

No. 829,616.

PATENTED AUG. 28, 1906.

M. G. WOOD.
LOCK.

APPLICATION FILED AUG. 1, 1904.

2 SHEETS—SHEET 1.

Fig 1

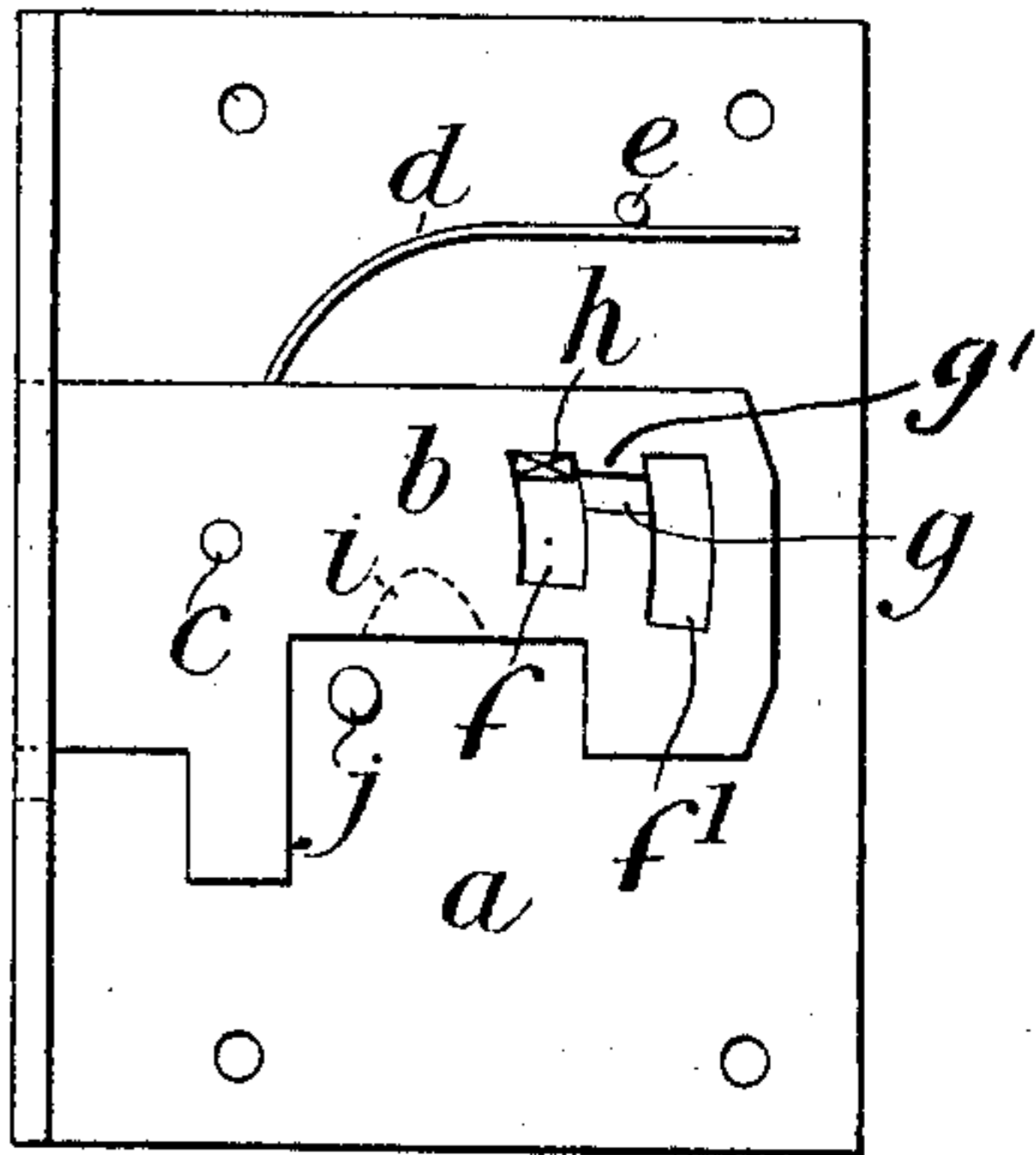


Fig 3

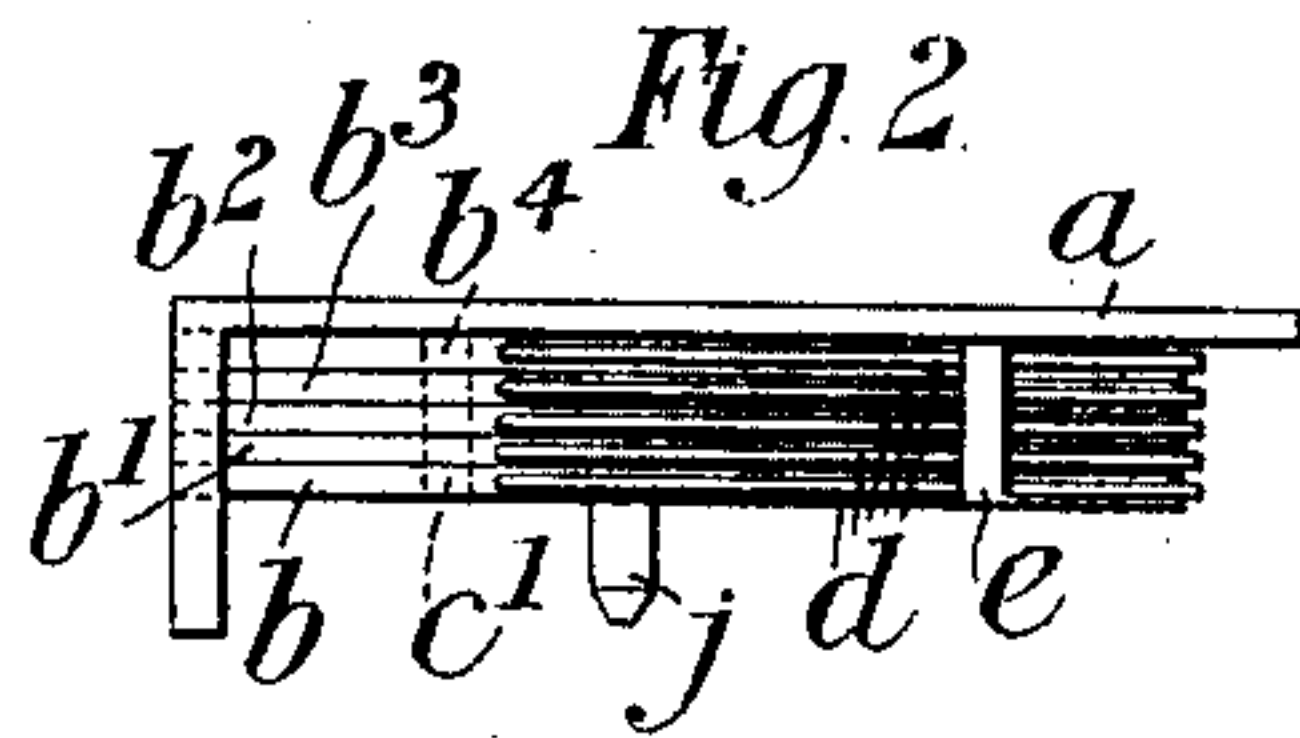
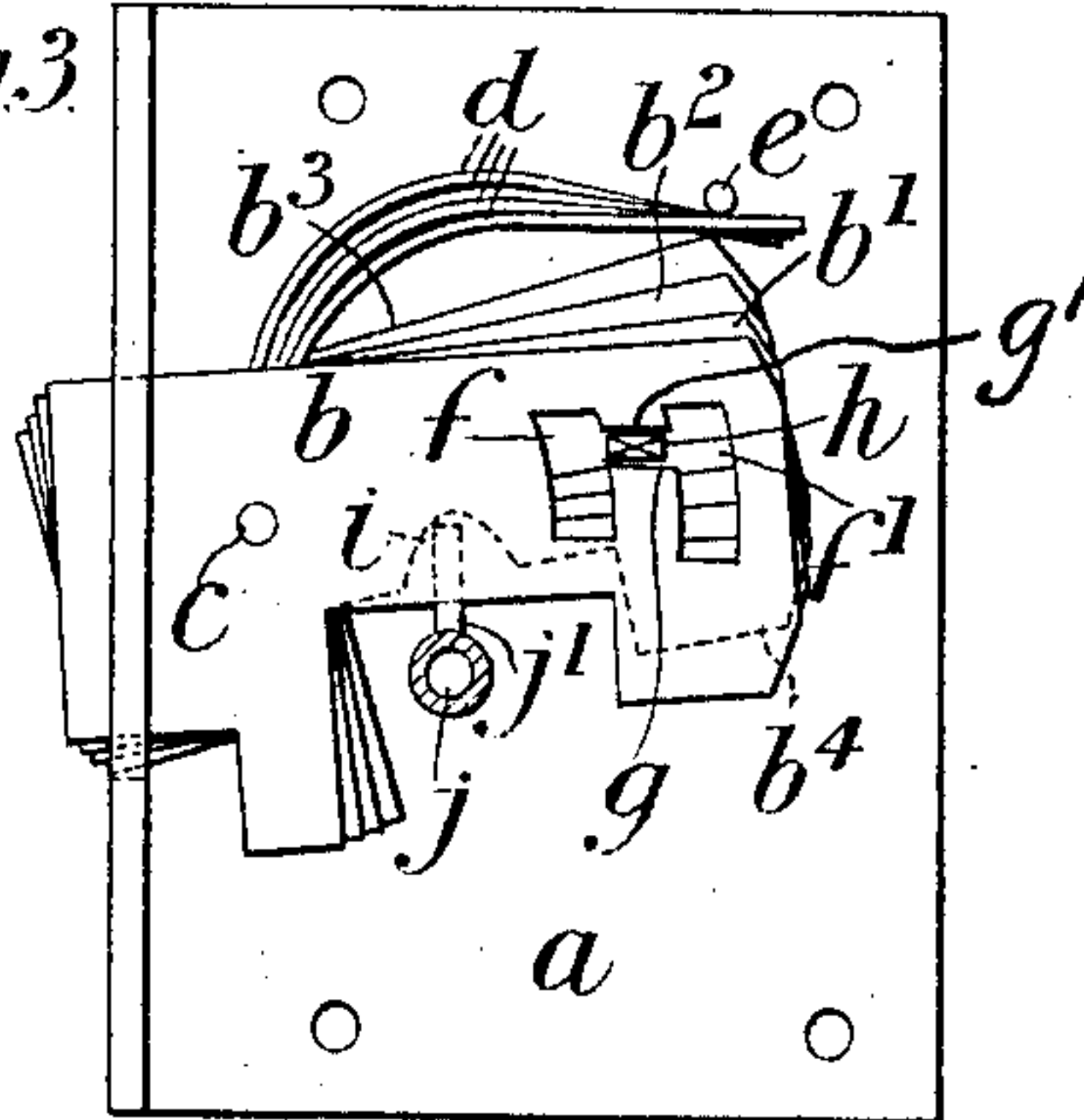


