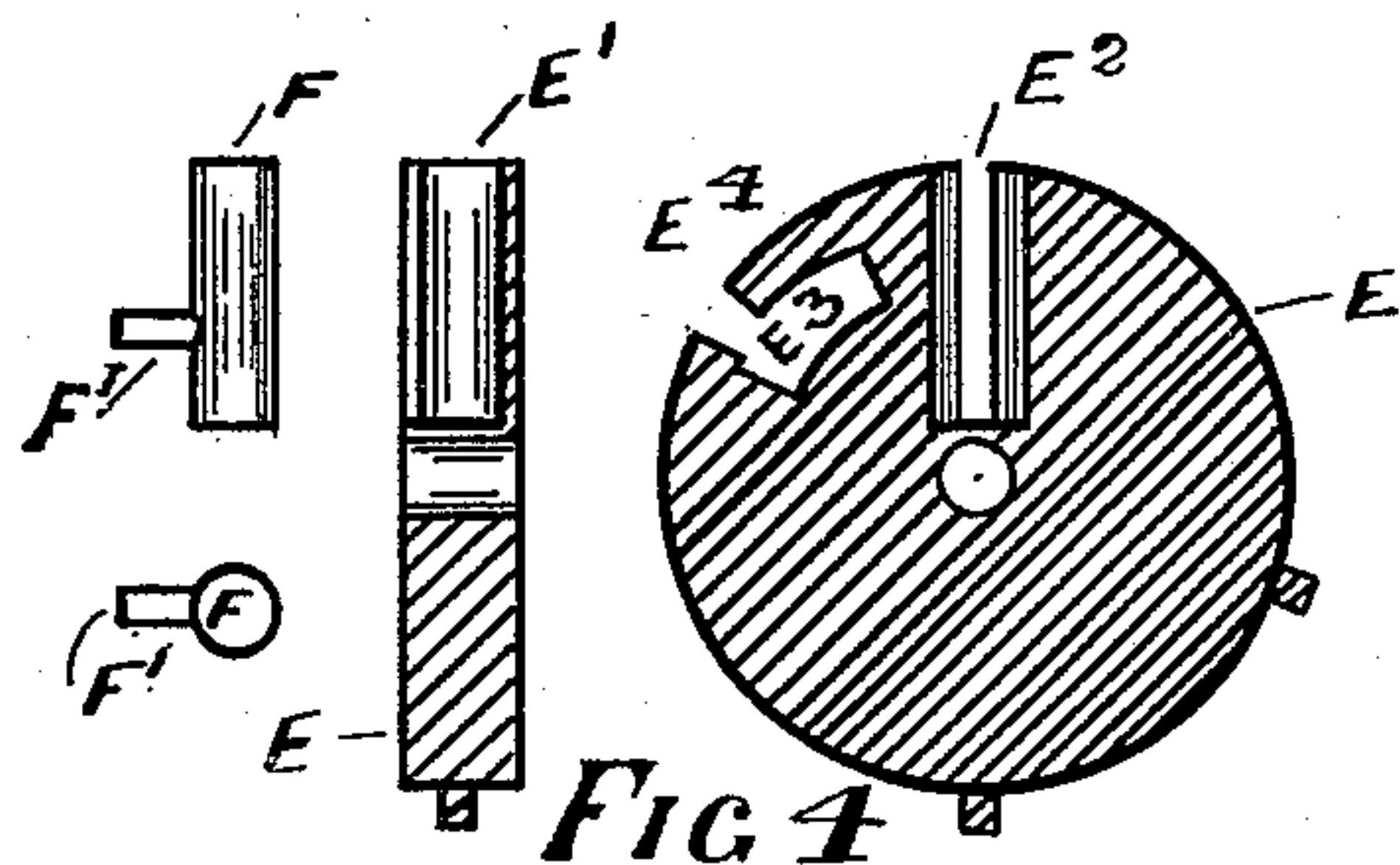
