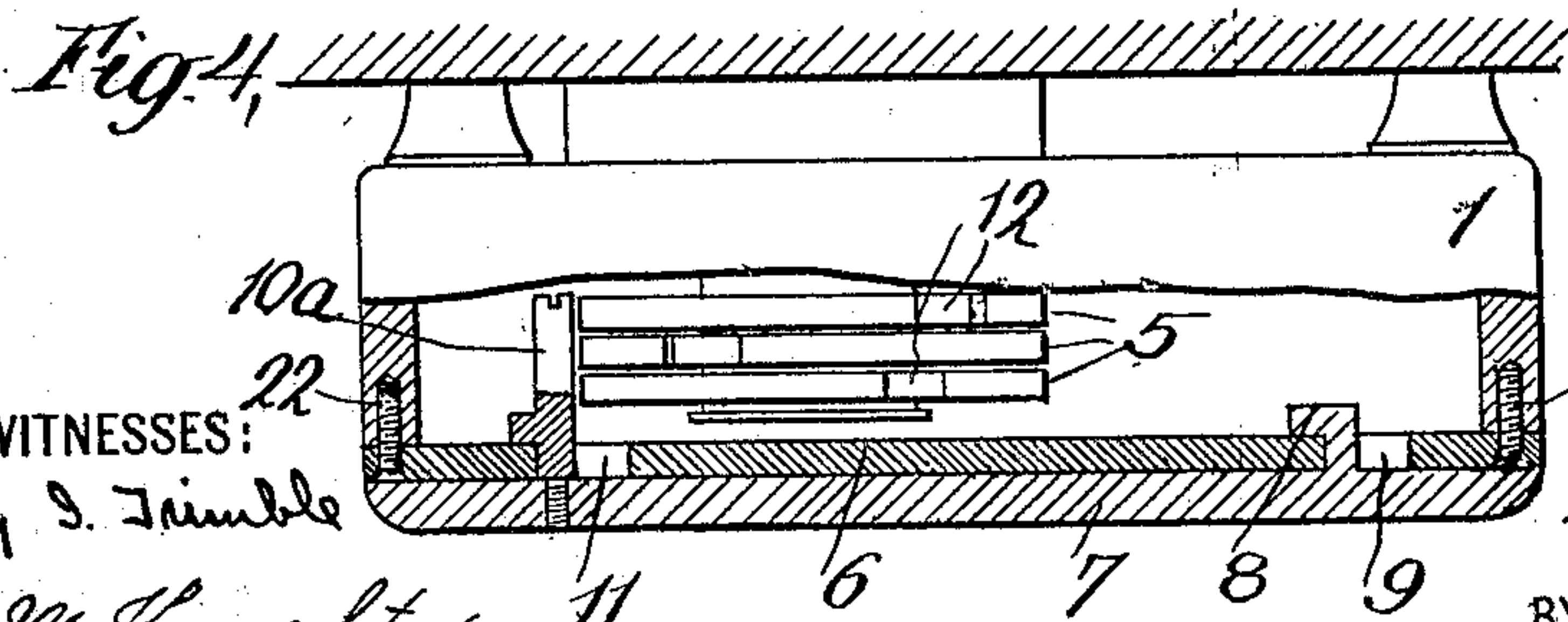
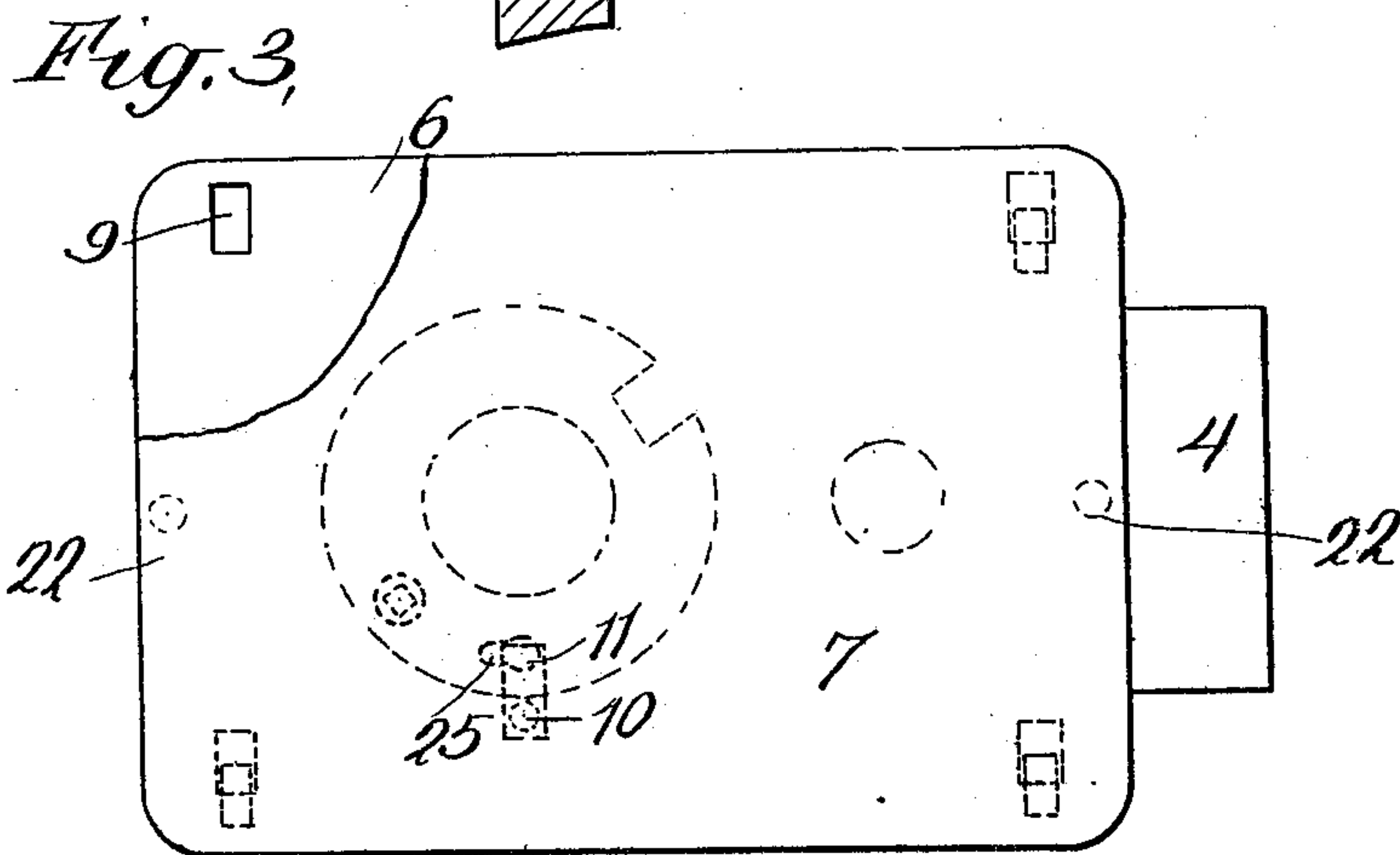
