No. 751,528. PATENTED FEB. 9, 1904.

W. A. MATROLIS.

PADLOCK.

APPLICATION FILED OCT. 29, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 1.

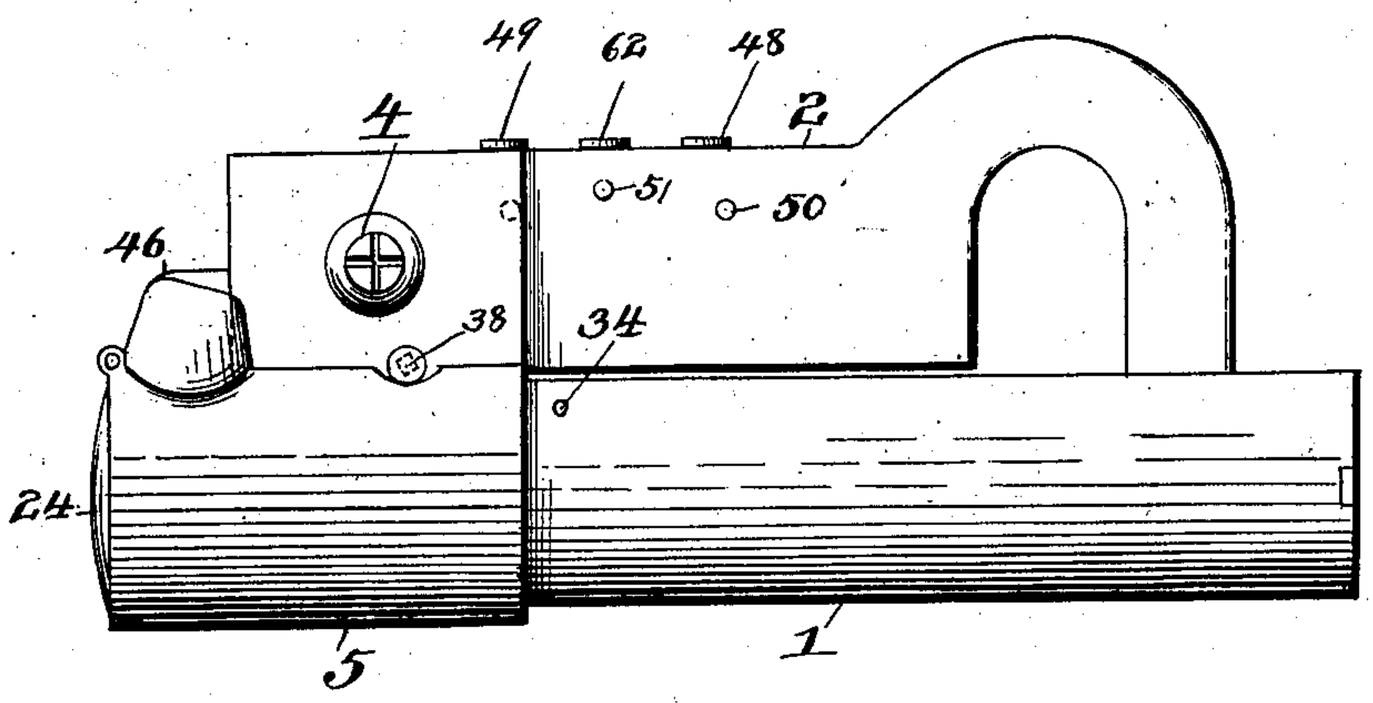


Fig. 2.

