

M. TAMBURINI.
MECHANICAL COMBINATION LOCK.
APPLICATION FILED JUNE 24, 1910.

981,140.

Patented Jan. 10, 1911.

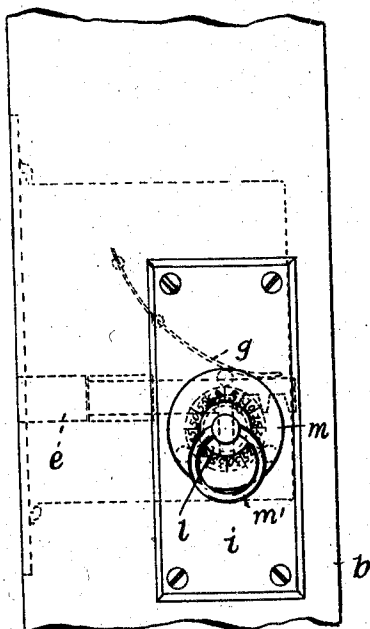


Fig. 1.

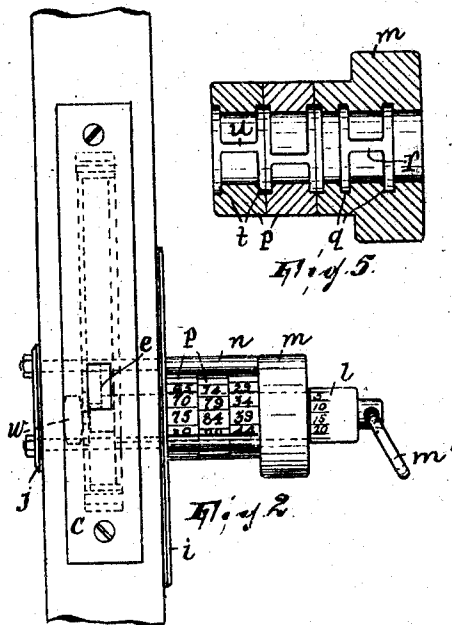


Fig. 2.

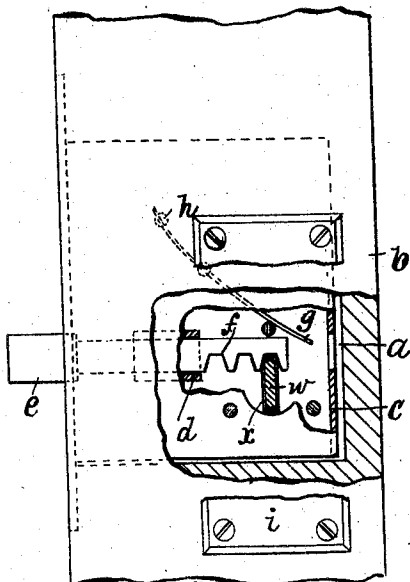


Fig. 3.

WITNESSES:
Wm. Dell.
Elio Kaufmann.

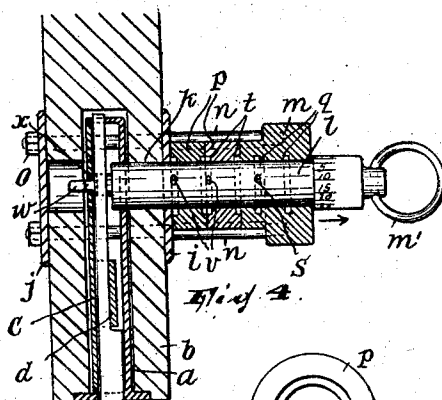


Fig. 4.

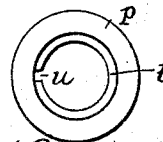


Fig. 5.

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MATTEO TAMBURINI, OF PATERSON, NEW JERSEY.

MECHANICAL COMBINATION-LOCK.

981,140.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, MATTEO TAMBURINI, a subject of the King of Italy, residing in Paterson, Passaic county, New Jersey, have invented a certain new and useful Improvement in Mechanical Combination-Locks; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention relates to combination locks and it has for its object to provide an efficient device of this nature the simplicity and inexpensiveness of whose construction enables it to be employed in many of the adaptations where the known types of such locks may not be used effectively and economically.

