

(No Model.)

W. E. SPARKS.
PADLOCK.

No. 521,994.

Patented June 26, 1894.

Fig. 1

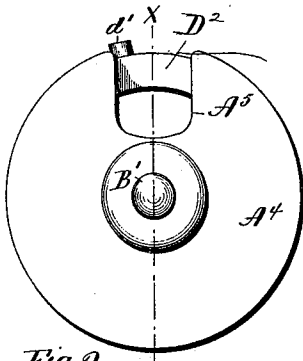


Fig. 3

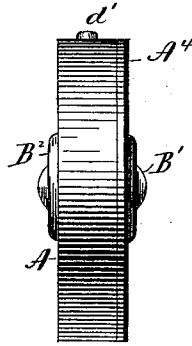


Fig. 9

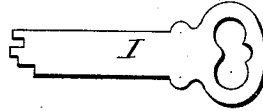


Fig. 2

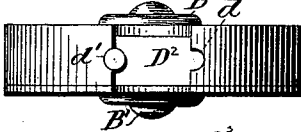


Fig. 4

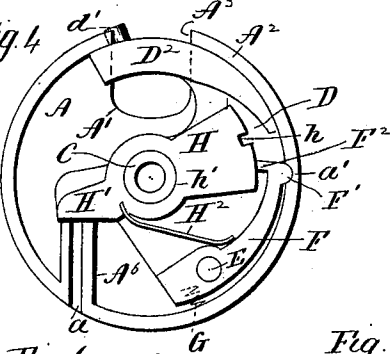


Fig. 5

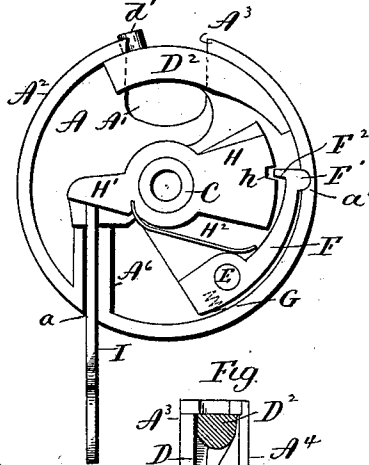


Fig. 6

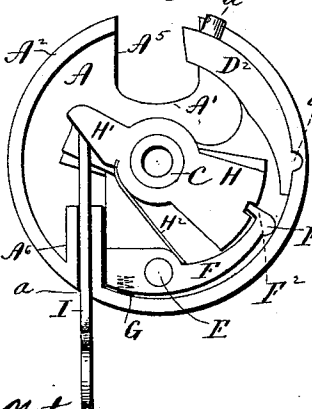


Fig. 7

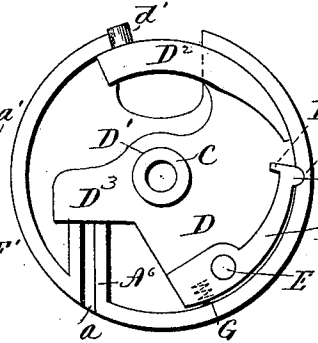
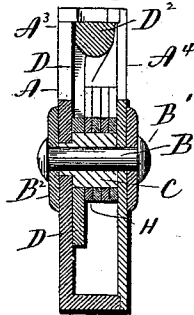


Fig. 8



Witnesses.
J. A. Shumway
William D. Kelley

Wm. E. Sparks
Inventor
By Atty.
Earle Seymour

UNITED STATES PATENT OFFICE.

WILLIAM E. SPARKS, OF NEW HAVEN, CONNECTICUT, ASSIGNOR TO THE
SARGENT & COMPANY, OF SAME PLACE.

PADLOCK.

SPECIFICATION forming part of Letters Patent No. 521,994, dated June 26, 1894.

Application filed February 9, 1894. Serial No. 499,672. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM E. SPARKS, of New Haven, in the county of New Haven and State of Connecticut, have invented a new Improvement in Padlocks; and I do hereby declare the following, when taken in connection with accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a view in side elevation of a padlock constructed in accordance with my invention; Fig. 2, a plan view thereof; Fig. 3, an edge view thereof; Fig. 4, a view of the lock with its cap or cover removed and showing its parts in their locked adjustment; Fig. 5, a similar view showing the locking tumblers as operated upon by the lock-key to bring their racking notches into line with each other and into line with the inwardly projecting finger of the racking-dog; Fig. 6, a similar view showing the lock in its unlocked adjustment; Fig. 7, a similar view of the lock with all of its tumblers removed; Fig. 8, a view of the lock in transverse section on the line $x-x$ of Fig. 4; Fig. 9, a detached plan view of the lock-key.

My invention relates to an improvement in that class of padlocks in which the bolt is automatically locked when manually closed, the object being to produce a simple, compact, durable and effective lock of the class described.

With these ends in view, my invention consists in a lock having certain details of construction and combinations of parts as will be hereinafter described and pointed out in the claims.