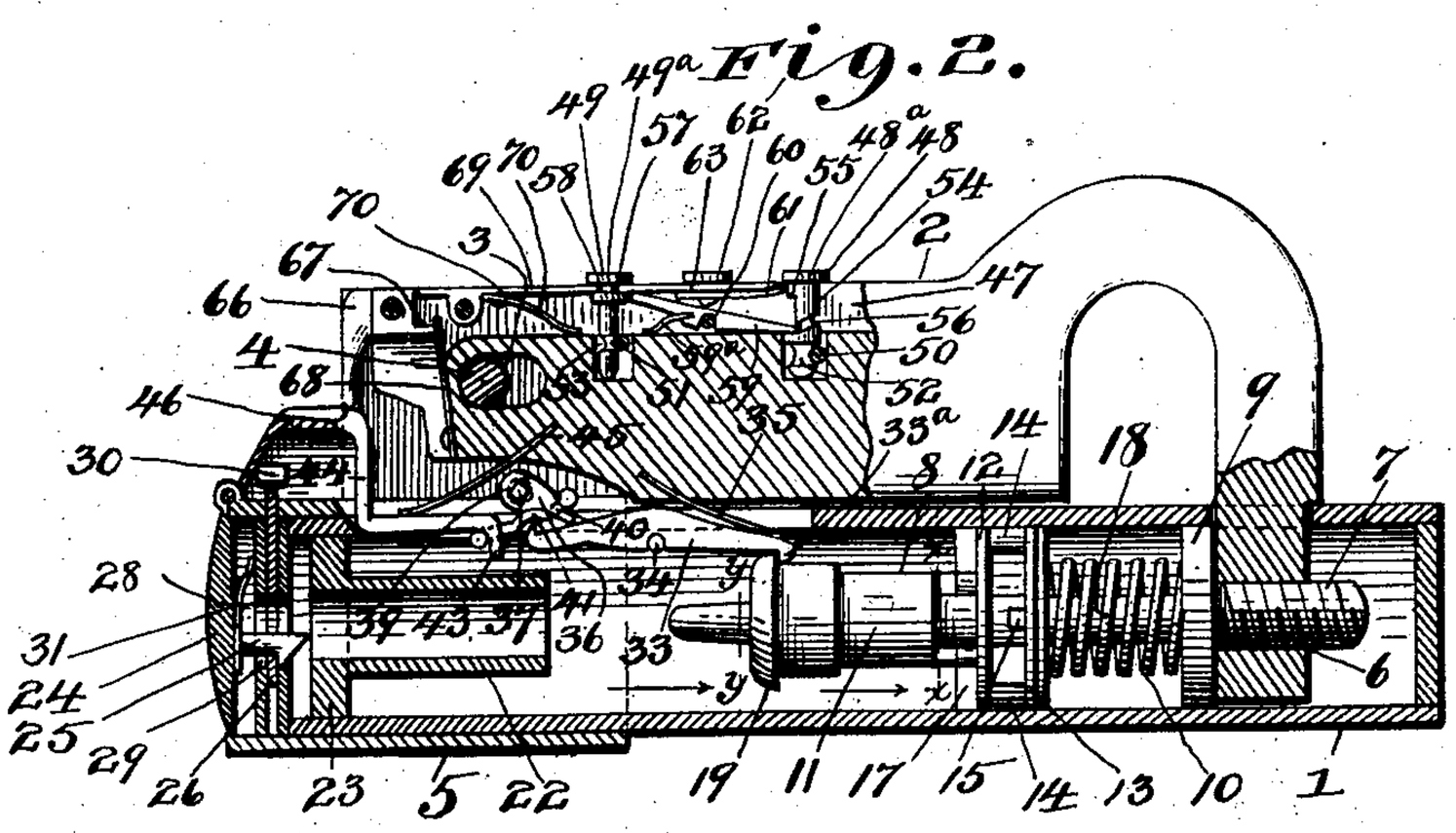
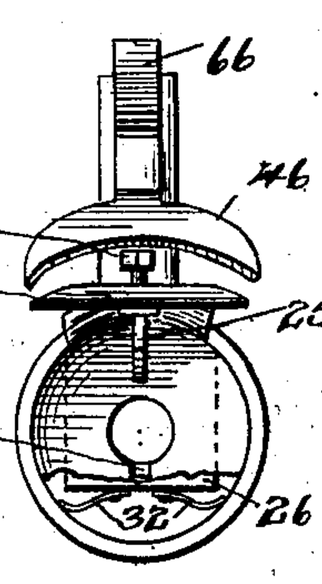


Fig. 4.



