

(Model.)

O. E. PILLARD.

DOOR LOCK.

No. 271,918.

Patented Feb. 6, 1883.

Fig. 1.

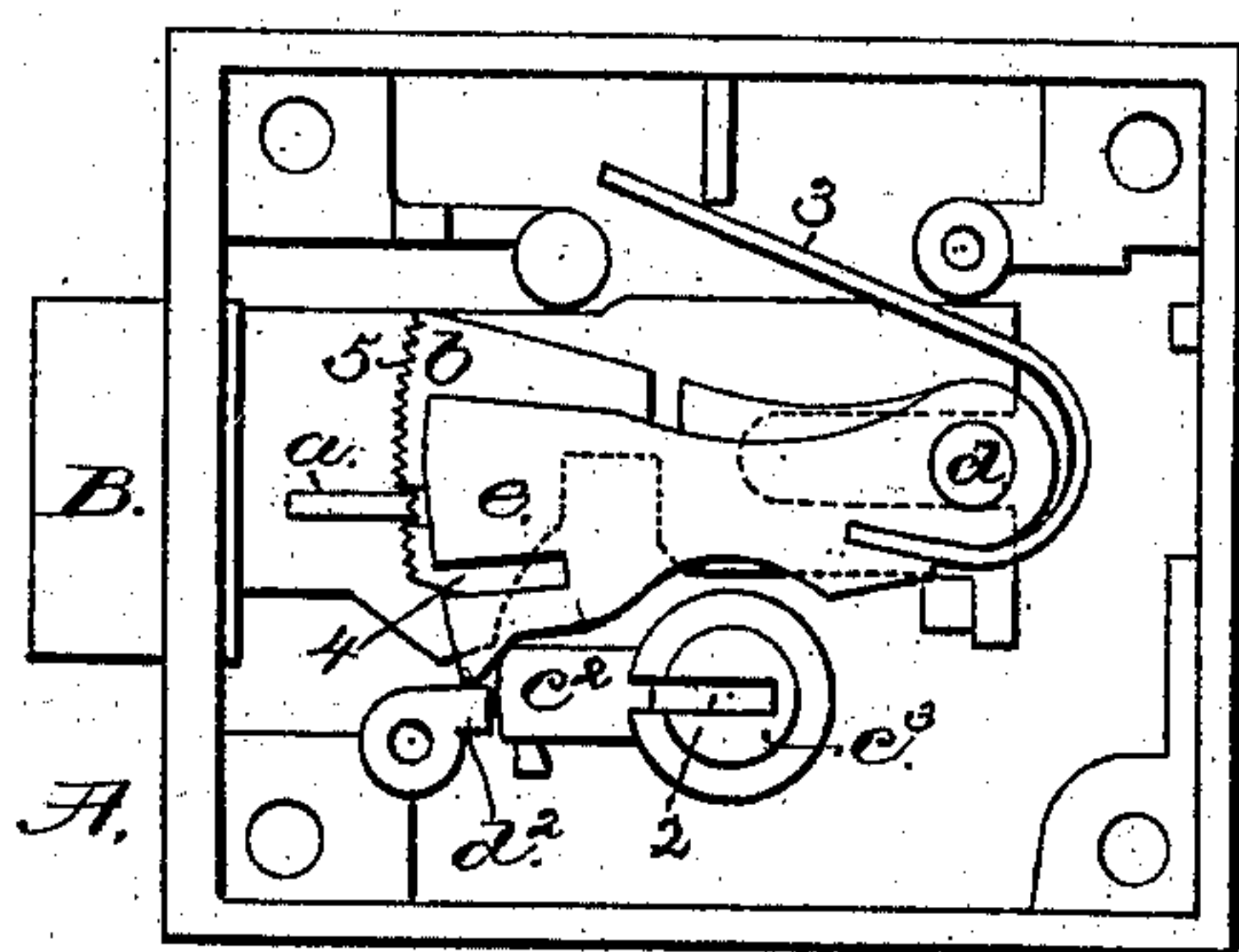


Fig. 2.

