WILLIAM H. AKINS & H. E. ABELL.

Improvement in Padlocks.

No. 114,386. Patented May 2, 1871.

Fig. 1.

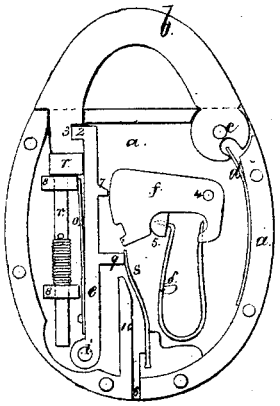


Fig. 3.

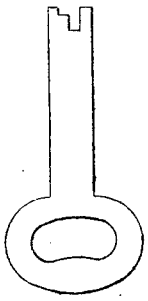
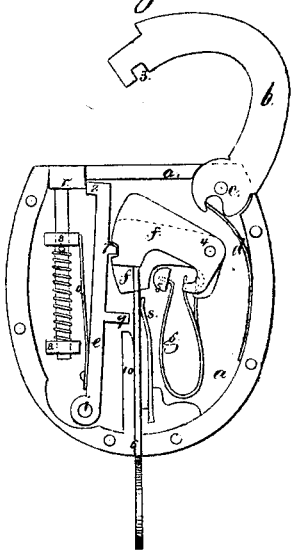


Fig. 2.



Witnesses,

Chas. H. Smith

Geo. B. Walker.

William H. Akins
per L. W. Serrell atty
H. E. Abell.

UNITED STATES PATENT OFFICE.

WILLIAM H. AKINS, OF ITHACA, AND HENRY E. ABELL, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN PADLOCKS.

Specification forming part of Letters Patent No. **114,386**, dated May 2, 1871.

To all whom it may concern:

Be it known that we, WILLIAM H. AKINS, of Ithaca, in the county of Tompkins and State of New York, and HENRY E. ABELL, of Brooklyn, Kings county, State of New York, have invented and made an Improvement in Padlocks; and the following is declared to be a correct description of the same.

In padlocks for mail-bags it is desirable that the shackle should spring open when unlocked; that the key-hole should be small, to prevent the introduction of gunpowder; that the bolt cannot become detached from the shackle by any concussion or blow on the lock, either accidental or designed; that the tumblers cannot be examined through the key-hole; and that the lock can remain open, but the bolt remain in a position that the hasp has only to be pressed down and the bolt will spring to its place and hold the hasp, or else the bolt has to be withdrawn by the action of the key before the shackle can be pressed into place, so that the closing of the lock may or may not be under control of the person holding the key. In our lock all these various requirements are met. The lock is strong, not liable to get out of repair, and opportunity is afforded for sealing the inside of the lock, to detect any attempt to open the lock.

In the drawings, Figure 1 is a view of the lock with the cap-plate removed and the shackle locked. Fig. 2 is a similar view, with the shackle thrown back, and Fig. 3 shows the key for a four-tumbler lock.

The case *a* is of any desired size and shape. *b* is the shackle, swinging upon the pin *c*, and thrown up by the spring *d*. The bolt *e* swings upon the pin *i*, and has an offset or talon, 2, that enters the notch 3 in the shackle *b* when locked. The tumblers *f* swing upon the pin 4, and are acted upon by the springs *g* between the stud 5 and tumbler-tails; or said springs might be applied in any convenient manner. The ends of the tumblers contiguous to the bolt *e* are formed as arcs of circles, and are notched, the key being a plate-key, that is introduced through the key-hole 6, and the bits are of such a length that the notches of the tumblers are brought on line to receive the detent 7 of the bolt *e*, so that the bolt may be thrown back by the spring *o*. The sliding bolt *r* is fitted to move in the lugs 8 8 by the action of a helical or other spring, and the head of the bolt forms a case-closer, a bolt-holder, and a shackle-mover. It is now to be understood that when the bolt *e* is thrown back by the spring *o*, after the tumblers have been placed by the key, the head of the bolt *r* acts to start the shackle and eject the swinging end from the case. Then the head holds the bolt *e* and offset 2 in position, as in Fig. 2, and this head of the bolt *r* fills the opening or mortise through which the shackle passes, so as to exclude dust and prevent the swinging end of the said shackle falling into the lock and catching accidentally, in case the spring *d* is broken or too weak to hold up the shackle. When the shackle is pressed to place, the bolt *r* is forced down and the bolt *e* thrown by the spring *s*, so as to hold the shackle, and the tumblers, being liberated from the talon 7, assume their normal position, and effectually prevent the bolt being moved back by concussion or otherwise until the tumblers are properly placed. This spring *s* intercepts any pick as it comes between the key-hole and tumblers, and the projection 9 of the bolt *e* becomes a fence to cut off access to the tumber-notches.

When the parts are in the position of Fig. 2, no opportunity exists for the lock to become injured by dirt or foreign substances, there being no more opportunity for any such substance to get into the lock than there is when the lock is locked. The key can be withdrawn, and when the hasp or shackle is pressed into place it will catch. If the bolt *r* is pressed down when the shackle is thrown back, the bolt *e* and tumblers *f* will assume their normal position, and the key will have to be introduced before the shackle can be pressed into the lock.

By taking off the cap of the lock a seal can be applied between the fence 9 and the key-hole fence 10, or between the tumblers *f* and

spring *s*, so that an effort to open the lock can be detected and lead to the discovery of the place at which such attempt is made to open the lock.

We claim as our invention—

1. The key-hole spring *s*, in combination with the plate-key, tumblers *f*, bolt *e*, and shackle *b*, as and for the purposes set forth.

2. The fences 9 and 10, in combination with the bolt *e*, tumblers *f*, and spring *s*, as and for the purposes specified.

Signed by us in the presence of witnesses.

WM. H. AKINS.
H. E. ABELL.

Witnesses:
SAML. LOVE,
JESSE M. MCKINNEY,
CHAS. H. SMITH,
GEO. D. WALKER.