(No Model.)

F. W. MIX.

PADLOCK.

No. 351,458. Patented Oct. 26, 1886.

Fig. 3.

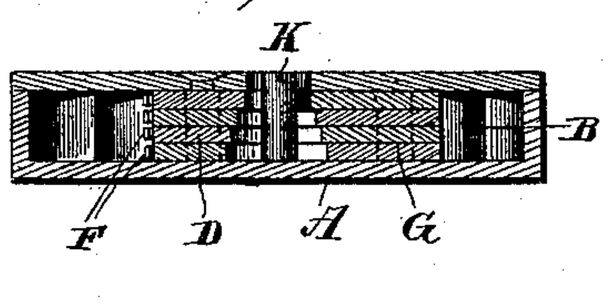


Fig. 1.

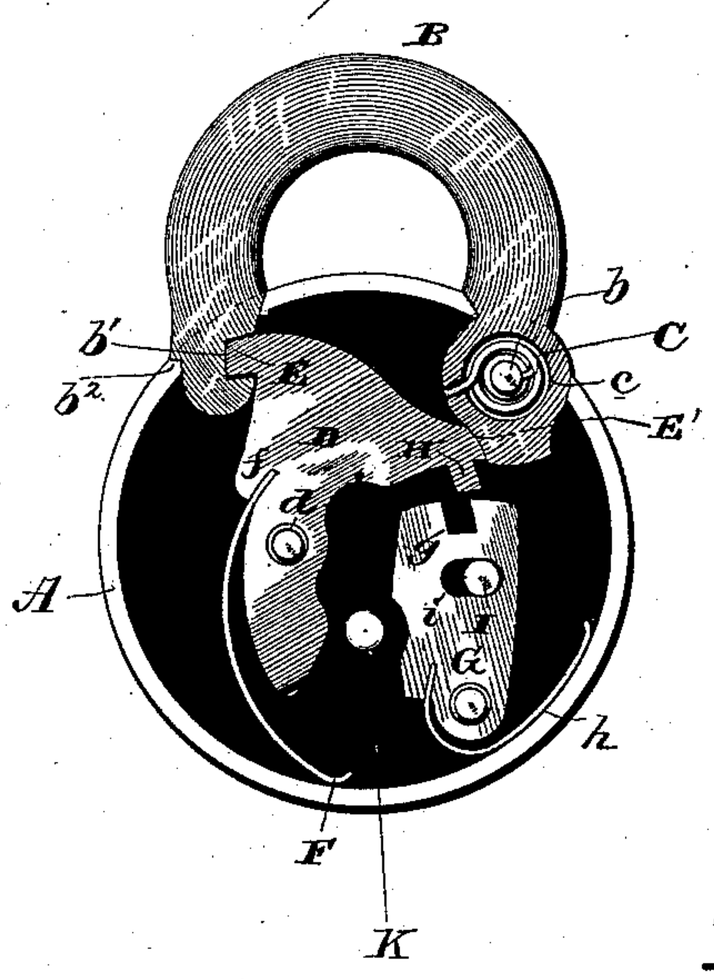


Fig. 2.