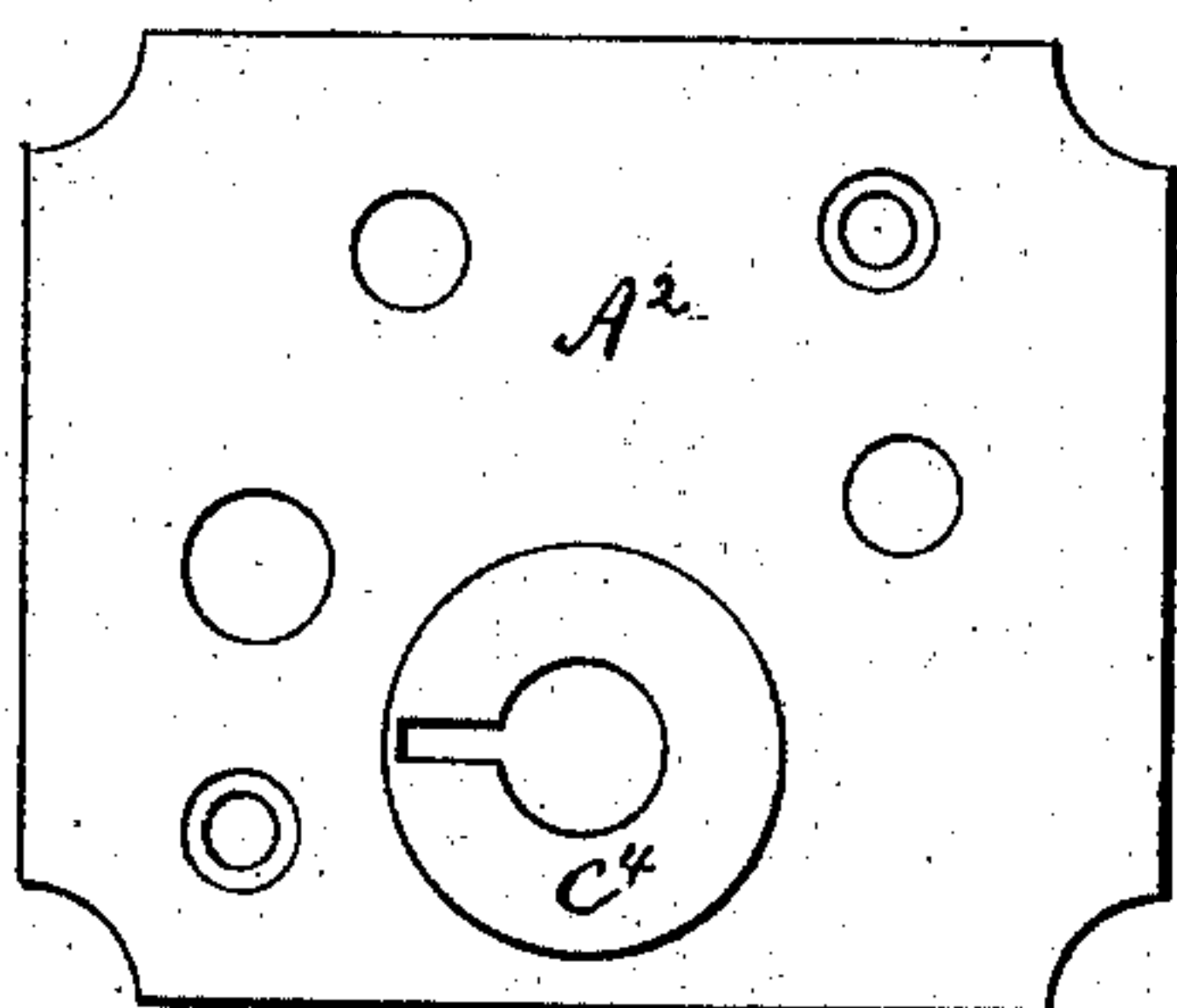


Fig. 4.