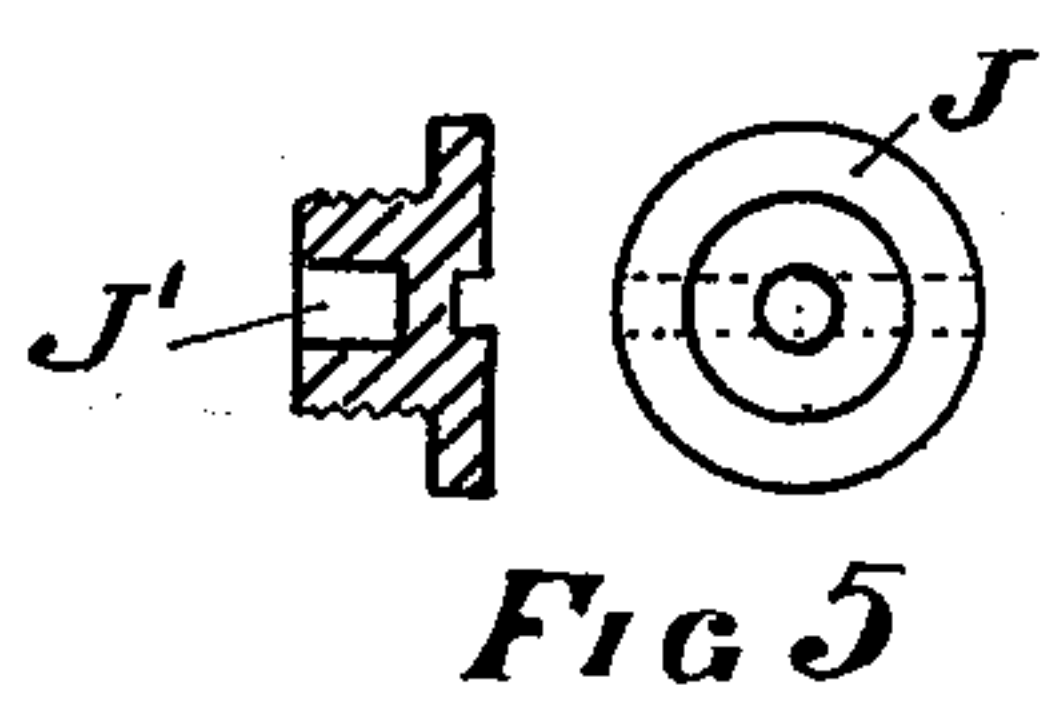