Witnesses

Jas. A. Blackwood

V. H. Sandyfoot Jr.

Inventor

William A. Matrolis

by D. A. Gurick

Attorney

No. 751,528. PATENTED FEB. 9, 1904.

W. A. MATROLIS.

PADLOCK.

APPLICATION FILED OCT. 29, 1903.

NO MODEL. 2 SHEETS—SHEET 2.

Fig. 3.

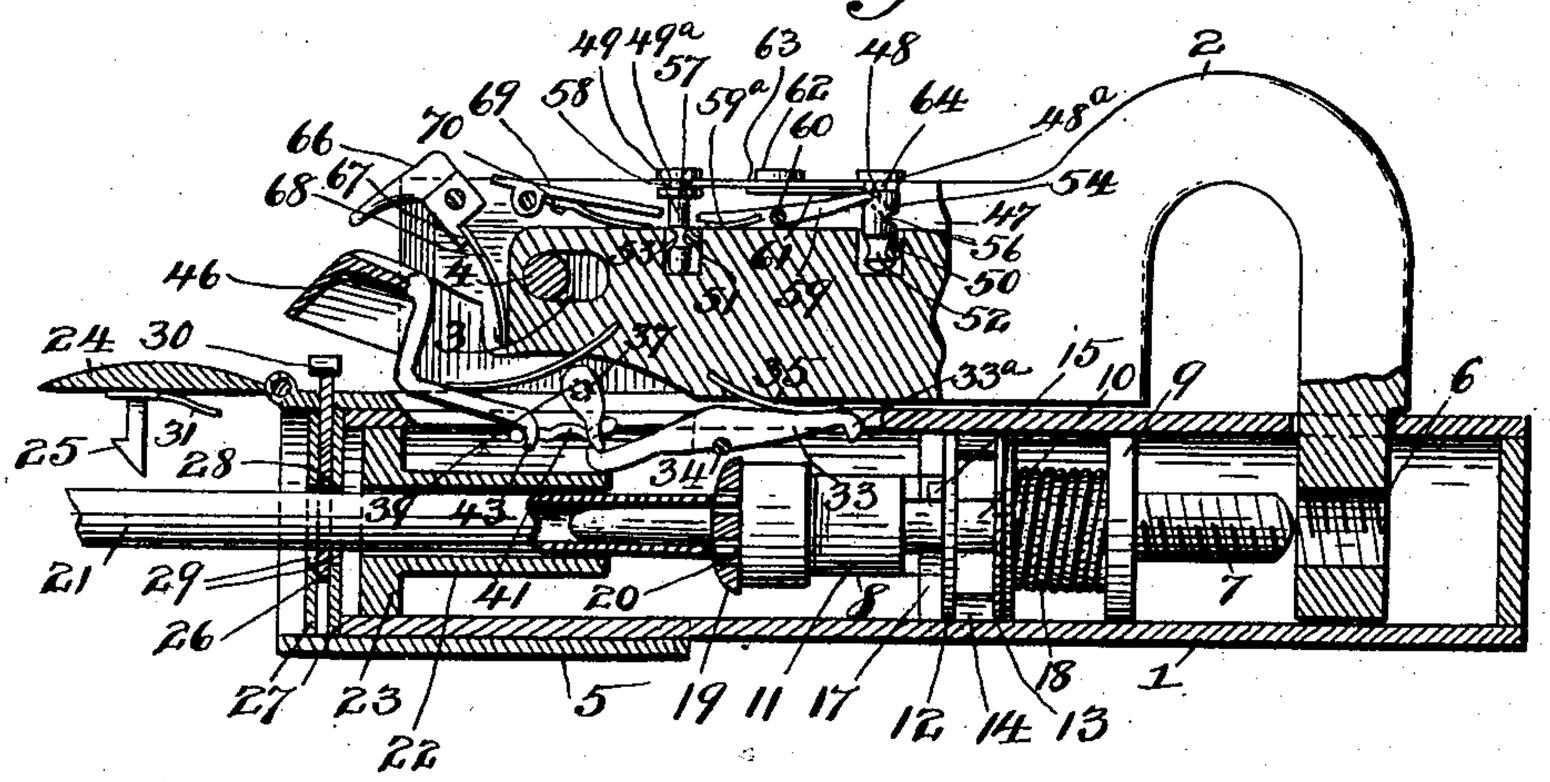


Fig. 5.

