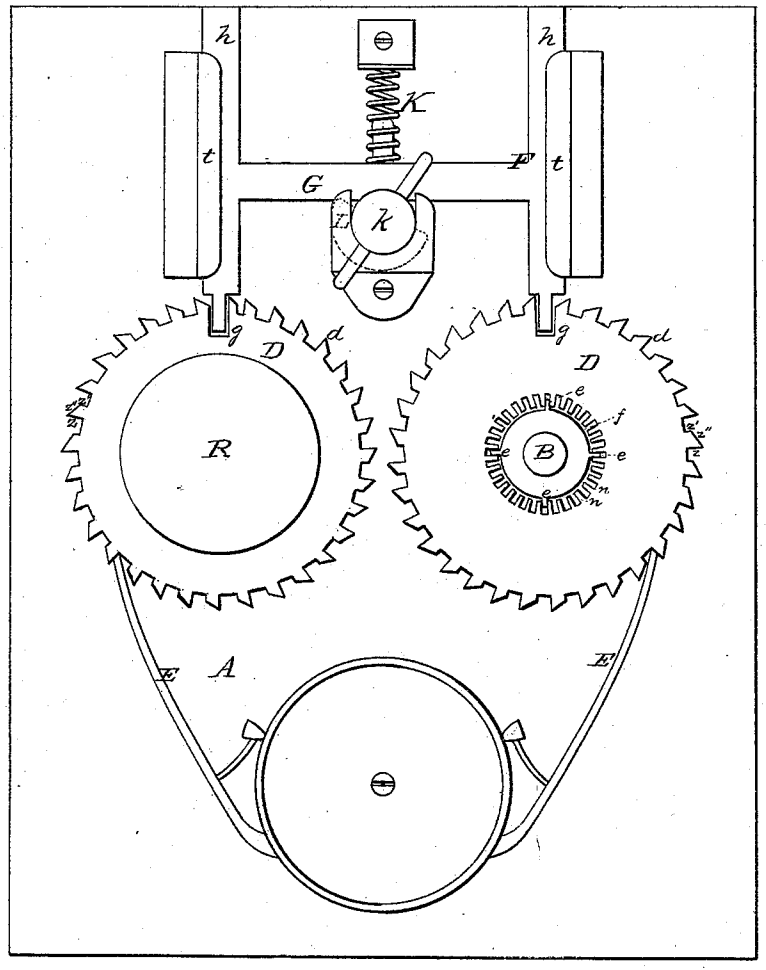
2 Sheets--Sheet 1

J. T. TAYLOR.

Improvement in Permutation-Locks.

No. 127,117. Patented May 21, 1872.

Fig 1.



Witnesses
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F. B. Curtis

Inventor:
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Attys

2 Sheets--Sheet 2.

J. T. TAYLOR.

Improvement in Permutation-Locks.

No. 127,117. Patented May 21, 1872.

Fig. 2.

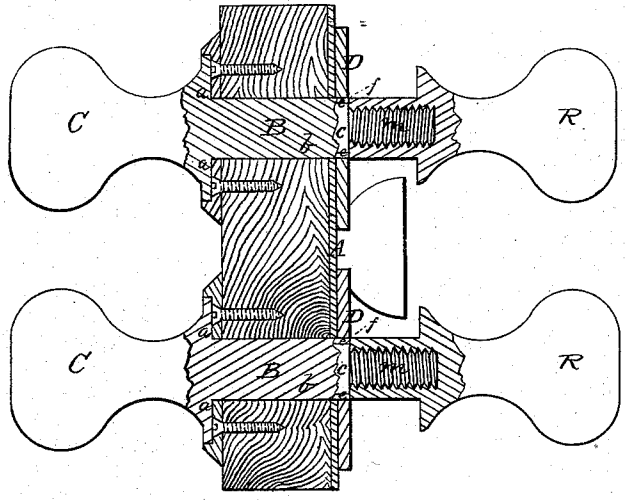
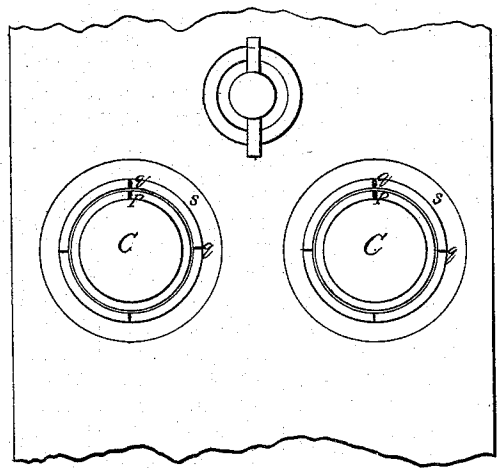


Fig. 3.



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UNITED STATES PATENT OFFICE.

JACKSON T. TAYLOR, OF NEWNAN, GEORGIA.

IMPROVEMENT IN PERMUTATION-LOCKS.