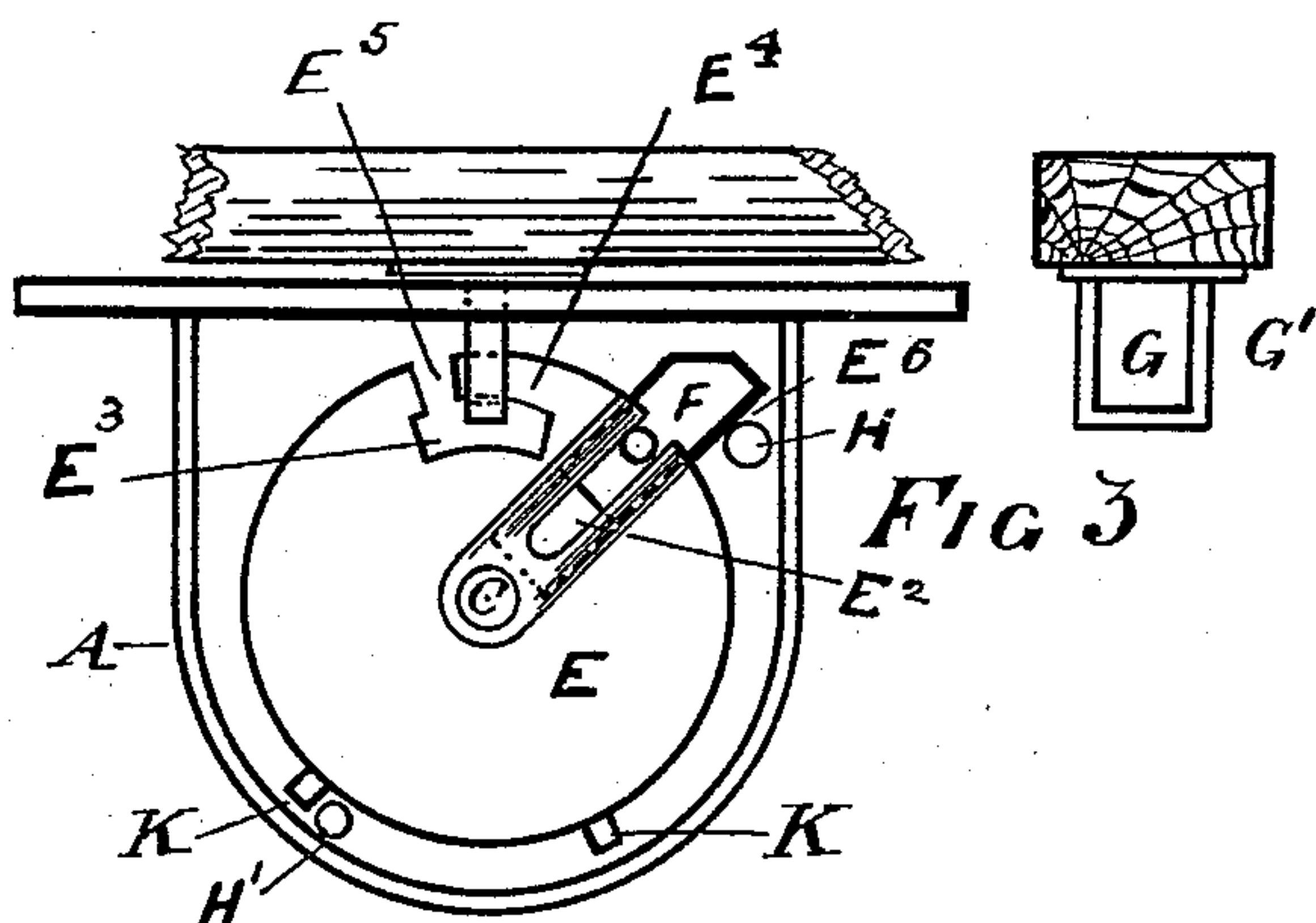
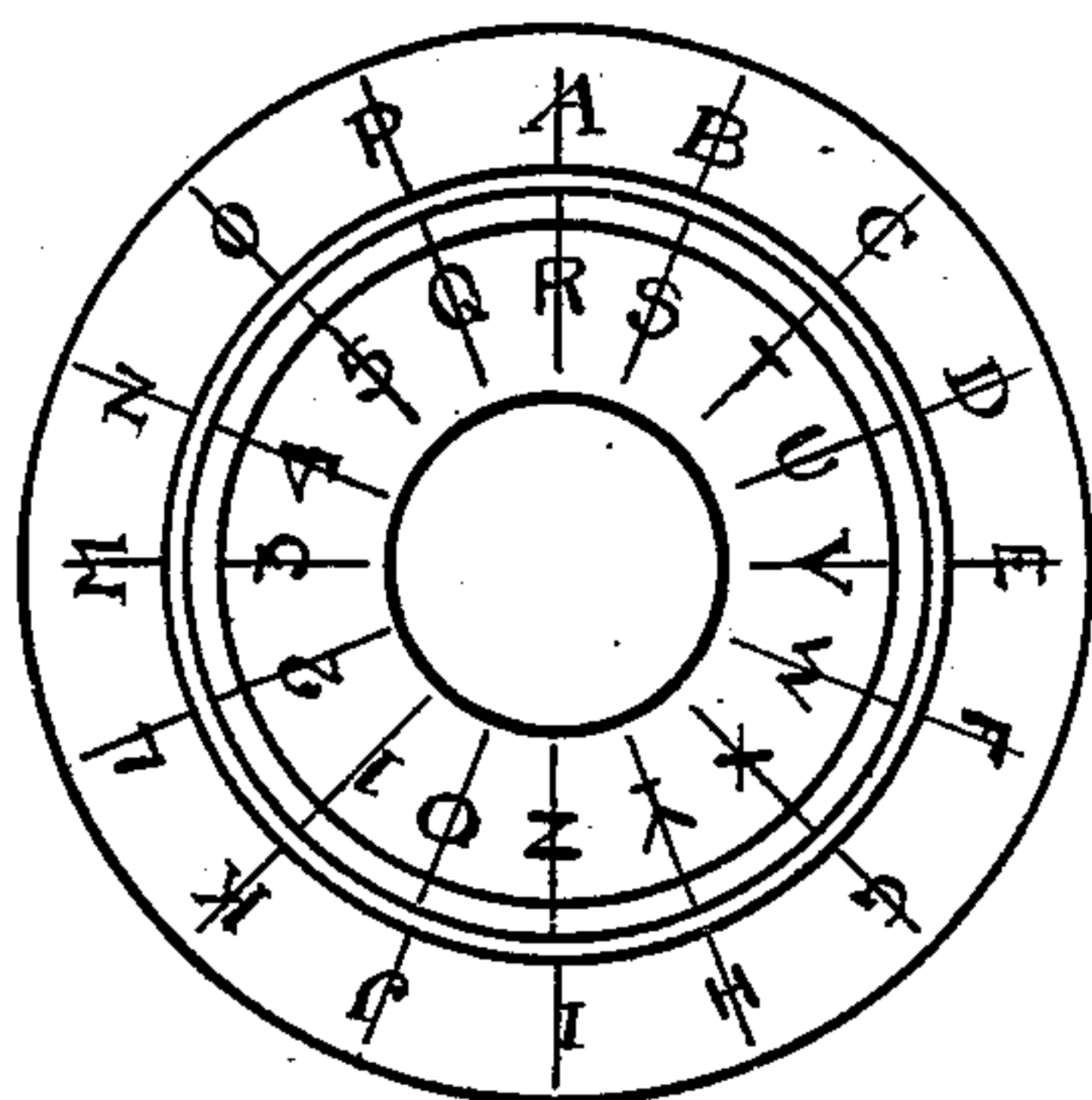
