

J. E. Treat.

Combination Lock.

No 93,501.

Patented Aug. 10, 1869.

Fig. 1

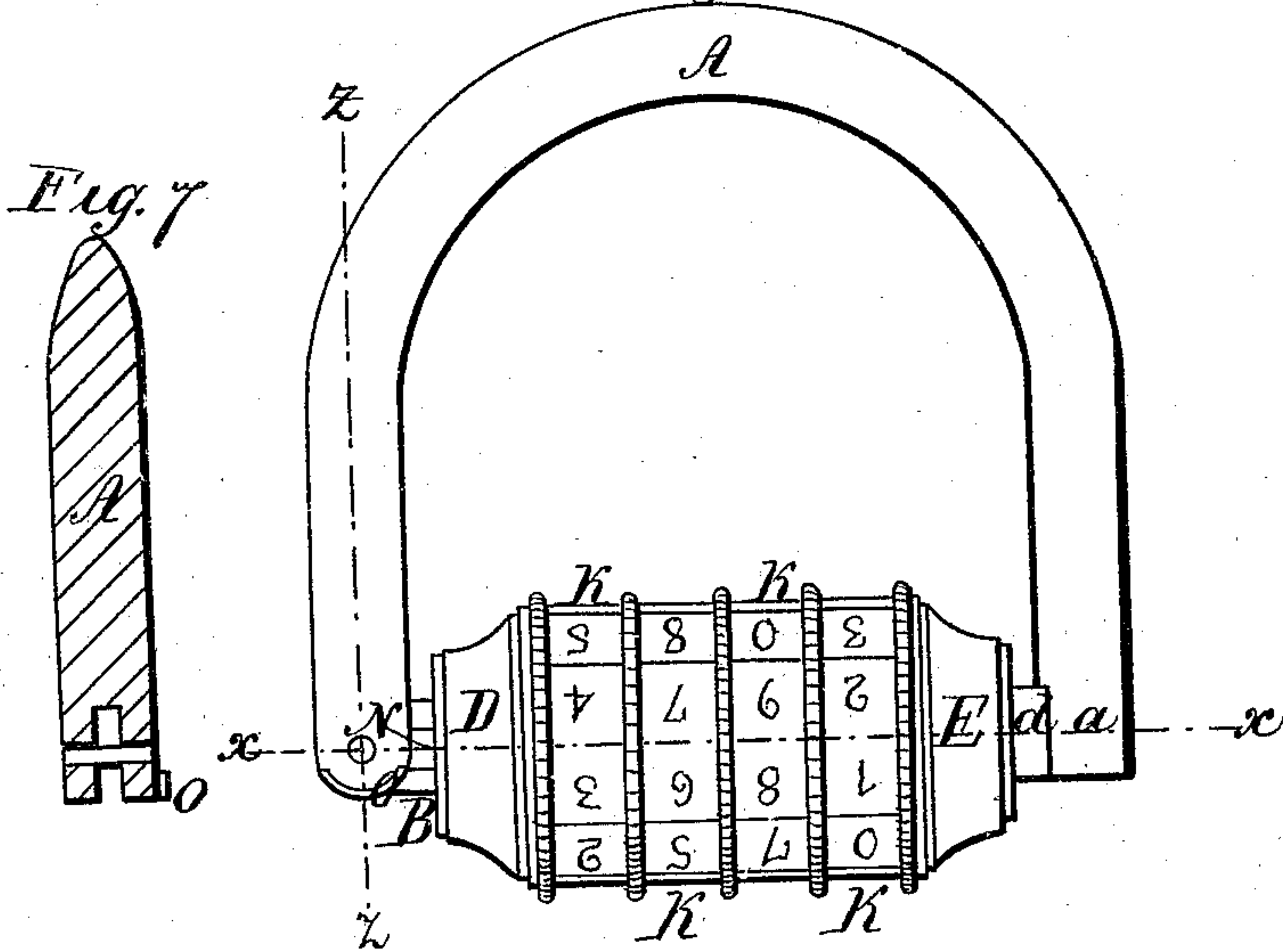


Fig. 7

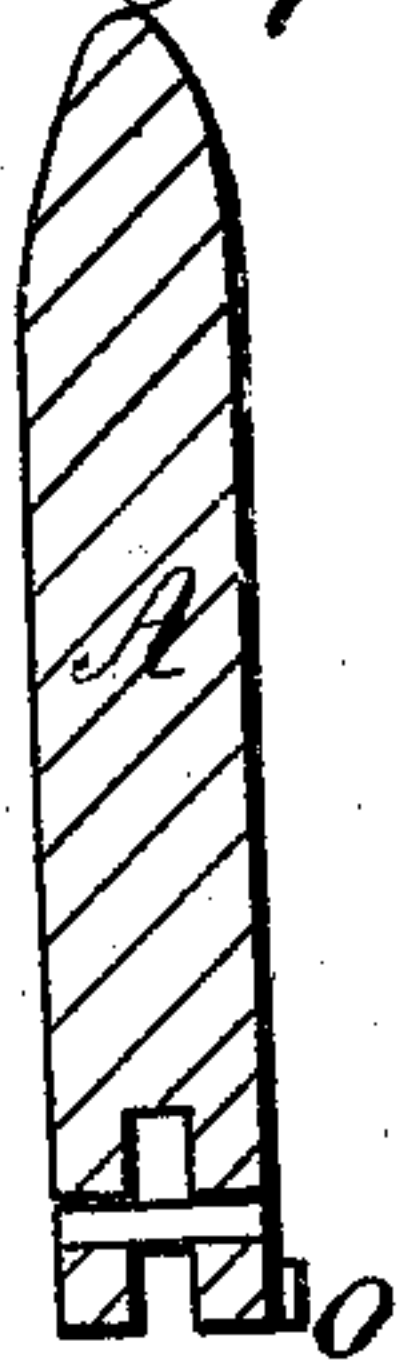


Fig. 2

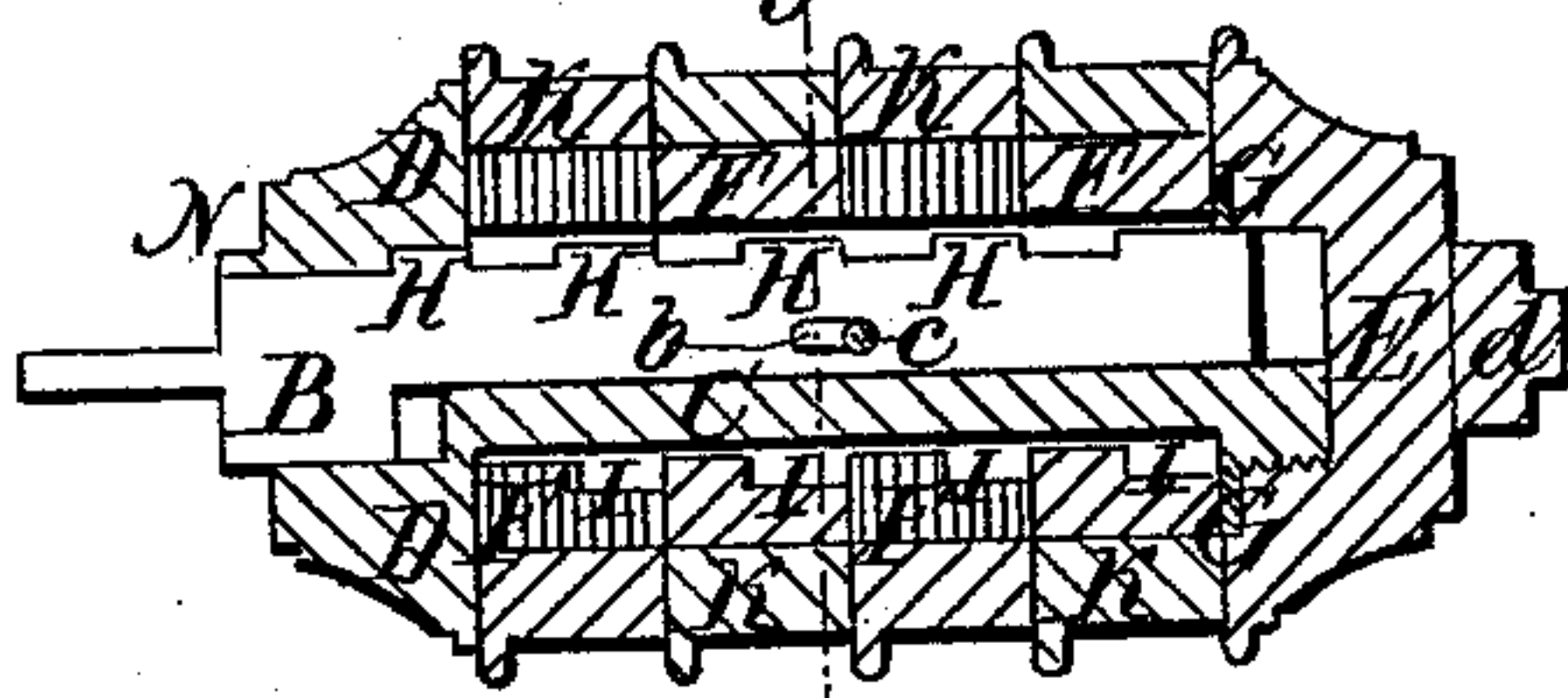


Fig. 3

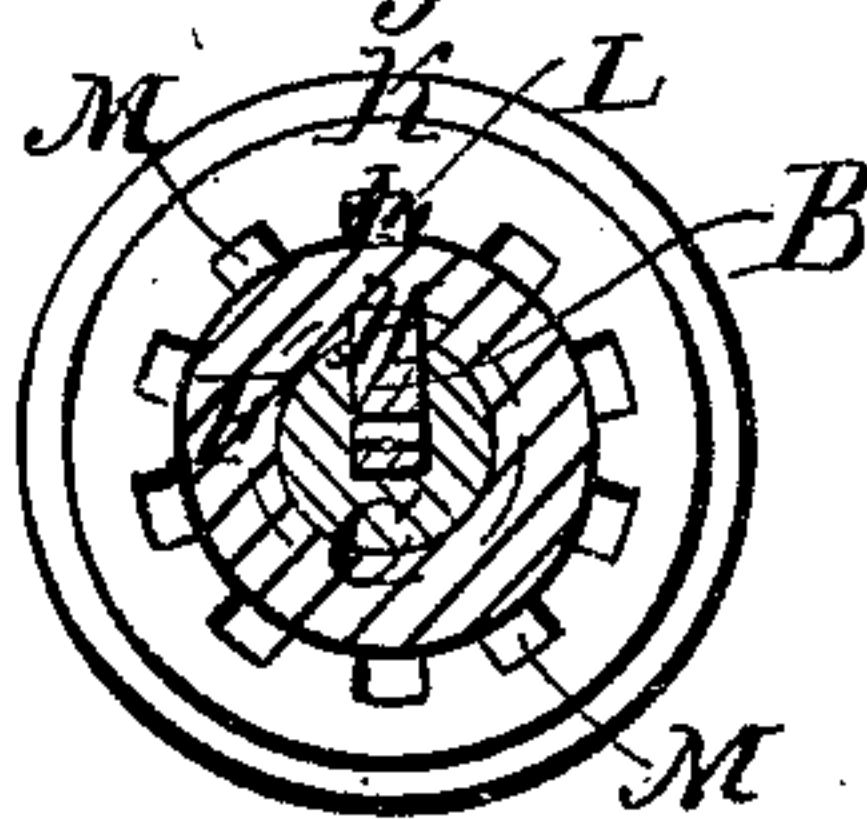


Fig. 4

