(No Model.)

W. A. SCHENCK.

COMBINATION LOCK.

No. 491,598. Patented Feb. 14, 1893.

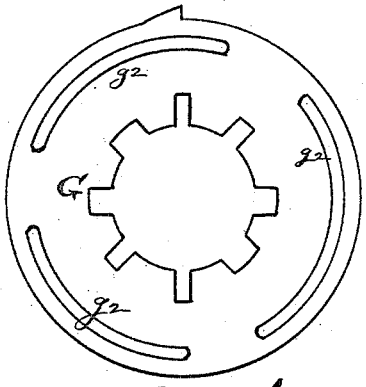

Fig. 4.

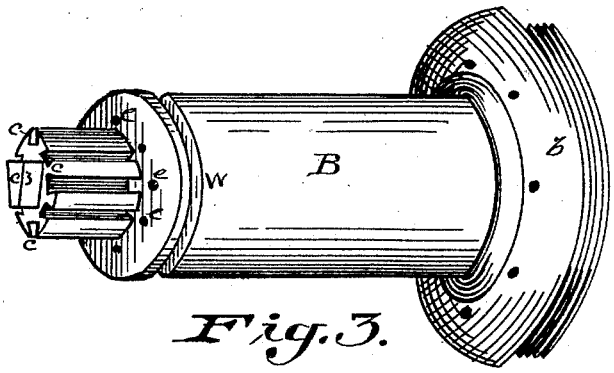

Fig. 3.

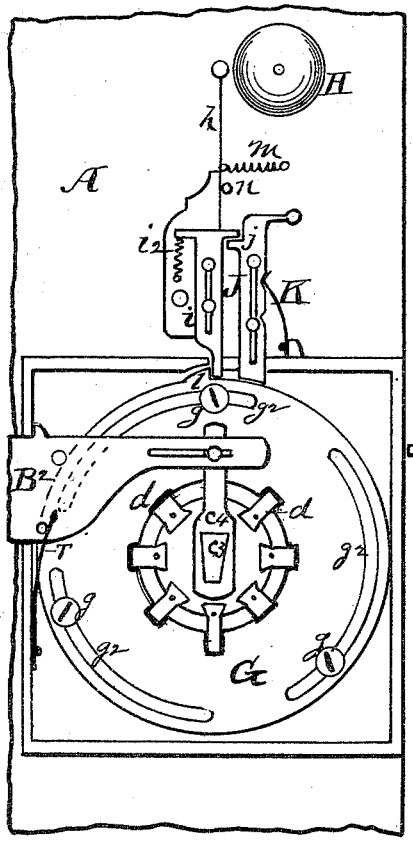

Fig. 2.

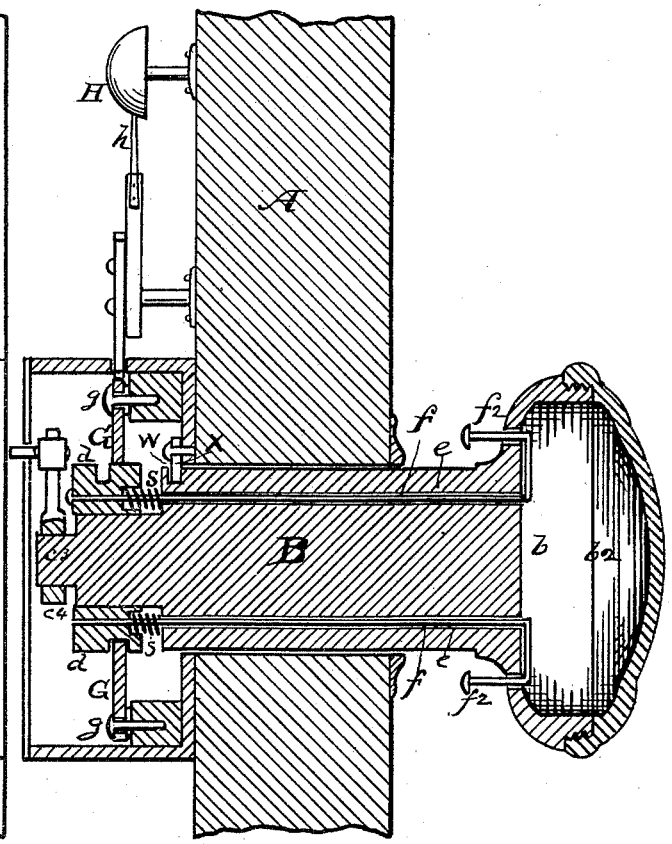

Fig. 1.

