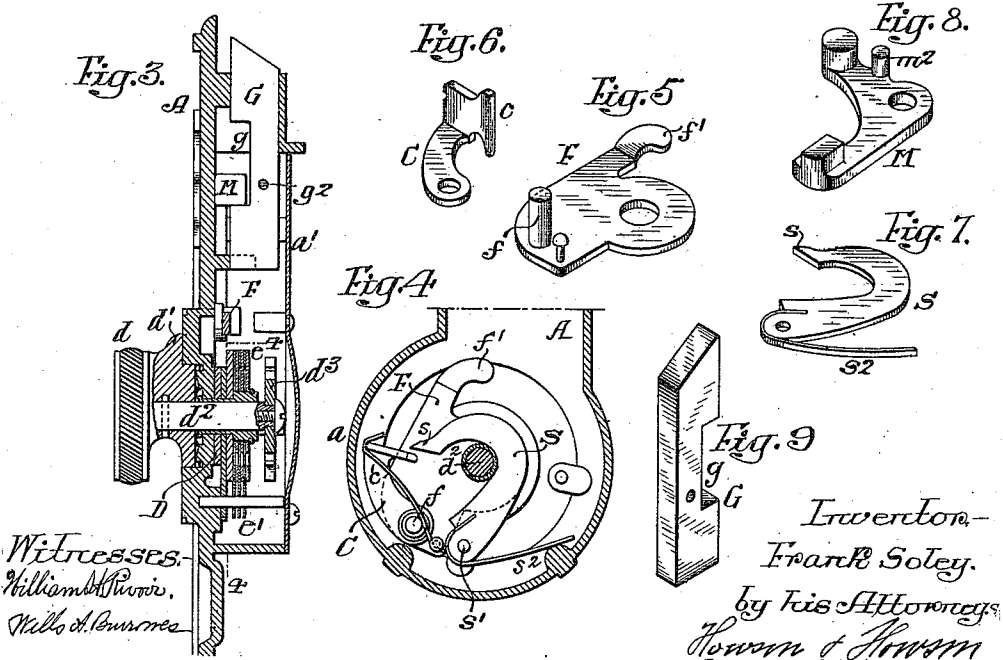
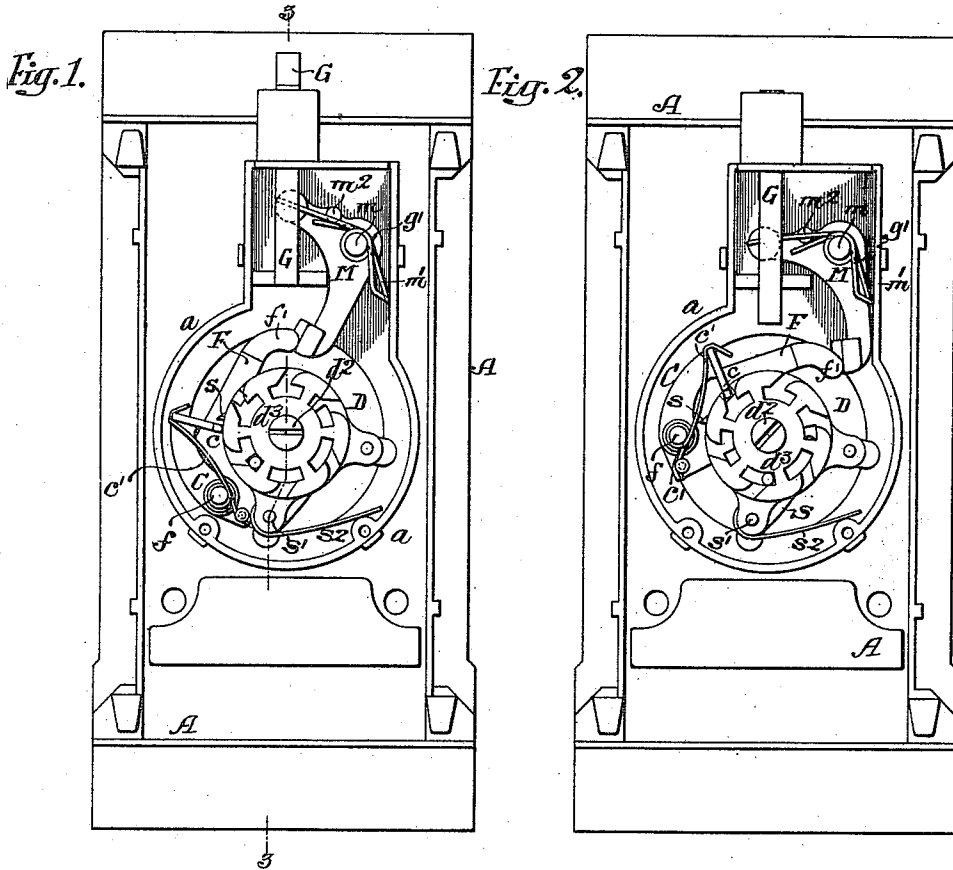


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COMBINATION LOCK.
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986,096.

