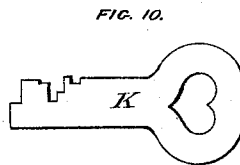
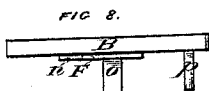
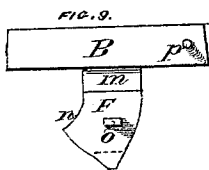
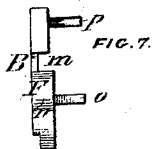
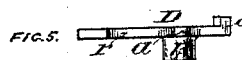
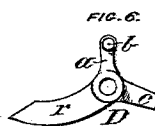
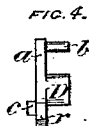
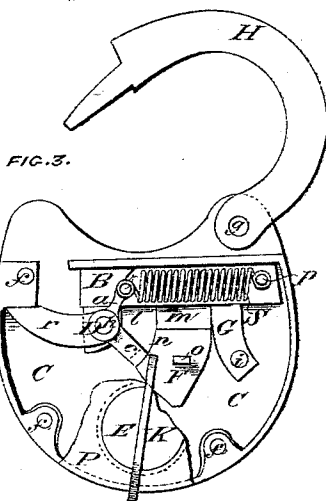
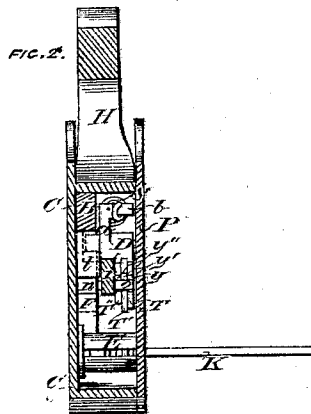
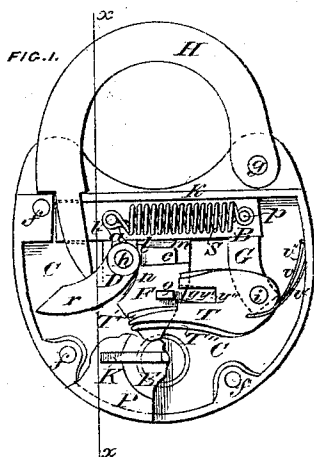


B. WALLMANN.
Pad-Lock.

No. 169,211.

Patented Oct. 26, 1875.



WITNESSES:
John A. Pitts.
William Waydelin.

INVENTOR:
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UNITED STATES PATENT OFFICE.

BODO WALLMANN, OF SAN FRANCISCO, CALIFORNIA.

IMPROVEMENT IN PADLOCKS.

Specification forming part of Letters Patent No. **169,211**, dated October 26, 1875; application filed August 31, 1875.

To all whom it may concern:

Be it known that I, BODO WALLMANN, of the city and county of San Francisco, State of California, have invented Improvements in Padlocks, of which the following is a specification:

My invention in padlocks consists essentially in arranging the working parts so that the bolt shall be in direct communication with the dog by means of a connecting spiral spring, whereby the same may be actuated by an ordinary plate-key, follower, hasp, and tumblers, in such manner that this connecting spiral spring shall be always contracted or at rest in the normal state of the lock, but shall be at its fullest tension at the points of locking and unlocking, and shall exert such force in a direct line; the object of my invention being to construct by this device a strong, simple, cheap, secure, and durable lock, as hereinafter described.

Figure 1 is a front view or vertical longitudinal elevation of the padlock embodying my invention, wherein it is shown with the plate of the casing removed. Fig. 2 is a vertical transverse section of Fig. 1 through the line *xx*. Fig. 3 is a vertical longitudinal elevation of this padlock with tumblers and front plate removed, showing the hasp disengaged from the bolt. Figs. 4, 5, and 6 are an end plan and side view, respectively, of the dog-piece. Figs. 7, 8, and 9 are an end plan and side view, respectively, of the bolt. Fig. 10 is a side view of the key.

