No. 647,408. Patented Apr. 10, 1900.

J. R. HOUTS.

PERMUTATION PADLOCK.

(Application filed July 8, 1899.)

(No Model.)

Fig. 1.

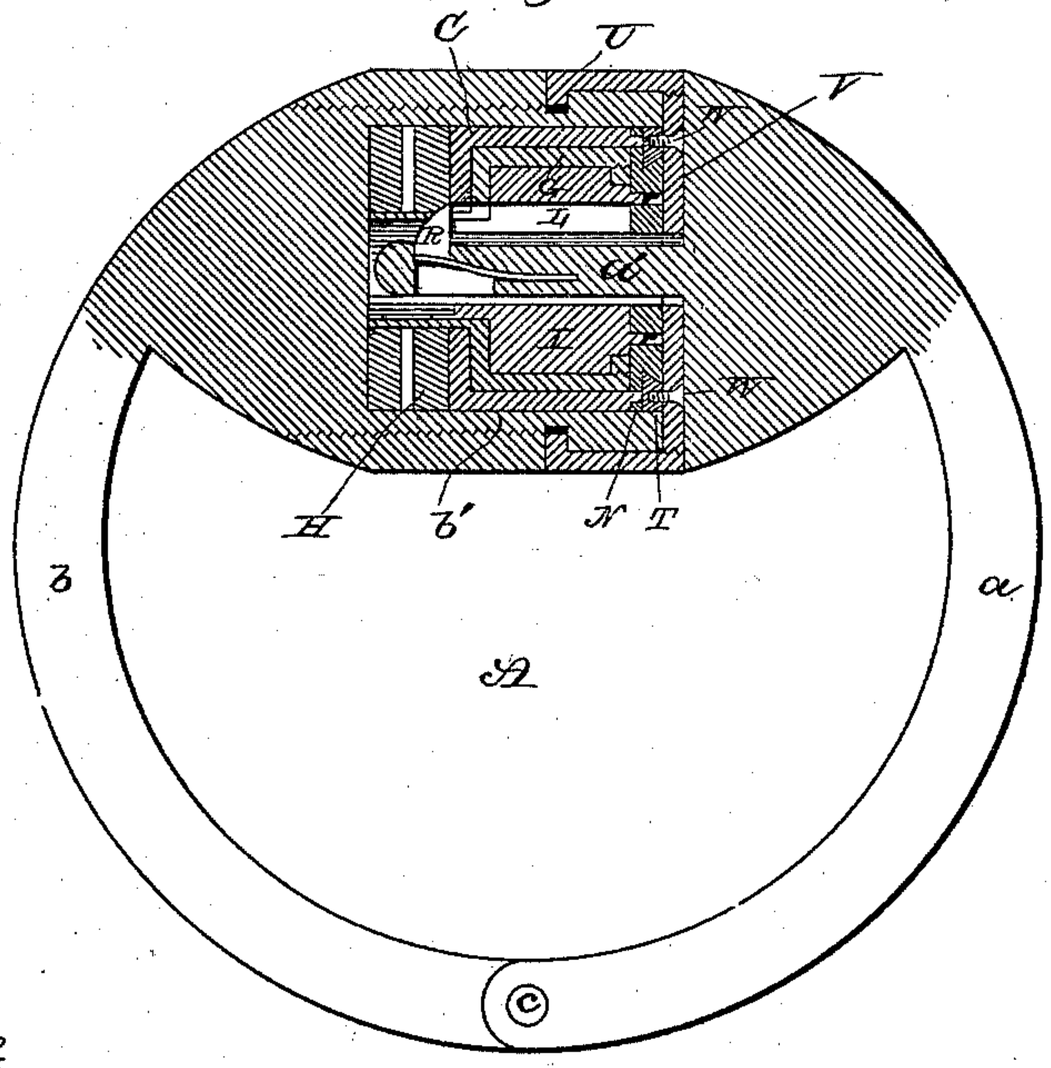


Fig. 2.

Fig. 3.

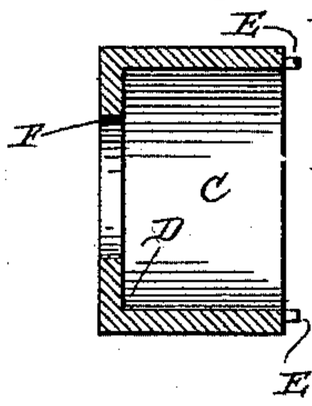


Fig. 4.

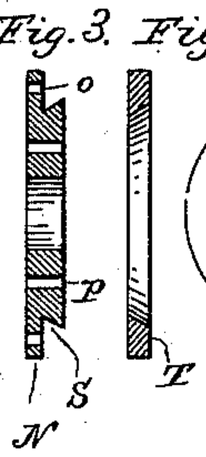


Fig. 5.

