

(No Model.)

H. THOELE.  
PERMUTATION LOCK.

No. 547,527.

Patented Oct. 8, 1895.

Fig. 1.

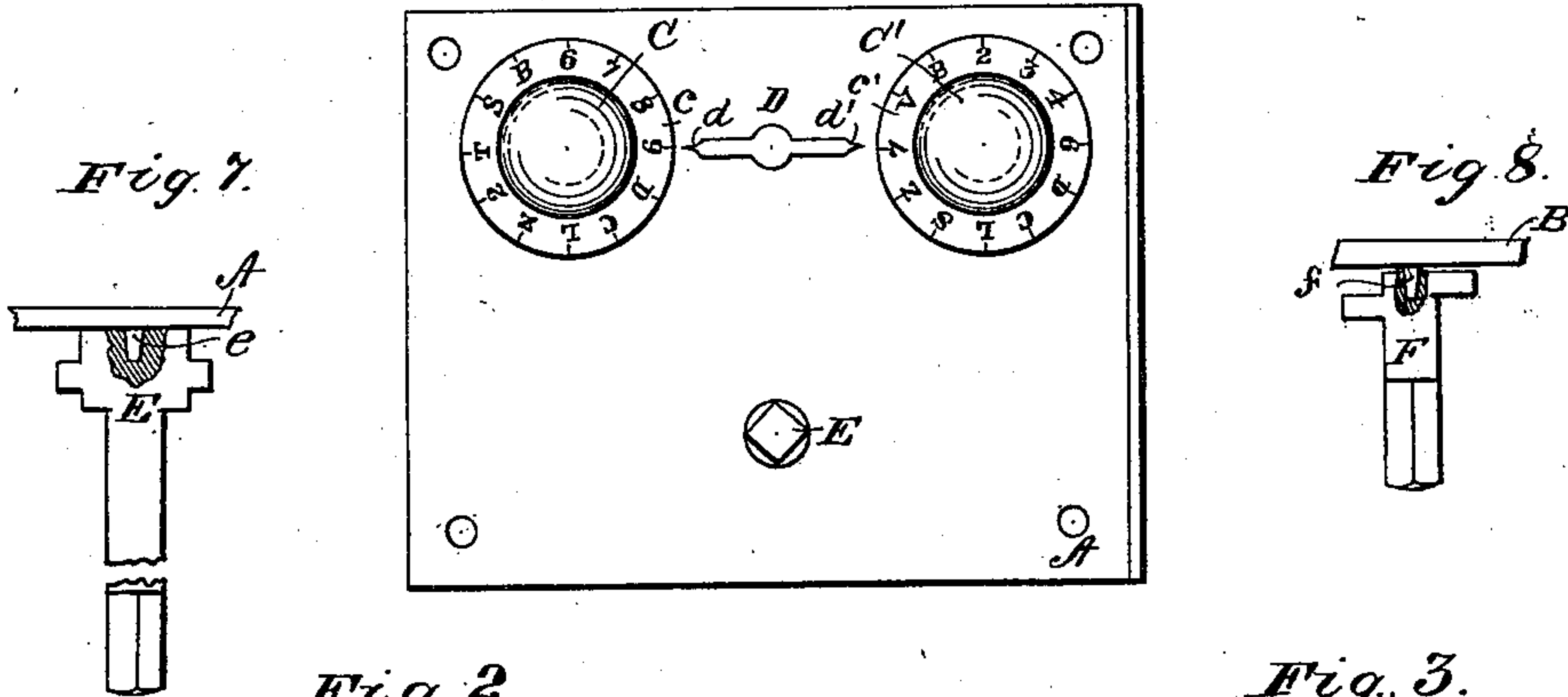


Fig. 2.

Fig. 3.