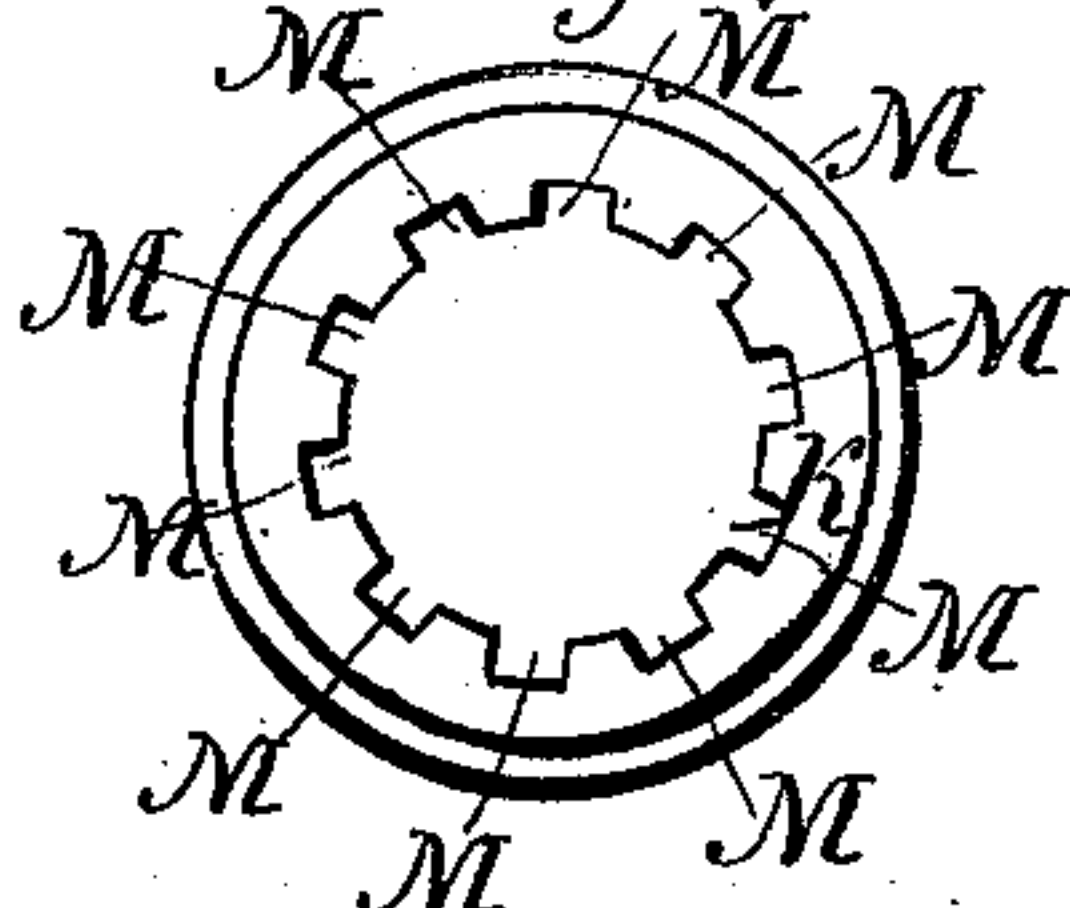


Fig. 5

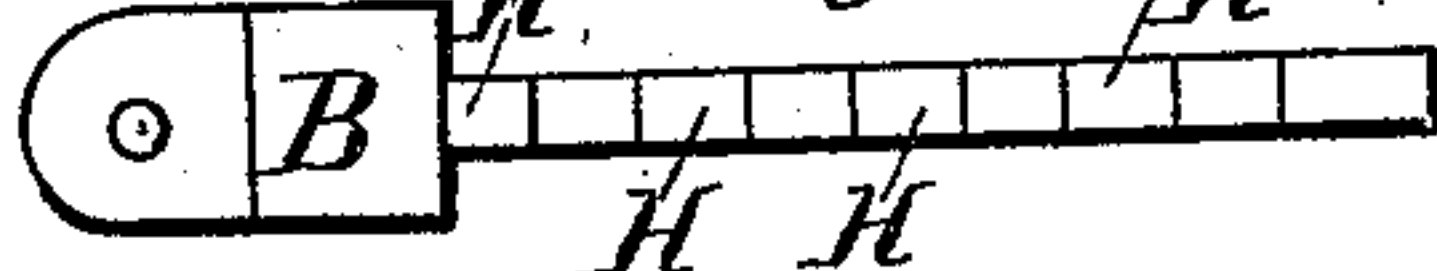
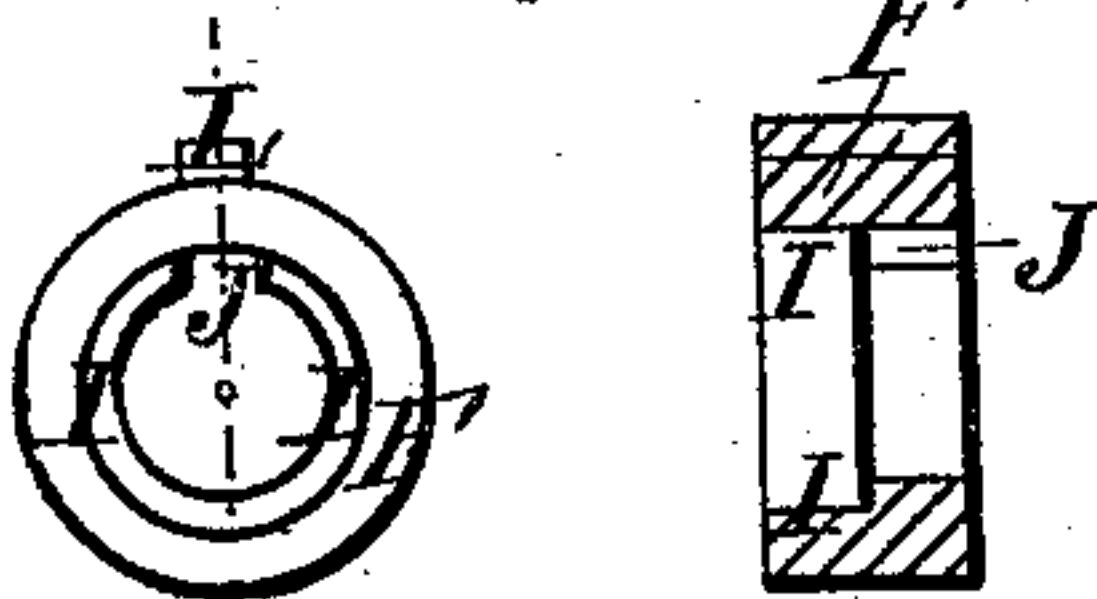


Fig. 6



Witnesses

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JOHN E. TREAT, OF OXFORD, MICHIGAN.

Letters Patent No. 93,501, dated August 10, 1869.

IMPROVEMENT IN PERMUTATION-PADLOCKS.

The Schedule referred to in these Letters Patent and making part of the same.

To whom it may concern:

Be it known that I, JOHN E. TREAT, of Oxford, in the county of Oakland, and State of Michigan, have invented a new and useful Improvement in Combination-Lock; and I do declare that the following is a true and accurate description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, and being a part of this specification, in which—

Figure 1 is an elevation of my device;

Figure 2 is a horizontal section of the same through the line *x-x* in fig. 1;

Figure 3 is a cross-section on the line *y-y* in fig. 2;

Figure 4 is an end view of one of the combination-rings;

Figure 5 is a plan view of the lock-bar;

Figure 6 is an end view and vertical section of one of the tumblers; and

Figure 7 is a vertical section of the pivoted end of the hasp on the line *z-z* in fig. 1.