Referring to the accompanying drawing, Figure 1 shows the stile of a door in elevation and the improved lock assembled therewith; Fig. 2 is a side elevation of what is seen in Fig. 1; Fig. 3 is a view like Fig. 1 except that parts are broken away to illustrate the interior mechanism of the lock; Fig. 4 is a horizontal sectional view taken in a plane through the bolt, the bolt and the operating spindle appearing in plan; Fig. 5 is a horizontal sectional view of the parts which control the manipulations of the spindle; Fig. 6 is a side elevation of one of the indexed disks.

In a recess *a* in the stile *b* is arranged a rectangular casing *c* in a guide *d* in which moves horizontally the bolt *e* whose under side at its inner end is notched, as at *f*. To insure maintaining the bolt in either of its limits of movement I provide a plate spring *g* secured in a stud *h* with its lower end projecting into the path of movement of the bolt and adapted to bear upon the inner end of the bolt when the latter is retracted. To the opposite faces of the stile are secured the escutcheons *i* and *j*, and penetrating the escutcheon *i* and the door is a horizontal bore *k* in which is journaled the inner end of a spindle *l* having a suitable means *m'* at its outer end for rotating it. This spindle is also journaled in a bearing piece *m* which is secured in spaced relation to the escutcheon *i* by the threaded stems *n* which

penetrate both escutcheons and the stile and have on their protruding ends the nuts *o*.

Between the bearing piece *m* and the escutcheon *i* is arranged one or more indexed disks *p*, journaled on the spindle. The said disks being in place, the nuts *o* are tightened to draw the bearing piece inward so that the parts *m*, *p* and *i* are in approximate contact with each other, allowing the disks to be turned.

The bearing piece *m* has two internal circumferential grooves *q* connected by a longitudinal groove *r*. Into this system of grooves projects a radial stud *s* on the spindle; when the stud is in either of the grooves *q* the spindle may be freely rotated, and when it is alined with the groove *r* the spindle may be moved longitudinally, the grooves *q* limiting such movement.

In each disk *p* are grooves *t* and *u* formed and arranged identically the same as the grooves *q* and *r*, respectively, and having the same functions, *v* being studs on the spindle respectively entering the system of grooves in the disks.

At its inner end the spindle *l* has a flattened T-shaped head *w*. When the spindle is in the position shown in Fig. 4 it cannot be drawn outwardly except this head *w* directly coincides with a vertical slot *x* in the rear side of the casing *c*; when in such coincidence, (the position of the disks with relation to the spindle and the spindle with relation to the bearing piece permitting) the spindle may be drawn out (see the arrow in Fig. 4) a distance represented by the spacing of the grooves *q* in the bearing piece *m*, in which position the head *w* will be in the same vertical plane as the bolt *e*, and upon now turning the spindle the bolt may be shot. Of course, in order to return the spindle it must occupy the same position as is necessary in order to draw it out. When the spindle is in the position shown in Fig. 4 rotation thereof will of course be ineffective to move the bolt.

It will be understood that in order to effect longitudinal movement of the spindle, it is necessary that its stud *s* should be alined with the groove *r* in bearing piece *m* and that the grooves *u* of the disks *p* should be alined with the studs *v*. The disks, bearing piece and spindle are provided with indices, as shown in Fig. 2, so that when a certain combination of such indices stand

aligned with each other, the alinement of the grooves *r* and *u* with the studs *s* and *v* will result. In either of the limits of movement of the spindle it may be locked against longitudinal movement by rotating the disks so as to disturb the combination necessary in order to permit such movement.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent is:

The combination, with a supporting means, of a sliding bolt having its inner end notched, a rotary and longitudinally movable spindle crossing the bolt at a right angle and having a projection engageable with the notched portion of the bolt to move the latter upon rotating the spindle, means for supporting the bolt and spindle including a fixed part spaced from the bolt and

having a bearing for the spindle and two internally formed circumferential grooves and a longitudinal groove connecting the circumferential grooves, and a rotary disk journaled on the spindle between said part and the bolt and also having two internally formed circumferential grooves and a longitudinal groove connecting the circumferential grooves, said spindle having a plurality of projections entering the grooves in said part and the disk, substantially as described.

In testimony, that I claim the foregoing, I have hereunto set my hand this 23rd day of June, 1910.

MATTEO TAMBURINI.

Witnesses:

ALFONSO ABATE,
JOHN W. STEWARD.