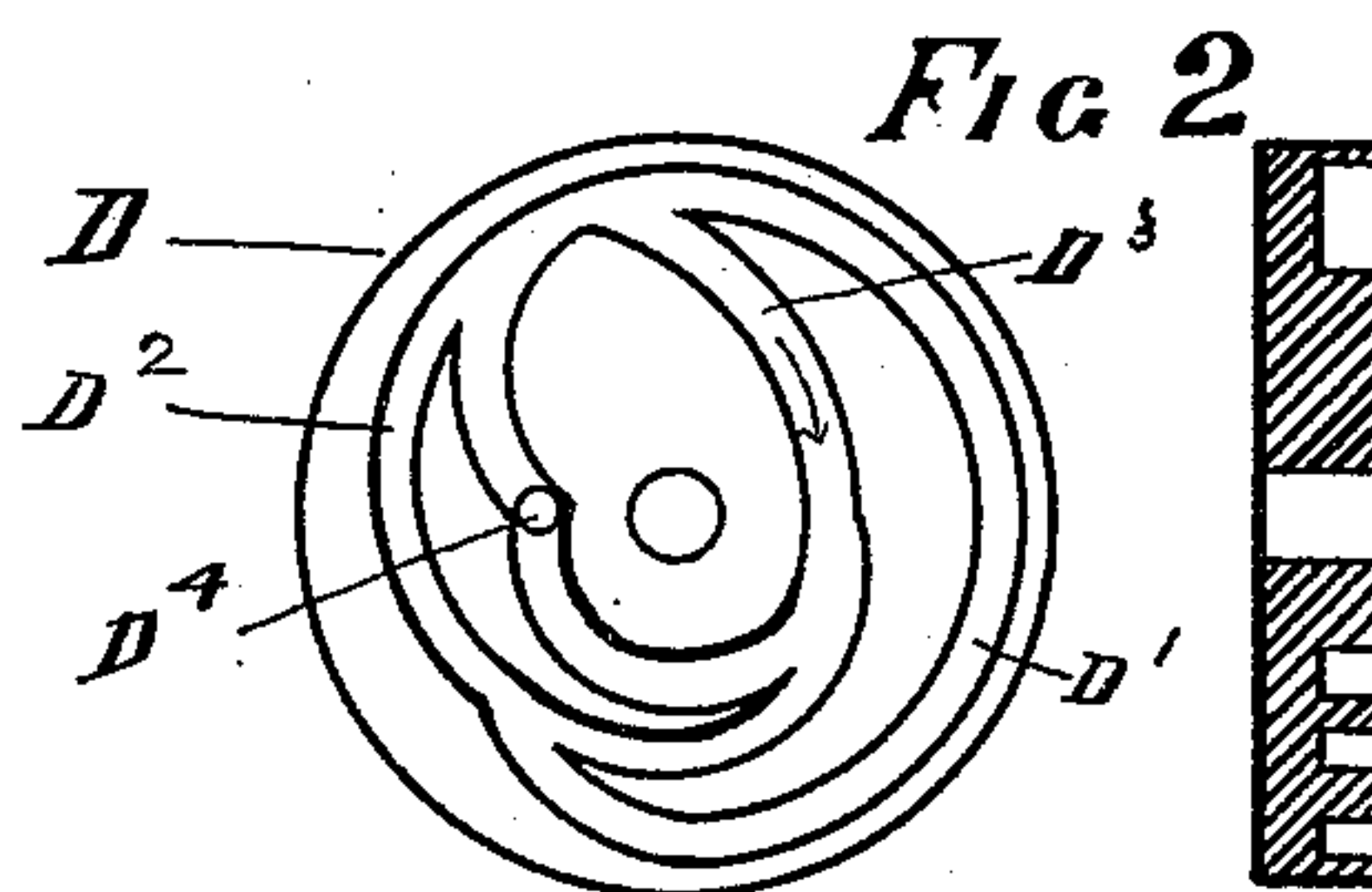
