(No Model.)

W. E. DYER & F. SOLEY.

PADLOCK.

No. 572,653. Patented Dec. 8, 1896.

Fig. 1.

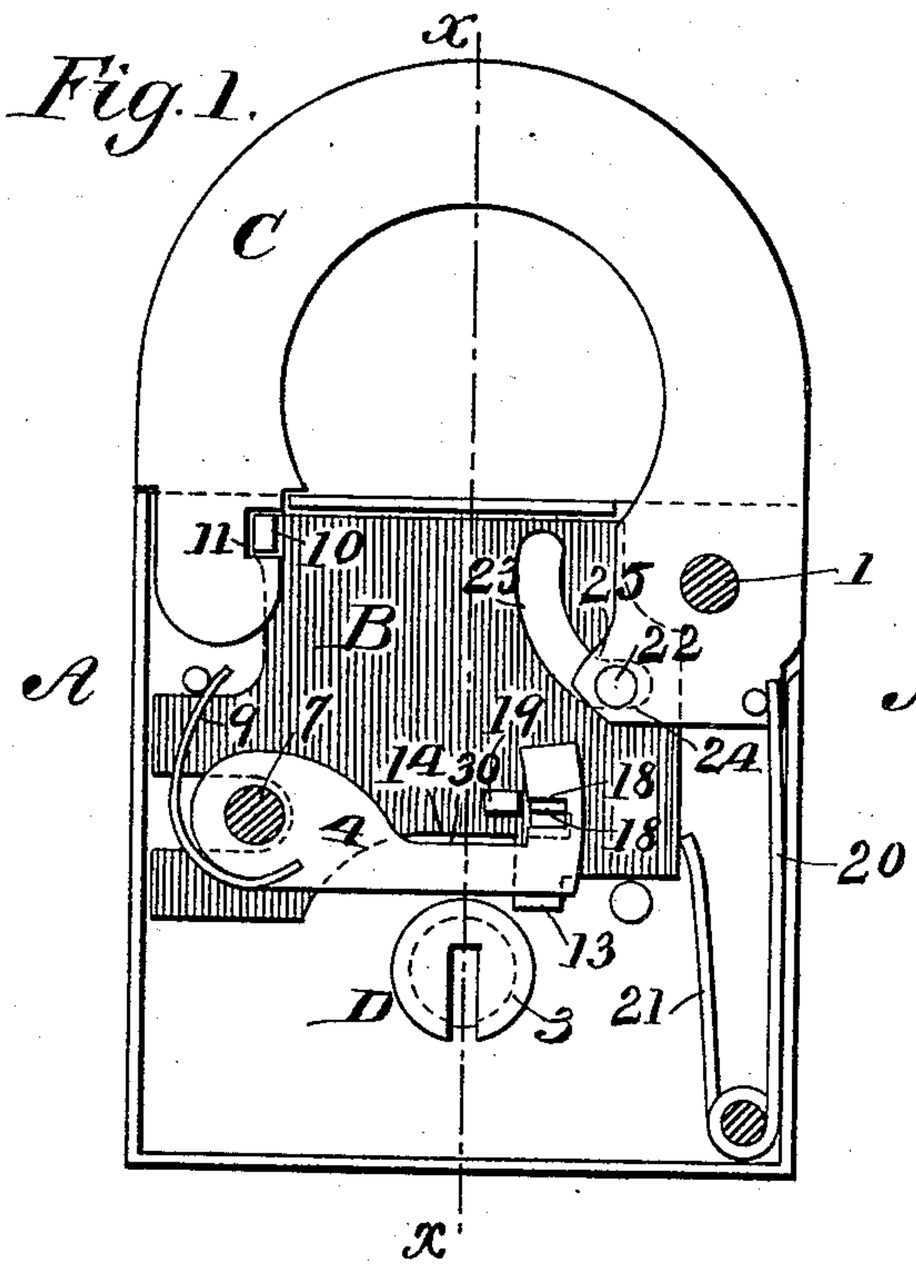


Fig. 2.

