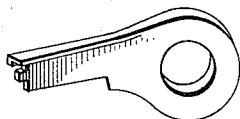
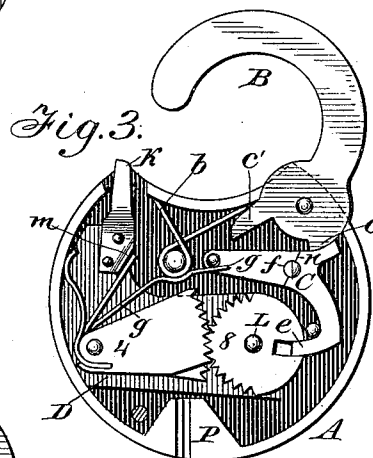
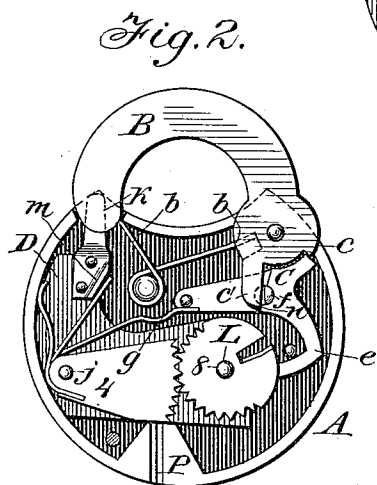
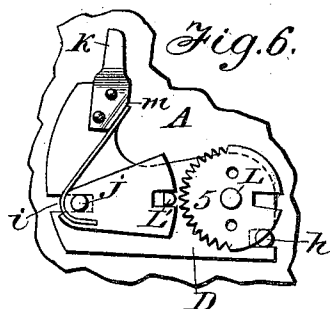
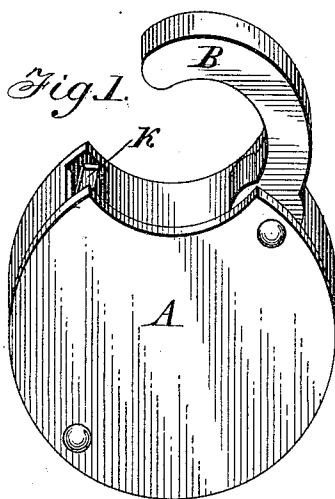
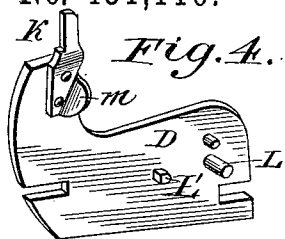


(No Model.)

W. D. DOREMUS.
PADLOCK.

No. 451,110.

Patented Apr. 28, 1891.



Witnesses:
G. F. Downing
S. G. Nottingham

Inventor.
Willard D. Doremus
By H. A. Seymour
Atty.

UNITED STATES PATENT OFFICE.

WILLARD D. DOREMUS, OF WASHINGTON, DISTRICT OF COLUMBIA, ASSIGNOR
TO THE CORBIN CABINET LOCK COMPANY, OF NEW BRITAIN, CON-
NECTICUT.

PADLOCK.

SPECIFICATION forming part of Letters Patent No. 451,110, dated April 28, 1891.

Application filed June 29, 1889. Serial No. 316,020. (No model.)

To all whom it may concern:

Be it known that I, WILLARD D. DOREMUS, of Washington, in the District of Columbia, have invented certain new and useful Improvements in Padlocks; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in padlocks, the object being to provide simple and convenient means for changing the combination, whereby a new combination is formed by the insertion of the key, as will be hereinafter more fully set forth, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in perspective of the lock with the hasp open. Fig. 2 is a view in elevation, showing the hasp closed and the front plate removed. Fig. 3 is a similar view showing the hasp open. Fig. 4 is a view of the sliding plate, which carries the circular sections of the tumblers. Fig. 5 is a view of one of the pivoted sections of a tumbler. Fig. 6 is a view of the sliding plate and pivotal section of the tumbler adjacent to the sliding plate. Fig. 7 is a view of the lock, showing the pivoted and circular sections of the tumblers separated; and Fig. 8 is a view in cross-section.

A represents a casing of the usual construction, and B the hasp pivoted to the case and provided on one face with a recess, within which one end of spring *b*, which opens the hasp, rests. The hasp is provided on its hub with a shoulder *c* and in advance of the shoulder with the finger *c'*, adapted to turn the locking-bolt C up against shoulder *c* and withdraw the tongue *e* of the locking-bolt out of the gatings or slots in the circular sections of the tumblers.