The nature of this invention relates to an improvement in combination-padlocks operated without a key; and consists in a device for automatically holding the tumblers stationary while the lock is open; and also, in combination therewith, certain tumblers, rings, and a lock-bar, so constructed and arranged as to make a lock which shall be convenient, durable, and difficult to be picked.

In the drawings—

A represents a hasp or yoke, to one end of which is hinged the lock-bar B.

C is a slotted bolt, having a collar, D, at its end next the pivot.

Into the slot of the bolt is partially inserted the lock-bar B, which has a slot, *b*, in its central part, through which passes a pin, *c*, from the body of the bolt, allowing the latter to slide a short distance on the lock-bar.

On the free end of the bolt is secured a collar, E, provided with a stud, *d*, which enters a recess, *a*, in the end of the hasp, as shown in dotted lines in fig. 1.

F are annular tumblers, usually four in number, rotating on the sliding bolt C, and prevented from slipping off by a collar, G, on its end.

The lock-bar B is provided with four studs H, which project out of the slot in the sliding bolt C.

The internal diameters of the tumblers are enlarged to half their depths, to form a recess, I, which permits the tumblers to rotate freely over the studs, which are in the enlarged end of the tumblers when the lock is closed.

J is a slot in the smaller diameter of the tumbler, which slips over the stud H.

When all the tumblers are so turned on the sliding bolt as to present their slots to the studs H, the sliding bolt may be moved back on the lock-bar, withdrawing the stud *d* from the recess *a* of the hasp, and the bar swung open on its pivot.

It will be noticed, that unless the slots J in all the tumblers be presented in line to the studs H on the lock-bar, the sliding bolt C cannot be moved back.

The rotation of the tumblers is effected in the following manner:

Each tumbler is provided with an outwardly-projecting feather, L, in line with its slot J.

Each combination-ring K is marked on its periphery with the ten Arabic numerals.

Under each numeral is a slot, M, allowing the rings to be slipped over the tumblers, their feathers L entering the slots M of the rings. As the rings K are rotated, they carry the tumblers with them.

A line is marked on the collar D, denoting the position of the studs H on the lock-bar B. To this line, the line under the proper consecutive figures of the combination must be brought to open the lock; fig. 1, of the drawings, showing my lock ready to be opened on the combination 1863.

On the collar D is a lip, N, grooved on its under side, as shown.

O is a segmental flange on the hinge-end of the hasp.

When the bolt is drawn back in unlocking, this groove in the lip engages with the flange, and when the bar is swung open, it prevents the rotation of the tumblers, so that the device is ready to lock when swung back, and especially useful in changing the combination, which is done as follows:

The bar B being swung open, the collar E and combination-rings K removed, a number, of four figures, is selected for the new combination. Each ring is successively slipped over the tumblers, taking care that the slot M under the proper figure embraces the stud H of the tumbler. The collar E is replaced, the bar B swung forward, and the stud *d* caused to enter its recess in the hasp. A slight movement of the rings and tumblers prevents the lock-bolt C from being moved back until the tumblers are again brought to their proper relative positions.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In combination-locks, the grooved lip N and the hasp A, when provided with the flange O, arranged and operating in the manner and for the purpose herein set forth.

2. In combination with the above, the lock-bar B, provided with studs H, the slotted bolt C, and pin *c*, collars D, G, and E, and bolt-stud *d*, the tumblers F, provided with the recesses I, slots J, and feathers L, and the combination-rings K, with their slots M, when constructed, arranged, and operating substantially as and for the purposes herein shown and specified.

JOHN E. TREAT.

Witnesses:

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