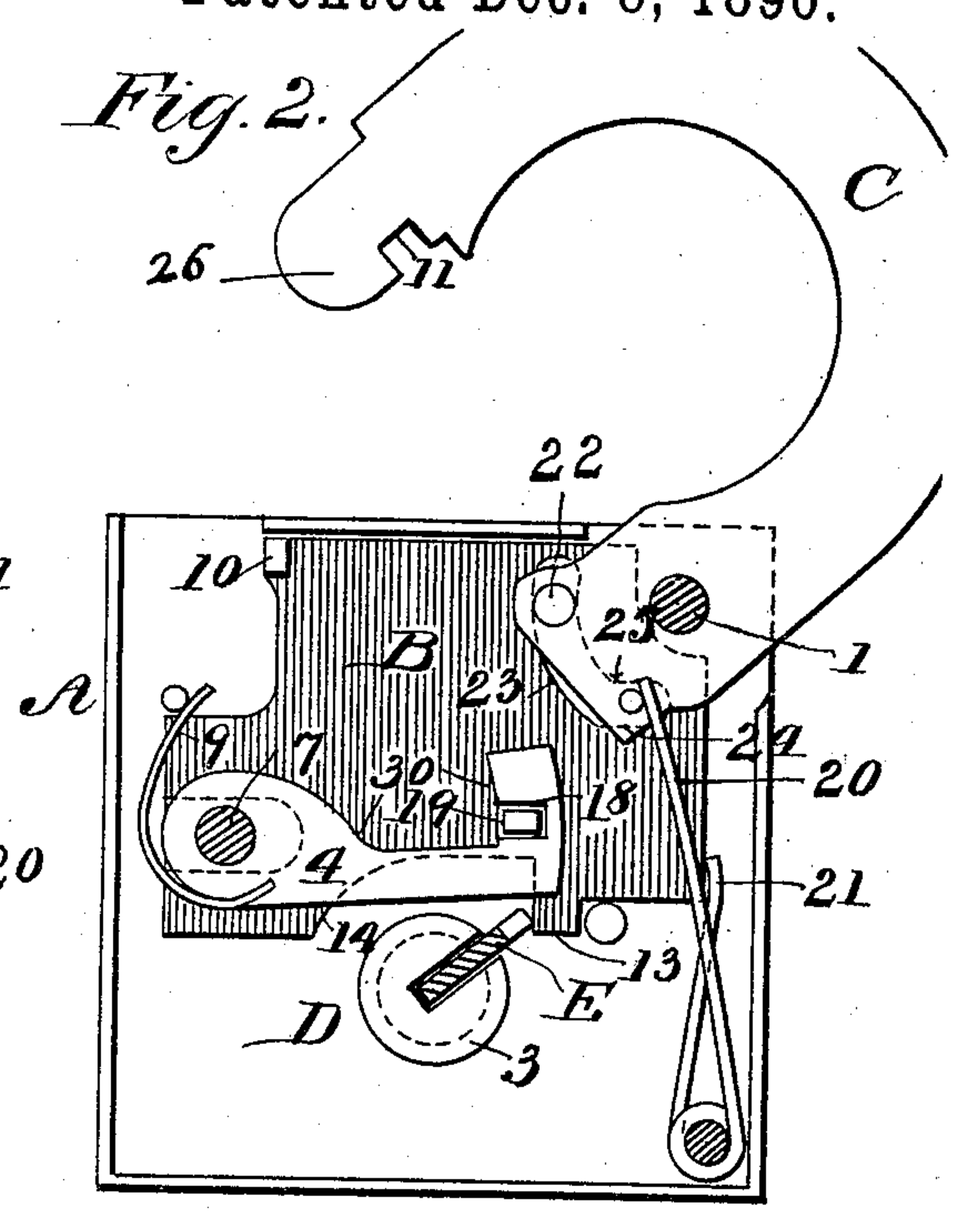


Fig. 3.