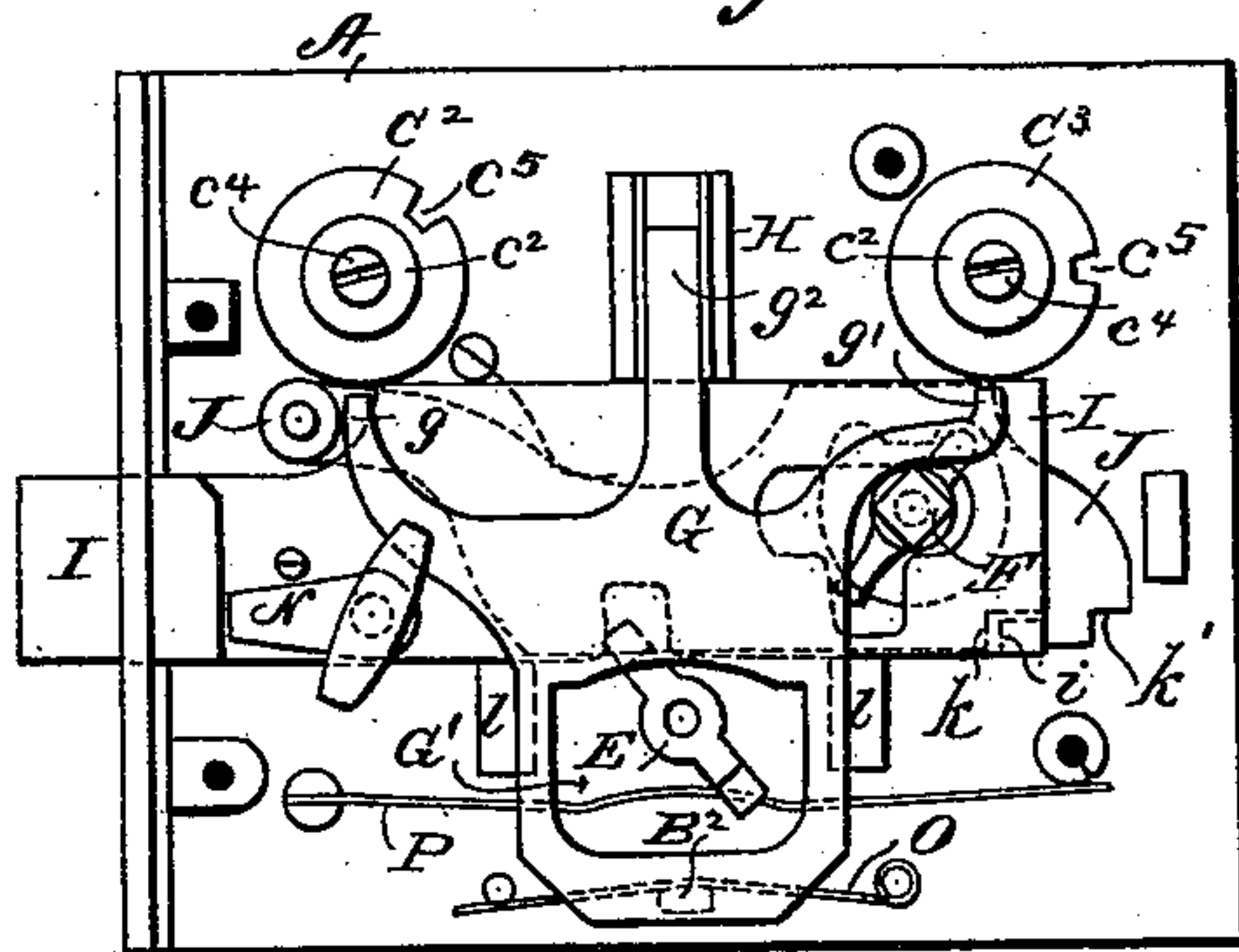