Fig 4

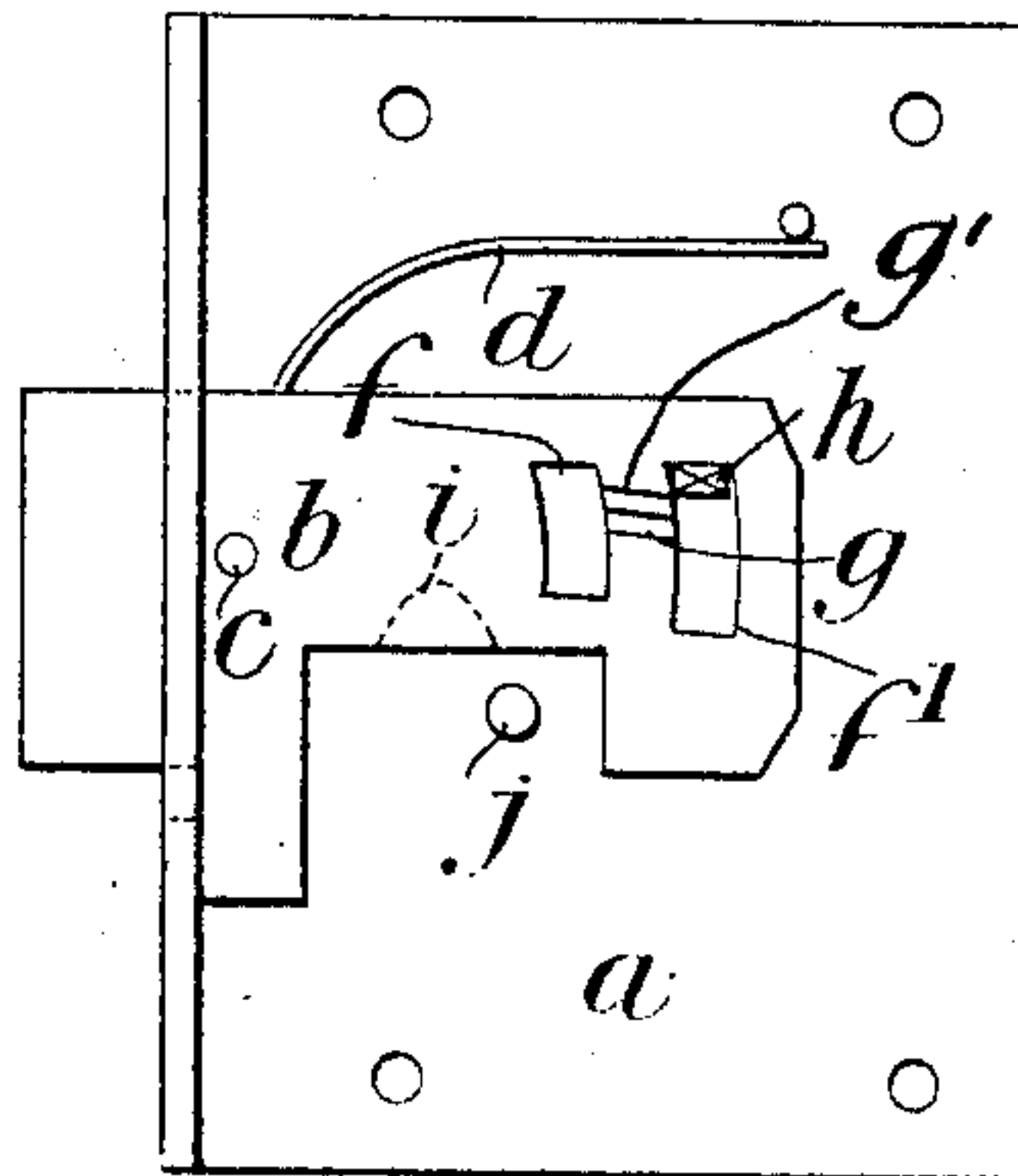


Fig 5

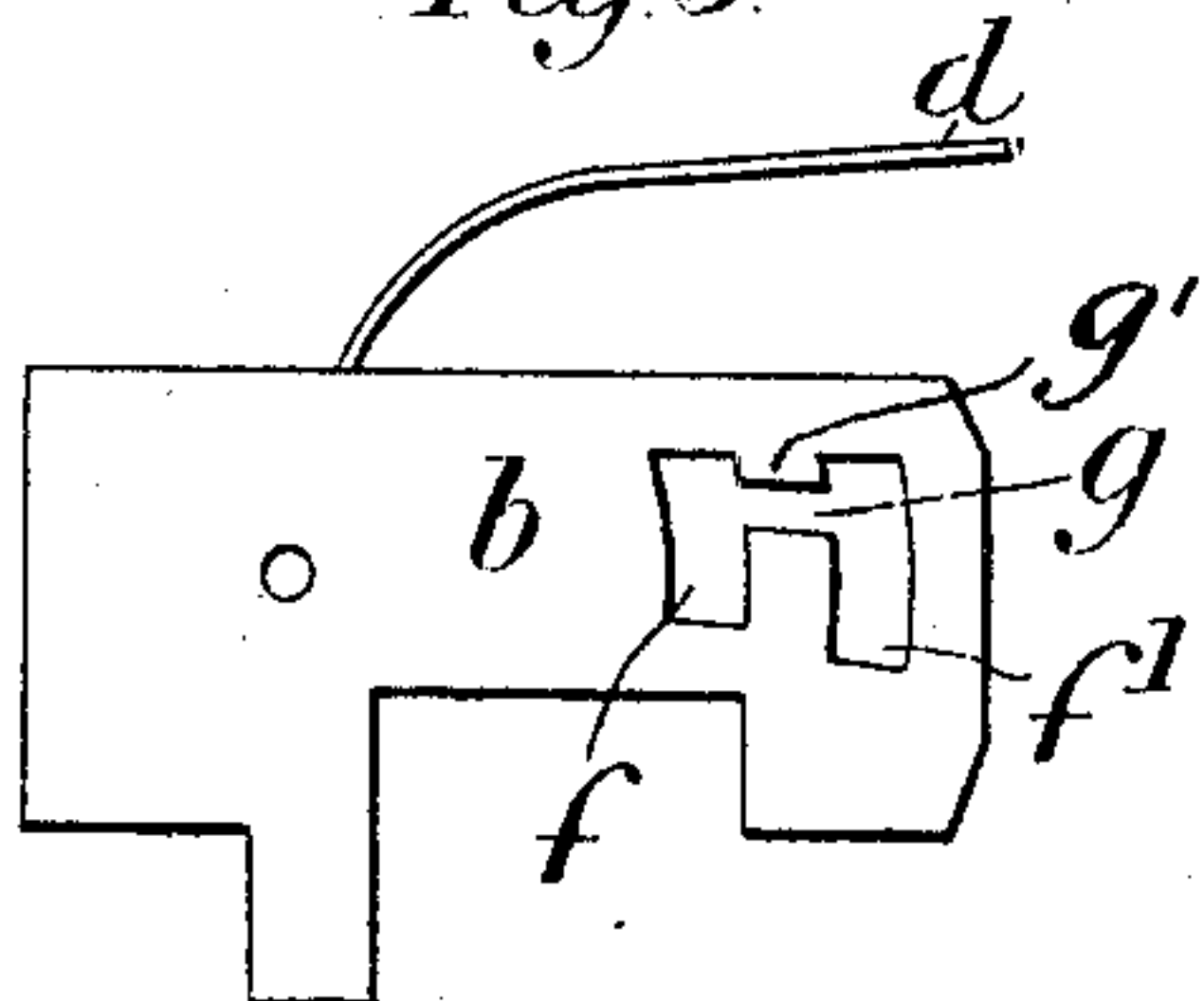


