G. M. HATHAWAY.

Permutation Padlock.

No. 226,069 Patented Mar. 30, 1880.

Fig. 1.

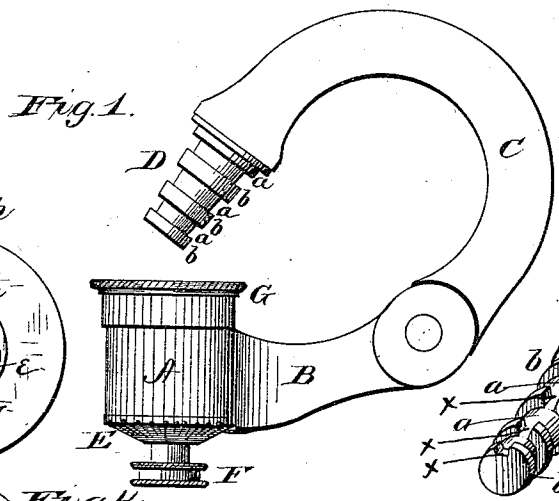


Fig. 5.

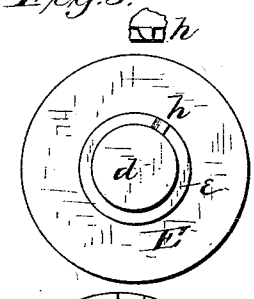


Fig. 6.

Fig. 4.

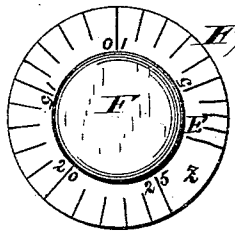


Fig. 7.

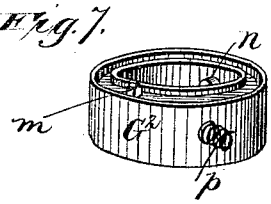


Fig. 8.

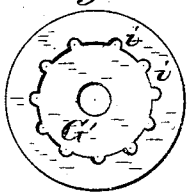


Fig. 2.

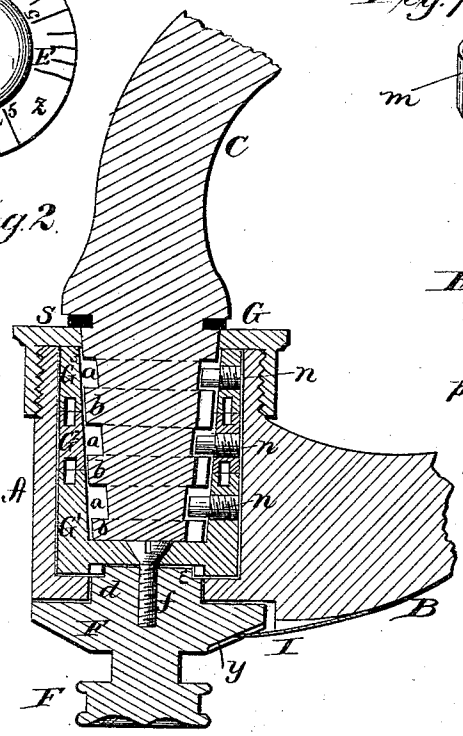
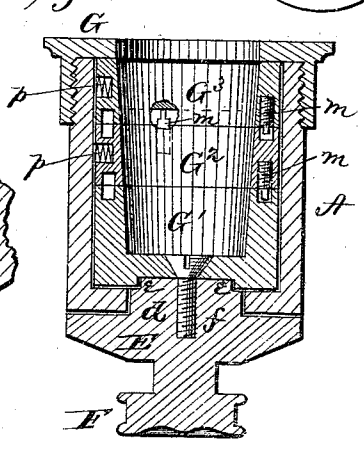


Fig. 3.



Witnesses.

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UNITED STATES PATENT OFFICE.

GEORGE M. HATHAWAY, OF ELMIRA, NEW YORK, ASSIGNOR OF ONE-HALF OF HIS RIGHT TO CLAY M. NEWCOMB, OF SAME PLACE.

PERMUTATION-PADLOCK.

SPECIFICATION forming part of Letters Patent No. 226,069, dated March 30, 1880.

Application filed November 28, 1879.

To all whom it may concern:

Be it known that I, GEORGE M. HATHAWAY, of Elmira, in the county of Chemung, and in the State of New York, 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 thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

The nature of my invention consists in the construction and arrangement of a combination-padlock, as will be hereinafter more fully set forth.