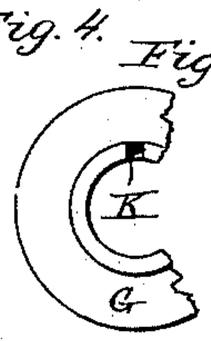


Fig. 6.

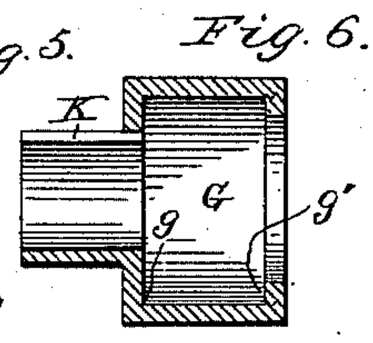


Fig. 7.

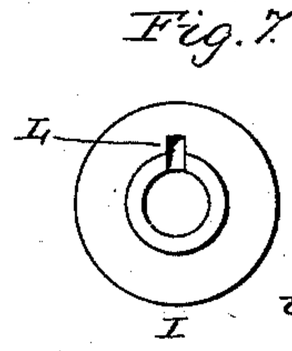
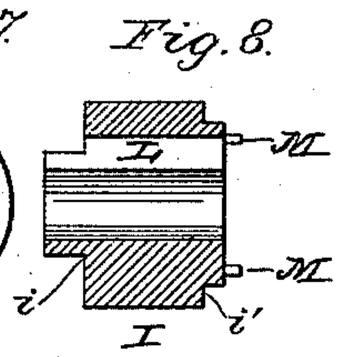


Fig. 8.



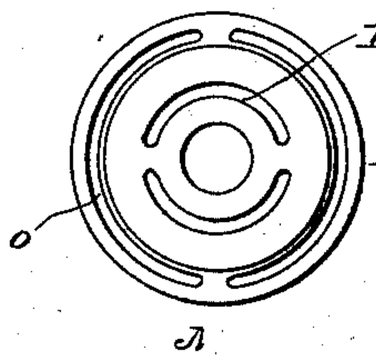


Fig. 9.

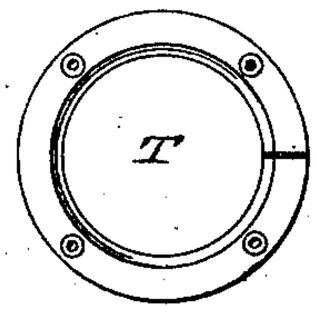
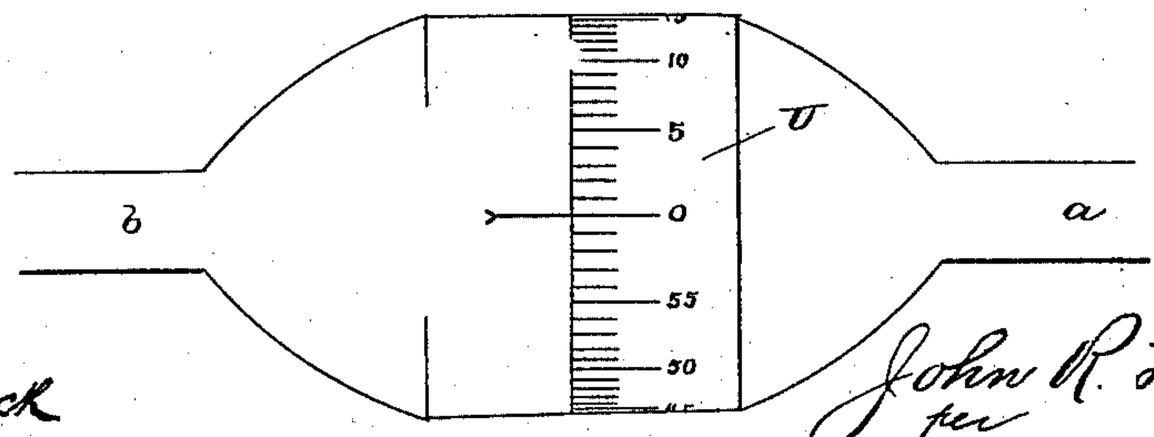


Fig. 10.

Fig. 11.



Witnesses
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per
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UNITED STATES PATENT OFFICE.

JOHN R. HOUTS, OF WASHINGTON, DISTRICT OF COLUMBIA.

PERMUTATION-PADLOCK.

SPECIFICATION forming part of Letters Patent No. 647,408, dated April 10, 1900.

Application filed July 8, 1899. Serial No. 723,167. (No model.)