Fig 15

Fig 14

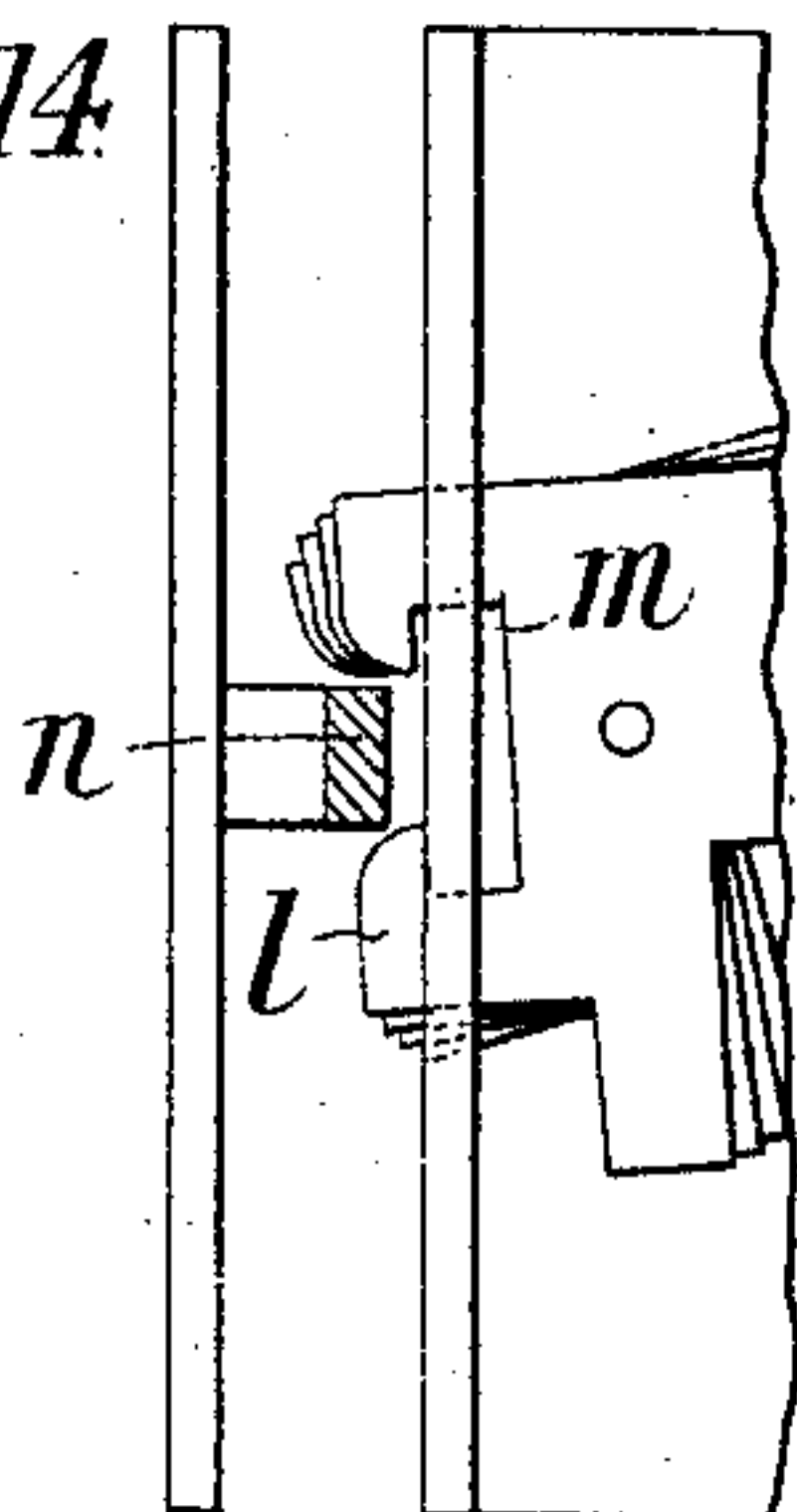
