2 Sheets—Sheet 1.

J. W. ELLIOTT.

PADLOCK.

No. 185,222. Patented Dec. 12, 1876.

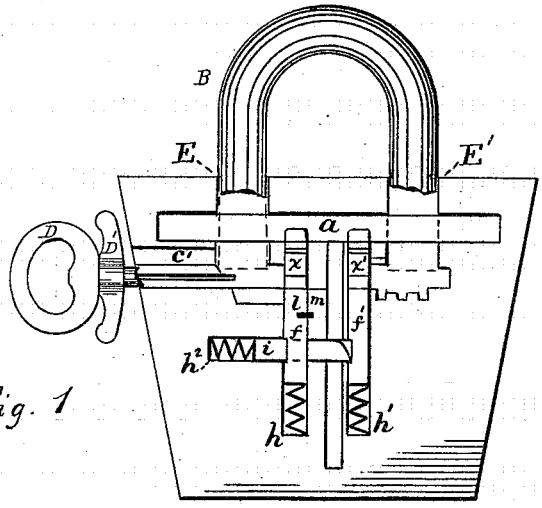
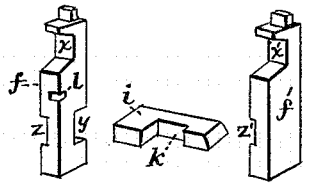


Fig. 1



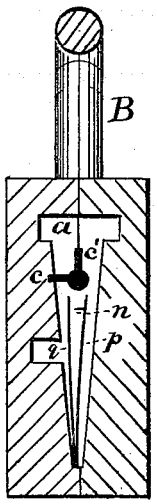


Fig. 2

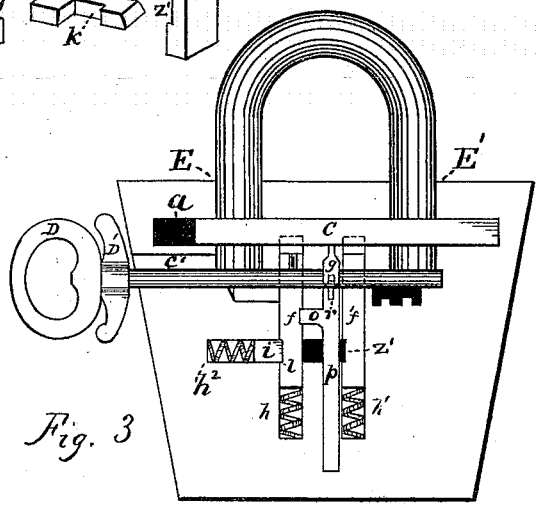


Fig. 3

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2 Sheets—Sheet 2.

J. W. ELLIOTT.

PADLOCK.

No. 185,222. Patented Dec. 12, 1876.

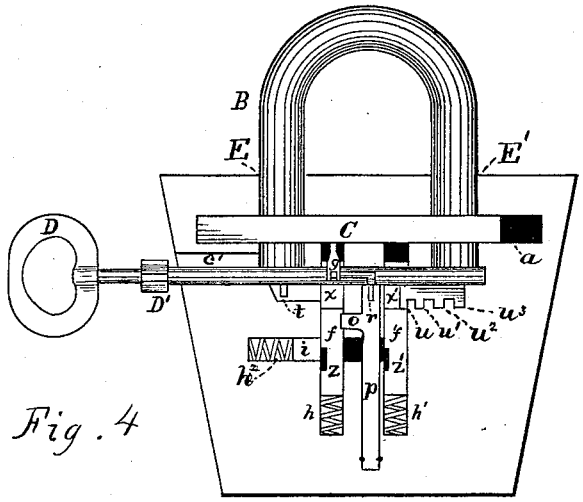


Fig. 4

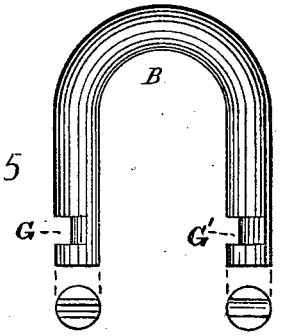


Fig. 5

Fig. 6

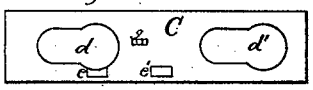
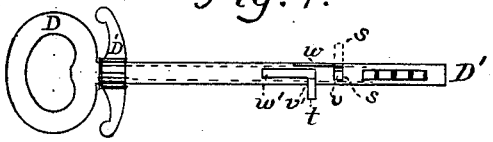


Fig. 7.