To all whom it may concern:

Be it known that I, JOHN R. HOUTS, a citizen of the United States, and a resident of Washington, in the District of Columbia, have invented certain new and useful Improvements in Combination Ring-Locks, of which the following is a specification.

My invention consists in a ring-shaped combination-lock comprising two sections hinged or pivoted together, one of said sections having a projecting bolt provided with a spring-catch and the other section having at its free end a corresponding annular recess containing a series of cylindrical tumblers, an adjusting-disk having annular slots to receive stops with which the tumblers are provided, and an exterior operating-annulus connected to the adjusting-disk.

My invention further consists in the peculiar construction and combination of devices that will be more fully set forth hereinafter and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a sectional view of a combination ring-lock embodying my improvements. Figs. 2, 3, 4, 5, 6, 7, 8, 9, and 10 are detail views. Fig. 11 is an exterior view.

The ring-shaped lock A comprises the sections *a b*, which are hinged or pivoted together, as at *c*. The section *a* has at its free end a projecting bolt *a'*, which may be either formed integrally therewith, as here shown, or securely attached thereto, and the section *b* has an annular socket or recess *b'* at its free end, adapted to receive the bolt and the operating parts of the lock.

C represents a cylindrical tumbler, which is located and adapted to rotate in the recess *b'* and has the shoulder D at its inner end and the pair of stops E at its outer end on opposite sides. An open slot F is made in one side of the annular shoulder D.

G represents an annulus or sleeve which is located within the tumbler C and is firmly secured in the recess *b'*, as at H, or in any other suitable manner. An inner cylindrical tumbler I is located within the annulus G and is adapted to rotate therein, the said annulus or sleeve having shoulders *g g'*, which bear against corresponding shoulders *i i'*, with which the inner tumbler is provided. An open slot K is made in the annulus or sleeve G, and a corresponding open slot L is made in the inner tumbler I, and said tumblers C I are adapted to be so turned with relation to each other and to the annulus or sleeve as to cause the slots F K L to aline or register with each other. The tumbler I is further provided with a pair of stops M.

N represents an adjusting-disk which is provided with annular slots O to receive and operate the stops E of the outer tumbler and with concentric annular slots P to receive and operate the stops M on the inner tumbler, the function of said disk being to communicate rotary motion to said tumblers, and thereby cause the open slots to either aline or be turned out of alinement with each other in order to engage or disengage the spring-catch R of the bolt. An annular dovetailed shoulder S is formed on the outer face of the adjusting-disk N, which is engaged by a correspondingly-formed open ring T.

An exterior annulus U is sleeved and adapted to rotate on the free end of the section *b* of the lock, said exterior annulus having an annular shoulder or face plate V, which covers the outer end of the recess *b'* and the parts located in said recess, the said annulus being so constructed that it cannot be drawn from the said section *b'* when the lock is closed, and the said annulus is secured to the open ring T by means of screws W, as shown.

It will be understood from the foregoing description that by turning the annulus U rotary motion may be communicated through the ring T and adjusting-disk N to the tumblers, so as to cause them to either engage or disengage the catch on the bolt, and thereby either fasten the lock in a closed position or permit it to be opened, as may be desired. The annulus U is provided exteriorly with a combination-scale of numbers or letters, and by shifting the ring T axially on the adjusting-disk the combination may be changed whenever it is so desired.

Having thus described my invention, I claim—

1. The ring-shaped lock comprising the two sections hinged or pivoted together, one of said sections having the projecting bolt provided with the spring-catch; the series of

cylindrical tumblers located in an annular recess in the free end of the other section, said tumblers having open slots adapted to register with each other and with the catch, the adjusting-disk having annular slots adapted to receive stops with which the tumblers are provided, and the exterior annulus, connected to and adapted to operate said adjusting-disk, substantially as described.

2. In a lock, the combination of the section having the projecting bolt provided with a spring-catch; the section having the annular recess in its free end; the series of cylindrical tumblers in said annular recess, said tumblers having open slots adapted to register with each other and with the catch; the adjusting-disk having annular slots adapted to receive stops with which the tumblers are provided; the shifting ring on said adjusting-disk, the annulus, and means to attach said annulus to said shifting ring, substantially as described.

3. In a lock, the combination with the sections *a*, *b*, of the bolt projecting from the section *a* and having the catch; the sleeve or annulus G attached to the free end of section *b*, the tumblers C, I, sleeved to the said annulus G and revoluble thereon, said sleeve or annulus and said tumblers having the open slots for the catch, and the exterior annulus U on said free end of said section *b*, and devices, substantially as described, revoluble by said exterior sleeve, and adapted to engage and operate the said tumblers, substantially as described.

JOHN R. HOUTS.

Witnesses:
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