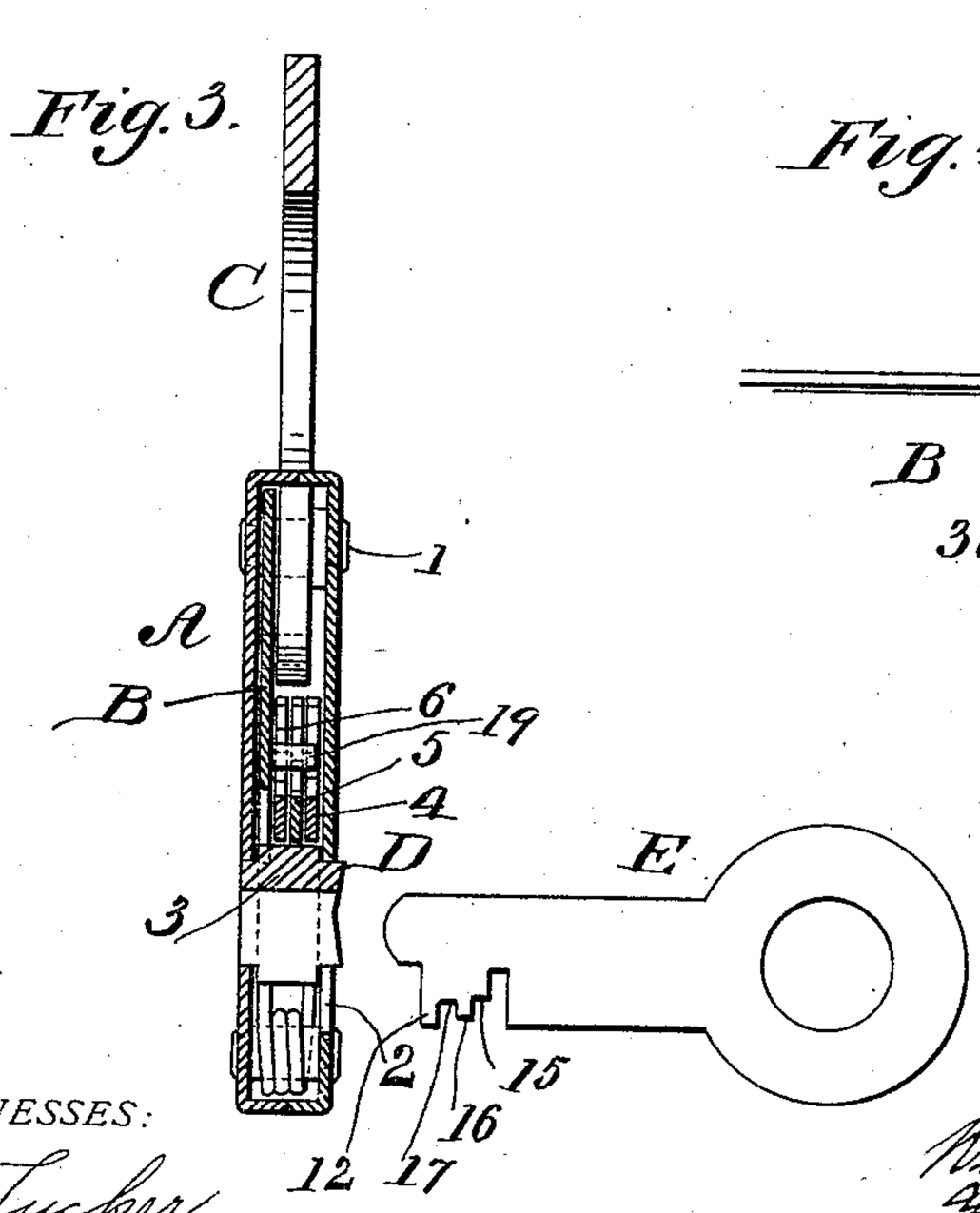
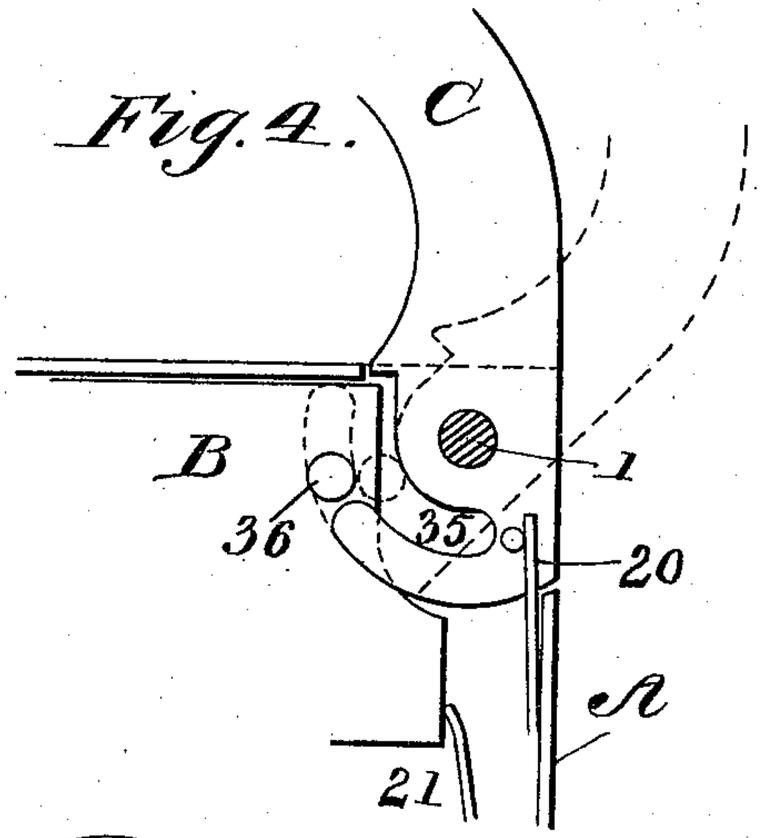


Fig. 4.



WITNESSES:

K. M. Tucker

Frank A. Fox

INVENTORS:

William E. Dyer,

and Frank Soley,

BY Henry H. Dalbey

ATTORNEY.