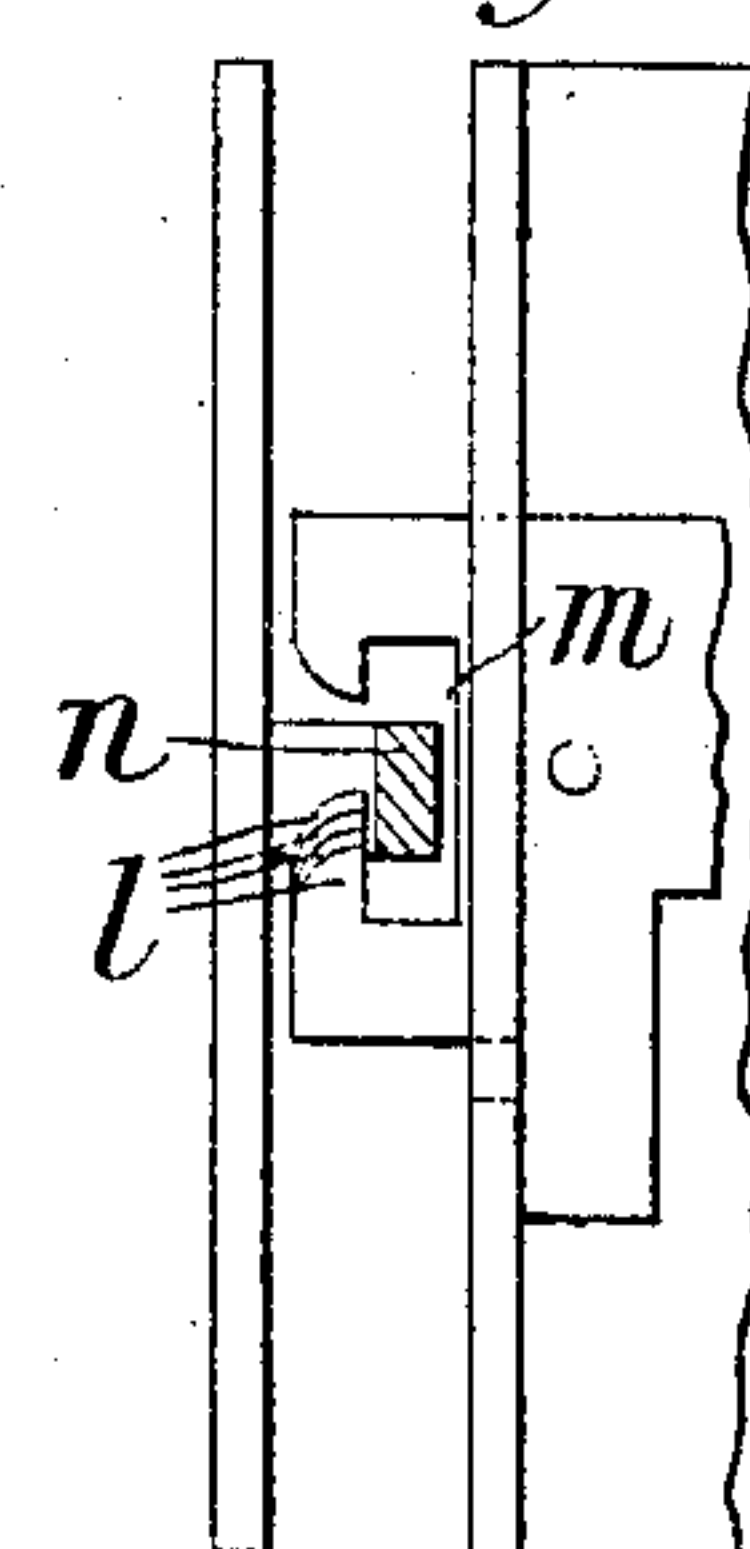
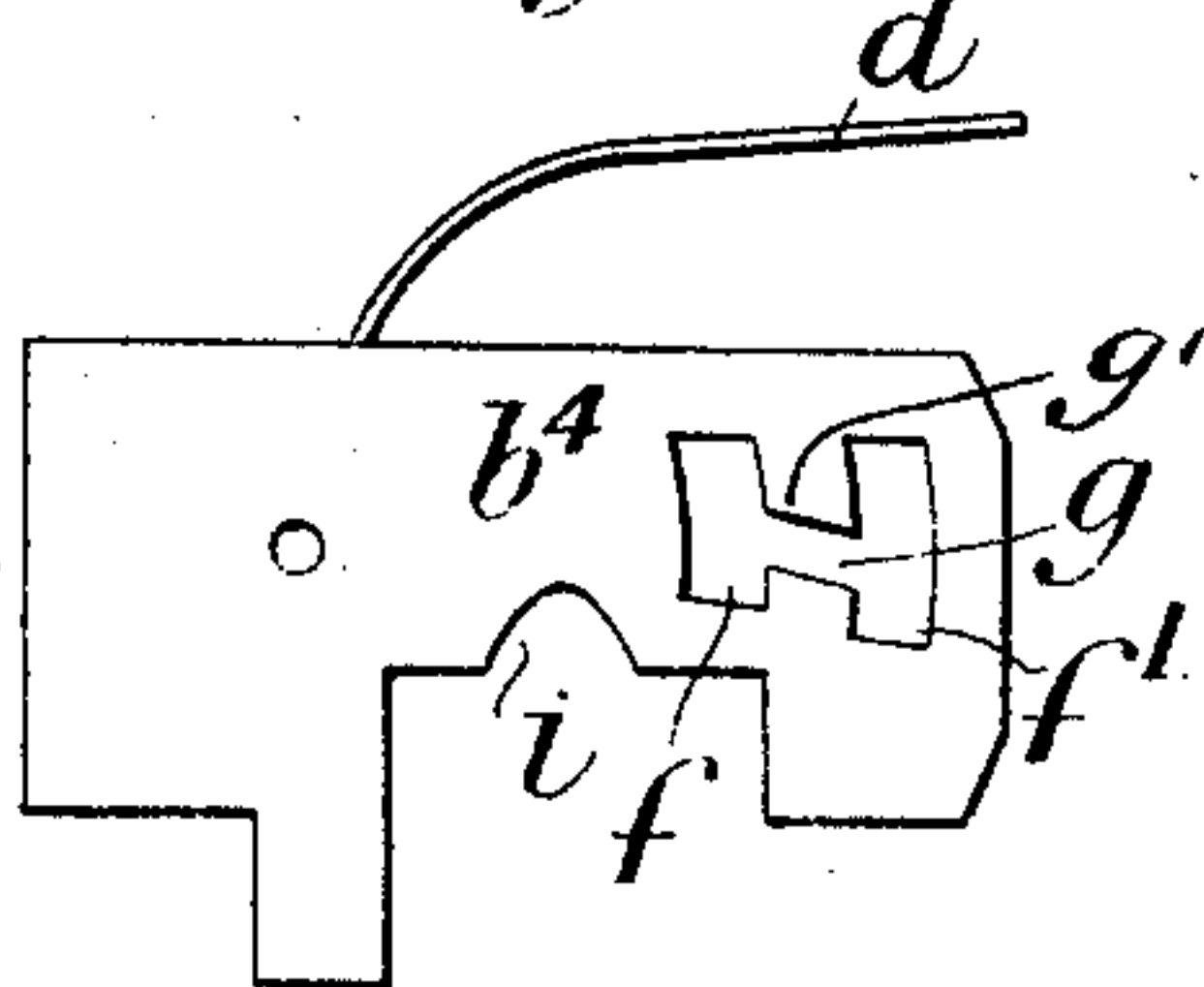