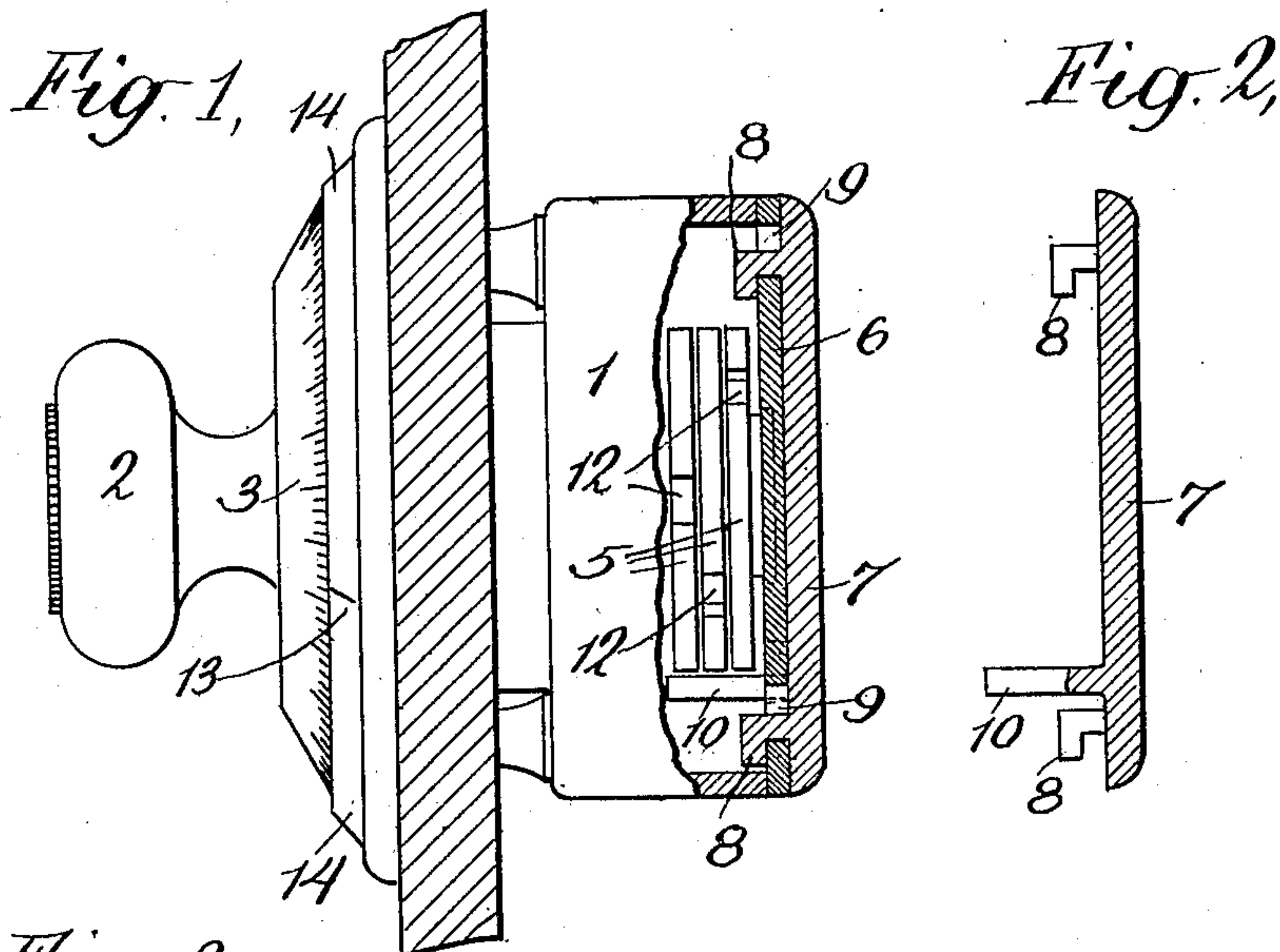