UNITED STATES PATENT OFFICE.

WILLIAM E. DYER AND FRANK SOLEY, OF PHILADELPHIA, PENNSYLVANIA;
SAID SOLEY ASSIGNOR TO SAID DYER.

PADLOCK.

SPECIFICATION forming part of Letters Patent No. 572,653, dated December 8, 1896.

Application filed December 23, 1895. Serial No. 573,101. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM E. DYER and FRANK SOLEY, citizens of the United States, and residents of Philadelphia, (Frankford,) in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Padlocks, of which the following is a specification.

Our invention relates to means for withholding the bolt when the shackle is open in self-locking padlocks; and our invention consists in certain novel mechanism adapted for applying such feature to a pivoted shackle, which said invention will be hereinafter fully described, and pointed out in the appended claims.

Referring to the accompanying drawings, Figure 1 is a vertical sectional elevation showing the interior of the lock. Fig. 2 is a similar view showing the parts unlocked. Fig. 3 is a vertical cross-section taken on the line $x\,x$, Fig. 1. Fig. 4 is a detail partial sectional elevation showing a modification of construction of the contact-surfaces between the shackle and the bolt.

A represents the case, B the bolt, and C the shackle, which is pivoted at 1.

D represents the key-receptacle, in which the key E is inserted through the keyhole 2 and guided in the rotary receptacle-piece 3.

4, 5, and 6 represent the tumblers, which are pivoted at 7. Each has springs 9. The bolt B is provided with a stud 10, which engages with the recess 11 in the free end of the shackle C. The stroke of the bolt is effected by the contact of the bit 12 of the key on the projection 13 of the bolt, the space or cut-out 14 in the bolt affording clearance for the key to advance and return after the bolt has been thrown back.

When the key is inserted in the lock, the bits 15 16 17, respectively, lift the tumblers 4, 5, and 6 in the first part of the rotation of the key, so that all the notches 18 coincide with the stud 19 of the bolt, and then the key acts on the projection 13 of the bolt, throwing it back a sufficient distance to clear the shackle at 11. The shackle is thrown open by the spring 20, and the bolt tends to return to its shut position by the pressure of the spring 21; but the bolt is prevented from returning and is withheld in the position shown in Fig. 2 by means of the pin 22 in the heel of the shackle, which plays in the slot 23 of the bolt. The slot 23 has a straight portion 24 parallel to the throw of the bolt, allowing the bolt to advance when the shackle is closed; but when the bolt is withdrawn the shackle C at its initial upward movement will lock its pin 22 over the shoulder 25 of the slot 23, withholding the bolt, the said pin passing up the curved part of the slot 23, which is then concentric with the pivot 1 of the shackle. Upon closing the shackle the bolt B is released as soon as the pin 22 arrives past the shoulder 25 and the tongue 26 of the shackle has had an opportunity to enter in front of the bolt.

It is to be observed that there is advantage in shaping the tumblers 4 5 6 as herein shown with the space 30 cut out in lieu of being made solid as heretofore, inasmuch as the proper tools can be introduced to cut additional notches in suitable positions for the purpose of a master-key.

In Fig. 4 we illustrate a modification, which consists in interchanging the positions of the slot and the pin that effect contact between the heel of the shackle and the bolt. The slot is here shown at 35 in the shackle, and the pin is shown at 36 in the bolt.

It is to be understood that our invention is not limited to the species of construction herein shown.

Having thus fully described our invention, what we claim, and desire to secure by Letters Patent, is—

1. In a padlock, the combination of a suitable case, a pivoted shackle, a bolt, and surfaces on the shackle and the bolt consisting in a pin on the one part engaging with a slot on the other having contact in a line of travel concentric with the pivot of the shackle for all open positions of the shackle, whereby the bolt is withheld in an unlocked position at all open positions of the shackle.

2. In a padlock, the combination of a suitable case, a pivoted shackle, a bolt, a pin in the heel of the shackle, and a slot in the bolt receiving said pin and curved concentrically with a point which coincides with the pivot of the shackle when the bolt is withdrawn, and adapted for the purposes described.

3. In a padlock, the combination of a suitable case, a pivoted shackle, a bolt, a pin in the heel of the shackle, and a slot in the bolt receiving said pin and having a portion parallel with the throw of the bolt, and another portion curved concentrically with a point which coincides with the pivot of the shackle when the bolt is withdrawn.

Signed at Frankford, in the county of Philadelphia and State of Pennsylvania, this 12th day of November, A. D. 1895.

WILLIAM E. DYER.
FRANK SOLEY.

Witnesses:
K. M. TUCKER,
H. F. PARKER.