Fig 6



Witnesses

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2 SHEETS—SHEET 2.

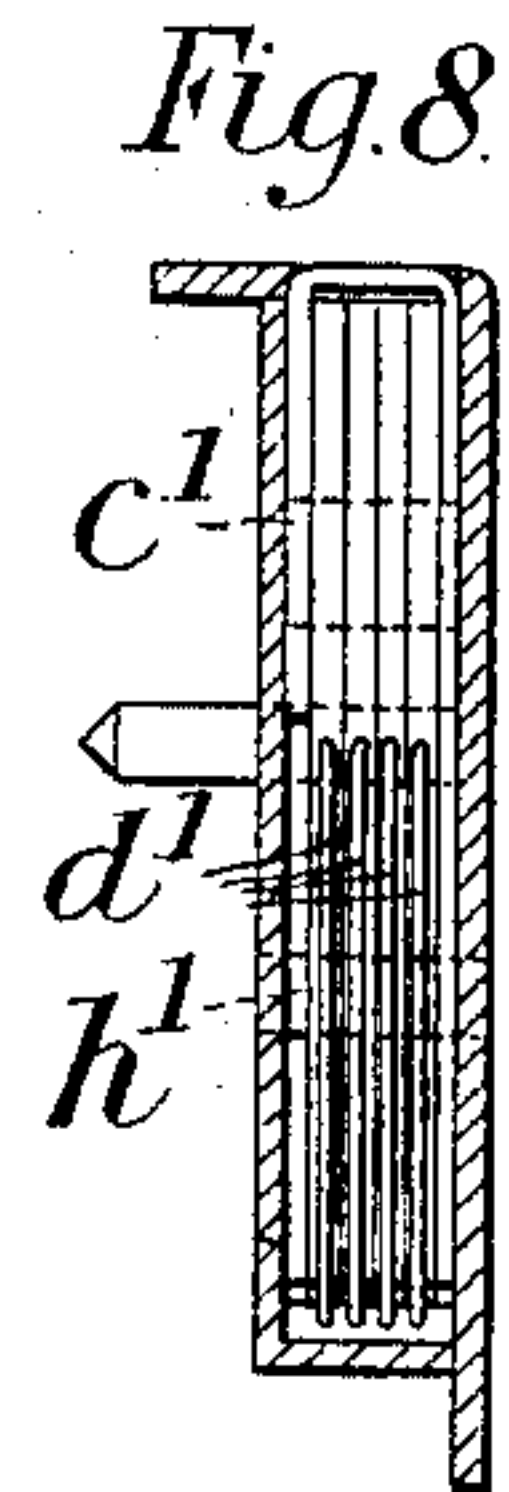
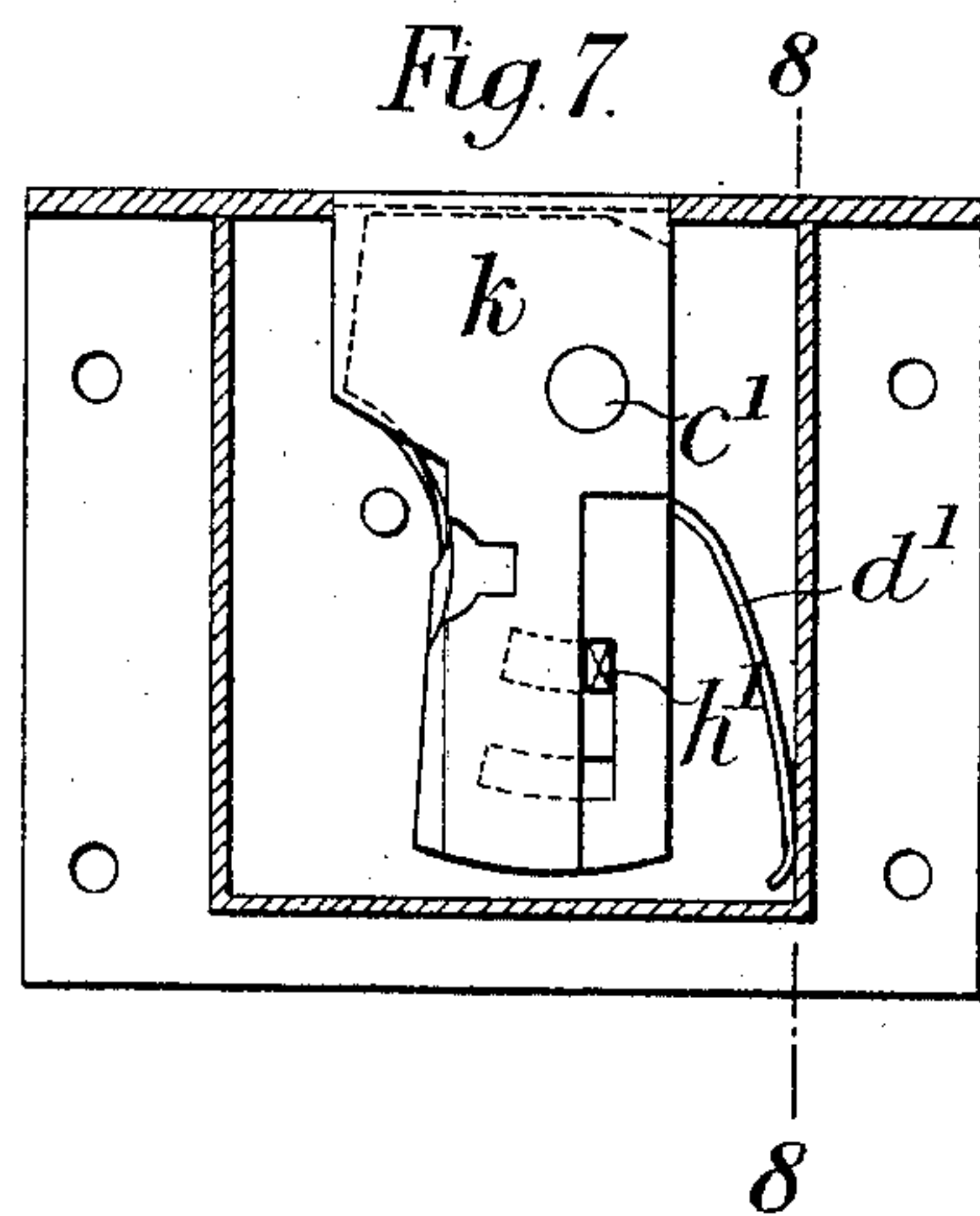


