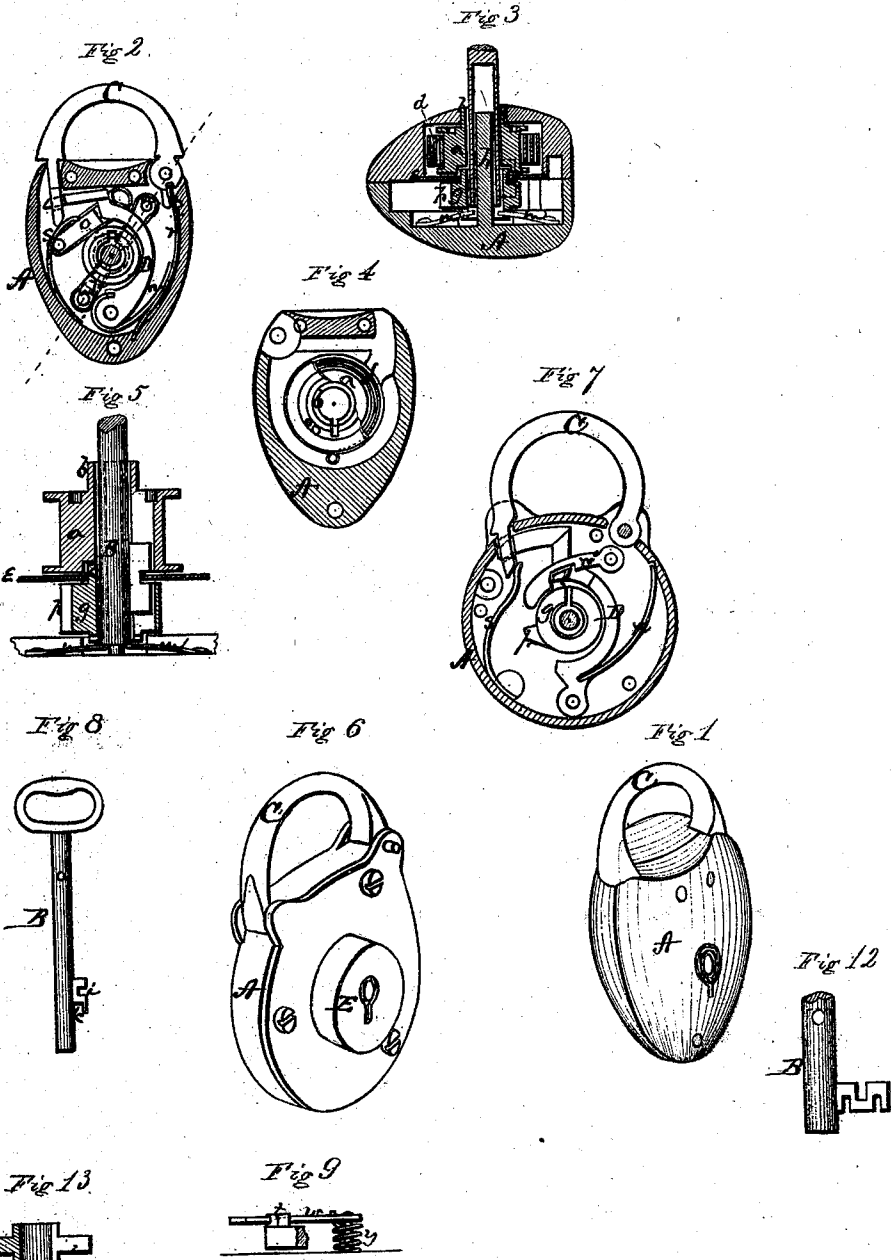


*S. G. Cabell,*

*Padlock.*

*No. 97,875.*

*Patented Dec. 14, 1869.*



Witnesses  
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# United States Patent Office.

SAMUEL G. CABELL, OF QUINCY, ILLINOIS, ASSIGNOR TO FLORA B. CABELL, OF SAME PLACE.

Letters Patent No. 97,875, dated December 14, 1869.

## IMPROVED PADLOCK

The Schedule referred to in these Letters Patent and making part of the same

### To all whom it may concern:

Be it known that I, SAMUEL G. CABELL, assignor in full to FLORA B. CABELL, of Quincy, in the county of Adams, and in the State of Illinois, have invented certain new and useful Improvements in Padlocks; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

The nature of my invention consists—

First, in the casting of the casing of the lock in an egg or oval shape, in halves, whereby I have a double arch, and construct the arch in the strongest and most durable manner;

Second, in the combination of a coil-spring within or without the inner casing, whereby the key must enter the key-hole and be turned partially around before it enters the locking-mechanism, and a fixed plate or disk, arranged as hereinafter described;

Third, in the combination of a rotating disk with a coil-spring, the division-plate thereunder, and of an additional rotating lugged disk, resting on springs;

Fourth, in the arrangement of a spring-tumbler, whether placed above or below the locking-bolt, and operated by a disk with a lug, whereby the lock is held secure, and cannot be opened by shaking; and

Fifth, in the combination of the general parts of the padlock.