The locking-bolt C is pivoted on stud *f*, secured to the casing, with its locking end in close contact with the hub of the hasp and provided at its opposite end with a pin, against which spring *g*, secured to one of pivoted sections of the tumbler, bears for moving the locking end of the bolt away from

shoulder *c* and moving the tongue into the slots in circular sections of the tumblers.

The plate D, which carries the circular sections of the tumbler, rests solidly against the inner face of the casing, and is provided on one end with a slot for the short stud *h* and on its opposite curved end with a slot *i* for the long stud *j*, which latter is rigidly secured to the casing and carries the pivoted sections of the tumbler. The curved end of the plate is extended upwardly through the hasp-opening and terminates in a thumb-lever *k*, by which the plate can be slid inwardly or toward the tongue end of the locking-bolt.

The plate D carries at its inner end the cylindrical stud L, on which the movable sections of the tumbler are mounted, and at a point nearer its center with the short stud L', which latter is about equal in length to the thickness of the pivoted section 1 of the tumblers and is adapted to engage the outer free end of this tumbler when the plate is slid inwardly or to the right and hold the same until released by moving the tumbler upwardly until the stud registers with the slot therein.

All of the pivoted sections of the tumblers are mounted on the stud *j*. Section 1, as before stated, is provided at its free end with a single slot for entrance of the short stud L' on plate D, while sections 2, 3, and 4 are all provided with teeth adapted to engage teeth on the circular sections 6, 7, and 8. Pivoted sections 1 and 2 are each provided with a short spring, the free ends of which bear against the shoulder *m* of the plate D and tend to turn the free toothed ends of the sections downwardly toward the bottom of the casing and move the sliding plate D to the left, while pivoted section 3 has a longer spring *g*, which bears against the pin on the dog C and tends to move the locking end of the dog away from the shoulder *c* on the hub of the hasp and move the pivoted section 3 toward this bottom of the lock, and section 4 a spring which bears against the casing and tends to force section 4 toward the bottom of the lock. Thus it will be seen that when the sliding plate carrying the cylindrical sections of the

tumbler is moved to the right, so as to disengage the teeth of the cylindrical and pivoted sections, the springs instantly throw all of the pivoted sections downwardly until they
5 come in contact with the key-guard formed in the bottom of the casing.

Section 5 of the cylindrical sections of the tumblers is simply a washer of the thickness of its corresponding pivoted section 1, while
10 the other cylindrical sections 6, 7, and 8 are provided with teeth extending part way round and with gatings or slots for the tongue on the dog.

The hasp is provided at its free end with a
15 recess, which latter when closed fits over the thumb-piece and conceals the same, and consequently prevents the plate D from being shifted while the hasp is closed. Again, when the hasp is closed the tongue on the locking-
20 bolt is in contact with the peripheries of the circular sections of the tumblers, and also assists in holding the plate against endwise movement.

The casing is provided with a key-slot, the
25 inside of the casing being thickened at this point to form a guard P. The key-slot is directly under the tumblers and near the free ends thereof, and hence the insertion of the proper key moves the pivoted sections of the
30 tumblers and the pivoted sections in turn operate their corresponding circular sections until the slots or gatings in the circular sections 6, 7, and 8 align with the tongue on the
35 locking-bolt. After the sections 6, 7, and 8 have been turned so that their slots are in line the spring *g*, before referred to, turns the locking-bolt and releases the hasp, which
40 flies open. To change the combination the thumb-lever is moved to the right until the short stud *L'* on the plate D leaves the slot
45 in section 1, and permits said section to fall onto the key-guard. The stud now rests against the edge of section 1 and absolutely prevents the plate moving back to its normal position. When the hasp is open, the
50 tongue on the locking-bolt extends only a short way of the slots in the sections 6, 7, and 8, the remaining or unoccupied portions of the slots permitting the plate D to be
55 moved to the right and the sections 6, 7, and 8 to be moved well in on the tongue. The movement of the plate carries with it all the circular sections, and hence disengages the
60 teeth and permits all the pivoted sections to fall onto the key-guard. A new key is now introduced, and the wards thereof engaging the pivoted sections of the tumblers moves them
65 all upwardly in their proper relative positions until the slot in section 1 reaches the short stud *L'* on the plate D. This prevents
farther inward movement of the key, releases the plate D, and allows it to slide to the left and carry with it the circular sections of the
tumblers until the teeth of the latter engage
the teeth of the corresponding pivoted sections. Now by turning the hasp the locking-bolt is turned on its pivot until the tongue

