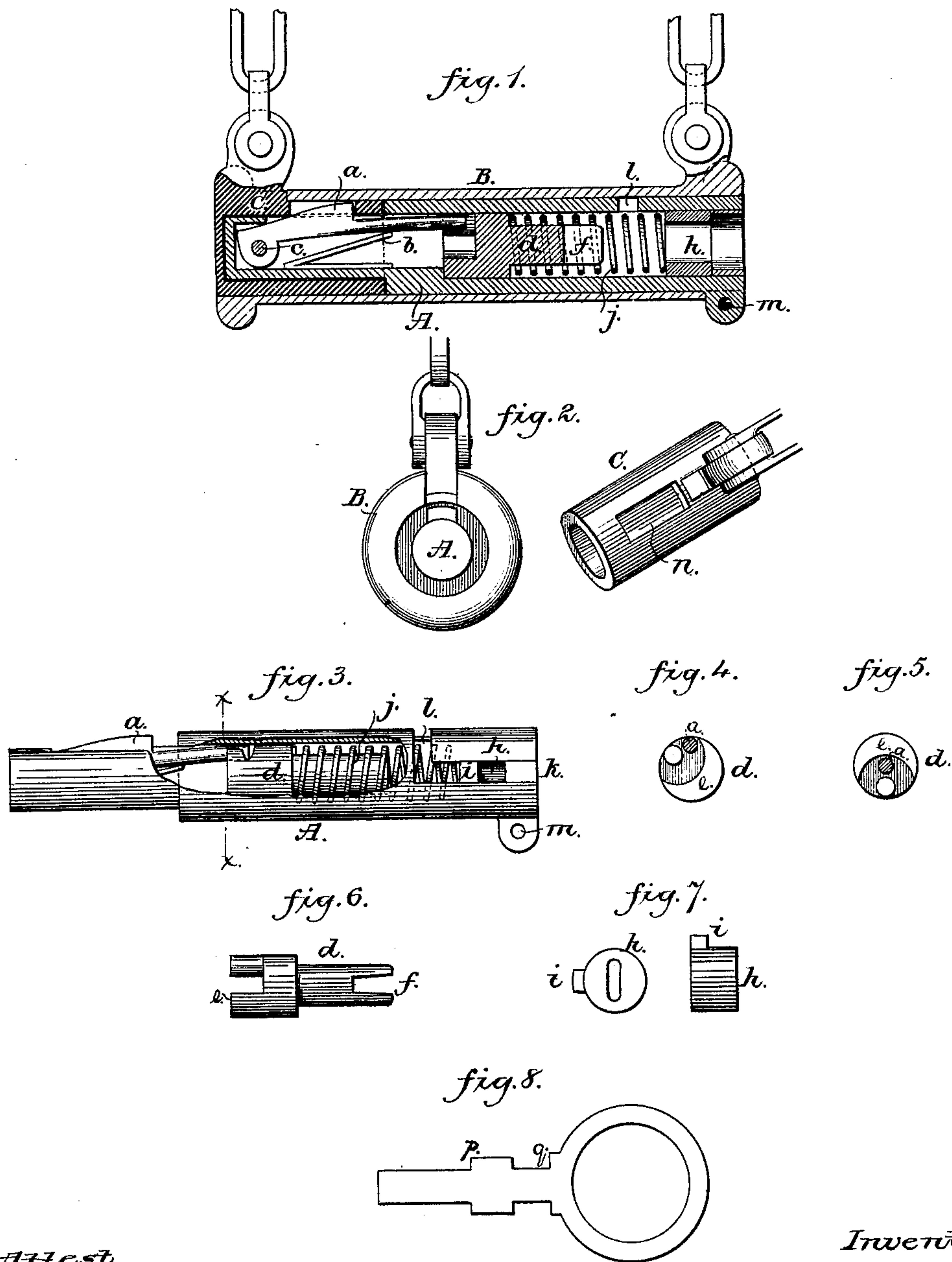


H. A. DERAISMES.  
Padlock.

No. 200,990.

Patented March 5, 1878.



