

(Model.)

J. P. WHITE.

LOCK.

No. 271,962.

Patented Feb. 6, 1883.

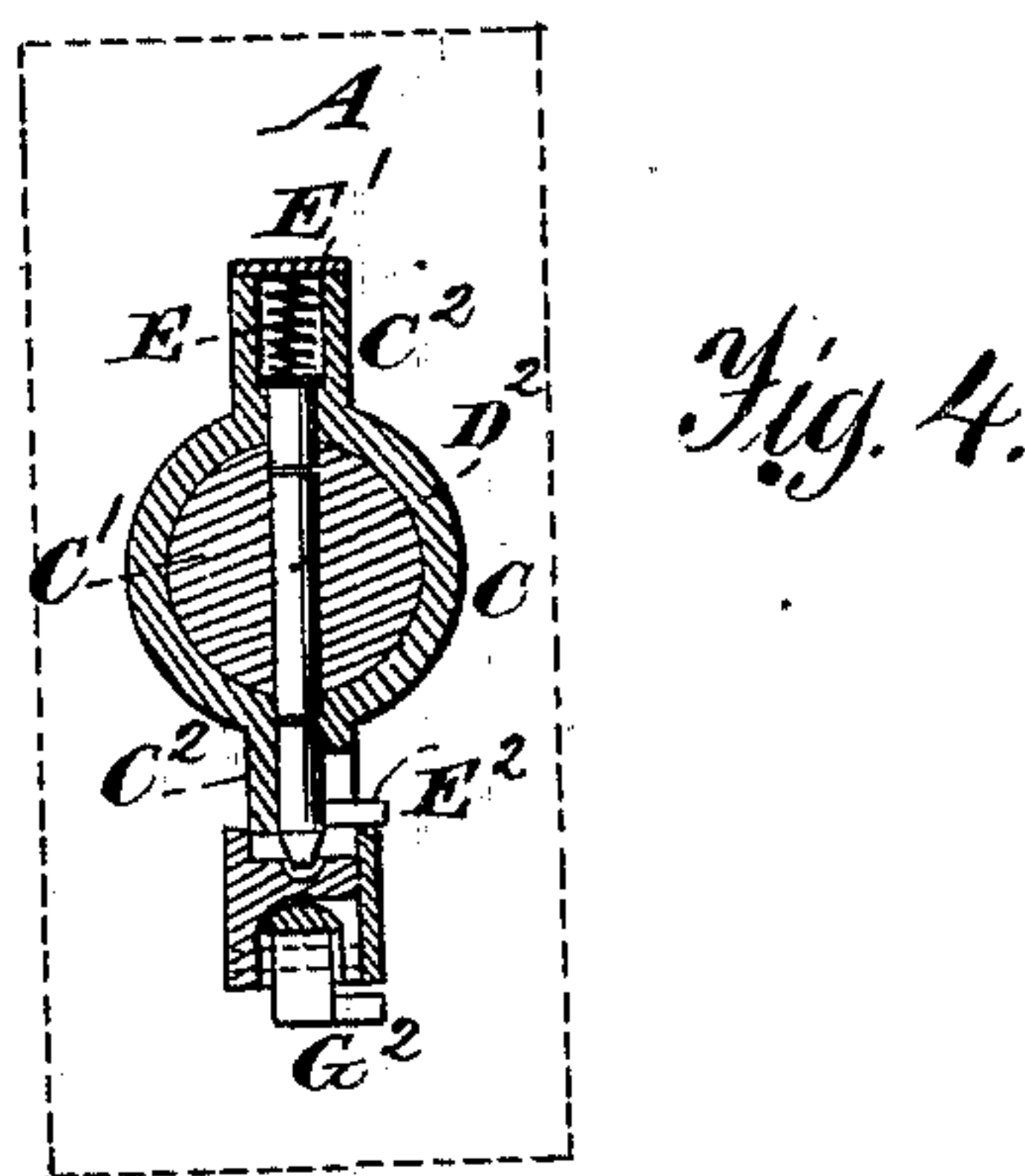