leaves the slot and allows the springs on the
pivoted sections to force the pivoted sections
70 down onto the guard and turn the circular sections. The locking-bolt is cut away on one face, leaving an oblique shoulder *n*, against which the finger *c'* of the hasp contacts when
75 the latter is closed, and it is this engagement of the finger and shoulder *n* that turns the bolt and withdraws the tongue from the slots and moves the locking end into contact with
shoulder *c*.

It is evident that numerous slight changes
80 in the construction and relative arrangement of parts might be resorted to without departing from the spirit of my invention, and hence I would have it understood that I do not confine myself to the exact construction shown
85 and described, but consider myself at liberty to make such changes as fairly fall within the spirit and scope of my invention.

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

1. In a combination-lock adapted to have
its combinations changed by the use of a key,
the combination of the tumblers in two separable sections, a movable plate carrying the
95 circular sections, and devices for holding the sections of the tumblers together, substantially as set forth.

2. The combination of a movable plate and
the circular parts of the tumblers carried thereby, the other parts of the tumblers being pivoted to the case, of a tongue pivoted to the casing and adapted to enter the gatings in the
100 circular sections when the latter have been turned to register therewith by the movement of the pivoted sections, substantially as set
105 forth.

3. The combination, with a movable plate
and circular sections of the tumblers carried thereby, of sections of the tumblers pivoted
110 to the casing, a tongue pivoted to the casing and adapted to enter slots in the circular sections of the tumblers, and devices for holding the sections of the tumblers in contact, substantially as set forth.

4. In a combination-lock adapted to have
115 its combinations changed by the use of a key, the combination, with a movable plate having a stud and a series of circular tumbler-sections mounted on said stud, of the pivoted
120 sections mounted on a stud attached to the casing, means whereby the circular sections mounted on the plate can be moved away from the pivoted sections, devices for holding the sections of the tumblers together, and
125 springs for forcing the pivoted sections downwardly toward the key-slot, substantially as set forth.

5. The combination, with a movable plate
and the circular sections of the tumblers
130 mounted thereon, of the pivoted sections mounted on a stud secured to the casing, springs for moving the pivoted sections toward the key-slot, and a tongue pivoted to the casing and adapted to enter slots in the

circular sections of the tumblers, substantially as set forth.

6. In a combination-lock adapted to have its combination changed by the use of a key, the combination, with the movable plate carrying a series of circular tumbler-sections, of the pivoted tumbler-sections mounted on a stud secured to the casing, and a stop for limiting the downward movement of the tumbler-sections, substantially as set forth.

7. The combination, with a hasp and a locking-bolt, of a movable plate carrying a series of circular tumbler-sections, and a series of tumbler-sections pivoted to the casing, substantially as set forth.

8. The combination, with a hasp having a shoulder and a locking-bolt having an end adapted to engage said shoulder, of tumblers made in sections, one series of sections adapted to engage the bolt for holding the latter in contact with the shoulder on the hub, substantially as set forth.

9. The combination, with a sliding plate having a short stud and carrying circular sections of tumblers, of pivoted tumbler-sections, one of which is provided with a slot adapted to receive the stud on the sliding plate, substantially as set forth.

10. The combination, with a casing, sliding plate having a thumb projecting through the casing, and tumblers, each composed of a piv-

oted and circular section, one series of said sections being mounted on the plate, of a hasp having a recessed end adapted to receive the thumb-lever, substantially as set forth.

11. In a changeable-combination key-lock, the combination of a key for actuating the tumblers in changing the combination and in unlocking the lock, and the tumblers in parts geared together at all times except when the combination is to be changed, substantially as set forth.

12. In a changeable-combination key-lock, the combination, with the tumblers in parts normally geared together and means for separating the tumbler parts to allow the combination to be changed, of a device for retaining the tumbler parts in a separated relation and a key for actuating said device to allow the tumbler parts to be restored to their normal operative condition and for changing the combination and for actuating the lock when the combination has been changed, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

WILLARD D. DOREMUS.

Witnesses:

GEO. W. CORBIN,
FRANK W. MIX.