In carrying out my invention I employ a flat, cylindrical case, comprising a circular bottom wall A, having a wide, radial open staple-slot A', and also comprising a circular flange A², containing a staple opening A³, coinciding with the said slot. With this case I employ a circular cap or cover A⁴, corresponding in diameter to the diameter of the case, and containing a wide, open radial staple-slot A⁵, corresponding to the slot A' before mentioned. As herein shown, the cover is secured to the case by means of a heavy rivet

B, constructed at one end with a large flat head B', and receiving at its opposite end a corresponding washer B², that end of the rivet which projects through the washer being headed down thereupon. Any other means, however, may be employed to secure the cap to the case. The said rivet passes through a hollow post C, made independent of and secured to the center of the bottom wall of the case, as herein shown, but if preferred it may be made integral with the said bottom wall of the case. In the bottom of the case and pivoted on the said hub, I locate a bolt-plate D, which is constructed with a circular opening D' to adapt it to fit over the hub on which it has limited rotary movement. This plate is provided upon its edge with a segmental bolt D², the outer face of which conforms in curvature to the curvature of the inner periphery of the flange A² of the case, and which when the plate is in its closed position, extends across the staple opening A³ in the flange of the case, and hence closes in the outer ends of the staple slots A', A⁵ in the bottom wall of the case, and in the cover thereof. The extreme outer end of the said bolt is furnished with a short outwardly projecting operating-pin d', which is received by shallow notches or grooves d d (see Fig. 2) formed in the ends of the flange A², and separated from each other by the width of the staple opening A³ located therein. The said plate D is also constructed with an operating finger D³, which is arranged in line with the key-guide A⁶, located within the case, and opening at its outer end into a transverse slot a formed in the flange A² to receive the key I. The bolt-plate is provided near its lower edge with a pin E, which carries a racking dog F, hung between its ends on the said pin so as to swing in the plane of the plate, the outer edge of the said dog conforming in curvature to the curvature of the inner periphery of the flange A² of the case. The inner end of the said dog is counter-bored to receive a spiral spring G, the outer end of which bears against and rides upon the inner periphery of the said flange A². The opposite end of the said dog is constructed with an outwardly projecting curved or beveled transversely arranged locking shoulder F', which

when the plate is swung into its closed position, takes into a transverse locking groove a' formed in the inner periphery of the flange A^2 of the case. The said end of the dog is also constructed with an inwardly projecting racking finger F^2 , which takes into the differentially arranged racking notches h of the pivoted tumblers H , each of which has a central opening h' adapting it to fit over the hub C , operating-arm H' , for engagement by the lock-key I , and an operating spring H^2 , the outer end of which engages with the inner face of the dog F .

Normally the bolt-plate D will be maintained in its closed position in which the bolt D^2 will close the open outer ends of the staple slots A' , and A^5 , and the staple-opening A^3 in the flange A^2 , by means of the dog F , the locking shoulder F' of which will be entered into the locking groove a' in which position it will be positively held by the engagement of the adjacent edges of all of the tumblers with the inwardly projecting finger F^2 of the dog. When, however, the key is introduced into the lock, it will first act upon the operating-fingers H' of all of the tumblers, so as to turn them until all of their racking notches h are in line, as shown in Fig. 5, after which the inward pressure of the key against the operating-finger D^3 of the bolt-plate will overcome the force of the spring G , and cause the beveled locking lug F' to ride out of its groove a' , the racking finger of the dog at the same time moving inward into the aligned racking notches of the tumblers. The bolt-plate having thus been unlocked, may be thrown into its open position, as shown in Fig. 6, either by the continued inward movement of the key, or by the fingers which are engaged with the pin d' for the purpose. The bolt is now left free to be thrown back into its closed position by means of its pin d' , and as soon as it reaches that position, the spring G acts to re-enter the locking lug of the dog into the locking groove in the flange of the case. When this occurs, the racking finger of the dog will move out of the racking notches of the tumblers, the springs of which will immediately turn them so as to throw the said notches out of alignment, and thus automatically lock the dog in its closed position.

It is obvious that in carrying out my invention some changes in the construction herein

shown and described may be made, and I would therefore have it understood that I do not limit myself to the same, but hold myself at liberty to make such changes as 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 Patent, is—

1. In a padlock, the combination with the case and cover thereof, of a bolt-plate pivoted within the case, adapted to be operated upon by the lock-key, and provided with a bolt, of a racking-dog pivoted upon the said plate and constructed at one end with an outwardly projecting locking lug arranged to take into a locking groove formed in the case, and at the same end with an inwardly projecting racking-finger; a series of tumblers pivoted within the case concentric with the plate and each having an operating-face for engagement with the lock-key, and a racking-notch to receive the finger of the racking-dog when the same is in its open position, substantially as described.

2. In a padlock, the combination with a circular case and cap, each having a radial open staple-opening, of a bolt-plate pivoted in the center of the case, constructed with an operating-arm adapted to be engaged by the lock-key, and provided with a bolt which moves back and forth within the case, and is furnished with an outwardly projecting operating pin; a spring-actuated racking-dog carried by the bolt-plate, arranged to swing in the plane thereof, and provided with an outwardly projecting locking lug arranged to take into a locking-groove formed in the flange of the case, and with an inwardly projecting racking-finger; and a series of tumblers pivoted concentric with the bolt-plate and each having an operating-arm adapted to be engaged by the key, and a racking-notch to receive the racking-finger of the dog, substantially as described.

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

W. E. SPARKS.

Witnesses:

ELLIOTT LITTLEJOHN,
WILLIAM T. COOKE.