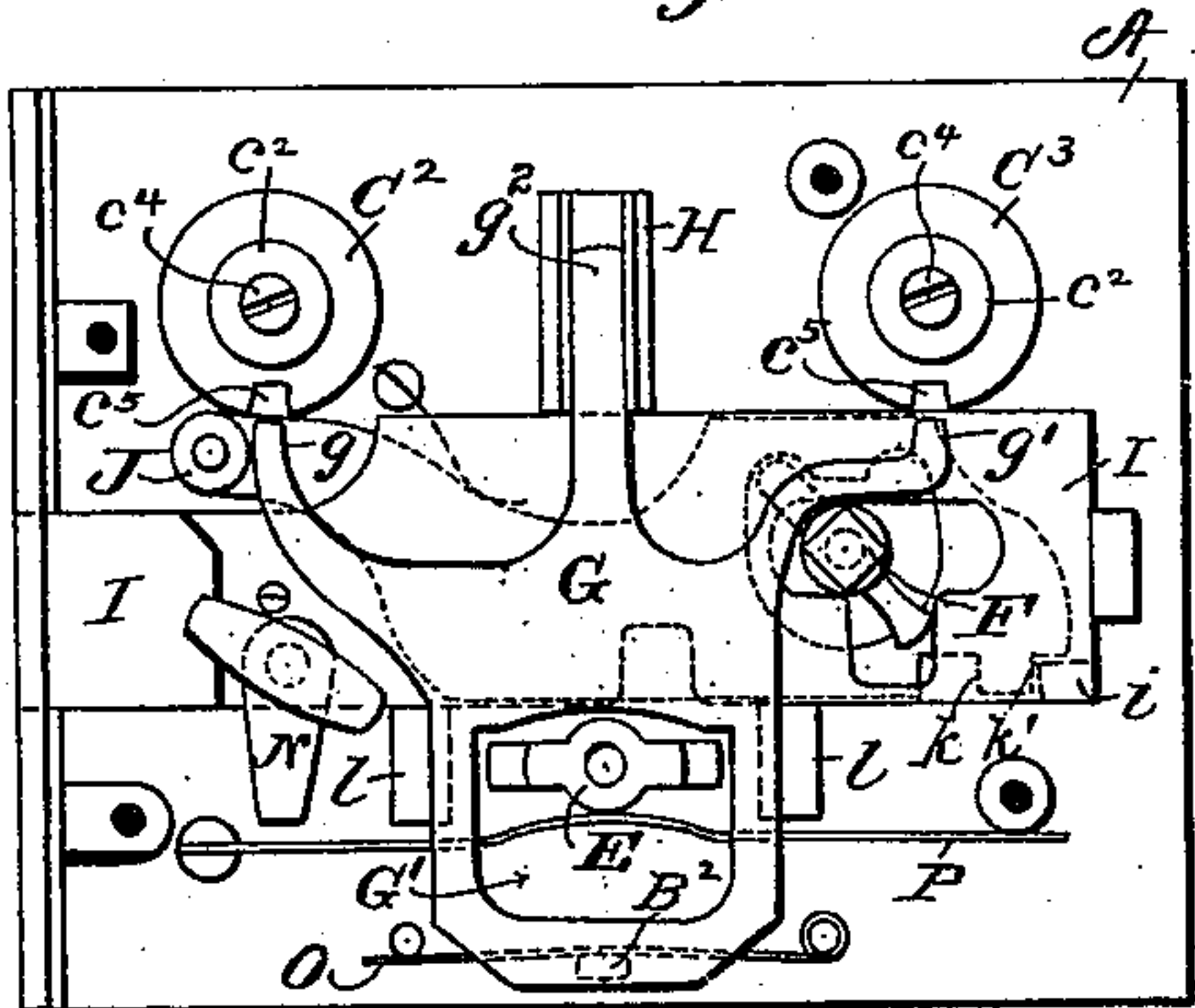