Witnesses,
A. A. Adams.
F. B. Poor

Inventor,
J. W. Elliott
Per his attorney O D Lewis

UNITED STATES PATENT OFFICE.

JAMES W. ELLIOTT, OF BEAVER FALLS, PENNSYLVANIA.

IMPROVEMENT IN PADLOCKS.

Specification forming part of Letters Patent No. **185,222**, dated December 12, 1876; application filed February 19, 1876.

To all whom it may concern:

Be it known that I, JAMES W. ELLIOTT, of Beaver Falls, in the county of Beaver and State of Pennsylvania, have invented a new and useful Improvement in Padlocks and Keys; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, forming a part of this specification, in which—

Figure 1 is a view of the internal mechanism, the bolt and double lateral spring being removed, also showing detached views of the spring-tumblers and cross-bolt. Fig. 2 is a sectional view of the lock, showing an edge view of the double lateral spring. Fig. 3 shows the relative positions of the key and the parts of the lock when locked. Fig. 4 shows the positions of the key and parts when unlocked. Fig. 5 is a representation of the hasp. Fig. 6 is a bottom view of the lock-bolt, and Fig. 7 shows the form of the key.

My invention relates to an improved padlock and key; and consists, first, of a slotted and recessed sliding bolt, having a notched projecting pin, in combination with two notched spring-tumblers, a cross-bolt, and a double lateral spring, one portion of which is notched in its free end, and provided with a detaining-flange; secondly, in a key consisting of a barrel provided with a series of wards and two L-shaped slots, in combination with a rod having two wards projecting therefrom, at an angle of ninety degrees to each other, through said L-shaped slots; and it further consists in the combination and arrangement of the parts which will be hereinafter more fully described and claimed.

In the description of the accompanying drawings similar letters of reference indicate like parts of the invention.

The bolt C is provided with openings *d d'*, made larger at the right than at the left hand side, recesses *e e'*, and a notched projecting pin, *g*, on its under side. This bolt fits into a groove, *a*, formed in the case, said groove being made longer than the bolt C to permit the latter to slide therein. The tumblers *f f'* slide in vertical grooves formed in the case of the padlock, and are forced upward by the spiral springs $h\,h^1$. The tumbler *f* has notches *x y z*, respectively, in its upper, lower, and left-hand surfaces, and has a shouldered point, which enters the recess *e* in the under surface of the bolt C. The tumbler *f'* has notches *x'* and *z'*, respectively, in its upper and left-hand surfaces, and also has a shouldered point, which enters the recess *e'* in the bolt C. The cross-bolt *i* has a notch, *k*, in its upper surface, which receives the tumbler *f*; and said cross-bolt *i* slides in a cross-groove in the case, and is operated in opposition to the tumblers *f f'* by a spiral spring, h^2. The tumbler *f* has still another notch, *l*, in its upper right-hand corner, which, when the tumbler is in the locked position, unites with a notch, *m*, in the partition between the tumblers *f* and *f'*, and forms a recess, *l m*, Fig. 1, which receives the detaining-flange *n*, depending from the arm *o* on the upper portion of the double lateral spring *p q*. The upper portion of the double lateral spring *p q* has a notch, *r*, in its free end, and the lower portion of said spring forms a tongue to the notch *r*, which, when acted upon by the ward *s* of the portion D of the key from the left side, will lift both portions of the spring *p q*, and release the tumbler *f*, by withdrawing the detaining-flange *n* from the notch *l m*; but when the ward *s* is turned against said double spring from the right-hand side, the ward *s* will pass through the notch *r*, carry the tongue or portion *q* to the left until it slips from the ward *s*, and resumes its place against the portion *p*. The key consists of the rod D, provided with the wards *s* and *t*, projecting therefrom at an angle of ninety degrees to each other, and the barrel D', having the wards $u\,u^1\,u^2\,u^3$, and the cross-slots *v v'*, connecting with parallel slots *w w'*. The key-hole is provided with recesses *c c'* at right angles to each other.