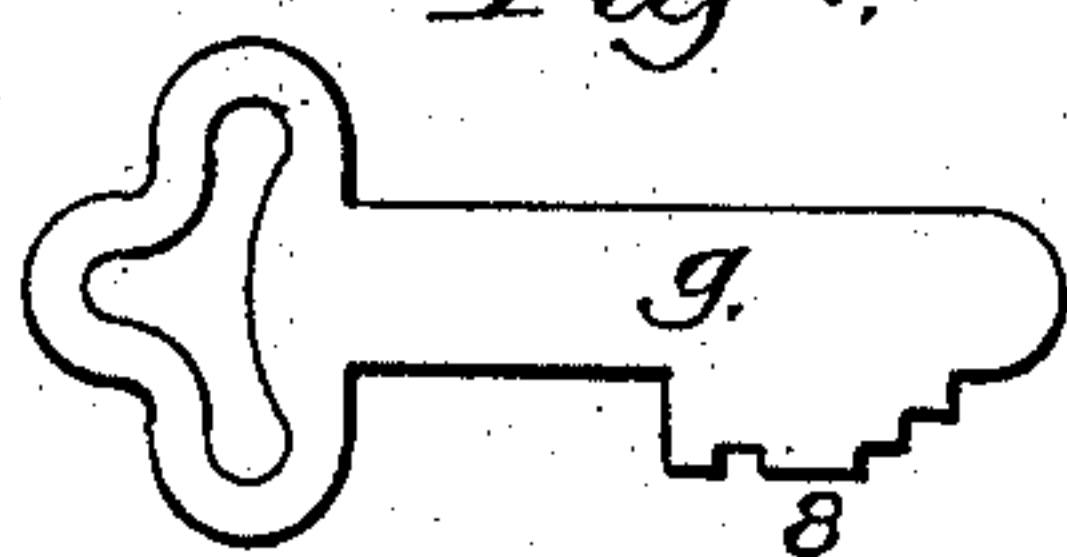


Fig. 5.

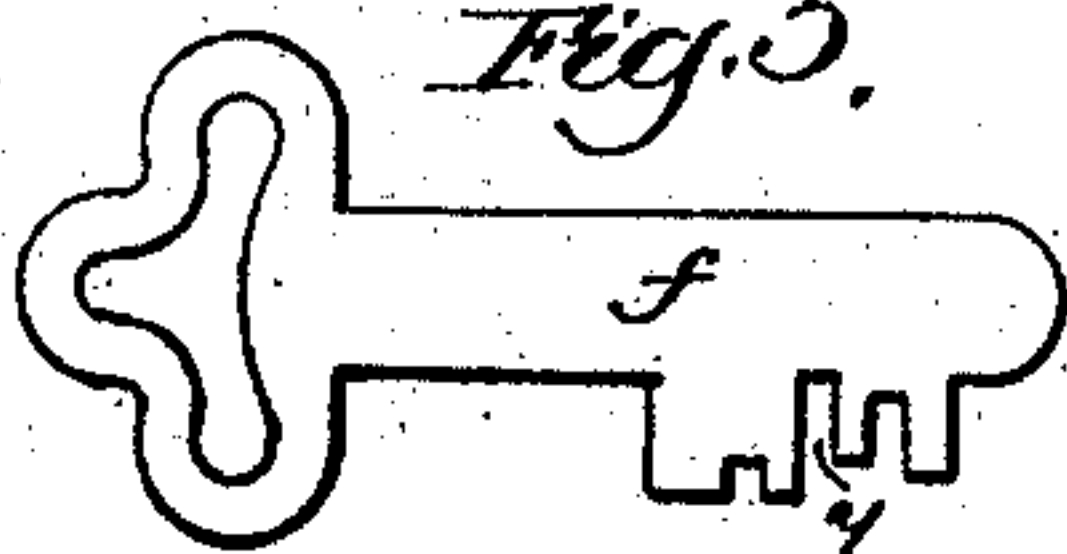


Fig. 3.

