L. C. Rodier,

Padlock,

No. 41,864. Patented Mar. 8, 1864.

Fig: 3.

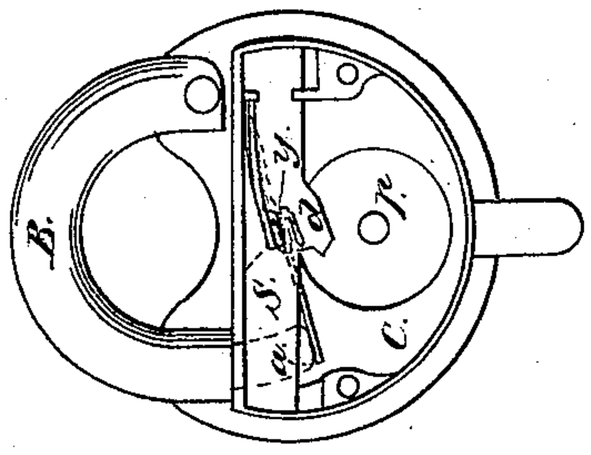


Fig: 2.

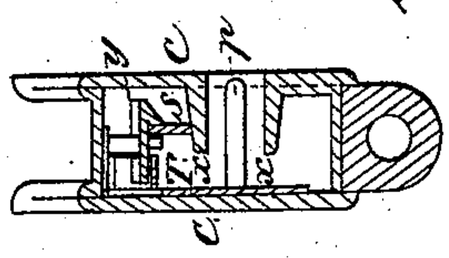


Fig: 7.

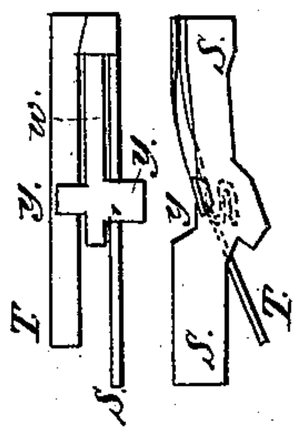


Fig: 6.

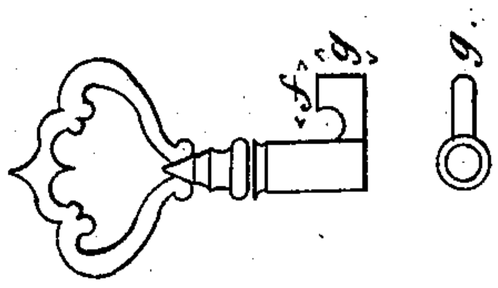


Fig: 5.

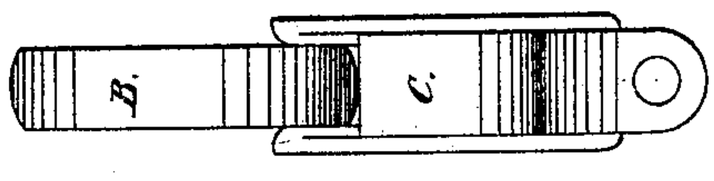
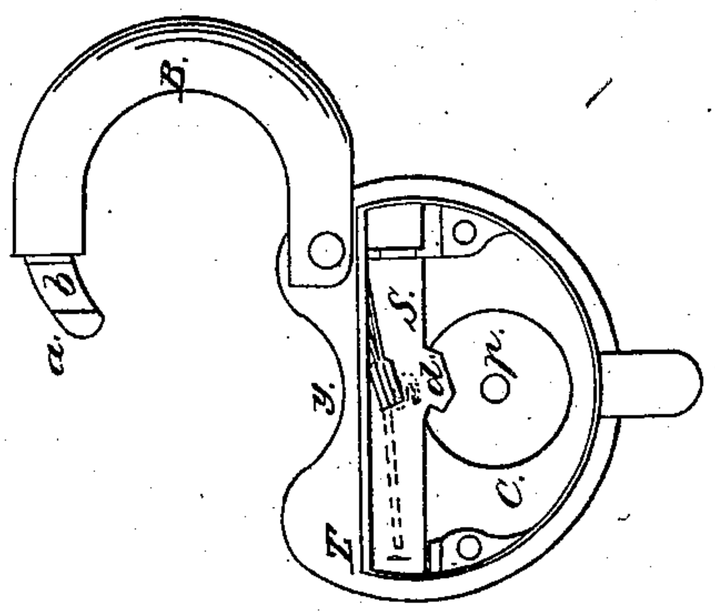


Fig: 1.