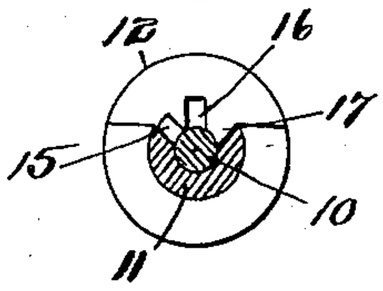


Fig. 6.

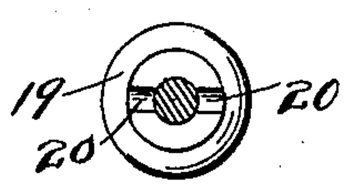


Fig. 8.

Fig. 7.

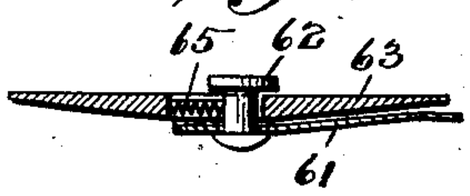


Fig. 9.

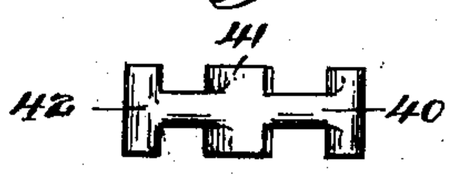
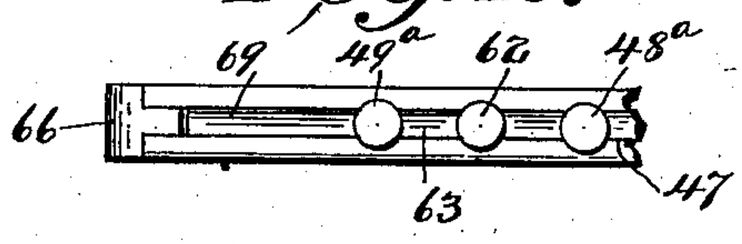


Fig. 10.



Witnesses

Jas. H. Blackwood

C. Randolph, Jr.

Inventor

William A. Matrolis

by A. M. Gooch

Attorney

No. 751,528. Patented February 9, 1904.

UNITED STATES PATENT OFFICE.

WILLIAM A. MATROLIS, OF CUMBOLA, PENNSYLVANIA.

PADLOCK.

SPECIFICATION forming part of Letters Patent No. 751,528, dated February 9, 1904.

Application filed October 29, 1903. Serial No. 179,039. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. MATROLIS, a citizen of the United States, residing at Cumbola, in the county of Schuylkill and State of Pennsylvania, have invented certain new and useful Improvements in Padlocks, of which the following is a specification.

My invention relates to padlocks, and has for its object to provide a lock that is difficult to unlock except to one familiar with its construction.

My lock consists of a cylindrical casing and a shackle pivotally mounted thereon. The end of the shackle that enters the casing is provided with a screw-threaded bore to receive the end of the lock-bolt, which is provided with screw-threads to fit said threaded bore. At the end of the casing through which the key is inserted is provided a door or keyhole-guard that may be closed over the keyhole and cannot be opened except by one familiar with the lock, the opening of the door depending upon the manipulations of buttons on the shackle and various other parts, that will be fully explained hereinafter.

Another feature of my lock is a catch to prevent the manipulation of the locking-bolt when in a locked position, said catch being operated by the same parts that are manipulated to open the door over the keyhole, so that should the door be broken open in an attempt to pick the lock the latch will still be inoperative.