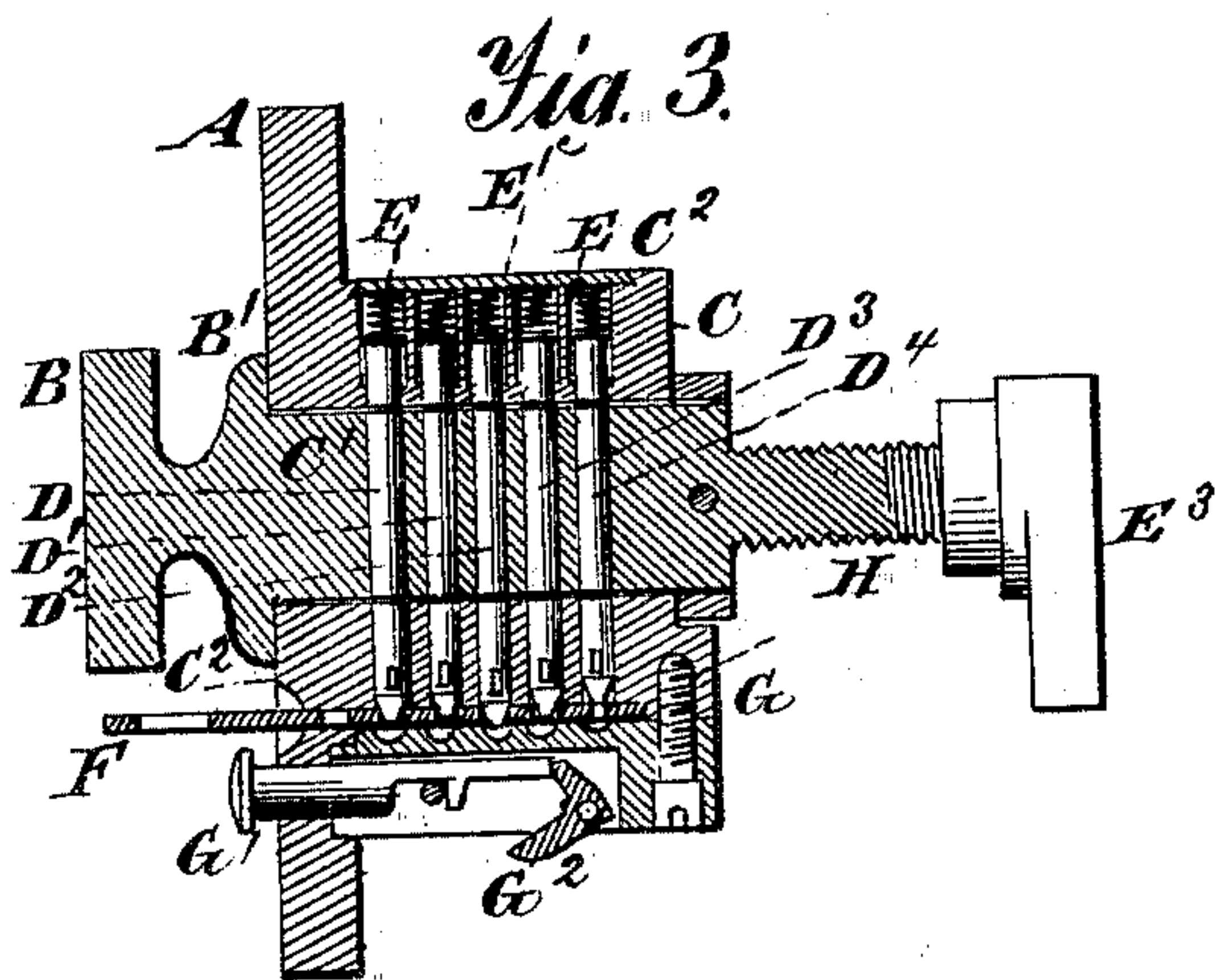
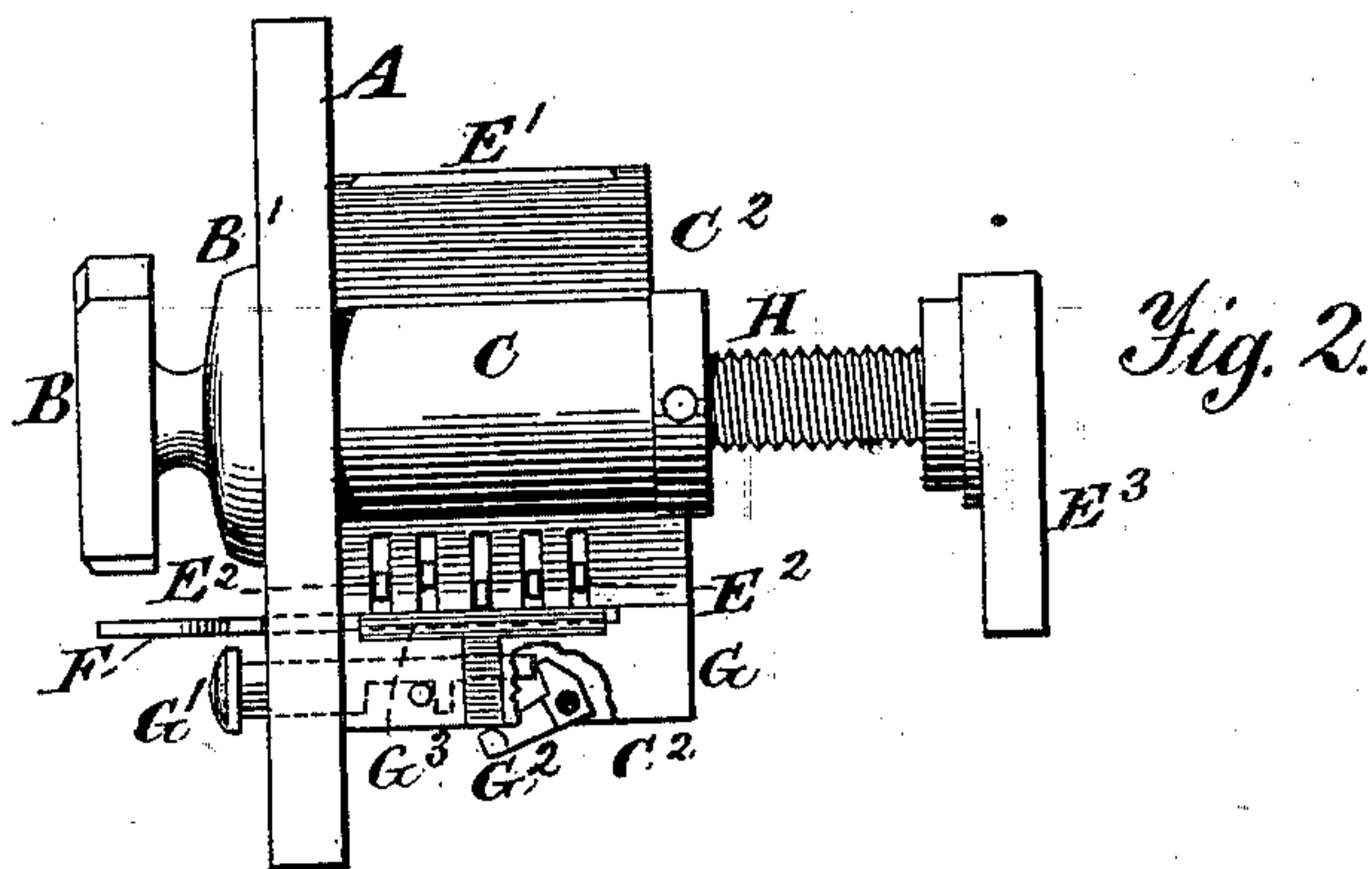