In order to enable others skilled in the art to which my invention appertains, to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawings, in which—

Figure 1 is a perspective of my egg-shaped lock.

Figure 2 is a longitudinal vertical section.

Figure 3 is a vertical section, taken through line *x*, fig. 2.

Figure 4 is an inside view of that portion of the lock not shown in fig. 2.

Figure 5 is an enlarged view of those parts of the lock through which the key passes.

Figure 6 is a perspective view of an ordinary padlock, provided with my devices for preventing the lock from being picked.

Figure 7 is an inside view of the lock represented in fig. 6, the front plate being removed.

Figure 8 is a side view of the key.

Figure 9 is an arrangement of the locking-device over the top of the bolt.

A represents the casing of my lock, which is made in egg-shape, and of halves firmly fastened together by rivets, or any other suitable means, said casing being further on the inside, only provided with such recesses as are absolutely necessary for the proper working of the interior devices, whereby it becomes of

very great strength. The egg-shaped form of the casing renders it stronger than any other form could possibly make it, and then the fact that it is solid, except so much as is necessary to contain the working-devices, makes it impossible to be broken, even if the heaviest articles should happen to pass over it, such as cars or heavy wagons.

The front half of the casing A is provided with a key-hole, which is round, with a slot projecting downward, for the insertion of the key B, which is shown in fig. 8, and will be hereafter described.

Within the front half of the casing A is placed an annular disk, *a*, which, on its front side, is provided with a circular flange, or tube, *b*, of such size, that when said disk is placed in position within the casing, the tube shall project through the key-hole, and its outer end be even with the outer surface of the casing.

Through the tube *b* and the disk *a* is a slot, corresponding in size with the key-hole slot above mentioned.

The outer circumference of the disk *a* is provided with a groove, or recess, within which is coiled a spring, *d*, one end of which is secured to the disk, and the other to the casing.

The front side of the disk is, around the tube *b*, provided with a circular recess, within which is, on one side, placed a lug, and in the casing is another lug, fitting in said circular recess.

These lugs are so arranged, that when they come in contact with each other, the slot in the disk *a* will be directly opposite the key-hole slot, allowing the key B to pass through the casing, and also through the disk, and when the key is turned, turning the disk, the spring *d* will be wound up, and as soon as the force is removed, the spring will unwind, and bring the disk back to its normal position.

The disk *a* is confined in the front half of the casing by a plate, *e*, secured in the same, said plate having a hole or circular opening of the same size as the outer circumference of the tube *b*.

The plate *e* has also a slot, of suitable size, placed in a directly opposite direction to the key-hole slot, so that when the key has been inserted, and, with the disk *a*, turned one-half around, more or less, the key can pass partially through said plate, and into the devices in the rear half of the casing.

The rear side of the disk *a* is, around the central core, provided with a circular recess, which receives and forms a bearing for a circular flange, or tube, *f*, projecting from the front side of a second annular disk or collar, *g*, placed in the rear half of the casing.

This second disk is also provided with a slot for a portion of the key to pass through, said slot being, when the disk is in its normal position, directly under

the slot in the plate *e*, that is, diametrically (or nearly so) opposite the key-hole slot.

The key-rod *h*, which is secured to the rear half of the casing, passes through the disks *g* and *a*, and is of such thickness that the tube of the key will fit around it and within said disks.

The key *B* is of the kind known as extension-keys, that is, the tube extends beyond the wards, as seen in fig. 8.

The ward of the key is cut with a slot, *i*, about its centre, running at right angles with the tube, and another slot, *k*, running a suitable distance from the edge, nearest the end of the key alongside of the tube.

The key has a hole on one or both sides, that any matter therein may be forced out when the key is placed upon the key-rod.

When the key is first inserted in the key-hole, the ward strikes the plate *e*, when it is turned, at the same time turning the disk *a* until the key can be passed through said plate *e*, into the disk *g*, when the slot *k* fits over the circular flange *f* and the slot *i*, around the inner edge of the plate *e*, allowing the key to be turned, with both disks *g* and *a*, in the opposite direction.

Before accomplishing this, however, the tube of the key first strikes a spring, *m*, which is secured in the rear half of the casing, and projects into a recess in the under or rear side of the disk *g*. I said "a" spring, *m*. There may be two such springs, as represented in figs. 2, 3, and 5, or only one, if so desired.