Fig. 10.

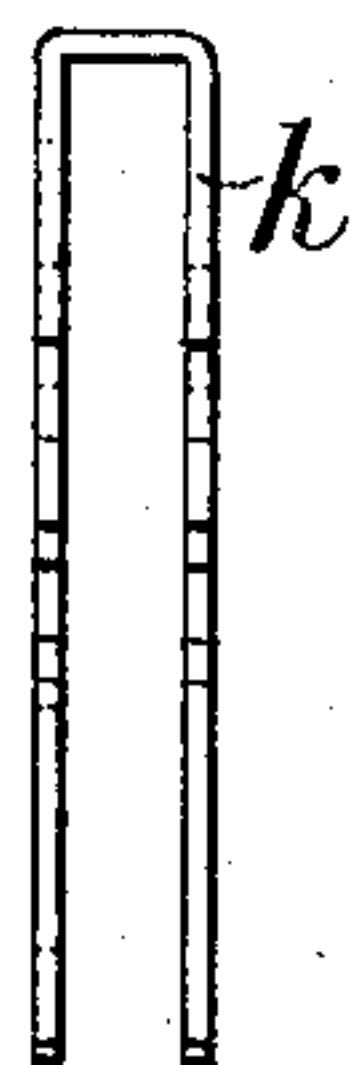


Fig. 9.

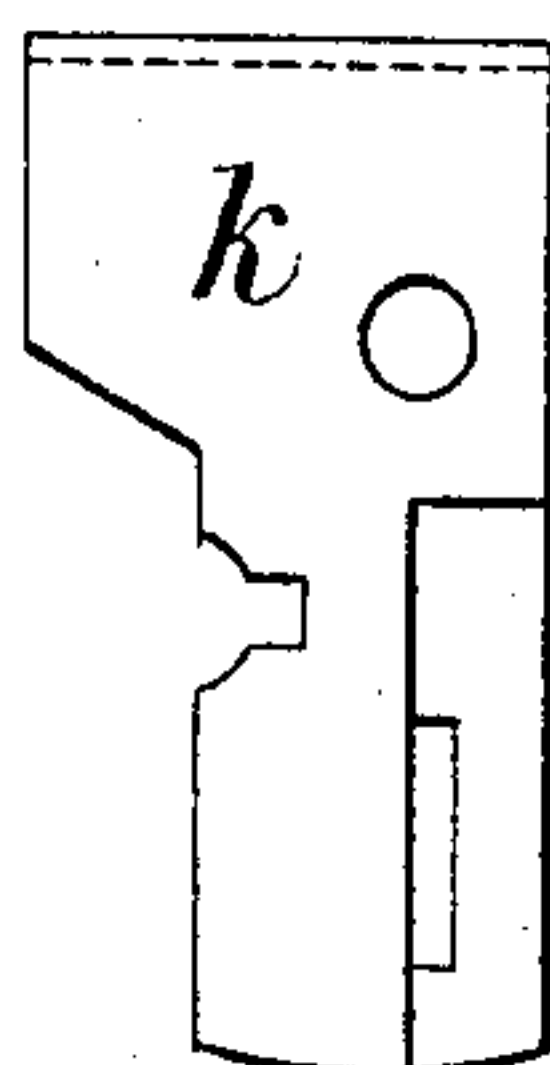


Fig. 11.

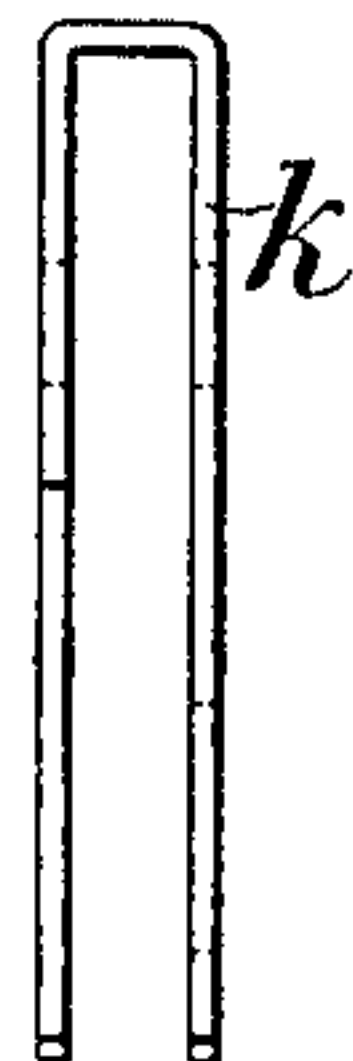


Fig. 12.