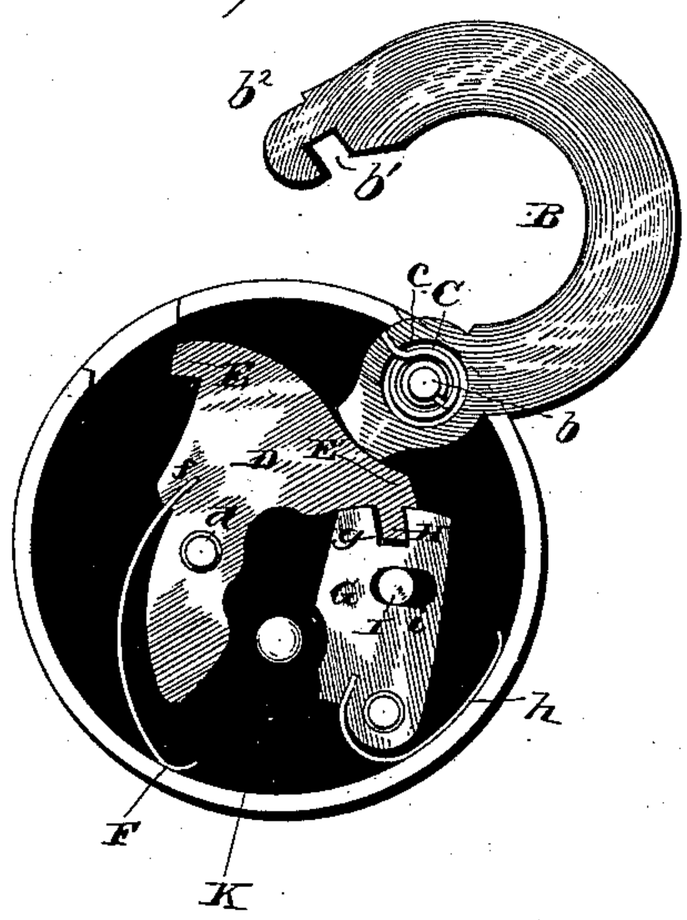
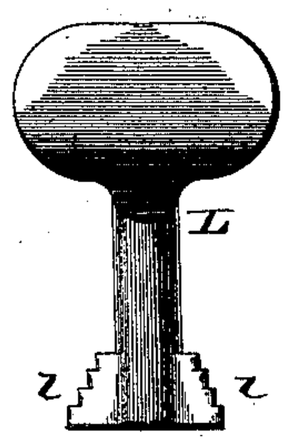


Fig. 4.



WITNESSES

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PADLOCK.

SPECIFICATION forming part of Letters Patent No. 351,458, dated October 26, 1886.

Application filed August 7, 1886. Serial No. 210,332. (No model.)

To all whom it may concern:

Be it known that I, FRANK W. MIX, of New Britain, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Padlocks; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in padlocks.

The object is to provide a strong, neat, and durable padlock, as simple as is consistent with a fair degree of safety.

A further object is to provide a padlock which cannot be easily "picked," and which cannot be sprung open by strain on the hasp.

With these ends in view my invention consists in certain features of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view of the padlock in side elevation, with one side of the casing removed, showing the parts in locked adjustment. Fig. 2 is a similar view showing the parts in unlocked adjustment. Fig. 3 is a transverse section through the padlock, and Fig. 4 is a view of the key.

A represents the casing of the lock, and B the hasp, pivotally secured to the casing near its edge, and caused, when set free, to automatically assume an open position, by means of a spring, C, preferably coiled around the pivotal bolt or stud *b*, within a recess, *c*, formed in the side of the hasp around the said pivotal bolt or stud. One end of the spring C is secured to the hasp and the other to the pivotal bolt or stud, as is common in the employment of coiled springs. The hasp, at the point where it passes through the rim of the casing, is preferably rounded, as shown, to admit of its opening and closing without leaving an open space in the casing, which would be liable to admit dirt or water. The free end of the hasp is provided with a notch, *b'*, which preferably has a slight slant in the opposite direction from that which the hasp takes in opening, so that any strain to which the hasp may be subjected tending to open it will not tend to force the bolt out of the notch. The said free end of the hasp is further provided with a shoulder, b^2, on its outside edge, which is adapted to rest in contact with the rim of the casing, as shown in Fig. 1, when the hasp is closed the proper distance to receive the locking-bolt. Any annoyance which might arise from pressing the end of the hasp too far within the casing, or not far enough, is thus obviated, and a perfect joint between the hasp and the rim of the casing obtained.