The spring or springs *m* serve to hold the disk *g* in its proper position, so that the key, after having made its half revolution, can be passed into the same, as already mentioned. The key must then be pressed inward, so that the spring or springs *m* will be pressed down out of their recesses or notches in the disk *g*, when the key, with the disk, may be turned, for opening the lock.

The bail *C* of the lock is pivoted, at one side, in the upper end of the casing *A*, and is inserted in an aperture on the other side, where it is held by the tumbler *D*, which is pivoted at a suitable point below the disk *g*, and, being curved, as shown in fig. 2, passes around the same, and is pressed, by a spring, *n*, toward and into the end of the bail *C*, so as to hold the same securely locked.

As an additional safeguard, there is a spring, *o*, secured under the tumbler *D*, in the casing, said spring having two projections, which extend upward, one on each side of the tumbler, preventing the same from being moved, unless the spring is first depressed.

This is accomplished by a lug, *p*, on the outer circumference of the disk *g*, which, when said disk is turned by the key, first depresses the spring *o*, and then, or almost at the same instant, forces the tumbler *D* out of the end of the bail *C*.

A spring, *r*, operating upon the pivoted end of the bail, causes it to spring open.

Another spring, *s*, operating upon the other end of the bail, assists in this movement, and at the same time bears against the end of the tumbler *D*, so as to hold it in the position in which it has been placed by the lug *p*.

The key is then turned so that the disk *g* resumes its original position, and then partially withdrawn, so as to clear the plate *e*, when the spring *d* will at once turn the disk *a*, and with it the key, so that the key may be withdrawn from the lock.

The lock is closed by simply pressing down the bail *C*, when its end will strike the spring *s*, releasing the tumbler *D*, so that the spring *n* may throw the same forward, and lock the bail and the spring *o*, and at the same time rise and secure the tumbler.

There is thus a lock within a lock. The tumbler *D* locks the bail *C*, and the tumbler is in turn locked by the projections on the spring *o*.

The interior devices of my padlock, as already described, may be applied to padlocks of the usual shape, as shown in figs. 6 and 7, in which case I place the disk *a* within a box, *E*, upon the outside of the front plate of the casing, and in place of the spring *o*, with its projections, I use the following device:

On the upper side of the tumbler *D* are made recesses, so as to form an angular projection, *t*, and an arm, *w*, pivoted to the casing, is provided with a notch, so as to fit over said projection. Around the pivot of the arm *w* is a coiled spring, *y*, which forces and holds the arm around said projection, thus locking the tumbler. The arm *w* is raised away from the projection *t*, by means of the lug *p*, upon the disk *g*, and the other parts of the lock are arranged and operated in precisely the same manner as described for the egg-shaped lock.

I may, in the egg-shaped lock, substitute this latter device for locking the tumbler, as it is merely a mechanical equivalent for the device therein mentioned.

In some padlocks I may not use two disks, but only one, in which case I dispense entirely with the disk *a* and its spring, and use only the disk *g*, which is then provided with circular grooves, on both the upper and under sides.

These grooves or recesses are so arranged on the two sides of the disk, that they alternate, that is, the groove on one side is directly opposite the flange on the other side. The key, in this case, will, of course, be made with suitable wards, to correspond with all the grooves in the disk.

This disk is also provided with a lug or projection, for unlocking the tumbler and bail, or I may make the key with a projection of suitable size, to perform this operation.

To make the lock still simpler, but equally strong and durable, I may make the disk *g* without these circular grooves, but retaining the other features, namely, the spring or springs *m*, and the device for locking the tumbler *D*.

Having thus fully described my invention,

What I claim as new, and desire to secure by Letters Patent, is—

1. A double-arched padlock-shell, when cast in halves, in an egg or oval shape, having interior spaces only for the insertion of the operating-mechanism, substantially as specified.

2. The combination of the disk *a*, tube *b*, spring *d*, and plate *e*, whether the spring is enclosed within or without the casing, substantially as and for the purposes herein set forth.

3. The combination of the disk *a*, with spring *d*, plate *e*, and disk *g*, with lug *p*, and one or more springs, *m*, substantially as specified.

4. The spring-tumbler *o*, whether arranged above or beneath the bolt *D*, when operated by the recessed and lugged disk *g*, and used to confine or release the bolt *D*, substantially as specified.

5. The combination of the disk *a* with spring *d*, plate *e*, disk *g*, bolt *D*, spring *n*, locking-device and spring *s*, all constructed and operated substantially as specified.

In testimony that I claim the foregoing, I have hereunto set my hand, this 30th day of November, 1869.

S. G. CABELL.

Witnesses:

A. N. MARR,  
F. A. LEHMANN.