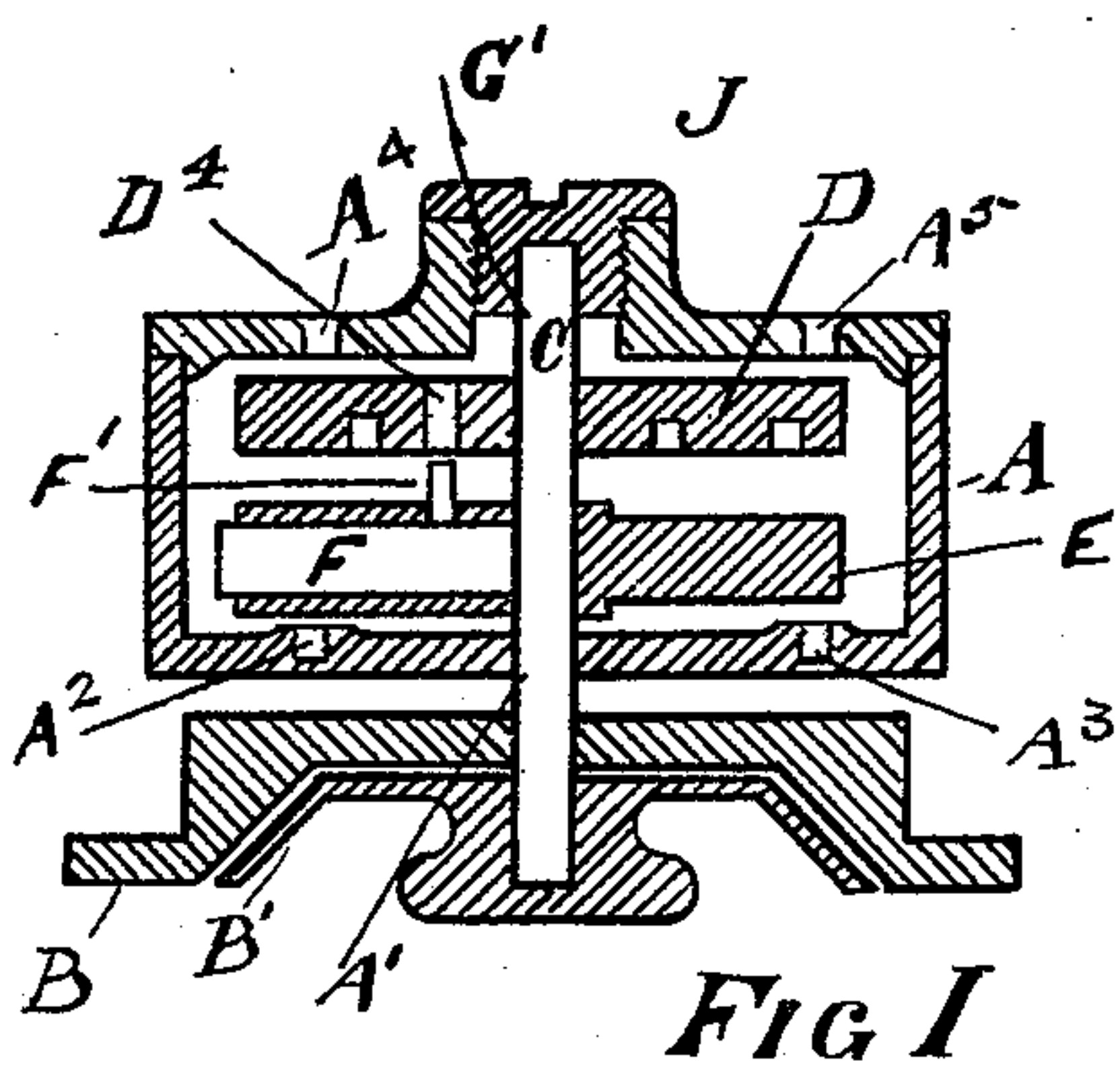