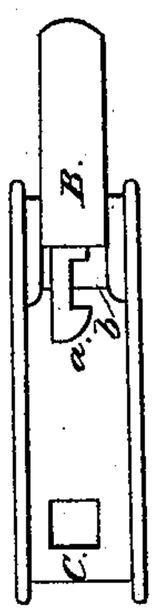
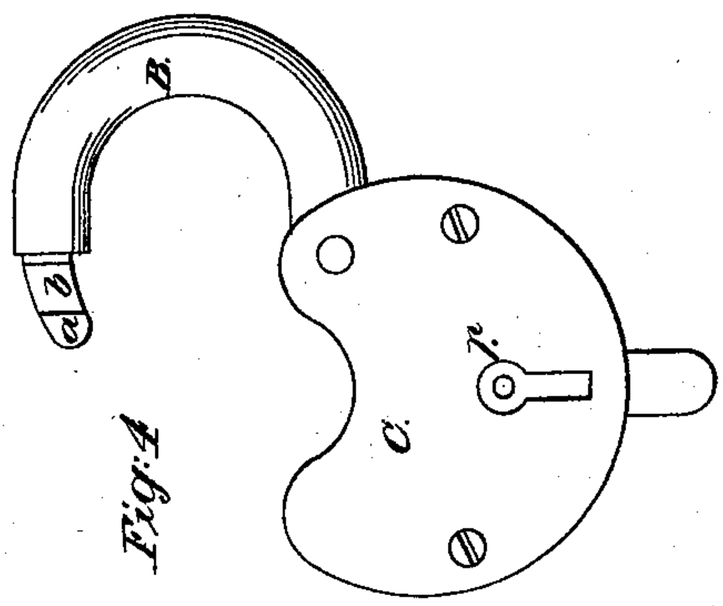


Fig: 4



Witnesses.

L. D. Bowles.

J. L. Coombs.

Inventor:

Louis C. Rodier.

by L. D. Bowles his atty.

UNITED STATES PATENT OFFICE.

LOUIS C. RODIER, OF SPRINGFIELD, MASSACHUSETTS, ASSIGNOR TO SAMUEL NORRIS, OF SAME PLACE.

IMPROVEMENT IN PADLOCKS.

Specification forming part of Letters Patent No. **41,864**, dated March 8, 1864.

To all whom it may concern:

Be it known that I, LOUIS C. RODIER, of Springfield, in the county of Hampden, in the State of Massachusetts, have invented certain new and useful Improvements in Padlocks; and I hereby declare that the following, taken in connection with the accompanying drawings, which constitute part thereof, is a full, clear, and exact description of the same.

Detached or pad locks as heretofore constructed are provided with a curved bar, which is pivoted at one of its ends and on one side of the lock, and is secured by means of a bolt shooting through a staple at its other end. Otherwise, such locks were constructed with the ordinary safety devices, more or less complicated, and employed in stationary locks; but as a general thing they were made of the simplest possible form, inasmuch as the application of safety devices to padlocks of comparatively small size renders them too expensive, and afford, therefore, no security.

The object of my invention is to produce a padlock of simple construction that shall, with convenience in locking and unlocking, combine a principle of security, affording reasonable protection against picking.

To enable others to make and use my invention, I shall now proceed to describe the construction and operation of a padlock made in accordance with my invention.

In the accompanying drawings, Figure 1 is an elevation of the same with the front plate removed. Fig. 2 is a vertical central section, and Fig. 3 is another elevation of the lock with the front plate removed, but exhibiting the same in position when the curved bar or bolt is secured. Figs. 4 and 5 are respectively front and side views of the padlock, showing its external appearance; and Fig. 6 is the key used in connection therewith. Fig. 7 is a detail of the spring mechanism hereinafter more fully explained.