Attest,

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## IMPROVEMENT IN PADLOCKS.

Specification forming part of Letters Patent No. **200,990**, dated March 5, 1878; application filed January 25, 1878.

*To all whom it may concern:*

Be it known that I, HIPPOLITE A. DERAISMES, of the city of Elizabeth, in the county of Union and State of New Jersey, have invented a new and useful Improvement in Locks, of which the following is a specification:

The invention relates to spring-locks; and consists, first, in the combination in a tubular lock of a bolt or catch and a rotating spindle, the end of which is provided with a groove, by means of which the bolt is depressed so that the fastening-slide can be released; second, in a tubular lock, a rotating spindle, one end of which is provided with a cam-groove to receive the bolt or catch, and the other end slotted to engage with the key; third, the combination of a tumbler moving in longitudinal and transverse slots in the holder, and a revolving spindle provided with a cam for depressing the bolt.

In the accompanying drawings, Figure 1 is a longitudinal vertical section of the lock and its case, the bolt being engaged with the fastening-slide. Fig. 2 is an end view of the same, the slide being withdrawn and shown in perspective. Fig. 3 is a side elevation of the lock when removed from its case, parts of the holder being broken away. Fig. 4 is a cross view on the line *xx* of Fig. 3, showing the bolt and the cam-shaped end of the spindle in the locked position. Fig. 5 is a view of the same parts when the bolt is depressed or unlocked. Fig. 6 is a plan view of the spindle, having one end provided with a cam and the other end slotted. Fig. 7 shows end and side views of the tumbler moving in slots in the holder; Fig. 8, plan view of key.

In the drawings, *a* represents the bolt or catch; *b*, bolt-spring; *c*, pivot which holds one end of the bolt in place; *d*, unlocking-spindle; *e*, cam-groove on end of spindle *d*; *f*, slot in the end of spindle *d*; *h*, tumbler moving in slotted holder; *i*, projection on tumbler; *j*, spring which holds the tumbler in position; *A*, holder which contains the various parts designated; *k*, longitudinal slot in holder; *l*, transverse slot in holder; *m*, lug; *B*, lock-case; *C*, fastening-slide, and *n* mortise in slide *C*.

The holder *A* is a cylindrical case or tube, in one end of which the bolt or catch *a* is pivoted,

as fully shown in Figs. 1 and 3 of the drawing. This bolt projects above the wall of the holder through a slot cut for this purpose, and rests upon a V-shaped spring, which is secured to the holder, and which serves to throw the bolt upward and retain it in that position, unless contracted, as hereinafter described. The free end of the bolt *a* rests in the cam-groove on the end of the spindle *d*, as seen in Figs. 4 and 5, and is depressed or permitted to rise by the partial forward and backward revolution of the spindle *d*.

This spindle is a cylindrical piece of metal fitted in the holder *A*, and has a groove cut in the end next the bolt *a* of such shape as to form a crescent-shaped wall upon one side, which gives the desired cam to cause the depressing of the bolt and its spring. The walls upon either side of the groove furnish bearings for the bolt *a*, and offer sufficient resistance to prevent the spindle *d* from being turned out of its normal position by any sudden shock or jar when the slide *C* is not engaged with its bolt, but at the same time permit the spindle to be turned by the use of the key. The efficiency of the lock depends largely upon the condition that the spindle *d* shall be retained in such a position, when the slide *C* is withdrawn, that the key, when inserted in the lock, will enter the slot in the end of the spindle. This spindle is retained in position by the spring *j*, and by any convenient stop opposite this spring which will prevent the forward movement of the spindle and permit it to be partially turned in the holder. The other end of the spindle is slotted to receive the end of the key. The longitudinal slot *k* and the transverse slot *l* are cut through the wall of the holder, and unite with each other, as shown in Fig. 3. The tumbler *h*, which is a short cylindrical piece, with a key-hole passing through its center, as shown in Fig. 7, is placed in position, as shown in Fig. 3, its projection *i* resting in the slot *k*, and its free movement along the holder *A* being prevented in one direction by the spring *j*, and the other by a hollow plug driven into the end of the holder and properly secured, or by other desirable means.