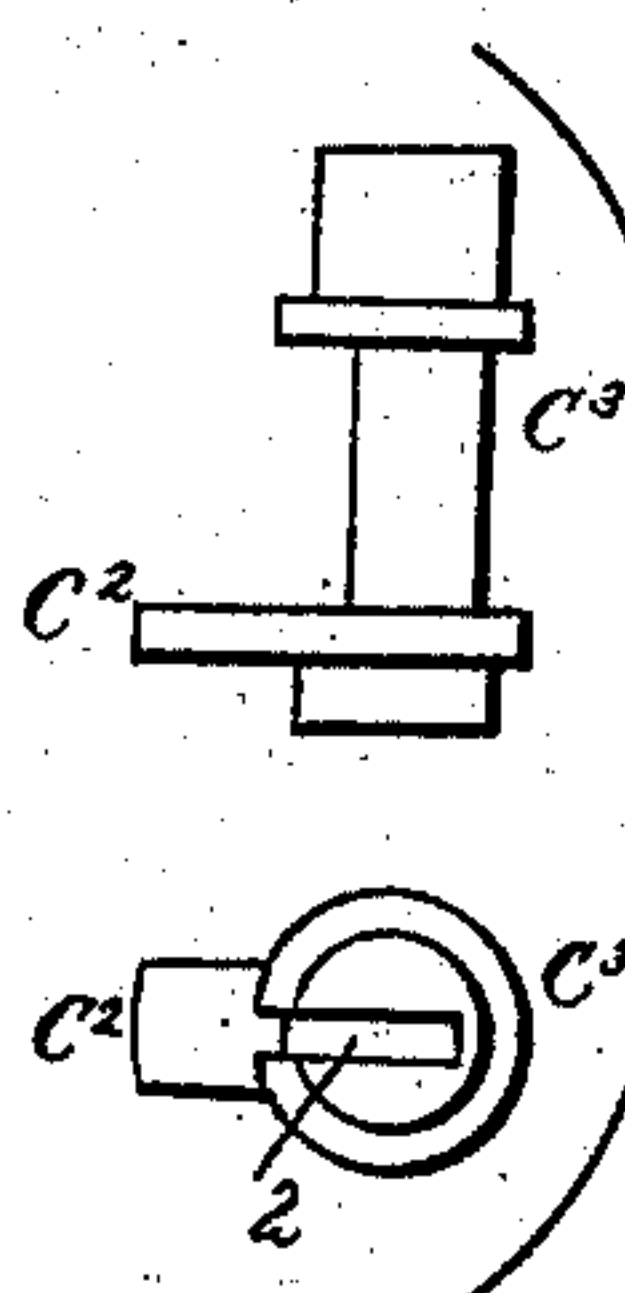
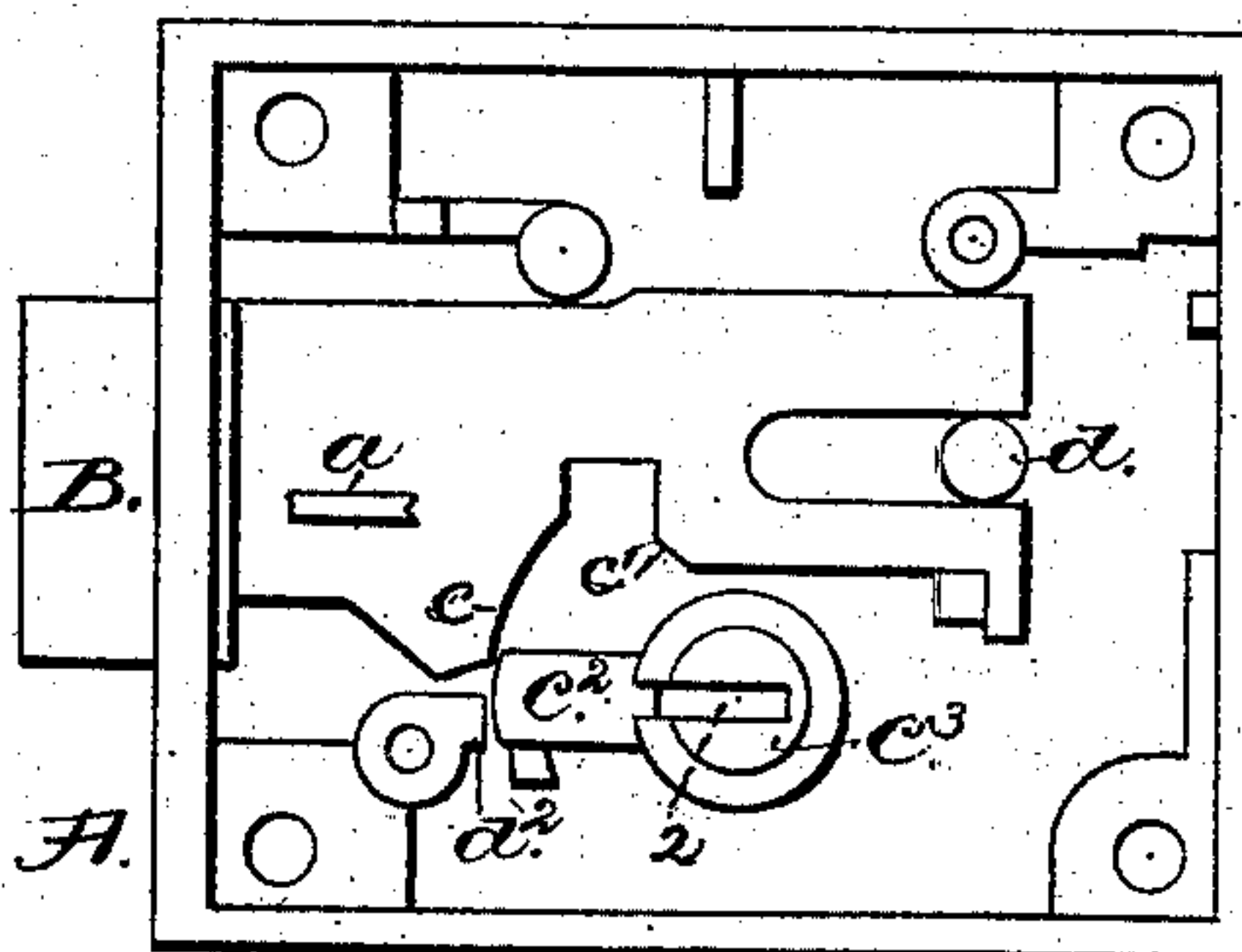


