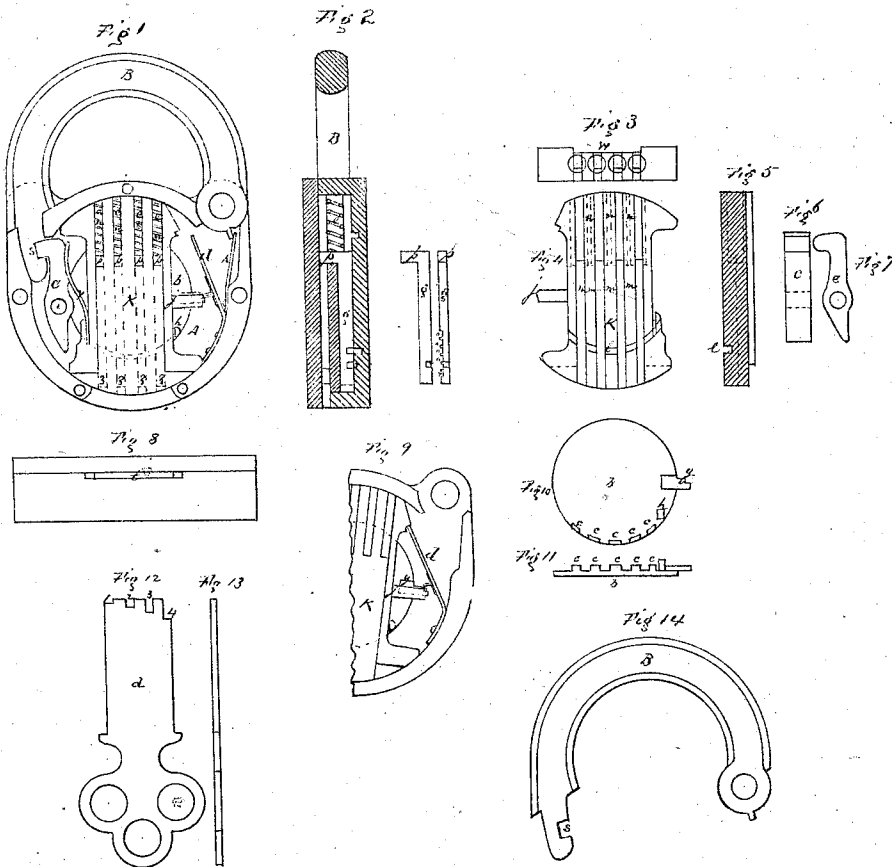


JOHN H. AMES.  
PAD LOCK.

110948

PATENTED JAN 17 1871



WITNESSES

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# United States Patent Office.

JOHN H. AMES, OF STAMFORD, CONNECTICUT.

Letters Patent No. 110,948, dated January 17, 1871; antedated December 31, 1870.

## IMPROVEMENT IN PADLOCKS.

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, JOHN H. AMES, of Stamford, in the county of Fairfield and State of Connecticut, have invented a new and Improved Pad-Lock; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon making a part of this specification.

The object of this invention is to so construct a padlock as will combine strength with simplicity in the manufacture, and safety and durability when in use.

In the accompanying drawing—

Figure 1 represents a side view of my lock with the face-plate removed.

Figure 2, an edge view of the same in section.

Figure 3, a plan or top view of the oscillating tumbler.

Figure 4, a side view of said tumbler.

Figure 5, an edge view of the same in section.

Figure 6, a front view of the hooked lever.

Figure 7, a plan or top view of same.

Figure 8, a lower-edge view of lock-case, showing key-hole.

Figure 9, a half-front view of lock with face-plate removed, showing stop-spring.

Figure 10, a plan or top view of circular fence.

Figure 11, an edge view of same.

Figure 12, a side view of key.

Figure 13, an edge view of same.

Figure 14, a side view of hasp.

Similar letters of reference indicate corresponding parts in the drawing.

A represents the shell or casing of a padlock. To the inner side of the casing A is fitted, in a countersink made for that purpose, the circular fence *b*, so that said fence may revolve or turn freely within the countersink. The lower edge of this circular fence has a raised lip, which is provided with a series of projecting teeth or notches, *c c c c*, as shown in fig. 11, and there is also fixed to said case the hooked lever C, in such manner as will allow it to freely turn on its axis or spindle *i*; and to the inner side of the frame of the shell or casing is also fixed the spring *k*, the upper or free end of this spring engaging with the under side of the pivoted end of the hasp B.

Into the casing A is fitted the oscillating tumbler K, the upper and lower ends of which are curved to such radius as will enable said ends, when in place, to conform to the shape of the interior of the casing A, and snugly fit therein. The rear side of this tumbler, or the side thereof that comes in contact with the back of the shell or casing A, is provided with a series of perpendicular slots, *m m m m*, and with a curved groove or channel *l*, and on the other side of said tumbler, and in the direction of its length, is formed

a recess, *w*, for the reception of the key hereinafter referred to, and also on said other or reverse side are formed the vertical openings or channels *n n n n*.