When the key is to be inserted into the lock the ward *s*, which occupies the L-shaped slot *v w*, should be turned in line with the wards *u*, &c., which brings the ward *t* at right angles thereto, so that the wards *s* and *u*, &c., will enter the recess *c*, and the ward *t* the recess *c'* of the key-hole. When the key has been entered into the lock the barrel D' is turned a quarter-turn to the left, which brings the ward *u* against the tumbler *f'*, and forces it out of the recess *e'*. At the same time the

cross-bolt *i* is moved out of contact with the notch *z* in tumbler *f* by means of its beveled end acting against the shoulder of notch *z'* in the tumbler *f'*. This quarter-turn of the barrel D' carries with it the wards *s* and *t* one quarter-turn to the left, brings the ward *s* in contact with the tongue *q*, and the ward *t* nearly in contact with the tumbler *f*, which has already been freed from the cross-bolt *i*, as before stated. A quarter-turn, now, to the left of the rod D will cause the ward *s* to remove the detaining-flange *n* from the notch *l m*, and drive the tumbler *f* back, thereby withdrawing the point from the recess *e* in the bolt C. The position of the key at this time causes the ward *s* to enter the notch in the lower end of the projecting pin *g*, and, by then drawing upon the portion D of the key, the ward *s* will draw the bolt C to the position shown in Fig. 4, which brings the largest sides of the openings *d d'* in line with the openings E E' in the lock-case, provided for the insertion and withdrawal of the hasp B. If the hasp B should be out of the lock it may be now inserted, and the notches G G' brought in position to receive the smaller sides of the openings *d d'*, when, by pushing upon the rod D, the ward *s*, which is still engaged with the projecting pin *g*, will slide the bolt C to the position shown in Fig. 3; and by turning the key one half-revolution to the right, the ward *s* will pass through the notch *r*, strike the spring *q*, and carry it to the left until it slips from the ward *s* to its place, at which time the tumblers *f f'* will have entered the recesses *e e'*, and the wards of the key will be in position to permit its withdrawal from the lock. When the lock is closed the cross-bolt *i* occupies the notches *z z'* in the tumblers *f f'*, as shown in Fig. 3. When the lock is opened the cross-bolt *i* is in the position shown in Fig. 4. When locked it will be understood that the notches G G', near the ends of the arms of the hasp B, occupy the smaller portions of the openings *d d'*, and the hasp cannot, therefore, be withdrawn.

Having thus described my improvements, what I claim as new and useful, and desire to secure by Letters Patent, is—

1. The bolt C, provided with the openings *d d'*, recesses *e e'*, and notched pin *g*, in combination with the spring-tumblers *f* and *f'*, the cross-bolt *i*, and the double lateral spring *p q*, provided with the notch *r* and detaining-flange *n*, constructed and operating substantially as hereinbefore set forth.

2. The padlock-key consisting of the rod D, provided with the wards *s* and *t*, in combination with the barrel D', having the wards *u* u^1 u^2 u^3, and the L-shaped slots *v w* and *v' w'*, constructed and operating substantially as and for the purposes hereinbefore set forth.

3. The bolt C, provided with the openings *d d'*, recesses *e e'*, and notched pin *g*, in combination with the spring-tumblers *f f'* and cross-bolt *i*, substantially as and for the purposes set forth.

4. The hasp B, having the notches G G', in combination with the bolt C, provided with openings *d d'*, recesses *e e'*, and notched pin *g*, and spring-tumblers *f f'*, having the cross-bolt *i*, substantially as and for the purposes set forth.

JAMES W. ELLIOTT.

Witnesses:

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A. A. ADAMS.