(No Model.)

H. H. KELLEY.  
PERMUTATION LOCK.

No. 532,669.

Patented Jan. 15, 1895.



Witnesses  
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# UNITED STATES PATENT OFFICE.

HARRY H. KELLEY, OF ELYRIA, OHIO.

## PERMUTATION-LOCK.

SPECIFICATION forming part of Letters Patent No. 532,669, dated January 15, 1895.

Application filed March 12, 1894. Serial No. 503,376. (No model.)

*To all whom it may concern:*

Be it known that I, HARRY H. KELLEY, a citizen of the United States, residing at the city of Elyria, in the county of Lorain and State of Ohio, have invented a new and useful Improvement in Permutation-Locks, of which the following is a specification.

Figure 1 represents a section of the whole lock. Fig. 2, represents the grooved disk. Fig. 3, represents the operating disk-front view. Fig. 4, represents the operating disk and section showing the several bolts. Fig. 5, represents the horizontal nut. Fig. 6, represents dial plates front view.

The improved lock is provided with the usual casing A and dial plates B and B' for computing the combinations of the lock. The lock mechanism comprises a horizontally disposed shaft C and operating grooved disk D, a locking disk E, sliding bolt F provided with laterally projected pin F'. Operating grooved disk D is fitted tightly upon and revolves with horizontal shaft C and provided on inner face with grooves D', D<sup>2</sup>, and D<sup>3</sup>, Fig. 2 of combined circular and cam form adapted to engage a laterally projected pin F' in sliding bolt F, Fig. 3 for the purpose of operating bolt F.

Horizontal shaft C is journaled inside of casing A at a point A' and in the nut J, Fig. 1 for the purpose of sustaining lock mechanism. A locking disk E, Fig. 3, (shown in section in Fig. 4) is fitted loosely upon horizontal shaft C and provided with radially disposed socket E' and radial slot E<sup>2</sup> (Fig. 4) said radial slot communicating with radially disposed socket E' for the purpose of receiving the sliding bolt F and laterally projected pin F', Figs. 3 and 4, said sliding bolt F being adapted to release locking disk E at the terminal of the permutation combination. In uppermost side of locking disk E, a notch E<sup>3</sup> and lug E<sup>4</sup>, Fig. 3, said lug forming an integral part of locking disk E, and adapted to engage the eye G in the opposite member G', Fig. 3 for the purpose of securing the opposite member G' pending the manipulation of the sliding bolt F by means of laterally projected pin F' and operating grooved disk D.