Fig. 7.

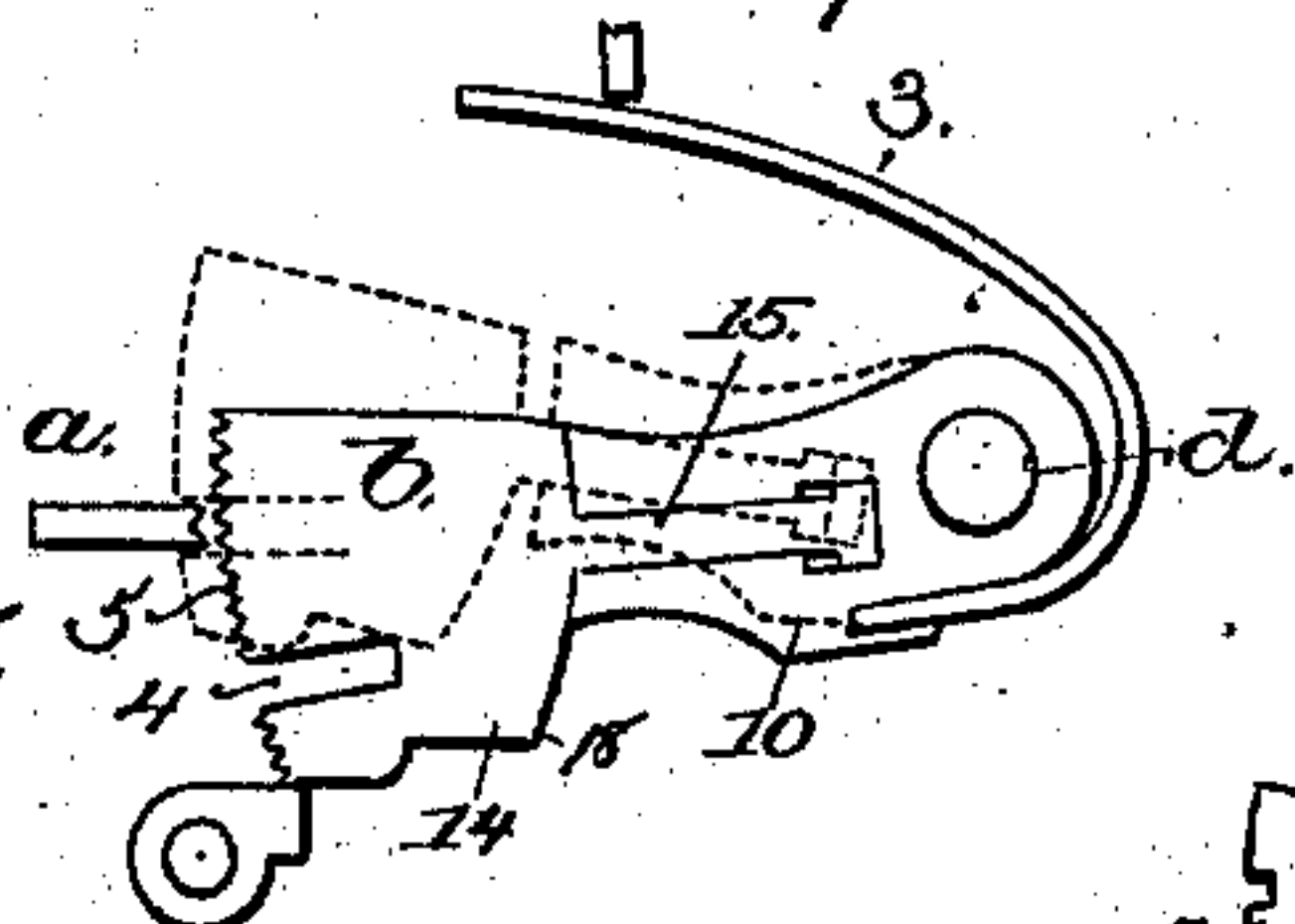
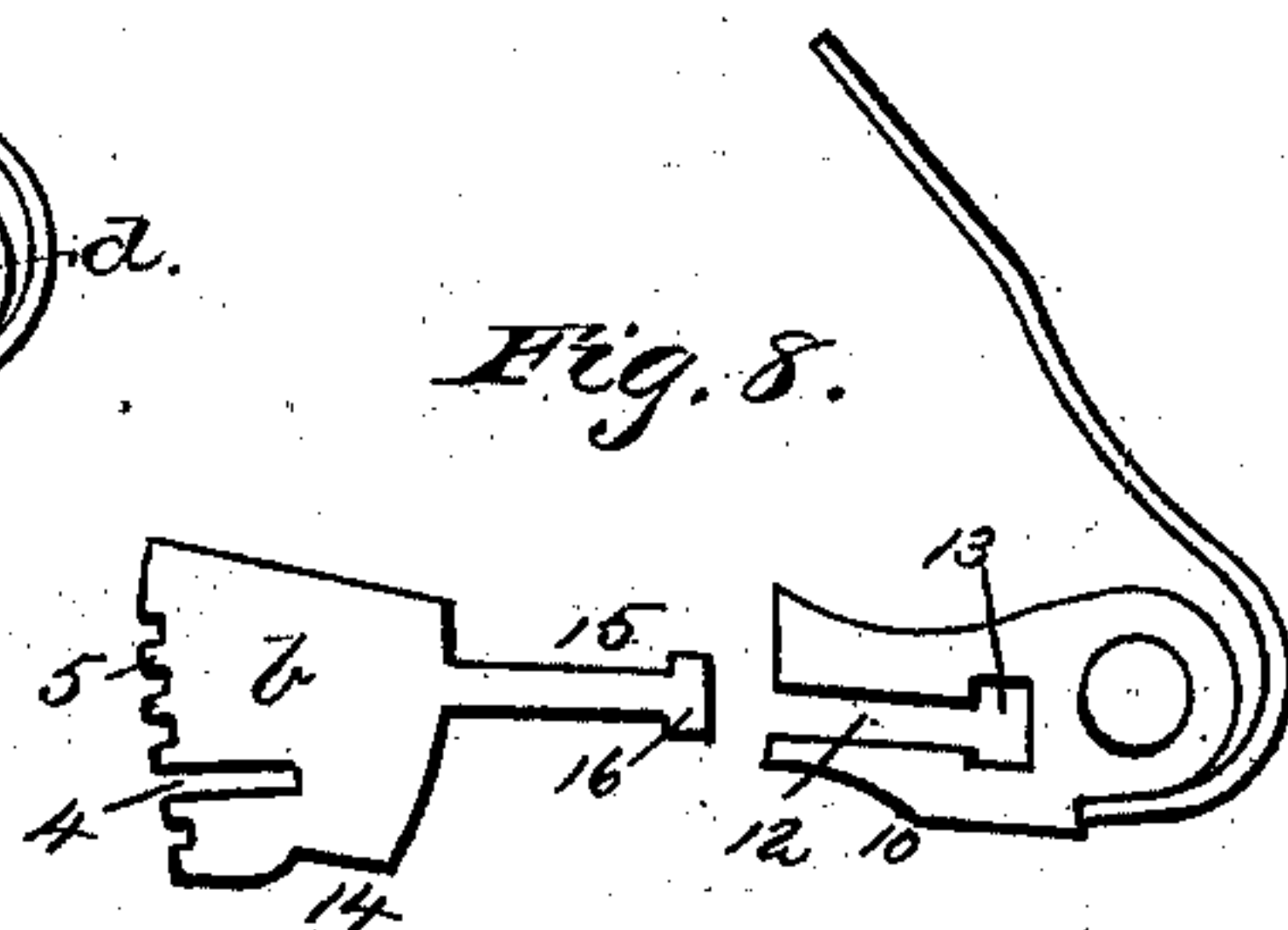


Fig. 6.

Fig. 8.



Witnesses.

John F. C. Peimert  
Bernice J. Noyes.