Specification forming part of Letters Patent No. 127,117, dated May 21, 1872; antedated May 11, 1872.

To all whom it may concern:

Be it known that I, JACKSON T. TAYLOR, of Newnan, in the county of Coweta and State of Georgia, have invented a new and valuable Improvement in Door-Locks, &c.; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawing making a part of this specification, and to the letters and figures of reference marked thereon:

Figure 1 of the drawing is a representation of an interior view of my invention. Fig. 2. is a central vertical transverse section, and Fig. 3 is a front view, showing the knobs, &c.

My invention has relation to combination locks, and it is intended as an improvement upon my combination lock patented October 17, 1871, whereby the tapering spindles are dispensed with, and the lock otherwise simplified in construction and rendered more secure in its operation, as hereinafter described.

In the accompanying drawing, the letter A represents the lock-plate or casing which is attached to the inner side of a door. B B represent two or more spindles which pass through the door and are provided with knobs or handles C for operating the lock. On the outside of the door these handles may be cast with the spindles, thus forming shoulders *a*, which will effectually prevent the spindles from being pushed through from the outside. Or, suitable shoulders may be formed on the spindles, and the handles afterwards secured thereon. That portion of each spindle which turns in the door is cylindrical in form, as shown at *b*. Next to this cylindrical portion is an extension or shoulder, *c*, provided with a certain number of teeth, *e*, whose outer faces are designed to be flush with the wall of the cylinder *b*. By the local changes of these teeth *e*, with reference to the permutating-wheels, hereinafter described, the changes in combination are effected. D D represent the permutating-wheels. These are disks provided with external teeth *d*, of peculiar form, the number of which should be some multiple of the number of teeth *e* on the spindle. Openings *f* are provided in the central portions of said disks, of the proper size to admit the toothed shoulder *c*. The opening *f* is provided with internal teeth *n*, the number of which corresponds with the number of external teeth *d*. The teeth *e* of the spindle are designed to engage with these internal teeth. To complete the disk one of the spaces between the external teeth is made deeper than its fellows, as shown at *g*, and the variation in the position of the spindle-teeth *e* with reference to this deep notch, determines the combination.

The external teeth *d* have a peculiar form. Commencing at the base each tooth extends radially outward, bounded by plane walls which are parallel or nearly so. The rear wall *z* extends in the same plane to the point of the tooth, but the forward wall *z'* after proceeding for a certain distance in the radial plane, forms an angle therewith and joins the rear wall at the point of the tooth by a beveled face, *z''*. E represents a spring so arranged that it will engage with the external teeth *d* of the disk. The ends of the springs are designed to slide over the beveled face *z''* of the tooth, and to abut against the plane face *z*, thus effectually preventing reverse motion of the disk. The clicks of the spring serve as means for determining the position of the notch *g*, when the operator is acquainted with the combination on which the lock is set. Sometimes I prefer to use the bell and hammers to effect this object, as set forth in my patent above referred to. F represents a bolt provided with a bar, G, giving it the general form of an H. If more than two spindles and disks are employed, a corresponding number of vertical bars, *h*, may be used. K is a spring which throws the bolt back, when relieved from the pressure of the locking-cam. L represents the locking-cam provided with an operating shaft, *k*, and suitable handles. This cam is semi-cylindrical in form, and serves to throw the bolt forward and to keep the rear ends of the vertical bars out of the notches of the disks. *m m* represent the inner ends or extensions of the spindles which are provided with screw-threads running in opposite directions for the attachment of the inner handles R R. These handles are designed to be screwed on in the direction of the revolution of the disks, so that they are not liable to become loose in the process of operation.

When the bolt is thrown by the cam, the operator upon the outside of the door brings the notch *p* on the base of the knob opposite

that one of the four notches *q* which are provided on the knob-plate *s*, which he has chosen as the starting point for his computation. Counting the number of clicks from the mark *p*, which indicates the number of teeth *d* between said mark and the notch *g* of the disk, said notch is readily brought opposite the projection of the corresponding vertical bar of the bolt. The other disks are operated in the same manner, and when all are in position the bolt can readily be retracted.

The form of the teeth *d* is designed to prevent a stranger to the combination from feeling with the inner ends of the vertical bars of the bolt, around the notches of the disk, to discover the deep notch *g*. The casing is provided with flanches *t* for the sliding bolt, and with other suitable fastenings for keeping the various parts in place.

What I claim as my invention and desire to secure by Letters Patent, is—

1. The combination of the toothed-spindle and the spring or springs E with the disks D internally and externally toothed, the H-shaped bolt, spring K and semicircular cam L, substantially as specified.

2. The combination, with the bolt and spring E, of the disk D having the internal teeth *n* and the external teeth *d*, said external teeth having their rear walls radial, and their forward walls partly radial and partly beveled, substantially as specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

JACKSON T. TAYLOR.

Witnesses:
GEO. S. UPHAM,
D. D. KANE.