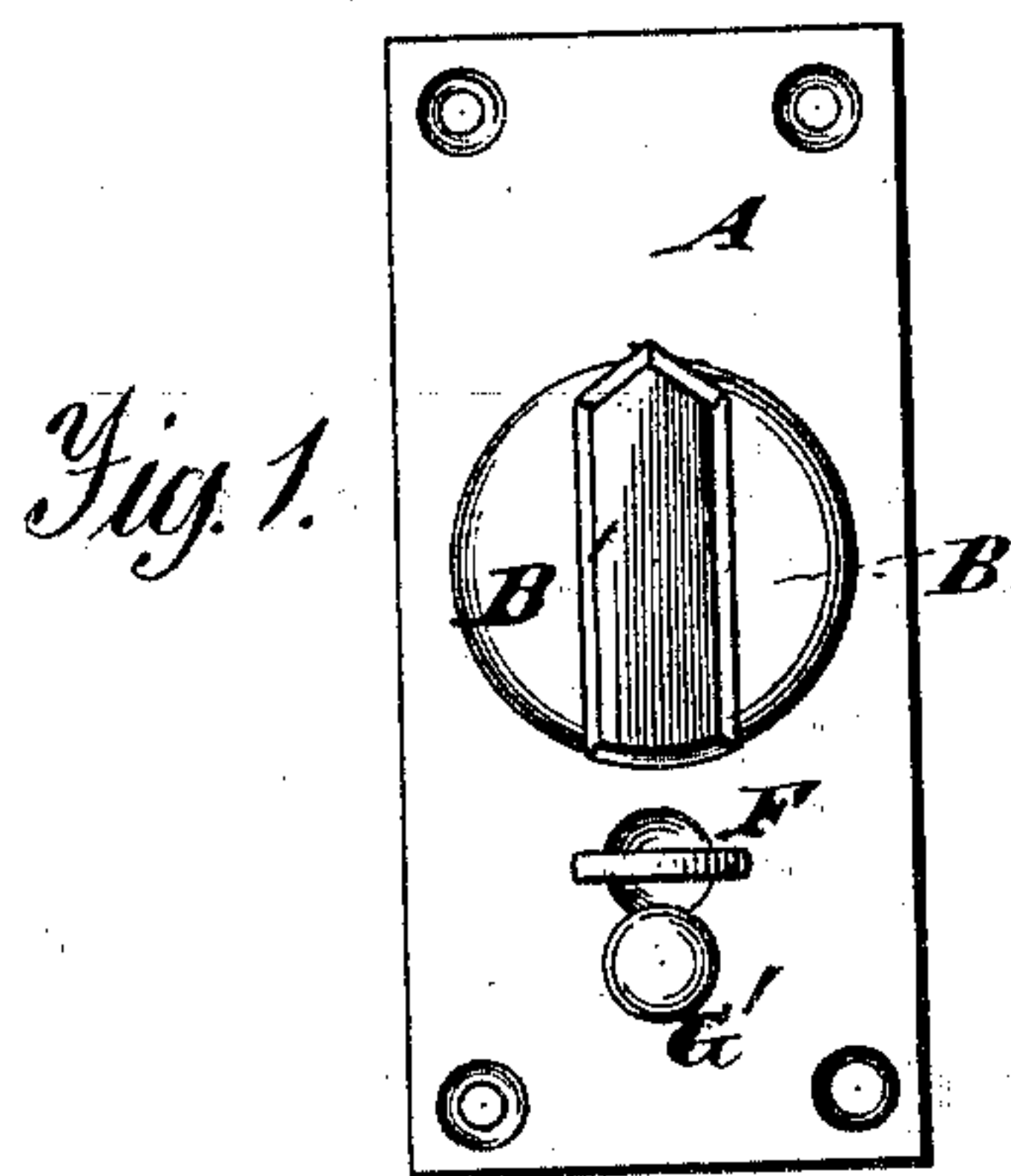