Into the perpendicular slots *m m m m* of the tumbler K are fitted the sliders *g g g g*. These sliders are of such dimensions as will enable them to accurately fit into said slots, and be flush with the surface of the tumbler K, and on the upper end of each of said sliders are formed the projections *p p p p*, which, when the sliders are fitted into their respective slots, protrude through the side of the tumbler. On the outer edges of said sliders, and near the lower ends of the same, and at varying distances, are formed the notches *r r r r*.

Now it will be readily seen that when the tumbler K is inserted into the shell or casing A, one side of said tumbler is closely in contact with the lower end of the hooked lever C, keeping said lever in position and hooked into the notch *s* of the hasp B, thus producing the "lock;" and the tumbler K, when in this position, cannot be disturbed therefrom, except in the manner hereinafter referred to, for the sliders *g g g g* interpose between the notches *c c c c* of the circular fence *b* and hold said tumbler in place, and effectually prevent its oscillating or turning.

When it becomes necessary to unlock the mechanism, a flat key, D, having bits 1 2 3 4 cut on the end thereof, is inserted into the opening or key-hole *t* formed in the under side of the shell or casing A, until said bits are brought in contact with the projecting ends *p p p p* of the sliders *g g g g*, when the sliders are pushed upward until the notches *r r r r* in each of said sliders are brought to coincide with the curved groove or channel *l*, when, no obstacle being offered to the notches *c c c c* of the fence *b*, a slight turn of the key D to the left will oscillate or move the tumbler K, which thus trips the hooked lever C, disengaging the hooked end of the hasp B and allowing it to fly or spring open by the action of the spring *k*.

The key then being moved to its former straight position, the tumbler is righted when the spring *v*, fixed to the side of said tumbler, throws the hooked end of the lever C in such position as will enable the beveled end of the hasp B, when pushed downward, to press said lever back until the hooked end thereof engages with the notch *s* of said hasp, when the mechanism is locked, and it will be observed that this locking is effected without the aid of the key D, which is only to be used when unlocking the same.

The tumbler being in this way brought to the locked position, and the key withdrawn, the spiral springs *e e e e*, which are fitted in the openings or channels *n n n n* of the tumbler K, force down the sliders *g g g g*, when the notches *r r r r* of said sliders

will be non-coincident with the curved channel *l*, and allow said sliders to fill the spaces between the notches *c c c c c* in the fence *b*, and retain the mechanism in its locked position, as before described.

In order to prevent the tumbler *K* from being forced out of its position by unfair means, I attach to the inside of the lock-casing the stop-spring *d*, extending diagonally from the side of the lock to the top of the tumbler, in such manner as will enable it to act as a brace from the top of the tumbler to the side of the case, and thus prevent the tumbler from being forced aside and the hasp unlocked.

It will be observed that when the true key is inserted into the lock the tumbler *K* oscillates or moves over the circular fence *b*, while said fence remains stationary or in place, and the stop-spring *d* is kept from engaging with the tumbler by the projection *y* on the side of said fence; but when a false key is inserted, in an effort to unlock the hasp in an unfair way, the tumbler and fence oscillate together, and the spring *d*, no longer being kept out of contact by the projection *y*, engages with the tumbler and prevents its being forced so as to unlock the hasp, and to prevent the tumbler from being forced aside in another direction the right lower end of the same is so constructed as to come in contact with the fixed end of the diagonal spring *d*.

To insure the tumbler and fence returning together to their proper place when the tumbler has been moved for operating the lock, a small stud, *h*, is fixed to the face of the fence, against which the tumbler comes in contact, so that both tumbler and fence are righted together.

To further render my lock unpickable, I form on the sides of the sliders *g g g g* false notches *o o o o*, so that when a wire or other instrument is inserted into the lock, and the sliders thereby raised, said false

notches will allow the sides of the notches *c c c c c* of the curved fence to enter therein, and the person thus operating the lock will be unable to determine when the true notches *r r r r* of the sliders coincide with the curved groove or channel *l* preparatory to unlocking the mechanism. And I attach to the side of the oscillating tumbler *K* the projection *j*, to keep the stop-spring *d* clear of the projection *y* on the circular fence *b* when the mechanism is locked, so that an attempt to pick the lock by feeling with a wire, &c., is thwarted by the fence moving away from the tumbler *K*.

The mechanism of my padlock, as hereinbefore described, may be applied to locks of any description, and therefore I do not wish to confine myself to its application to padlocks only.

Having thus described my invention,

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

1. The spring-brace *d*, in combination with the tumbler and fence, constructed as described, and provided with projections *k-y-j*, for the purpose set forth.

2. A safety-padlock, consisting of the case *A*, circular, oscillating, and notched fence *b*, oscillating tumbler *K*, sliders *g g g g*, springs *e e e e*, and springs *d*, *k* and *v*, hooked lever *C*, hasp *B*, in combination with the flat key *D*, bitted on its sides or end, constructed and arranged substantially in the manner and for the purposes herein set forth.

3. The combination of a circular, oscillating, and notched fence *b* and projection *y* with stop-spring *d*, flat key *D*, hooked lever *C*, and hasp *B*, substantially in the manner and for the purpose set forth.

JOHN H. AMES.

Witnesses:

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G. M. PLYMPTON.