Fig. 4.

Fig. 5.

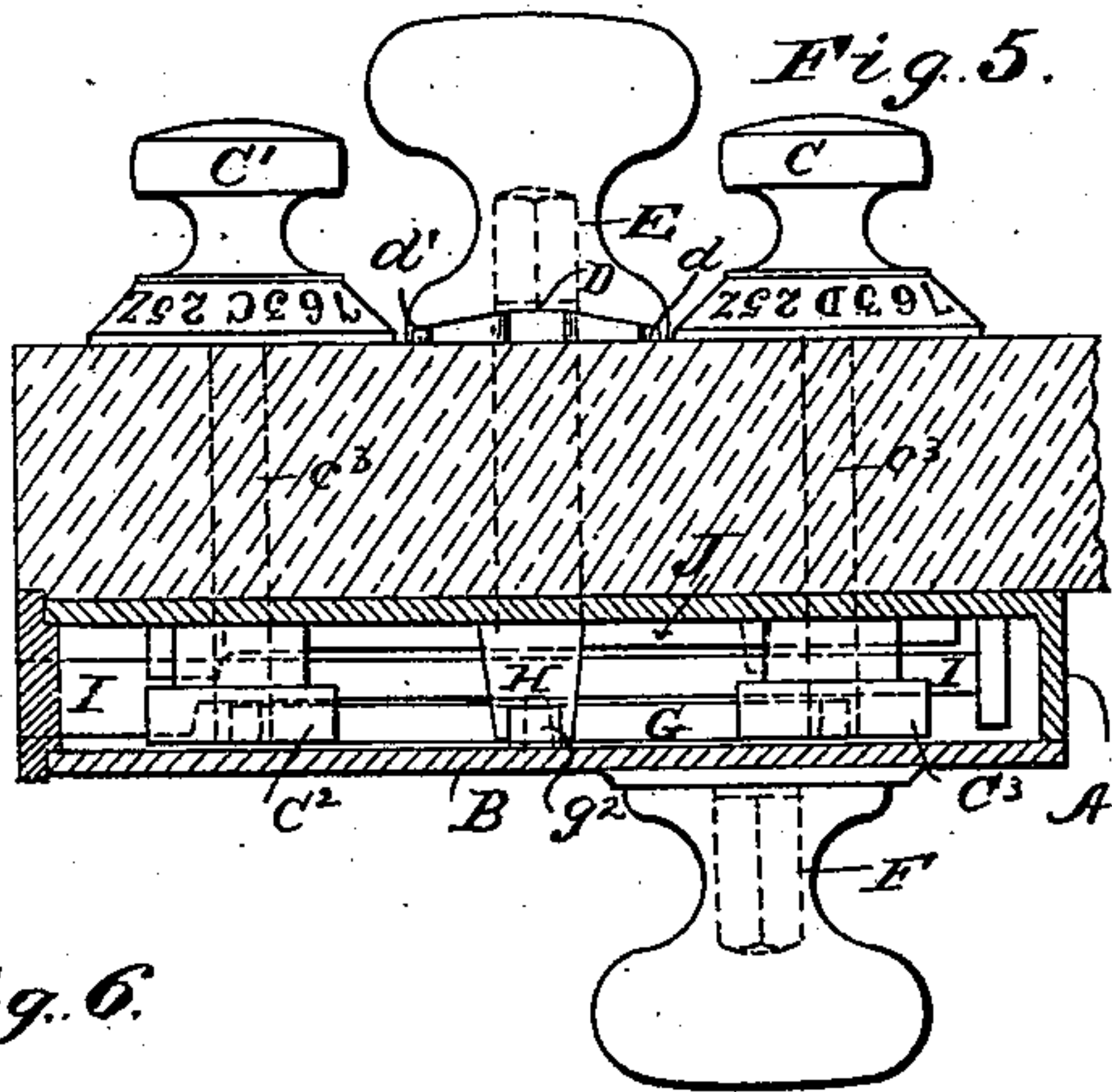