The construction and advantages of my invention will fully appear hereinafter and by reference to the accompanying drawings, in which—

Figure 1 is a side view of my lock; Fig. 2, a view showing the cylinder in section and the shackle partly broken away to disclose the working parts of the lock, the device being in a locked position; Fig. 3, a similar view showing the parts in an unlocked position; Fig. 4, an end view showing the keyhole-guard in an open position; Fig. 5, a view on the line *x x* of Fig. 2 looking in the direction of the arrow; Fig. 6, a view on the line *y y* of Fig. 2 looking in the direction of the arrow; Fig. 7, an enlarged detail view in section of catch; Fig. 8, an enlarged end view of one of the pins; Fig. 9, an enlarged view of link, and Fig. 10 a top view of a portion of the shackle.

In the drawings similar reference characters indicate corresponding parts throughout the several views.

1 represents a tubular casing, made preferably of steel, so as resist breaking, and 2 the shackle, pivotally mounted, by means of a slot 3 and pin 4, to a strap 5 shrunk on said casing 1. It is understood that the slot 3 permits a slight play of the shackle when being inserted in and withdrawn from the casing 1. The end of shackle 2 is provided with a screw-threaded bore 6 to receive the screw-threaded end 7 of the lock-bolt 8 in locking. Behind said screw-threaded end 7 is a shoulder 9, that fits snugly the bore of casing 1 and serves to guide the end 7 in projecting the bolt.

10 represents a spindle secured to or integral with the shoulder 9. Mounted on spindle 10 is a sleeve 11, having at the end adjacent to shoulder 9 a shoulder 12, that also fits snugly the bore of casing 1.

13 represents a ring secured to shoulder 12 and spaced apart therefrom by means of blocks 14.

15 represents a pin on spindle 10 that normally bears against ring 13, but which in operating the bolt passes through hole 16 in shoulder 12 and rests against either side of recess 17, formed in shoulder 12 and the adjacent end of the barrel of sleeve 11.

18 represents an expansible coil-spring mounted between shoulder 9 and ring 13. The outer end of sleeve 11 is formed with a shoulder 19, the surface of said end being rounded at its edges.

20 represents notches in the end of sleeve 11 to receive projections on a suitable key 21. In the form of key shown in the drawings there is provided two projections; but it will readily appear that the number may be varied as desired, so that different keys may be required for various locks. It will also be apparent that the form of key may be varied in other ways—as, for instance, being provided with spurs or projections on its sides and having the keyhole and notches in the end of the bolt formed to correspond to such projections.

22 represents the keyhole, which consists of

a tube having a flange 23, that is secured to the bore of casing 1.

From the above description it will be understood that when the lock-bolt is in the position shown in Fig. 2 the sleeve 11 will rotate on the spindle 10. To retract the bolt, the key after being inserted in the casing and the projections 21 fitted into notches 20 is pushed inward, sliding sleeve 11 on spindle 10 against the resilience of spring 18. The inward movement of the key will be arrested by the shoulder 12 coming in contact with the pin 15. The key is then turned on its axis until the pin 15 enters hole 16, when the sleeve is again pushed inward a sufficient distance to allow the pin to pass through said hole and then turned in the direction to unscrew the end 7 from bore 6, the pin 15 contacting with the side of recess 17 and causing the whole bolt to turn.

24 represents the keyhole-guard hinged to strap 5 and having a catch 25 secured thereto, which is adapted to be engaged by a plate 26, slidably mounted between disks 27, secured to the inner side of strap 5, said disks 27 and plate 26 being perforated in alinement with the keyhole 22, as shown at 28, the lower side of the perforations in the disk being notched, as shown at 29, to receive the end of catch 25. The upper end of plate 26 is formed as a pin 30 to depress the plate when it is desired to open the door forming the keyhole-guard 24, 31 representing a spring to throw the door outward when the catch 25 is released.

32 represents springs to raise the plate 26 when pressure on pin 30 is released.

33 represents a lever-catch fulcrumed on rivet 34, secured in casing 1 and having its end 33^a adapted when in a normal position to engage shoulder 19, being held in this position by means of leaf-spring 35, secured in shackle 2.