Sliding bolt F when in outermost position, Fig. 3, engages at uppermost and a horizontally disposed screw H for the purpose of se-

curing locking disk E, pending the manipulation of the operating grooved disk D.

A horizontally disposed nut J, (shown in detail in Fig. 5) is screw threaded into back of casing A and provided with concentric socket J', (Fig. 5) adapted to receive one end of horizontal shaft C for the purpose of forming a laterally adjustable journal for horizontal shaft C at a point C', Fig. 1.

Two radially projected pins K and K' respectively, Fig. 3 in periphery of locking disk E are adapted alternately to engage a horizontally disposed screw H', Fig. 3, for the purpose of limiting the rotative movement of locking disk E. Horizontally disposed screws H and H', Figs. 1 and 3 being screw threaded into side of casing A, at points A<sup>2</sup> and A<sup>3</sup>, extend laterally and pass through back of casing A at points A<sup>4</sup> and A<sup>5</sup>, Fig. 1, for the purpose of securing back of casing A to main body of same and also for providing stop for locking disk E at a point E<sup>6</sup>, Fig. 3, provision being made for changing the combination of the lock by shifting outer dial plate B on horizontal shaft C, Fig. 1.

The grooves D', D<sup>2</sup> and D<sup>3</sup> on the inner face of operating grooved disk D, Fig. 2 are so arranged that by alternately operating grooved disk D by means of horizontal shaft C, to proper points indicated by suitable marks on face of dial plates B and B' the sliding bolt F sustained by locking disk E and in radially disposed socket E', Fig. 4 is moved downward and in the direction of horizontal shaft C, for the purpose of releasing locking disk E at a point E<sup>6</sup>, Fig. 3 at the terminal of the permutation combination.

By rotating operating grooved disk D to proper point indicated on face of dial plates B and B', the laterally projected pin F' in sliding bolt F is brought into position to engage horizontally disposed hole D<sup>4</sup>, Figs. 1 and 2 in bottom of groove D<sup>3</sup> on inner face of operating grooved disk D, said horizontally disposed hole D<sup>4</sup> being for the purpose of receiving the laterally projected pin F'. When in this position, a movement of horizontal shaft C in the proper direction, causes the laterally projected pin F' to engage the laterally disposed hole D<sup>4</sup> in the bottom of groove D<sup>3</sup> in inner face of operating grooved disk D, thus locking operating grooved disk D and



locking disk E together for the purpose of transferring the rotative movement of operating disk D to locking disk E, for the purpose of releasing the opposite member G' (Fig. 3).

5 By again rotating horizontal shaft C to a proper point indicated on face of dial plates B and B', the lug E<sup>4</sup>, Fig. 3, releases the eye G of opposite member G' at a point E<sup>5</sup>, Fig. 3. Two radially projected pins K and K', Fig. 3,  
10 at periphery of locking disk E are adapted to alternately engage a horizontally disposed screw H' for the purpose of limiting the rotative movement of locking disk E.

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

1. In a permutation lock, the combination with lock casing and horizontal operating shaft, of a horizontally disposed nut screw

threaded in back of casing, said nut having 20 concentric socket therein adapted to receive and form laterally adjustable bearing for one end of horizontal operating shaft as shown and described.

2. In a permutation lock, in combination 25 with horizontal shaft and grooved operating disk, a locking disk fitted loosely upon horizontal shaft and provided with radially disposed socket and radial slot, a sliding bolt and laterally projected pin adapted to move 30 freely in radially disposed socket and radial slot by means of grooved operating disk, as shown and described and for the purpose set forth.

HARRY H. KELLEY.

Witnesses:

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M. E. GAGE.