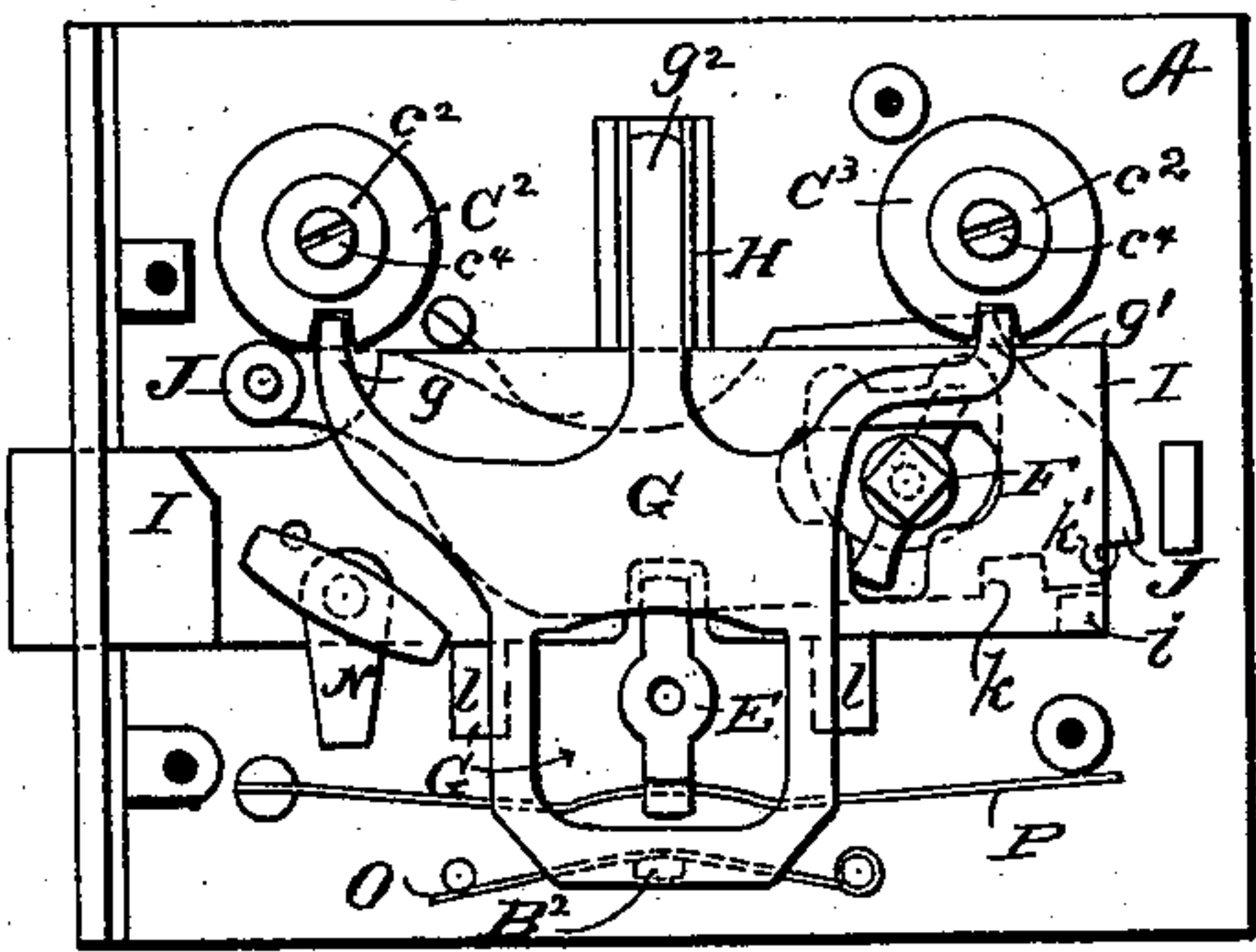
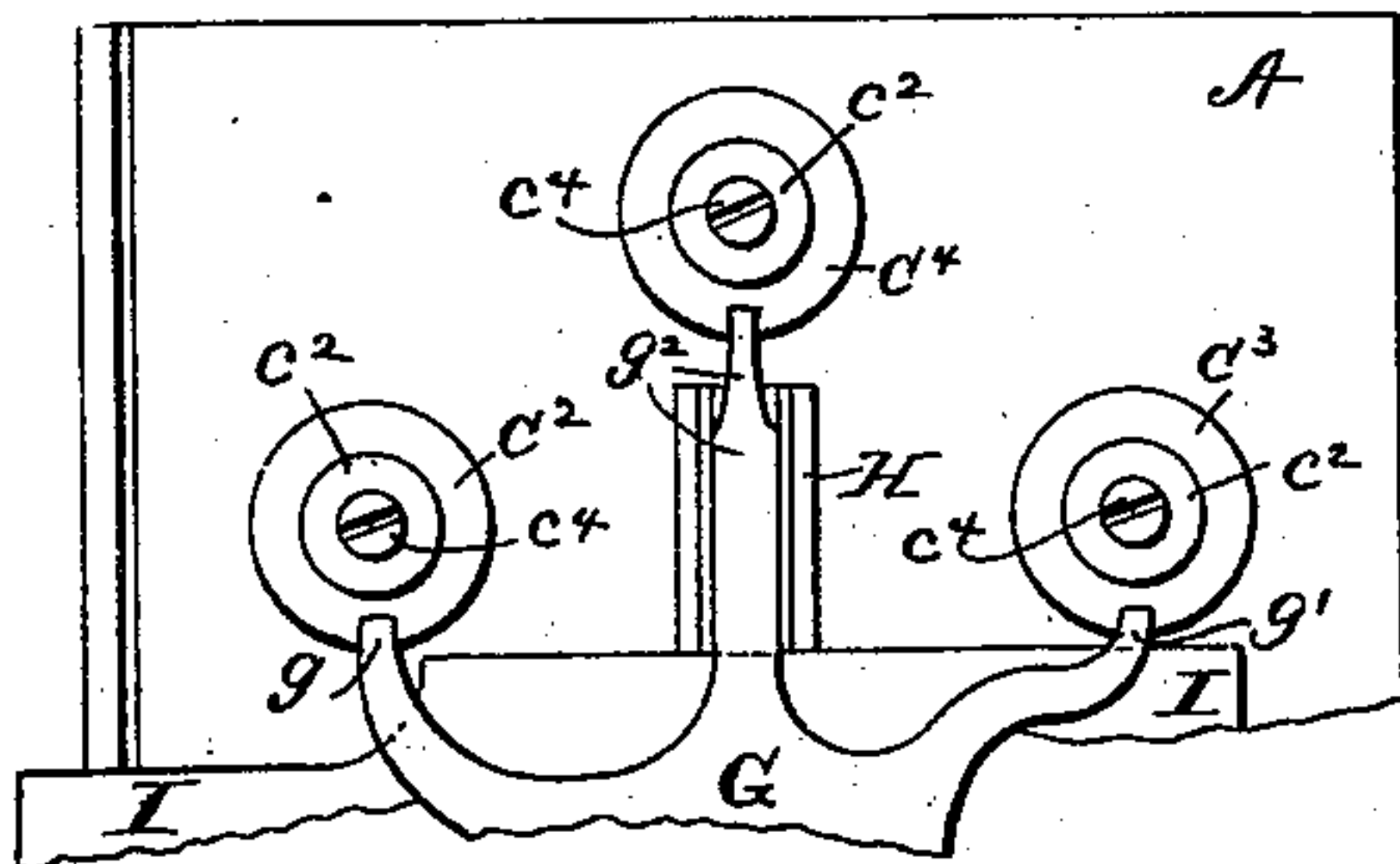