In the annexed drawings, Figure 1 is a side view of my padlock open. Fig. 2 is an enlarged vertical section with the hasp in place. Fig. 3 is a similar view of the lock-case without the hasp. Fig. 4 shows the dial on the outside. Fig. 5 shows the inside of the dial. Fig. 6 is a perspective view of the end of the hasp. Fig. 7 is a perspective view of one of the tumblers. Fig. 8 shows the under side of the bottom tumbler.

A represents the lock-case, made in cylindrical form, open at both ends, and provided with a side arm, B, to which the hasp C is hinged in any suitable manner. The end of the hasp C forms the part D, which is made slightly tapering in form and provided with three circumferential grooves, *a*, more or less, leaving a series of flanges, *b*, each of which has a notch, *x*, through it, as shown in Fig. 6.

E is the dial, graduated from 1 to 25, and provided with a knob, F, for turning the same. The dial is on its inner side provided with a circular projection, *d*, which is shouldered, as shown at *e*, and fits in the opening in the bottom of the lock-case, while the body of the dial bears against the lower end of the case.

G′ is the bottom tumbler, which is made in cup form and swiveled to the dial by means of a screw, *f*, from the inside. This tumbler is in the bottom provided with a series of notches, *i*, into one of which takes a projecting tooth, *h*, on the shoulder *e* of the dial-projection *d*, so that by turning the dial the tumbler G′ will also be turned.

G² is the next tumbler, and G³ the top one, both made in ring form and fitting in the lock-case. The adjoining edges of the three tumblers are grooved annularly—that is to say, the top edge of the tumbler G′ has an annular groove, while both edges of the tumbler G² and the bottom edge of the tumbler G³ are similarly grooved. In each of these grooves is inserted a pin, *m*, which projects into the groove on the adjacent tumbler.

All the tumblers have a horizontal pin, *n*, projecting inward, as shown in Fig. 2; and the two upper tumblers have each a spring, *p*, inserted in a recess in the outer side to bear against the inner face of the lock-case, so as to create sufficient friction to prevent the tumblers from getting out of position while setting the lock.

G is a cap screwed on the upper end of the lock-case, and provided with an opening to admit the part D of the hasp, the cap holding the tumblers in place. On the end of the hasp C, where the part D projects, is a shoulder with packing-ring *s*, to bear against the cap and prevent the ingress of dust and moisture.

When the tumblers are turned in the usual manner for combination-locks, according to a certain combination—say, for instance, 6, 21½, 1½—the tumblers will be left with their pins *n* in a line with each other, and with the notches *x* in lock-bolt flanges *b*, and the lock can be opened.

The tumblers must be placed in the same position to close the lock, and they are then turned so that the pins *n* enter the grooves *a* on the part D of the hasp. By now turning the cap G slightly backward to bear against the shoulder and ring *s*, it will bind the interior parts together, so that the dial cannot be turned, thus locking the combination or forming a double lock.

The combination can easily be changed by simply changing the position of one or more of the pins *m n*, or by changing the tooth *h* in a different notch, *i*.

My combination-lock is a night-lock—that is, a lock that can be opened by night as well as by day by any one having the proper combination.

It will be noticed that the graduation-marks on the dial are in the form of radial grooves or indentations, as shown particularly at *y* in Fig. 2, and a spring, I, is attached to the arm B, and provided with a suitable flange or projection to take into said groove. Furthermore, the graduating-marks are so arranged on the dial that a wide smooth space, *z*, is left thereon between the figures 25 and 1, so that even at night-time a person can tell when and where to commence counting. Then as the dial is turned the operator can tell by the click of the spring I every time a graduation is passed.

Instead of radial grooves, raised letters, figures, or characters may be used and answer the same purpose.

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

1. The combination of the series of cup and ring shaped tumblers G′ G² G³, the horizontal pins *n*, and the part D of the hasp, having circumferential grooves *a* and flanges *b*, with notches *x*, substantially as and for the purposes herein set forth.

2. The combination of the lock-case A, with tumblers therein, hasp C, with part D, with shoulder and packing-ring *s*, and the movable screw-cap G, as and for the purposes herein set forth.

3. The combination of the series of cup and ring shaped tumblers G′ G² G³, having horizontal pins *n*, the dial F, having on its face a series of radial depressed graduation-marks, *y*, and smooth space *z*, the spring I, and the part D of the hasp, having grooves *a* and notched flanges *b*, all constructed substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 26th day of November, 1879.

GEORGE M. HATHAWAY.

Witnesses:
H. AUBREY TOULMIN,
J. J. MCCARTHY.