

F. J. CHAPMAN.
Combination Lock.

No. 168,873.

Patented Oct. 19, 1875.

Fig. 1.

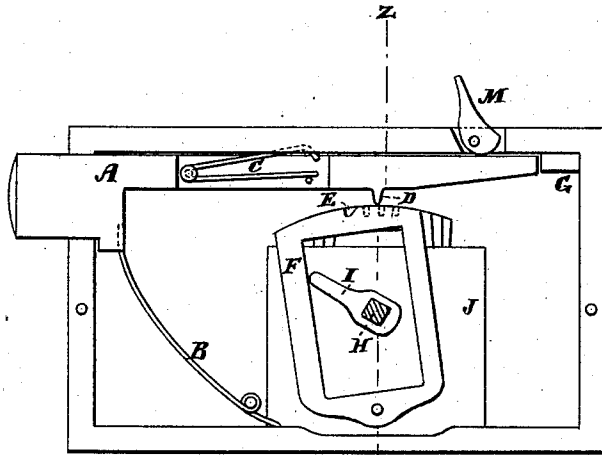


Fig. 2.

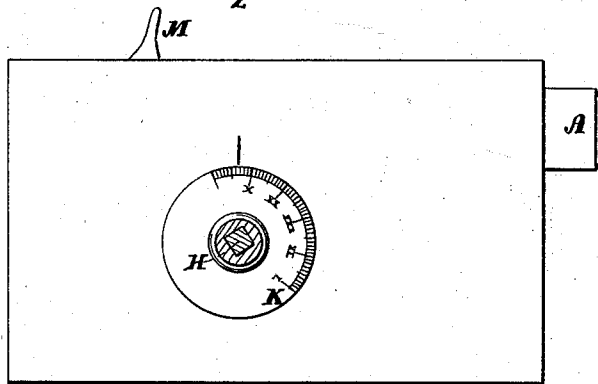
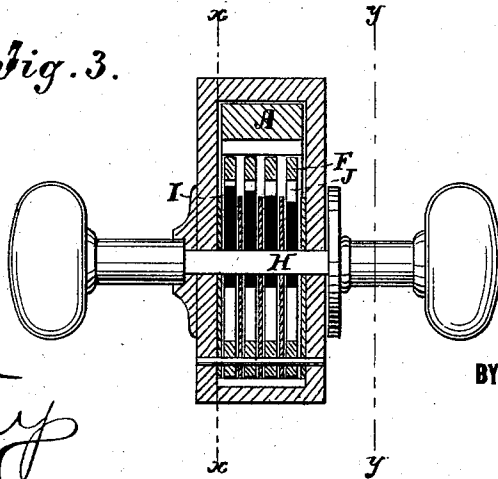


Fig. 3.



WITNESSES:

A. Remmerendof.
A. F. Terry

INVENTOR:

F. J. Chapman
BY *[Signature]*
ATTORNEYS.

UNITED STATES PATENT OFFICE.

FRIEND J. CHAPMAN, OF McLEANSBOROUGH, ILLINOIS, ASSIGNOR TO HIMSELF AND JOSEPH R. SEDDALL, OF SAME PLACE.

IMPROVEMENT IN COMBINATION-LOCKS.

Specification forming part of Letters Patent No. **168,873**, dated October 19, 1875; application filed May 1, 1875.

To all whom it may concern:

Be it known that I, FRIEND J. CHAPMAN, of McLeansborough, Hamilton county, Illinois, have invented a new and Improved Combination-Lock, of which the following is a specification:

The invention will first be described in connection with drawing, and then pointed out in the claim.

The spindle has an arm for each tumbler, working in a space in the middle of the tumbler, and the arm may vary in length, so that by setting the tumbler having the longest arm first, and continuing in the same order, the tumblers which are set will not be disturbed by the setting of the others. The adjustment of the arms is regulated by a dial, in which the spindle works.

Figure 1 is a side elevation of my improved lock with the case open, and the spindle being sectioned on the line *x x*. Fig. 2 is an elevation of the outside of the case and section of the spindle on the line *y y*, Fig. 3; and Fig. 3 is a transverse section on the line *z z*, Fig. 1.

Similar letters of reference indicate corresponding parts.

A is the bolt, which is arranged in the upper part of the lock-case, and has a spring, B, to throw it out; also, a spring, C, to press it down to engage the rib D with the notches E in the upper end of the tumblers F. At the rear end of the bolt is a stud, G, which locks the bolt against being withdrawn when the rib D is raised up out of the notches of the tumblers. H is the knob-spindle, which has an arm, I, for each tumbler, working in a hollow space in the middle portion of it. J represents dividing-plates between the tumblers,

to prevent them from moving each other by friction. K is the dial on the outside of the lock-case, or in the door around the spindle, to gage it on setting the tumblers. The arms are of different lengths, and the notches of the tumblers vary in position, so that the point to which the spindle turns for setting one tumbler will not answer for another, thus making it necessary for a special operation of the spindle for each tumbler, which is to be gaged by letters or numbers on the dial, to be known only to the person authorized to open the lock, and which may be changed by using shorter or longer arms. The notch in the tumbler having the greatest throw, by reason of the longest arms, is inclined on one side, for raising the rib out of the notches when it is displaced, and at the same time raising the bolt up in front of the block G. This tumbler is first moved, both in locking and unlocking, and after it the others in the order of the length of their arms. M is a cam to fasten the bolt, so that it cannot be raised from the tumblers, or the latter be displaced.

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

In a combination-lock, the pivoted notched tumblers, constructed as described, the notch in the tumbler operated by the longest arm having an incline on one side, in combination with the arms I, of different lengths, working in the hollow spaces in the tumblers, substantially as and for the purpose set forth.

FRIEND J. CHAPMAN.

Witnesses:

SAM. E. FLANNIGAN,
J. M. SHOEMAKER.