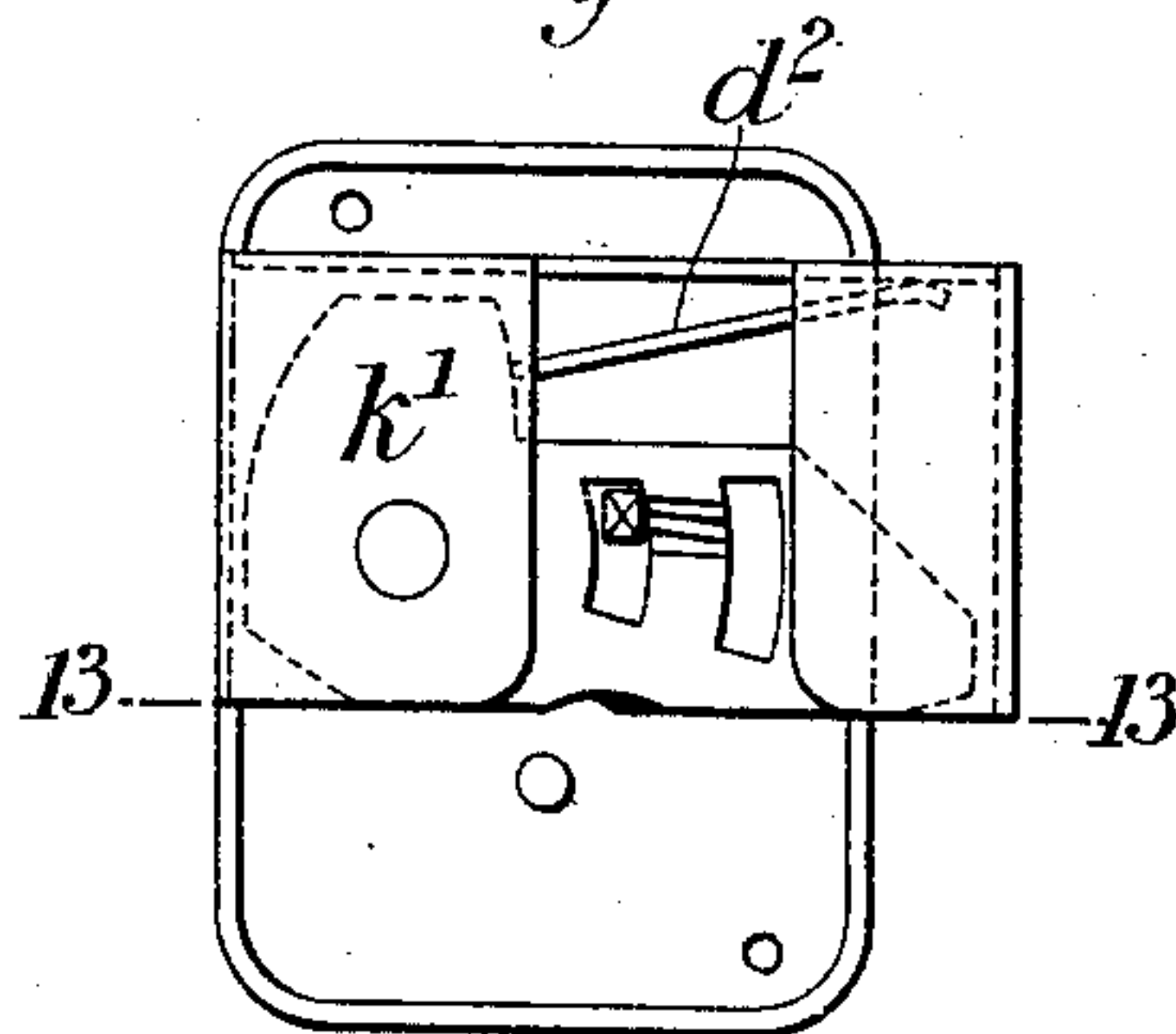
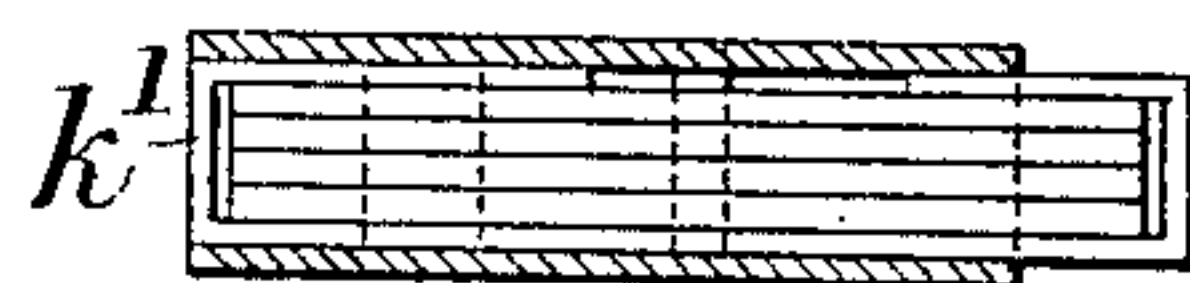


Fig. 13.



Witnesses.

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MARSHALL GEORGE WOOD, OF LONDON, ENGLAND.

LOCK.

No. 829,616.

Specification of Letters Patent.

Patented Aug. 28, 1906.

Application filed August 1, 1904. Serial No. 219,102.

To all whom it may concern:

Be it known that I, MARSHALL GEORGE WOOD, a subject of the King of Great Britain, residing at 5 Charlotte street, Portland Place, London, England, have invented new and useful Improvements in Locks, of which the following is a specification.

My invention relates to locks having protrusible bolts, and has for its objects to simplify their construction, to increase the difficulty of picking or operating them without the proper key, and to afford greater resistance than heretofore to attempts to force the same.

In a lock constructed according to my invention I pivot together a number of plates which, either alone or in a stirrup or case in which they are carried, form the bolt and also act as tumblers, the said plates having in or upon them slots or projections arranged in conjunction with a bar or the like fixed to the lock-case, so that the longitudinal movement of the bolt can only be effected when the slots in the several plates or the several projections are brought into coincidence to correspond with the bar. The plates are sometimes barbed at the outer ends to engage with a bar or holdfast in the slot into which the bolt is projected.

To enable my invention to be fully understood, I will describe the same by reference to the accompanying drawings, in which—

Figure 1 is a view of the lock with the cover plate or cap removed, the bolt being shown in the retracted position and as composed of a number of plates; and Fig. 2 is a plan of the same. Figs. 3 and 4 are views similar to Fig. 1, but respectively illustrating the bolt partly protruded and completely protruded. Figs. 5 and 6 are elevations of two of the plates of the bolt detached. Fig. 7 is a sectional view of a lock wherein the bolt is composed of a series of plates pivoted in a stirrup or case. Fig. 8 is a section on the line 8 8, Fig. 7; and Figs. 9, 10, and 11 are views of the stirrup or case detached. Fig. 12 is a sectional view showing a lock of the type shown in Figs. 7 to 11, but with a double-ended bolt. Fig. 13 is a section on the line 13 13, Fig. 12. Figs. 14 and 15 are views showing the plates forming the bolt provided with barbed ends.