D represents the bolt. It is made in the shape substantially as shown, in order to economize metal, as far as consistent with the requisite strength, and in order to fulfill its functions. It is pivotally secured on a bolt or stud, *d*, located a little to one side of the center of the casing, and its end toward the hasp is adapted to engage both ends of the hasp as follows: When in locked position, a lug or projection, E, is adapted to rest within the notch *b'* in the free end of the hasp, and at the same time a projection, E', at the opposite corner of the same end, is adapted to rest in contact with the inner side of the hinged end of the hasp, within the casing. The locking-bolt D is drawn forward into locked adjustment by a spring, F, one end of which is attached to the bolt above its pivotal point, as shown at *f*, and the opposite end allowed to work freely against the inside face of the rim of the casing. The spring F and the slant of the notch *b'* in the end of the hasp would be quite sufficient to hold the bolt D in locked position under ordinary circumstances; but the lock could be quite readily picked, and a very sudden and strong jar might possibly disengage the bolt. To obviate these objections, and to render the lock more effective, a tumbler, G, is provided. It is pivoted at its lower end, near the edge of the casing, and extends upwardly toward the hinge end of the hasp on the opposite side of the center of the casing from the locking-bolt. Its upper end is provided with a notch, *g*, adapted to receive a corresponding projection, H, on the locking bolt when the hasp is swung open, and when the parts are in locked adjustment the upper end of the tumbler rests in close proximity to the end of the said projection H and positively prevents the backward swing of the bolt D. The tumbler is constantly drawn toward the bolt D by a spring, *h*, one end of which is secured thereto above the pivotal point, and the opposite end is allowed to work freely in con-

tact with the inner face of the rim. The throw of the tumbler G toward the bolt D is limited by a stud or pin, I, which works in an elongated slot, *i*, formed transversely in the tumbler; or the tumbler might be provided with a projection on its lower end adapted to engage the casing and limit its forward throw.

K represents the key-post, and L the key. The latter is provided with oppositely-extending wings *l*, adapted to engage simultaneously the tumbler above its pivotal point and the bolt below its pivotal point. The effect is to throw the tumbler back sufficiently far to allow the projection H on the locking-bolt to enter the notch *g* in the end of the tumbler, and at the same time to force the bolt D backwardly out of engagement with the notch *b'* in the hasp. As soon as the free end of the hasp is released, it automatically swings open by the tension of the spring at its hinge, and as the projection H enters the notch *g* the hinge end of the hasp slides over the end of the locking-bolt and retains the several parts in unlocked adjustment. (Shown in Fig. 2.)

When it is desired to throw the parts into locked adjustment, the hasp is pressed forward, its free end being forced within the casing until stopped by the shoulder b^2, at which moment the locking-bolt D is free to swing forward, which it automatically does, and the tumbler automatically assumes its position beneath the projection H and positively secures the bolt.

The bolt D and tumbler G may be made each in one piece, or they may be composed of manifold sections having the same general form. As herein shown, they are composed of four layers free to swing independently of one another, and are cut away at the points where the key engages them, requiring a key such as shown, having the ends of its wings oblique and notched to engage the several layers in order.

The number of parts of which the bolt and tumbler are composed may be increased or diminished and cut in regular or irregular order where they engage the key, as may be found desirable. It is evident also that other slight changes might be resorted to in the form and arrangement of the several parts described without departing from the spirit and scope of my invention; hence I do not wish to limit myself strictly to the construction herein set forth; but,

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a padlock, the combination, with a spring-actuated locking-bolt pivotally secured to the casing, of a vibratory tumbler pivoted at its lower end and limited in its throw by a pin or stud located in an elongated closed slot formed transversely through the tumbler, a key-post located between the bolt and tumbler, and a key adapted to engage the tumbler above its pivotal point and engage the bolt below its pivotal point, substantially as set forth.

2. The padlock consisting, essentially, of the casing, the locking-bolt composed of one or more independent spring-actuated sections having the same general form, the tumbler pivoted at its lower end and composed of one or more spring-actuated sections having the same general form and limited in its or their throw or throws by a pin or stud located in an elongated closed slot formed transversely through the tumbler, and the spring-actuated hasp, the whole constructed substantially as set forth.

3. The combination, with a casing, hasp pivoted thereto and provided with a recess around the pivotal bolt, and a coiled spring located within said recess, one end of said spring being secured to the hasp and the other end to the pivotal bolt, of the spring-actuated locking-bolt having a projecting lug or tongue on its side opposite the free end of the hasp, a tumbler provided with a notch adapted to receive said lug or tongue, and a stud or pin adapted to limit the throw of the tumbler.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

FRANK W. MIX.

Witnesses:
CHAS. E. WETMORE,
E. L. PRIOR.