Witnesses:
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UNITED STATES PATENT OFFICE.

WILLIAM A. SCHENCK, OF RICHMOND, VIRGINIA.

COMBINATION-LOCK.

SPECIFICATION forming part of Letters Patent No. 491,598, dated February 14, 1893.

Application filed April 22, 1892. Serial No. 430,266. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. SCHENCK, a citizen of the United States, and a resident of Richmond, county of Henrico, State of Virginia, have invented certain new and useful Improvements in Combination-Locks, of which the following is a specification.

This invention relates to combination locks, for safes, doors &c., and consists in the peculiar construction and combinations of parts comprising the lock as hereinafter described and pointed out in the claim.

In the accompanying drawings—Figure 1 is a longitudinal section of my new lock. Fig. 2 is an inner end view of same. Fig. 3 is a detached view of the spindle and knob. Fig. 4 is a detached view of the tumbler engagement ring or disk.

Let A represent a portion of a safe or other door.

B is a spindle having an open half head or knob, *b*, closed by a screw cap b^2. The inner end of spindle is reduced in size and is provided with a number of dovetail grooves, *c*, *c*, in said reduced portion, and has a tenon c^3, having crank arm c^4, engaging with bolt B^2, provided with spring T, which forces the bolt outward. *d*, *d*, are tumbler blocks fitted to rest in said dovetail grooves *c c*, and to slide therein. The spindle also has an annular groove, W, in which a key X, fixed to the case, reaches, which holds the spindle from being drawn out or pushed in, but lets it turn. Through the spindle are made a number of longitudinal bores, *e*, *e*, in which are placed rods *f*, *f*, loosely, so they may have longitudinal play. Their inner ends are secured to the said tumbler blocks and are the means by which said blocks are moved. The outer ends of the rods have return bends f^2, which project through holes in the shell of the knob, and on the ends are provided push buttons by which the said rods are pushed with fingers of the hand grasping the knob. On the rods are placed springs, *s*, *s*, surrounding the rods, and partly resting in recesses in the ends of the tumblers. The tumblers are made in varying widths and thicknesses, for a purpose hereinafter shown.

G is a tumbler engagement disk or plate placed on the spindle over the said tumblers, and is supported on screws *g*, *g*, passed through the curved slots g^2, g^2, and fixed in the bed plate of the case containing the lock mechanism. In the disk are made as many radial slots as there are tumbler blocks and said slots are the same form and size as the tumblers.

Above the lock case is provided an alarm bell or gong H, to be struck by a spring hammer *h*, tripped by means of a lug *l* on the upper side of the disk G.

On the hammer is provided an adjustable sliding bar *i*, having a longitudinal slot by means of which it is attached to the hammer lever with headed pins. It is held down by a spring i^2.

J is a stop bar attached to the case by the side of the said hammer lever, by means of headed pins in a longitudinal slot. It has a lip or projection *j* reaching under a like lip or projection on the bar *i*. K is a spring fixed by the side of said bar J, the upper end of which rests in a notch in the edge of the bar, and serves to hold the bar in position.

m is a spring for pulling the hammer backward when thrown by the disk G, and *n* is a stop pin to limit the back throw of the hammer.

The purpose of the stop bar J is two fold. It serves as a stop to limit the turning of the disk when down, and it is also designed to lift the bar *i* and hold the same up, when it is desired to disengage the hammer to avoid ringing the bell, as when the door is opened without the use of the combination. The stop bar J is held up when drawn up, by the spring K, engaging with the lower notch in the side of said bar.

Having described my invention I claim:

In a combination lock, a spindle, B, having perforated half head and longitudinal bores, grooves *c c* in its inner end, rods *f*, *f*, contained in said bores, tumbler blocks *d d*, in said grooves *c*, *c*, and attached to the rods, springs *s s*, on said rods, slotted tumbler engagement disk G, gong H, hammer lever *h*, sliding bar *i*, on said hammer lever, stop bar J, and spring K, constructed and adapted to operate substantially as and for the purpose specified.

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