Inventor.

Oliver E. Pillard

by Crosby & Gregory  
attys.



# UNITED STATES PATENT OFFICE.

OLIVER E. PILLARD, OF CAMBRIDGEPORT, MASSACHUSETTS.

## DOOR-LOCK.

SPECIFICATION forming part of Letters Patent No. 271,918, dated February 6, 1883.

Application filed July 18, 1882. (Model.)

*To all whom it may concern:*

Be it known that I, OLIVER E. PILLARD, of Cambridgeport, county of Middlesex, State of Massachusetts, have invented an Improvement in Locks, of which the following description, in connection with the accompanying drawings, is a specification.

My invention relates to that class of locks in which the bolt, having been drawn into and then thrown out from the case by the regular key, cannot be again drawn into the case to unlock the lock until after a master-key has been inserted to place in correct position an extensible toothed tumbler controlled only by the said master-key, the said tumbler acting, until set by the master-key, to prevent the drawing of the bolt into the case, the bolt having a registering-pin which is arrested by the said extensible toothed tumbler.

Figure 1 represents in side elevation, with the cover-plate removed, a lock embodying my invention, the extensible toothed tumbler having been set by the master-key; Fig. 2, the said cover separately. Fig. 3 shows the lock with all the tumblers removed. Fig. 4 represents the master-key of the lock; Fig. 5, the regular key of the lock. Fig. 6 represents in full lines a detail showing the extensible toothed tumbler in the position in which it will be left when the bolt has been thrown out from the case by the regular key, and in dotted lines the position into which the said tumbler is put by the master-key before the lock is to be unlocked or the bolt drawn into the case by the regular key; Fig. 7, a detail of the key-receiving socket-piece, and Fig. 8 details of the extensible toothed tumbler.

The case A of the lock has a bolt, B, (fully shown in Fig. 3,) provided at one side with a registering-pin, *a*, fast upon it, the said registering-pin having its inner edge made V-shaped, to at certain times and under certain contingencies meet the toothed end 5 of a toothed tumbler, *b*, and arrest the motion of the said bolt—as, for instance, when it is attempted to draw the bolt B into the case by the wrong key or by the regular key before the master-key has been inserted to set the toothed tumbler. The bolt has shoulders *c c'*, (see Fig. 3,) which are struck by the bolt-moving projection *c*<sup>2</sup>, forming part of the key-receiving socket-piece *c*<sup>3</sup>, (shown separately in Fig. 7,) one end

of which takes a bearing in the lock-case and its other end in the hollow hub-piece *c*<sup>4</sup> of the removable cover A<sup>2</sup> of the case. The socket-piece *c*<sup>3</sup> has a long slot, 2, to receive the keys by which it is partially rotated. The bolt B, at its rear end, is guided by a stud, *d*, connected with the case A, and this stud serves as the fulcrum for all the main tumblers *e*, two or more, and the extensible toothed tumbler *b*, each of the said tumblers having a spring, 3, which normally keeps it pressed down against the tumbler-stop *d*<sup>2</sup>.

The lock herein shown is supposed to have four tumblers such as shown by *e*, and the toothed tumbler *b*, the latter occupying a position in the stack of tumblers next the outer tumbler *e*, three other tumblers like *e* being supposed to be below tumbler *b* in Fig. 1. The tumblers *b e* each have a like slot, 4, and before the bolt B can be drawn into the case to unlock the lock all these slots 4 must be in line with the registering-pin *a* of the said bolt.

The regular key is marked *f* and the master-key *g*, each having notches and projections of suitable shape to perform its proper duty with the tumblers. The extensible toothed tumbler, (see Figs. 6 and 8,) as herein shown, is composed of an end piece, 10, provided with a slot, 12, and a space, 13, and a plate, 14, toothed at 5, slotted at 4, and provided with an arm, 15, having a head, 16, to enter the slot 12 and space 13 and slide therein for a short distance, the said tumbler being thus made to slide longitudinally, or being extensible. When the bolt is drawn into the case by the regular key *f* the registering-pin *a* meets the inner end of the slot 4 of the plate 14 of the extensible toothed tumbler and causes the arm 15 and head 16 to be moved back into the piece 10, as in full lines, Fig. 6; but when the regular key is turned in the opposite direction, as it is before it is withdrawn to throw the bolt B out from the case, the toothed tumbler *b*, as soon as the pin *a* passes out of slot 4 in it, is acted upon by its spring 3, the edge of the said tumbler *b* entering the deep cut 7 in the key. Fig. 6 shows the position of the toothed tumbler after the bolt B has been thrown out by the regular key and the lock locked. Now, before the bolt can be drawn in by the regular key *f* the master-key *g* must be inserted into the socket-piece *c*<sup>3</sup> and turned,