Fig. 6.



Witnesses.  
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# UNITED STATES PATENT OFFICE.

HENRY THOELE, OF FLORENCE, ALABAMA.

## PERMUTATION-LOCK.

SPECIFICATION forming part of Letters Patent No. 547,527, dated October 8, 1895.

Application filed September 18, 1894. Serial No. 523,328. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY THOELE, a citizen of the United States, residing at Florence, in the county of Lauderdale and State of Alabama, have invented a new and useful Lock, of which the following is a specification.

My invention relates to an improvement in locks, which is so constructed and arranged as regards the combination of the parts that it requires no skill or memorizing on the part of the operator to manipulate the same.

The object of my invention is to provide a cheap, durable, simple, and inexpensive lock for dwelling-houses, stores, warerooms, &c., yet so simple in its construction that it can be readily understood and manipulated, and also the combination changed without any previous knowledge of the same, and that the use of removable keys may be obviated, and that the lock may be operated from the inside of the door without regard to the combination. With this object in view, I will proceed to describe my invention, referring to the drawings, which form part of this specification, in which—

Figure 1 represents a face or outside view of my improved lock, which is provided with two knobs for forming combinations. Fig. 2 represents a rear view of the same, the plate or cover being removed, exhibiting the internal mechanism with the bolt thrown back. Fig. 3 represents a similar view as shown in Fig. 2 with the bolt thrown forward. Fig. 4 represents the bolt in a midway position with the duplex tumbler engaging the combination-knobs. Fig. 5 represents the lock-case in section and secured to a portion of a door. Fig. 6 represents a lock in detail broken away and provided with three combination-knobs. Figs. 7 and 8 represent, respectively, the keys for operating the lock from the outside and inside of the door, the knobs for the same not being shown.

My improved lock consists of a case A, which is provided with a cover B and which supports and contains the following mechanism: Near the upper part of the lock are a pair of knobs C and C', which are provided on their beveled bases with figures and letters for indicating the position for operating said knobs, in combination with pointers *d* and *d'*, said pointers forming part of a pointer-bar D.

The combination-knobs C and C' are secured to spindles *c*<sup>3</sup>, as shown in dotted line of Fig. 5. These spindles, which extend from the outside of the door, and consequently through the same, are secured to small disks or knobs C<sup>2</sup> and C<sup>3</sup> by means of screws *c*<sup>4</sup> in combination with washers *c*<sup>2</sup>. The object of securing the knobs in this way is to readily change the combination, which will be hereinafter more fully described, or the outside knobs may be secured by a screw and washer, and the combination be changed entirely from the outside of the door. On the enlarged portion of said disks or knobs C<sup>2</sup> and C<sup>3</sup> are notches *c*<sup>5</sup> for receiving the prongs *g* and *g'* of the duplex tumbler G. Secured to the lock on opposite sides are permanent keys E and F, which are provided with ordinary hand-knobs, as shown at Fig. 5, for manipulating bolt I and tumbler J, the latter being of ordinary construction. Key E also operates from the outside of a door the duplex tumbler G, previously referred to; but this key E cannot turn unless the notches of the small inner knobs are so arranged as to engage the prongs of the tumbler G.