36 represents a dog having a rectangular bore 37 in which is mounted the rectangular pin 38, inserted in circular holes 39 in strap 5. The free end of dog 36 is forked and has the narrow portion 40 of link 41 seated therein, while the other narrow portion 42 of said link 41 is inserted in the forked end 43 of angular lever 44, the ends of said forked portion 43 being bent toward each other slightly, so as to hold the narrow portion 42 in place. Said angular lever is fulcrumed by means of leaf-spring 45, mounted in shackle 5, and has its outer end formed with a hood 46, that covers the pin 30 when in its normal position.

It will be understood from this description that when the outer end of lever 44 is raised the dog 36 is drawn along the top of lever-catch 33, thus raising its end 33^a out of engagement with the shoulder 19, so as to permit the sleeve 11 to slide on spindle 10, as hereinbefore described in operating lock-bolt 8. At the same time hood 46 will be raised, so that the head of pin 30 is exposed, and it may be depressed, so as to open the guard 24 to permit insertion of the key.

In order to prevent raising lever 44 and hood 46 except by one familiar with the mechanism of the lock, I provide a securing means therefor, which is hereinafter described. The top and end of shackle 5 is slotted, as shown at 47, and mounted therein are two pins 48 and 49, held in place by rivets 50 and 51, respectively, that ride in circumferential grooves 52 and 53 in said pins. The end of said pins that protrude from the top of the shackle are formed with buttons 48^a and 49^a, respectively. The pin 48 is provided with a barrel portion 54, having one segment thereof recessed, as shown at 55, while the other segment has a spiral groove 56 therein, beginning at one side at the bottom of said recess and ending at the other side at the top thereof. The other pin 49 is formed with a flange 57, spaced a short distance apart from the head 49^a and leaving a circumferential groove 58 therein for the purpose hereinafter set out, the flange 57 being provided with a notch 57^a.

59 represents a lever fulcrumed on rivet 60, having one end riding in the groove 56 and recess 55 in pin 48, while the other end is adapted to seat in notch 57^a when the parts are in the position shown in Fig. 2.

59^a is a spring to hold the lever in the locking position shown in Fig. 2.

61 represents a catch for holding pin 48 from turning which is secured to the shank of button 62, which is slidably mounted in bar 63, mounted in groove 58 and under button 48^a. When in a locked position, catch 61 is seated in a notch 64 in pin 48 and prevents it from turning; but when the button 62 is pressed toward button 49^a the end of the catch leaves notch 64, and the pin may be rotated.

65 represents a coil-spring to normally hold the catch in engagement with notch 64.

66 represents a dog pivotally mounted on the end of shackle 5 and having a spur 67 thereon against which bears a spring 68 to normally hold it in the position shown in Fig. 3.

69 represents a lever-catch which normally engages the rear side of dog 66, as shown in Fig. 2, and when in said position its other end rides in groove 58.

70 represents a spring to hold the lever in the position shown in Fig. 2.

The operation of this part of the lock is as follows: The button 62 is first pressed toward button 49^a, which, as stated above, releases pin 48, and by turning button 48^a lever 59 is actuated, so as to cause its end to leave notch 57^a, and pin 49 is thus released to rotation. When the pin 49 is turned so that notch 57^a is directly beneath the end of lever 69, said lever may be depressed, so as to disengage its other end from dog 66. When so released, spring 68 throws the end of dog 66 upward, and the parts just described will be in the po-

sitions shown in Fig. 3, and the lever 44 and hood 46 may be raised.

To resecure the parts just described, the dog 66 is swung to the position shown in Fig. 2. The spring 70 will then lift the end of lever 69 upward through notch 57ª into groove 58, while its other end bears against said dog. The pin 48 is then turned to the position shown in Fig. 2, which releases lever 59 to the action of spring 59ª, which raises its end against the flange 57. Then when pin 49 is turned the end of lever 59 will enter notch 57ª, and the device will be in the position shown in Fig. 2.

It will of course be understood that the buttons 48ª and 49ª may be marked so as to tell when they are in the proper positions to lock and unlock the parts.