Fig. 5.

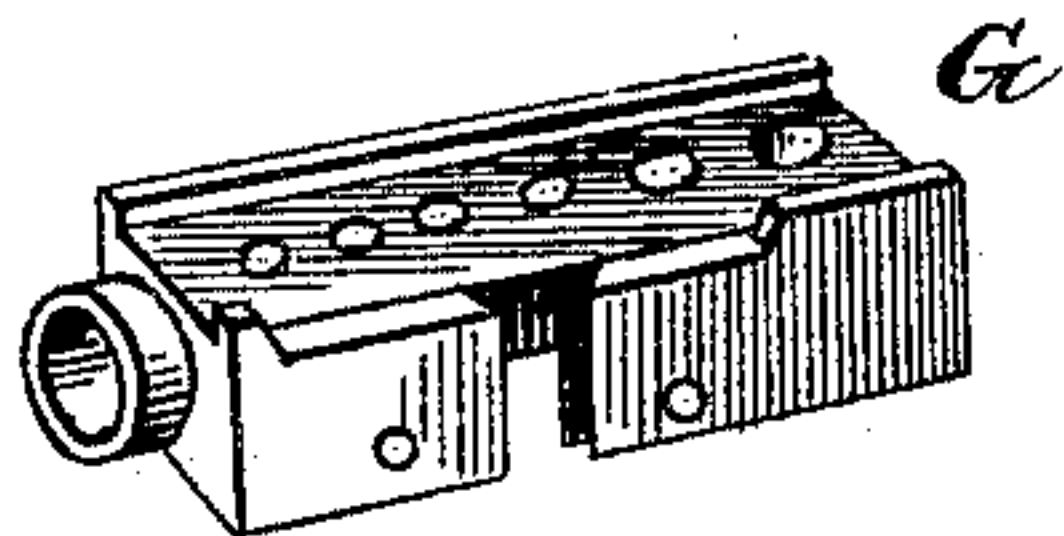


Fig. 7.



Fig. 6.

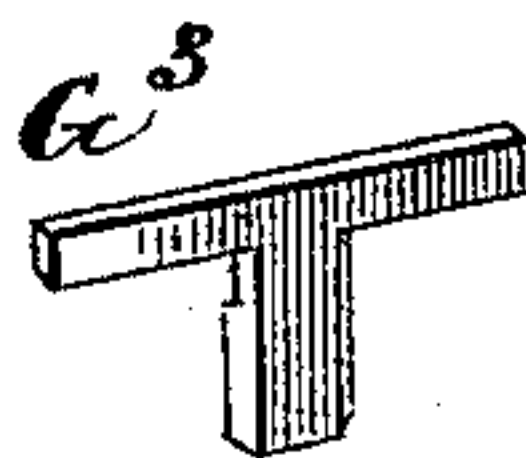
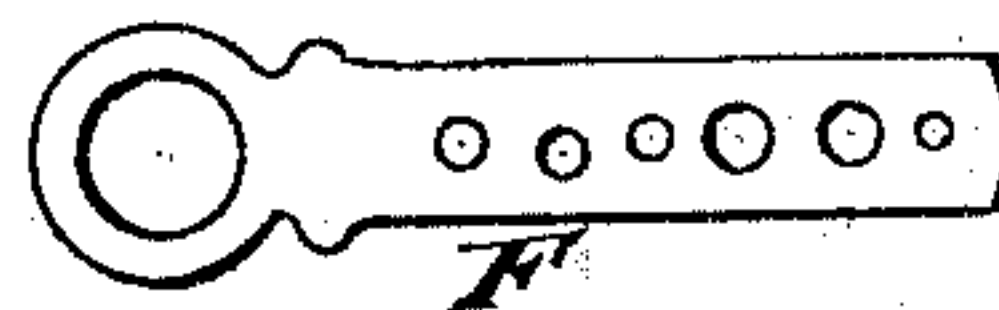


Fig. 8.



