A. E. MARSHALL.

Lock.

No. 213,515. **Patented Mar. 25, 1879.**

Fig. 1.

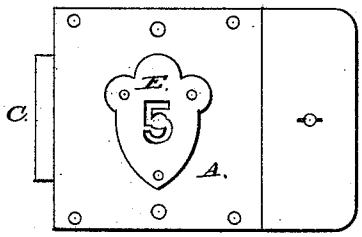


Fig. 2.

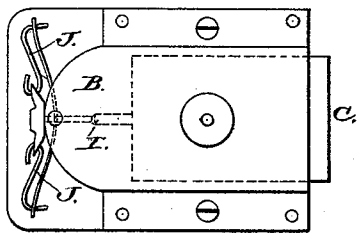


Fig. 3.

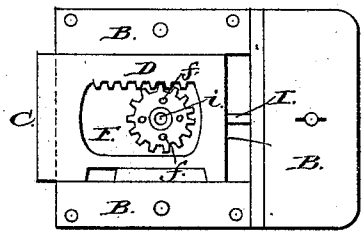


Fig. 4.

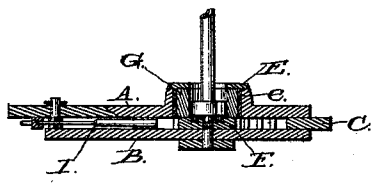


Fig. 5.

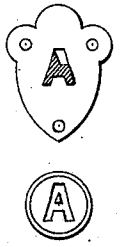


Fig. 6.

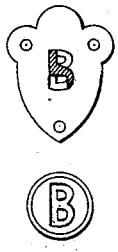


Fig. 7.

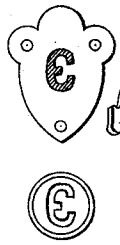


Fig. 11.

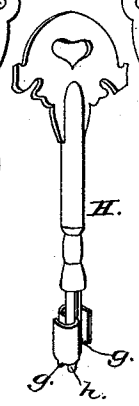


Fig. 8.

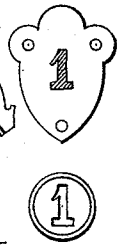


Fig. 9.

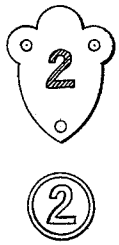
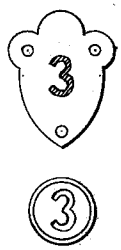


Fig. 10.



WITNESSES

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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN LOCKS.

Specification forming part of Letters Patent No. **213,515**, dated March 25, 1879; application filed February 10, 1879.

To all whom it may concern:

Be it known that I, AARON E. MARSHALL, of Brazil, in the county of Clay and State of Indiana, have invented certain new and useful Improvements in Combination-Locks; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Figure 1 is a front view, and Fig. 2 a rear view, of a lock embodying the improvements to which the invention relates. Fig. 3 is a front view of the same with plate removed. Fig. 4 is a section through the center, showing key in place; and Figs. 5, 6, 7, 8, 9, and 10 are views of the changeable shields, with their corresponding tumblers; and Fig. 11 is a perspective view, showing the form of key adapted to this style of lock.

This invention has relation to changeable locks; and it consists of certain improvements in the construction of the same, hereinafter more fully described, and particularly pointed out in the claims.

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

A is the front, and B the back, plate of the case containing the lock mechanism. C is a bolt, rectangular in shape, working in a recess in the back plate, B. The bolt C has a rectangular opening in its center, the upper side of which is provided with a rack or series of teeth, D.

To the back plate, B, is journaled a pinion, F, working in the rack D in the bolt C. The face of the pinion F is provided with two pin-holes, *f*.

The shield E is removably secured to the raised guard *e* of the front plate, A. The interior of the raised guard *e* is circular in shape, and contains the revolving tumbler G. The center of the revolving tumbler G is cut away in various forms to receive a correspondingly-formed key, H.

In the form chosen to illustrate my invention, the shield, revolving tumbler, and key represent the figure **5**; and it will be seen that by varying the forms of shield, tumbler, and key, a great number of alterations can be produced.

The operation of the invention is as follows: A shield, representing the figure **5** and having a corresponding tumbler, is secured to the lock. A like-shaped key—viz., figure **5**—is inserted in the shield, and passes through the tumbler G, and the pins *g g* enter the holes *f f* in the pinion F. If the key be then turned, motion will be given to the pinion F, which, in turn, will cause the bolt C to move back or forth, as the case may be.

It will thus be seen that only the key corresponding to the particular shield and tumbler can open the lock; and by placing the points *g g* on the key in different positions, other alterations of the same shield and tumbler will follow.

The end of the key H is provided with a pivot, *h*, which enters the hole *i* in the pinion *f*, serving to guide the key and retain it in place while the lock is being operated.

A rod, I, attached to the bolt, is connected to a spring, J, which serves to keep the bolt locked at all times, except when being operated upon by the key.

Having thus described my invention, what I claim as new and useful, and desire to secure by Letters Patent of the United States, is—

1. A lock having a series of different-shaped removable shields, E, having correspondingly-shaped tumblers and keys, all common to the same lock, substantially as set forth.

2. In a lock, the bolt C, having rack D, in combination with the pinion F, removable revolving tumbler G, changeable shield E, having openings peculiar to both, and the correspondingly-shaped key H, substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

AARON E. MARSHALL.

Witnesses:

RAYMOND L. KELSEY,

JOHN E. DILSAVER.