Having thus described my invention, what I claim is—

1. In a padlock, a shackle suitably mounted, a lock-bolt to engage said shackle, a sleeve slidably mounted on said lock-bolt, and means to prevent said sleeve from sliding, substantially as shown and described.

2. In a padlock, a shackle suitably mounted, a lock-bolt to engage said shackle, a sleeve slidably and revolubly mounted on said lock-bolt, and means to prevent said sleeve from sliding, substantially as shown and described.

3. In a padlock, a shackle suitably mounted, a lock-bolt to engage said shackle having a screw-threaded end, a sleeve slidably and revolubly mounted on the lock-bolt, and means to prevent said sleeve from sliding, substantially as shown and described.

4. In a padlock, a shackle suitably mounted, a lock-bolt to engage said shackle, a sleeve slidably mounted on said lock-bolt, and a catch adapted to engage said sleeve to prevent it from sliding, substantially as shown and described.

5. In a padlock, a shackle suitably mounted, a lock-bolt to engage said shackle, a sleeve slidably and revolubly mounted on said lock-bolt, and a spring-actuated lever-catch adapted to engage said sleeve to prevent it from sliding, substantially as shown and described.

6. In a padlock, a shackle suitably mounted, a lock-bolt to engage said shackle having a screw-threaded end and a pin intermediate of its ends, a sleeve slidably and revolubly mounted on said lock-bolt having a recessed and perforated shoulder to receive said pin, and means to prevent said sleeve from sliding, substantially as shown and described.

7. In a padlock, a keyhole-guard, a catch to secure said guard in an operative position, means to conceal the operative portions of said catch, and means to secure said concealing means against displacement, substantially as shown and described.

8. In a padlock, a keyhole-guard, a catch to secure said guard in an operative position, a hood adapted to cover the operative portions of said catch, and means to secure said hood in a closed position, substantially as shown and described.

9. In a padlock, a keyhole-guard, a spring-actuated catch to hold said guard in an operative position, means for covering the operative portions of said catch, and concealed devices for holding said covering means in position, substantially as shown and described.

10. In a padlock, a keyhole-guard, a spring-actuated catch to hold said guard in an operative position, a hood adapted to cover the operative portions of said catch, and concealed means to hold said hood in an operative position, substantially as shown and described.

11. In a padlock, a shackle suitably mounted, a lock-bolt to engage said shackle, a sleeve slidably mounted on said lock-bolt, a catch adapted to engage said sleeve to prevent it from sliding, a pivoted dog to actuate said catch, a keyhole-guard, a catch to hold said guard in an operative position, a hood to cover the operative portions of said catch, said hood being extended to form a lever and connected with said pivoted dog, and concealed means to prevent movement of said hood and lever, substantially as shown and described.

12. In a padlock, a cylindrical casing, a shackle pivoted thereon and having a screw-threaded bore in its free end adapted to enter said casing, a lock-bolt having a threaded end, a sleeve slidably mounted on said lock-bolt, a catch adapted to engage said sleeve to prevent it from sliding, a pivoted dog to actuate said catch, a keyhole-guard, a catch to hold said guard in an operative position, a hood to cover the operative portions of said catch, said hood being extended to form a lever and connected with said pivoted dog, and concealed means contained in said shackle to prevent movement of said hood and lever, substantially as shown and described.

13. In a padlock, a cylindrical casing, a shackle pivoted thereon and having a screw-threaded bore in its free end adapted to enter said casing, a lock-bolt having a threaded end, a sleeve slidably mounted on said lock-bolt, a catch adapted to engage said sleeve to prevent it from sliding, a pivoted dog to actuate said catch, a keyhole-guard, a catch to hold said guard in an operative position, a hood to cover the operative portions of said catch, said hood being extended to form a lever and connected with said pivoted dog, a spring-actuated dog pivotally mounted in the shackle to hold said hood in a closed position, a lever to hold said dog in an operative position, and concealed means to prevent the operation of said lever, substantially as shown and described.

In testimony whereof I hereto affix my signature in the presence of two witnesses.

WILLIAM A. MATROLIS.

Witnesses:
B. J. MURRAY,
SAMUEL HYNES.