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UNITED STATES PATENT OFFICE.

JOSEPH P. WHITE, OF SAVANNAH, GEORGIA.

LOCK.

SPECIFICATION forming part of Letters Patent No. 271,962, dated February 6, 1883.

Application filed March 28, 1882. (Model.)

To all whom it may concern:

Be it known that I, JOSEPH P. WHITE, a citizen of the United States, residing at Savannah, in the county Chatham and State of Georgia, have invented certain new and useful Improvements in Locks, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to improvements in locks, which are to be applied to doors and to other devices which it is desirable to keep locked; and the objects of my invention are, first, to provide a lock for such purposes that shall be burglar-proof, or one that cannot be opened by drilling or cutting away the bolts which hold the parts in their locked position; and, second, to provide a novel construction and combination of the parts of which it is composed. I attain these objects by the means described and by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation of my lock, showing a plate of hardened steel, a handle for turning the locking-cylinder and its extension, the outer end of the key, and the pin-lifting slide. Fig. 2 is a side elevation, showing the parts above named, the casing, the extension of the locking-cylinder that passes through the door or other device to which the lock is applied, the locking-arm upon its inner end, the pin-lifting slides, and a pivoted arm, the key being in position. Fig. 3 is a sectional elevation, showing the positions of the parts above enumerated, and also the springs which operate the locking-pins. Fig. 4 is a transverse section, showing the casing in which the locking-cylinder works, the cylinder in position, one of the locking-pins passing through it, the spring which operates it, the pivoted lever which lifts the bolts, the space into which the key is thrust for unlocking the door or other device, and the vertical slide for raising the pins when the key is inserted or withdrawn. Fig. 5 is a perspective view of a block or appendage which carries the horizontal slide, the pivoted arm or lever, and a vertically-moving slide for lifting the locking-pins. Fig. 6 is a perspective view of the vertically-moving slide. Fig. 7 is an elevation of the arm of the locking-pins, showing a pin or projection upon one of its sides, which rests upon the vertically-moving slide; and Fig. 8 is a plan view of a key,

showing one arrangement of apertures for the reception of the pointed ends of the locking-pins.

Similar letters refer to similar parts throughout the several views.

In locks in which a series of locking-pins have been employed very little protection has been afforded, on account of the fact that a burglar or other persons seeking to gain admission to the apartment could readily do so by drilling a small hole through the front plate of the lock and then through the extension, thus cutting off all of the pins, when the locking-cylinder can be turned and the door or other device opened by turning the locking-cylinder.

My invention is designed to remove this objection; and to this end, in constructing locks, I provide a plate, A, of any desired dimensions, according to the device to which it is to be applied. This plate I prefer to make of steel, and to harden it to such an extent as to render it impossible to perforate it with a drill. Instead of making this plate of steel, it may be made of chilled cast-iron or of any other material that will resist the action of a drill.

As a further protection against drilling away the locking-pins, it is preferred to place upon the outer end of the locking-cylinder and between the plate A and handle B a hardened collar, B', the diameter of which is to be equal to or greater than that of the cylinder. This collar is also to be made impervious to a drill. This having been done, there is no part where a drill can be used for cutting away the operating parts of the lock, and thus gaining access to the apartment upon which it is placed.

I will now proceed to describe the features of novelty in the construction, combinations, and arrangements of the parts of which this lock is composed.