In the arrangement of my device shown in

Figs. 1 to 6, *a* is the plate of the lock, and *b b'* *b*² *b*³ *b*⁴ are the tumbler-plates forming the bolt, and any desired number of which may be used, according to requirements.

The several plates, which are of substantially the same shape externally, are all connected together by the pivot-pin *c*, (advantageously fixed to the lowermost plate,) and each plate is provided with a spring *d*, which presses against a pin *e* on the lock-plate *a*. Each plate has formed in it two transverse parallel slots *ff'*, connected by a longitudinal slot *g*, and to the lock-plate *a* is fixed the bar *h*, which is either in the slots *f* or in the slots *f'*, according as the bolt is in its retracted or protruded position.

The positions of the connecting-slots *g g* in the several plates are varied so that locking projections *g'* of different lengths are formed between the slots *f* and *f'*, and in order to bring the several plates into position to permit of their moving relatively with the bar *h* to be protruded from the lock they must be lifted to different heights—for instance, as shown in Fig. 3—the key being of course cut accordingly.

One or more of the plates *b b'*, &c., is advantageously provided with a notch or gateway, such as that shown at *i* in Fig. 6, to allow of the key moving the bolt longitudinally.

From the foregoing description it will be noticed that while the plates *b b'*, &c., serve as the tumblers of the lock they also serve as the bolt, and thus enable a lock of a certain class to be constructed with fewer parts than a similar lock as heretofore constructed. *j* is the pintle or pin of the lock, and *j'* is the key. In the arrangement hereinbefore described the slot in the case through which the bolt protrudes has to be made rather longer than the width of the said plates in order to allow of the oscillation of the latter, as will be readily understood by reference to Figs. 1 and 2. By mounting the said plates in a stirrup or sheath *k*, as indicated in Figs. 7 and 8, which sheath is made sufficiently wide to allow the oscillation of the tumbler-plates within it, this difficulty is overcome, the width of the sheath corresponding with the length of the slot. In this modification the sheath has no oscillation whatever, it being guided at one end in the slot in the case and

at the other end on the bar h' , also the pin c' , upon which the plates oscillate being carried at both ends in the stirrup, need not be fixed, as it is made of a length corresponding to the distance between the cover and the face-plate of the lock and, furthermore, this arrangement of the pin c' greatly facilitates the assembling of the parts of the lock.

I sometimes make the sheath k' with the sides partially closed, and also both ends, if desired—as shown, for instance, in Figs. 12 and 13. This arrangement is of especial advantage in a cupboard-lock of the kind wherein either end of the bolt can be used, according as to whether the lock is applied to a right or left hand door.

As shown in Fig. 7, the springs d' take their bearing against the walls of the cap or cover-plate, while in Fig. 12 they bear against the inside of the sheath, as indicated at d^2 , whereby the friction and wear due to the sliding of the springs is obviated.

The arrangement wherein the ends of the plates are barbed is illustrated in Figs. 14 and 15; l indicating the barbs, and m slots adjacent thereto and which pass over the holdfast or bar n , inserted into the slot or staple into which the bolt is protruded. The barbs l and slots m are so arranged that when the bolt is to be moved the several barbs will coincide, as shown in Fig. 14, so that the slot m in the bolt will pass over the holdfast n , but that when the bolt is shot the several barbs will be in varying positions, one of the barbs of each plate engaging with the holdfast, as indicated in Fig. 15. When this arrangement of barbs is used, the slots f and g , hereinbefore described, may be dispensed with or the barbs may be used in combination with such an arrangement, so that the bolt when shot is locked against backward movement partly by the bar h and partly by the holdfast n .

I wish it understood that I do not confine my invention to the details of construction hereinbefore described, as it is obvious that these can be modified. For instance, the bar h instead of being fixed to the plate a can be fixed to the cap of the lock, or it may be adapted to engage with both the cap and the plate.

Having now fully described and ascertained my said invention and in what manner the same is to be performed, I declare that what I claim is—

1. In a lock, the combination with the lock-casing, of a sliding bolt, comprising a plurality of plates arranged side by side and having portions projecting through an aperture in the lock-casing, a pivotal pin connecting said plates for joint longitudinal movement but permitting them to oscillate independently on said pin, said plates having

locking projections of different lengths for engaging a locking part adapted to hold said bolt from longitudinal movement, and having key-engaging portions, whereby said plates may be oscillated on said pivotal pin to bring said locking projections into alignment to pass said locking part and independent springs engaging said plates, substantially as described.

2. In a lock, the combination with the lock-casing, of a longitudinally-sliding bolt comprising a plurality of plates arranged side by side and adapted to be protruded through an aperture in said casing, a pivotal pin uniting said plates for joint longitudinal movement but permitting them to oscillate independently thereon, a fixed locking-bar secured in said lock-casing, said plates being provided with locking projections of different lengths to engage said locking-bar and prevent the longitudinal movement of the bolt, and having key-engaging portions, and independent springs for said plates for holding them normally in engagement with said fixed locking-bar, whereby said plates may be oscillated more or less upon said pivotal pin to bring said locking projections into alignment to permit them to pass said locking-bar, substantially as described.

3. In a lock, the combination with the lock-casing, of a longitudinally-sliding bolt comprising a plurality of plates arranged side by side and adapted to be protruded through an aperture in said casing, a pivotal pin uniting said plates for joint longitudinal movement but permitting them to oscillate independently thereon, a fixed locking-bar secured in said lock-casing, said plates being each provided with a pair of parallel slots extending transversely thereof and connected by a longitudinal slot, said longitudinal slot being located in different transverse positions on said several plates, thereby providing locking projections of different lengths between said parallel slots, said plates having key-engaging portions, whereby said plates may be oscillated more or less upon said pivotal pin to bring said locking projections into alignment and permit them to pass said locking-bar, substantially as described.

4. In a lock, the combination with the lock-casing, of a longitudinally-sliding bolt comprising a plurality of plates arranged side by side, a sheath inclosing said plates and adapted to be protruded therewith through an aperture in said casing, a pivotal pin uniting said plates and said sheath for joint longitudinal movement, but permitting said plates to oscillate independently thereon, said pivotal pin being prevented from moving longitudinally by the walls of said casing, a fixed locking-bar secured in said lock-casing, said plates being provided with locking

projections of different lengths to engage said
locking-bar and prevent the longitudinal
movement of the bolt, and having key-en-
gaging portions, and independent springs for
5 said plates for holding them normally in en-
gagement with said fixed locking-bar, where-
by said plates may be oscillated more or less

upon said pivotal pin to bring said locking pro-
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said locking-bar, substantially as described.

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Witnesses:

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