when the projection 8 of the said master-key acts on the lower edge of the plate 14 of the extensible toothed tumbler and turns it on the stud *d*, places the slot 4 therein opposite the pin *a*, and as the projection 8 is passing the corner 18 of the said plate the strain thereon is sufficient to push the said plate toward the left, as in dotted lines, Fig. 6, just far enough to place the slotted part 4 on the pin *a*, as in Fig. 1, which sets the toothed tumbler, so that the regular key *f* may operate correctly when placed in the socket-piece and turned. The notches and projections of the master-key are not of proper shape to turn the tumblers *e* into position to place their slots 4 in line with pin *a*, so that the master-key cannot alone draw the bolt B into the case. The extensible toothed tumbler having been set as in Fig. 1, the regular key 5 may be inserted to turn the tumblers *e* and bring their slots 4 all in line with the pin *a*, after which the part *c*<sup>2</sup> of the socket-piece *c*<sup>3</sup> strikes the shoulder *c*<sup>1</sup> and draws the bolt in; but, as before described, as the key and socket-piece are turned in the opposite direction to throw the bolt B out of the case the toothed tumbler drops, so that it cannot be again lifted by the regular key. Should a key not the master-key be inserted just after the regular key was withdrawn, a projection on the said key, which should lift the toothed tumbler, if of greater or less length than the projection 8 of the master-key, would operate on the corner 18 and move the plate 14 outward out of its time, so that instead of the slot 4 being engaged by the pin, as before described, some one of the teeth at the edge of the plate of the toothed tumbler would be thrown into engagement with or opposite the pin *a*, and the bolt B could not be drawn into the case.

From the foregoing description it will be seen that the toothed tumbler *b* is directly under the control of the master-key, while the other tumblers, *e*, are directly under the control of the regular key, and, so far as I am aware, this is the first lock wherein a master-key operates a toothed rather than a plain tumbler. If the tumbler controlled by the master-key were not toothed, it could be readily set without the aid of a master-key, and such an untoothed tumbler, having only the notch 4, could be easily set on the registering-pin. By providing this master-key tumbler *b* with teeth, it will be seen that as soon as the said tumbler is acted upon by any device inserted in the slot 2, or the said tumbler is in any way moved

in such manner as would effect the placing of the slot 4 on the registering-pin, or, as it is commonly called by lock-smiths, the "stump," 5, if the said slot 4 and pin or stump were in line, such movement of the slot 4 and pin or stump, not being in line, will effect the lodgment of the toothed end of the tumbler *b* upon the edge of the said registering pin or stump, and will lock the said toothed tumbler. The tumbler *b* having been set wrongly by other than the master-key, the regular key *f* must be inserted to move the part 14 of tumbler *b* back, as in full lines, Fig. 6, when it will drop, as therein shown, as the regular key is being taken out, and thereafter the said toothed tumbler may be set correctly by the master-key.

I do not broadly claim a lock adapted to be operated by two keys inserted one after the other in the same slot, one key operating a latch provided with a stop and adapted to be reciprocated in the case at right angles to the bolt.

The part 15 is held securely in the slot of the piece 10 by the pressure against the extensible tumbler at each side of one of the tumblers *e*.

I claim—

1. In a lock, the bolt B, having the registering pin or stump, combined with the extensible toothed tumbler to co-operate therewith, substantially as described.

2. The case, bolt B, provided with registering-pin or stump and the slotted socket-piece provided with projection *c*<sup>2</sup>, combined with the series of tumblers *e* and the extensible toothed tumbler *b*, each of the said tumblers being provided with a slot, 4, the combination being substantially as described, whereby the tumbler *b* may be set by a master-key, and the tumblers *e* be turned by means of a different key preparatory to the part *c*<sup>2</sup> of the socket-piece drawing the bolt into the case, substantially as described.

3. The toothed tumbler composed of the slotted plate 14, having arm 15 and head 16, and the end piece, 10, provided with the slot and space to receive the arm and head, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

OLIVER E. PILLARD.

Witnesses:

G. W. GREGORY,  
W. H. SIGSTON.