Patented Mar. 7, 1911.



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UNITED STATES PATENT OFFICE.

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COMBINATION-LOCK.

986,096.

Specification of Letters Patent.

Patented Mar. 7, 1911.

Application filed November 13, 1909. Serial No. 527,828.

To all whom it may concern:

Be it known that I, FRANK SOLEY, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Combination-Locks, of which the following is a specification.

My invention relates to certain improvements in combination locks, especially those adapted to post office lock boxes, although it will be understood that the invention may be applied to any combination lock where a bolt is thrown.

The object of the invention is to so construct the locking mechanism that the combination is lost the moment the knob is released. The lock being a spring lock snaps back without operating the knob. By this arrangement it is impossible for any one to operate the lock should the one having the combination leave the lock without turning the knob to destroy the combination, as is usual in this type of lock.

In the accompanying drawings,—Figure 1, is a rear view of sufficient of a post office lock box drawer, with the lock in position, the back plate of the casing being removed; Fig. 2, is a view similar to Fig. 1, the bolt withdrawn; Fig. 3, is a sectional view on the line 3—3 Fig. 1; Fig. 4, is a sectional view on the line 4—4 Fig. 3; Fig. 5, is a detached perspective view of the cam plate; Fig. 6, is a perspective view of the dog; Fig. 7, is a perspective view of the distributing hook; Fig. 8, is a perspective view of the bolt throwing lever; Fig. 9, is a perspective view of the bolt.

A is the front plate of the drawer of a post office lock box, in the present instance.

D is the lock of the combination type, mounted within a casing *a* cast integral with the part A and having a detachable back plate *a'* which can be removed when it is desired to gain access to the interior of the lock. The lock is of the combination type having a knob *d* provided with a pointer *d'*, and this knob has a spindle *d²* which carries a driving disk *d³* and between this disk and the base of the knob are tumblers and washers *e—e'*.

F is the cam plate pivoted to the hub of the lock casing, and this cam plate engages, in the present instance, one arm of the bolt throwing lever M which is pivoted at *m* to the casing. The other arm of the lever is rounded and is adapted to the notch *g* in the

bolt G, which in the present instance is beveled so as to snap into position. On the pivot pin *m* of the bolt are two springs *m'* and *g'*. The spring *m'* rests against a post *m²* of the lever M and the end of the spring *g'* is adapted to an opening *g²* in the bolt G. By this arrangement the lever spring *m'* throws the mechanism back whether the bolt spring moves the full distance or not.

Pivoted to the stud *f* of the cam plate F is a dog C having a nose *c* which is shaped to enter the notches in the tumblers *e* and the driving disk *d³*.

S is a distributing hook having a nose *s* shaped to partially encircle the stud on which the tumblers are mounted. This distributing hook is pivoted to a stud *s'* projecting from the casing, and has a spring *s²* attached at the butt end, as shown in Fig. 7. The free end of this spring bears against the casing *a*. The parts are so proportioned that the nose of the hook S will project in the path of the dog C so that on the movement of the dog it will engage the end of its hook and move it against the pressure of its spring, and when the dog reaches a certain point the hook is released and it slips past the end of the dog, assuming its normal position so that when the dog returns after actuating the bolt it will ride upon the nose *s* of the hook S and will be forced out of the notches in the tumblers and driving disk. Consequently, the combination will be immediately lost. A spring *c'* mounted on the post *f* of the cam plate bears upon the dog C and tends to force it toward the notched driving disk and tumblers, so that as soon as the notches of the different elements are in line, the nose of the dog will drop into the notches.

It will be seen that by the above construction, I am enabled to provide means for destroying the combination of the lock as soon as the knob is released, or as soon as it is turned back after opening the door, thus preventing the opening of the door by any one other than the proper person, if through carelessness the door is left closed without first breaking the combination, as in ordinary combination locks of this type.

It will be understood that while I have shown by invention in connection with a combination lock having a permanent knob, it may be used in connection with a combination have a detachable knob.

I claim:

The combination in a lock of a bolt, a spring for actuating the bolt, combination mechanism, means for operating the combination mechanism, a cam plate, a dog pivoted to the said plate and arranged to engage the combination mechanism, means for throwing the dog out of engagement with the combination mechanism on its return movement, a bolt throwing lever interposed

between the bolt and the cam plate and having a spring independent of the bolt spring.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

FRANK SOLEY.

Witnesses:

WM. E. SHUPE,

WM. A. BARR.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