The fastening slide or clasp *C* (shown in Fig. 2) is a hollow cylinder, the bore of which



is just sufficient to permit it to be slipped over the bolt end of the lock when the bolt *a* is depressed. A mortise, *n*, is cut through the wall of the slide to receive and detain the bolt. When the slide is pushed onto the end of the lock the closeness of its fit forces the bolt *a* and its spring *b* downward until the mortise of the slide is brought directly over the hook or detent of the bolt, when the bolt springs upward and makes the engagement, as shown in Fig. 1.

This lock, to be effective, must be inclosed in a suitable case. For many purposes a case like that designated by B in Figs. 1 and 2 of the drawing will be convenient, will conceal the operative parts of the lock and secure them from injury. The case B is a metal cylinder of sufficient length and size to contain the lock. It is slotted at each end to receive the lugs on end of the holder A and on the slide C. These lugs, when entered in their respective slots, give the proper position to the lock and the slide, so that the mortise *n*, when the slide is pushed into the case, will directly override the shoulder or detent of the bolt *a*. The lock is secured in the case B by a rivet passing through the case and the lug *m*, or in any other convenient manner.

This lock is convenient for securing any movable articles to any fixed object. For this purpose a chain may be employed, one end of which is secured to the case B, while the other end is fastened to the slide C. The slide carrying one end of the chain, being disengaged from the lock, is passed through some loop or ring in the movable article and brought around or secured to the fixed object, and the slide is then slipped into its end of the case, and the articles are locked together.

The key is provided with a shoulder, *p*, upon its stem, which prevents its advance through the tumbler *h* farther than the shoulder *p*. By a forward pressure upon the key the tumbler *h* is pushed along the holder A, its projection *i* riding in the slot *k*, and the spring *j* being contracted until the farther advance of the tumbler is arrested by some means—*e. g.*, the abutting of the end of the key against the head of the slot *f*, or of the projection *i* against a termination of the slot *k*, or of the shoulder *q* against the end of the lock. But by whatever means the advance of the tumbler *h* is arrested, its projection *i* must always stop at a point directly opposite the transverse slot *l*, and the extreme end of the key must be entered in the slot *f* in the spindle *d*.

When the parts have been brought into

the position above described, both the tumbler *h* and the spindle *d* will, by turning the key, be partially revolved in the holder A, and the cam on the end of the spindle, acting upon the bolt *a*, will depress it. This cam-groove, as shown in Figs. 4 and 5 of the drawings, on the spindle should make about one-fourth of a revolution to bring the bolt fully down, so that the slide C can be readily removed.

The spindle is brought back to its normal position by turning the key back, the key and the lock being so arranged that the key cannot be withdrawn till it is brought into the same position as when inserted in the lock. This may be easily accomplished by shoulders on the stem of the key, which strike against the plug in the end of the lock, and prevent the key from being withdrawn until brought into the same relation with the hole in the plug as when it was entered.

It will readily be seen that, by varying the position of the transverse slot *l* and varying the length of the stems of the keys and the location of the shoulders *p* and *q*, so that when the tumbler *h* is pushed forward as far as it can go its projection *i* will be directly opposite the transverse slot *l*, and the end of the key be in engagement with the spindle *d*, an indefinite number of locks can be made, no one of which can be unlocked except by the use of a key especially constructed for that purpose.

What is claimed as new is—

1. The combination, in a tubular lock, of a detaining bolt or catch and a rotating spindle, one end of which is provided with a cam-groove for operating such bolt or catch, substantially as described.

2. In a tubular lock, the rotating spindle, having one end provided with a cam-groove to act upon the bolt, and the other end slotted to engage with the key, substantially as and for the purpose set forth.

3. In a tubular lock, the combination of a tumbler moving along longitudinal and transverse slots, and a rotating spindle provided with a cam for depressing the bolt or catch, substantially as and for the purpose set forth.

4. In a tubular lock, the combination of the bolt or catch *a*, pivoted at one end, and the fastening-slide C, substantially as and for the purpose set forth.

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Witnesses:

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