With reference to the drawing, C is an ordinary metallic padlock-casing, provided with fixed pins *f f f*, for the fitting thereto of a covering-plate, P, and also a pin, *g*, and teats *h* and *i*, for receiving a hasp, H, dog D, and set of tumblers T T' T'', respectively, while the remaining parts, consisting of a bolt, B, and connecting spiral spring S, form with this dog D, in their construction and arrangement, the essential features of this my improvement. The dog D is adjusted to the teat *h*, fixed to the casing C, and forming part of a guide, *l*, for the bolt B, and differs from the general form of such movable lock-pieces in being provided, in addition to the ear *r*, with two arms, one, *a*, carrying a pin, *b*, for the attachment thereto of a spiral spring, S, and the

other, *c*, for use both as a slide-bit and stop to the bolt B. This bolt B is provided at its shank end with a projecting pin, *p*, for the connection thereto of this spiral spring S from the arm *a* of the dog D, and, when actuated backward or forward, is made to slide between the upper casing-plate *k* and the lower guides *l* and *G*. At about the middle of the lower part of this bolt B it projects downward into the shape of a deep flange-piece, F, wherein a groove, *m*, is so arranged as to admit of the slide-stop *c* therein during the travel of, or forward movement of, the bolt. This flange F is also hollowed out in the shape of an arc on one side, so as to allow of the travel of this stop *c* against it when the dog D is being turned on the fixed teat *h*, and it serves to hold the bolt B stationary. Also, a lug, *o*, is fixed onto the flange F of the bolt, so that an ordinary set of tumblers, T T' T'', with actuating-springs *v v' v''*, respectively, properly-warded key K, and follower E, may cause this lug *o* to enter the slots *y y' y''* of these tumblers when the bolt B is being pushed back by this key K.

The operation of this lock is as follows: Supposing the hasp H to be secured by the bolt B in the usual manner, and it is required to release the same or unlock, the key K is inserted into the follower E and turned from left to right, so as to press against the lower part of the flange-piece F. This will move the bolt B backward between the guides *k*, *l*, and *G*, and cause the lug *o* to enter the slots *y y' y''* of the tumblers T T' T'', while the dog D is kept stationary by reason of the grooved part *m* of the bolt holding in place the slide-stop *c* during its travel, but as this bolt keeps on receding it necessarily will elongate the spiral spring S and increase its tension till such time as the groove *m* releases the stop *c*, when, the bolt being freed at the same instant from the hasp H, the full force of this spring will be exerted in bringing up the dog-ear *r* and throwing well outward the hasp H, thus unlocking the padlock. For reversing the operation, or locking, the hasp H is pressed downward, in the usual manner, onto this ear *r*. This causes the slide-stop *c* to rub against the hollowed or curved part *n* of the flange F, by reason of the dog D being made to turn

on its fixed pin *h*, and in so doing the spring *S* becomes again elongated by the receding of the pin *b* from the bolt-shank pin *p*, (as the bolt *B* is prevented from moving by the action of the stop *c*,) but when this stop *c* has arrived in line so as to coincide with the groove *m* the spring *S*, having attained the requisite tension, shoots forward the now unobstructed bolt in the direction of this extended spring, and consequently with its full force, so that the locking is instantly effected.

By this arrangement a strong, simple, and cheap lock is obtained, since, independently of the usual hasp, key, follower, and tumblers, the working portions are restricted to a bolt, dog, and connecting spiral spring. It is also essentially a durable lock, for, as already explained, by reason of the spiral spring *S* only being extended when actually required for use, it is not subjected to the wear and tear of other locks, wherein the springs are continually at tension, and, as this spring is spiral, and acts directly in line with the bolt, it has considerable advantage over those having a curved or circular movement. It is, besides, a safe or secure lock when compared to those

with ordinary springs, inasmuch as a lock with a curved spring can readily be tampered with by a blow from a mallet on the side of the padlock-casing, which instantly disorganizes the spring and several pieces within, while in this device the various parts would have to be broken by such hammering before releasing the hasp.

I claim as my invention—

1. The spiral spring *S*, connecting the dog *D* by its arm *a*, and pin *b* to the bolt *B* by the shank-pin *p*, arranged so as to actuate the bolt *B* longitudinally between the guides *l*, *G*, and *k*, fixed to the casing *C*, and to turn the dog *D* on the teat *h*, in the manner and for the purposes herein set forth.

2. The spiral spring *S* and pivoted dog *D*, provided with stop *c*, arm *a*, and pin *b*, in combination with the bolt *B*, fitted within the guides *l*, *G*, and *k*, and provided with pin *p* and grooved curved flange *m n F*, substantially as and for the purpose specified.

BODO WALLMANN.

Witnesses:

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LIONEL VARICAS.