The peculiarities of my improved lock do not consist in the outside appearance. It is composed, like most padlocks, of a curved bar or bolt, B, and a case, C, as shown in Figs. 4 and 5. The end of the bar, whereby it is secured in and to the lock, instead of being staple-formed, is cam-shaped at *a* and recessed at *b*, so as to fit the locking-spring. The latter (marked in the drawings S) is composed of a flexible and elastic strip of metal extending within the case across the top thereof, and is secured by one of its ends in such a manner as to allow the other end, which is opposite the bolt-hook *a* and *b*, to vibrate when actuated by the cam-shaped bolt or by the key. The former will gradually force back the spring until its recessed portion comes opposite thereto, when, by virtue of its elasticity, the spring will resume its original position, fall into the notch or recess, and thus hold the bolt firmly locked or confined until the spring is removed by the action of the key. At *d* or thereabout—that is to say, in the path of the bit or web of the key, the spring is bent inward, forming deflections which constitute a cam which the bit encounters in its rotary motion upon the pin *p* as center. The key-bit passes beyond and presses with its face *f* against the inner surface of the spring, and thus forces the latter out of the notch. The depression in the spring forming on one side a uniform convexity, the bit of the key will operate it on moving either to the right or to the left.

In addition to the spring S there are two other springs, T and W, also secured within the case at or near the joint of the spring S. The spring T bears against the bolt, so that on releasing the spring S it will throw out the bolt, and thus instantaneously disengage the lock. The other spring, W, is provided with a yoke, Y, which, when depressed by the action of the spring, will clasp and hold the spring S firmly in position when locking the bolt. By this arrangement the bolt is prevented from being disengaged by jars or knocks which the lock may receive, and which otherwise would cause the spring S to vibrate, and thus release the bolt. The yoke-spring is held up and out of action by means of the spring T, the latter having an upward tendency, while the former has a downward tendency. If, therefore, the spring T is depressed by the bolt, the spring W will follow and clasp the said spring S as soon as it falls in with the notch in the bolt. The rear portion of the yoke Y is depressed so as to come in contact with the bit of the key when rotated either to the right or to the left. The key acts against this depression or cam by the face *g* of the bit,

so that the said face *g* acts on the yoke while the face *f* acts on the spring. The action of the two is not quite simultaneous, the face *g* first acting on the yoke to free the side spring from its grasp, and the face *f* then releasing the bolt by its action on the side spring, S.

The front plate, closing the case of the padlock, is provided with fixed wards X, preferably cast thereto and made in one piece therewith. It will be obvious that any number of wards may be used and any configuration desired so arranged as to prevent the entrance or revolution of any lever or key which is not formed with corresponding openings, so as to thread its way among them. This arrangement will greatly add to the security and efficiency of the lock.

Having thus fully described my invention and the manner in which the same is or may be performed, I claim—

1. The employment in padlocks of a locking-spring moving, when actuated by turning a key either to the right or to the left, transversely to and out of the path of the bolt, substantially as herein shown and described.

2. In combination with a locking-spring vibrating under the action of the key turning on a fixed pin within the lock-case either to the right or to the left transversely to the path of the bolt, the cam-shaped hook on the end of the said bolt for operation, as set forth.

3. The arrangement, in combination with a side-locking spring and hinged bolt operating as described, of wards cast to the front plate of the lock-case, as shown and as set forth.

4. In combination with a bolt-locking side spring, a yoke or the equivalent thereof, actuated by a spring, as described, to securely hold the side spring when locking the bolt and when arranged in relation to the key, so that when turned either to right or left it shall cause the release of the spring, substantially as herein set forth.

5. In combination with the bolt-locking spring and spring-locking yoke, a spring connected with or disconnected from the yoke-spring, arranged within the casing of the lock relatively to the bolt and the yoke, so as to constantly bear on the yoke and to throw out the bolt when a key is applied from without to actuate the yoke and side spring, as shown and described.

In testimony whereof I have signed my name to this specification before two subscribing witnesses.

LOUIS C. RODIER.

Witnesses:
E. D. BEACH,
WM. H. HAWKINS.