To the inner face of the plate A there is secured by soldering, riveting, or by casting thereon a projection, C, the central portion of which is cylindrical in form, as shown in Fig. 2, and is bored out to receive the locking-cylinder C', as shown in Fig. 3. Upon two sides of the projection C there is placed flanges C², through which a series of holes are drilled, the number being such as to admit of the insertion of the desired number of locking-pins—say five or more or less. The holes just

alluded to are extended through both of the projections, care being taken to have those in one exactly in line with those in the other, so that the locking-bolts may slide freely through them. The locking-cylinder C' also has a series of holes formed in it, which correspond in number and size with those in the projections, as shown in Fig. 3. The locking-pins are designated by D D' D² D³ D⁴, they being preferably of hardened steel in order that they may resist the action of the burglar's drill, and made in three sections, as shown in Fig. 3, one of the sections being placed in the upper projection C², one in the locking-cylinder C', and the other in the lower projection C². Above each of the upper sections there is placed a spring, E, said springs being held in position by a sliding plate, E'. The lower sections of these bolts are pointed at their lower ends, as shown, and each one of them is provided with a projection or pin, E², as shown in Fig. 7. The combination and arrangement of the last-named parts are such that when the locking-cylinder is in this position the different sections will move freely up and down, but will not prevent the locking-cylinder from being turned by the handle B into such a position as to cause arm E³ to withdraw a main locking-bolt which may be attached to the doors of a safe or other device, and thus unlock it, or so as to throw said locking-bolt into its locking position—a function which said arm performs in addition to that of holding the lock in or upon the door. The locking-pins E are brought into this their unlocked position by the insertion of the key F, as shown in Fig. 3, it being provided with a series of holes of different diameters, as shown in Fig. 8. To enable the operator to insert the key, there is arranged in a block of metal, G, which is secured to the lower projection C² of the casing, a horizontally-sliding pin, G', the inner end of which comes in contact with a bell-crank lever, G², the effect of a push upon the pin being to cause the lower arm of said lever to come in contact with the lower end of a vertical slide, G³, which works in a slot formed in the block G, and raising it upward, in doing which a horizontal arm formed upon its upper end, as shown in Fig. 6, is brought into contact with the projections E² on the lower sections of the locking-bolts, and bring the latter into such position that the key can be inserted, at which times, as before stated, the locking-cylinder can be turned into such a position as to unlock the room or receptacle to which the lock is attached.

It will be observed that there is in the upper surface of block G a recess, into which

the key passes on being inserted, and also that the surface of this block has in it a series of recesses, into which the points of the locking-bolts drop when the key is removed, the effect of which is to allow the different sections of the pins to drop down, so that the lower ends of the sections will drop into the holes in the lower projection and those in the upper projection into the locking-cylinder, and thus form two locking-points.

It will be seen that, owing to the different lengths of the locking-pins, the arrangement of the holes in the key are of great importance, as, if they are not of the proper arrangement and character, unlocking cannot be effected, owing to the fact that some of them will enter either the lower projection or the locking-cylinder while the others were in a proper position for unlocking.

An important feature of the lock is that by changing the location of the holes in the key and the pins in their places a variety of combinations can be formed and the unlocking of one lock with a key made for another lock be prevented. An examination of the drawings in this case will show that it is nearly, if not quite, impossible to pick the lock with any instrument passed through the key-hole, as, before it can be unlocked, each one of the locking-pins has to be brought to an exact position and held there until all are adjusted, which cannot be done with any instrument or instruments except a key fitted to the particular lock to which it is applied.

The extension H of the locking-cylinder is provided with a screw-thread for attaching the arm E³ thereto, by which means it may be adjusted to doors of any desired thickness.

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

1. The combination of the plate A, the casing C, with its projections C² C², a series of locking-pins formed in three sections, the recessed block G, and the key F, the parts being constructed and arranged for joint operation substantially as set forth.

2. The combination of the case C, the recessed block G, the horizontally-sliding pin G', the lever G², vertical slide G³, and the sectional sliding locking pins, substantially as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JOSEPH P. WHITE.

Witnesses:

S. H. VAIGNEUR,
H. G. EVERITT.