The tumbler J is provided with notches *k* and *k'* for receiving a nib or stud *i*, secured on the rearmost end of bolt I, which prevents said bolt from being forced back in case a knife-blade or other thin device were inserted between a door and its accompanying jam. The duplex tumbler G, previously referred to, is operated in a vertical direction through the medium of way or guide H and guide-lugs *l*. Near the lowermost end of said tumbler G is a large opening G' for allowing free action to the key E when elevating said tumbler. Said tumbler G is also provided with a lug B<sup>2</sup> on its under and lowermost side, which engages with a spring O for forcing tumbler G into its normal position when released from the action of key E. Secured to case A at its lowermost part is a flexible spring P, which bears against the bit of key E, and thus retaining the key-bit in its normal position when not used in operating the lock-bolt. Secured to the plate B by means of a thumb-knob is a stop N for preventing said bolt from being manipulated by the outside knob of the key E, even if the combination is known.

The bits of the keys E and F are stepped for engaging with the tumblers and bolts and



are also provided with suitable recesses to fit over steady-pins *e* and *f*, as shown at Figs. 7 and 8, respectively.

Key *F* is located upon the inside of the door and can always operate the bolt *I*, irrespective of the condition of the tumblers *G* or *J*, its bit being so stepped as not to engage with tumbler *G*, and tumbler *J* being held down only by a spring, the bit of key *F* readily raises it.

When necessary to open the door from the outside, the combination-knobs *C* and *C'* must be in the position shown in Figs. 2 and 4, respectively. This position of knobs *C* and *C'* is arranged by means of the figures or letters on the base of the same coming directly opposite the pointers *d* and *d'*, located on pointer-bar *D*, as shown at Fig. 1, and consequently the notches *c*<sup>5</sup>, located in the periphery of the knobs *C*<sup>2</sup> and *C*<sup>3</sup>, will coincide or register with the prongs *g* and *g'* of the duplex tumbler *G*. When the door has been opened, the knobs *C* and *C'*, turned carelessly in any direction, may assume the position shown in Fig. 3, so that the notches *c*<sup>5</sup> will not register or come directly opposite the prongs *g* and *g'*, previously referred to.

When it is necessary to change the combination of the lock, the key *E* is turned until it assumes the position as shown in Fig. 4, thus holding the prongs *g* and *g'* in the notches *c*<sup>5</sup> *c*<sup>5</sup> of the knobs *C*<sup>2</sup> and *C*<sup>3</sup>, respectively. When in this position, the screws *c*<sup>4</sup> *c*<sup>4</sup> (whether securing the knobs *C*<sup>2</sup> and *C*<sup>3</sup>, as shown in drawings, or the knobs *C* and *C'*, as they may be used) are slightly slackened up, and the combination-knobs *C* and *C'* are turned with any desired letter or number opposite the pointers *d* and *d'*, after which the

screws *c*<sup>4</sup> are again tightened, thus forming a new combination.

In Fig. 6 the guide-prong *g*<sup>2</sup> is extended and forms a prong for entering a notch in the knob *C*<sup>4</sup> similar to the knobs *C*<sup>2</sup> and *C*<sup>3</sup>, all acting simultaneously.

I do not limit myself to any number of prongs or knobs, as any number greater than those shown in my invention comes within the spirit of the same; nor do I limit myself as regards the notches *c*<sup>5</sup> *c*<sup>5</sup>, as lugs can project from the periphery of the disks or knobs *C*<sup>2</sup> *C*<sup>3</sup> *C*<sup>4</sup>, and notches can be substituted in tumbler *G* for the prongs *g*, *g'*, and *g*<sup>2</sup>.

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

1. A lock, having in combination two permanent keys with their respective spindles and hand-knobs, said keys operating the lock-bolt each from different sides of the door; one of which keys engages and lifts vertically a tumbler having prongs designed to enter the notches of disks, which disks are operated by knobs having letters, figures or a scale; and an index; while the other of said keys is operated from the other side of the door or lock regardless of the tumbler, its prongs, the disk or its accompanying mechanism.

2. In a lock substantially as shown, a permanent key *E*, provided with a double bit, having steps thereon, in combination with tumblers *G*, *J* and bolt *I*, and spring *P*, for holding said key in its normal position.

HENRY THOELE.

Witnesses:

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