No. 860,550.

PATENTED JULY 16, 1907.

C. E. LEIGHTON.
LOCK PROTECTING DEVICE.
APPLICATION FILED JULY 18, 1906.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

Fig. 5.

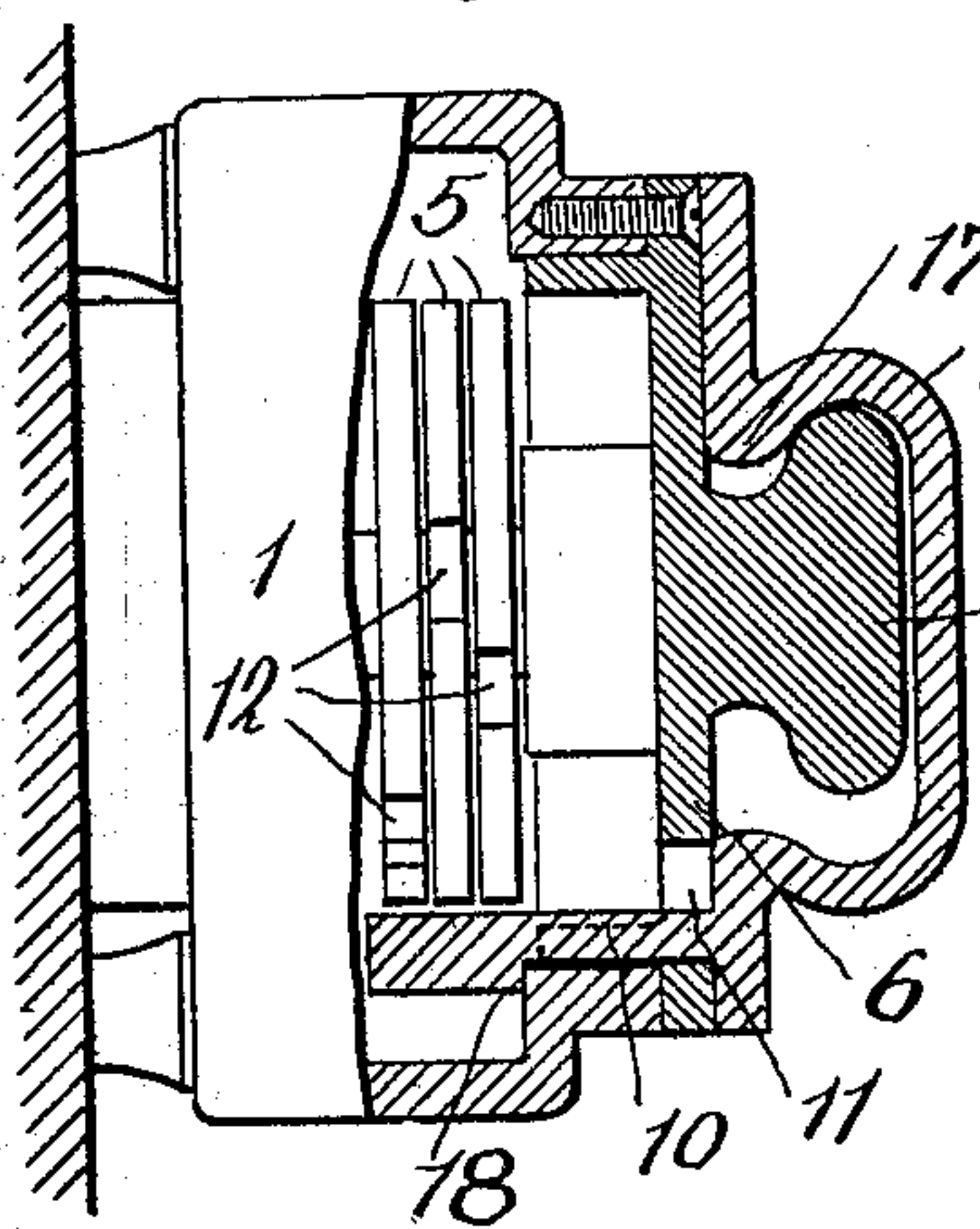


Fig. 6.

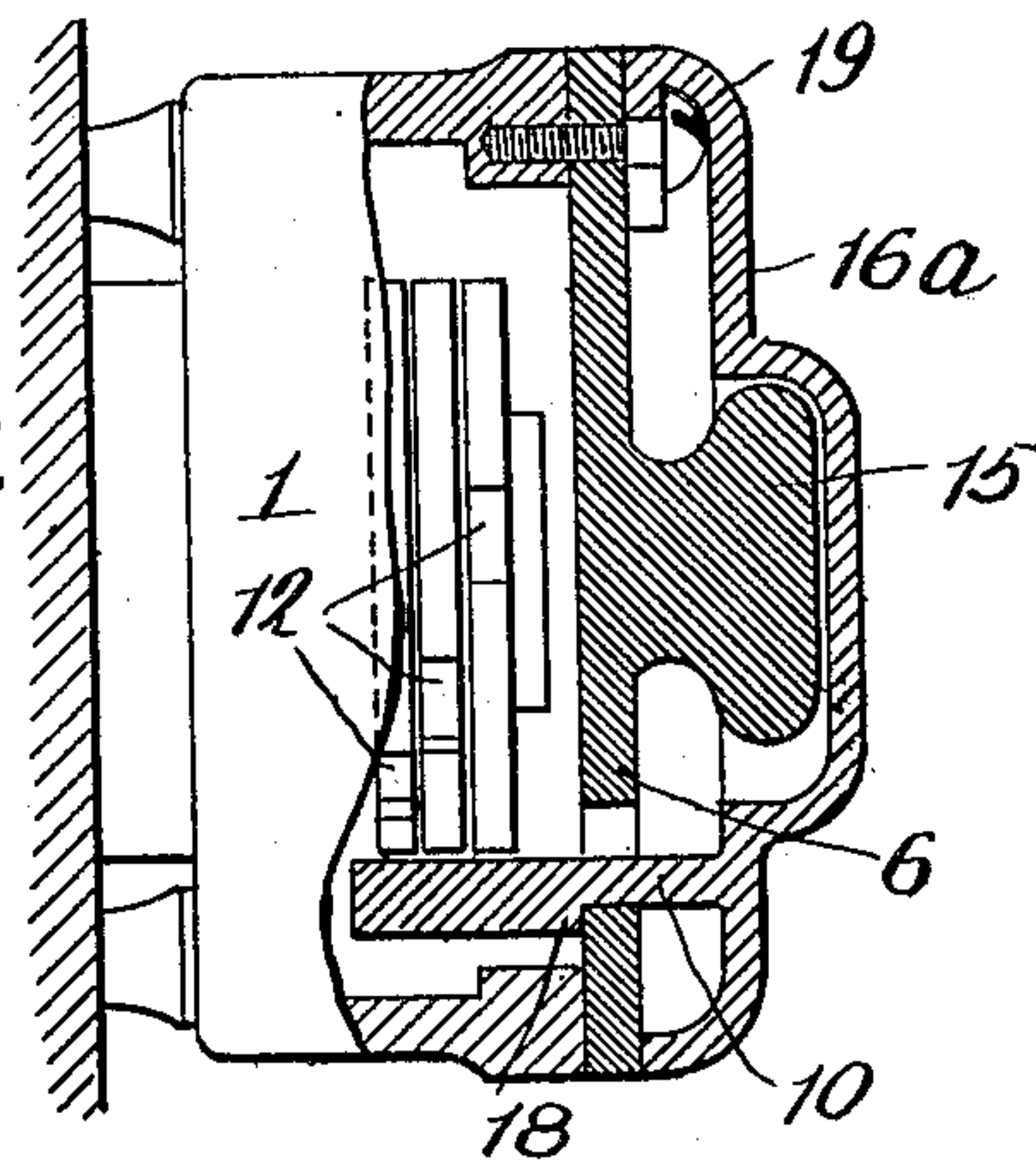


Fig. 7.

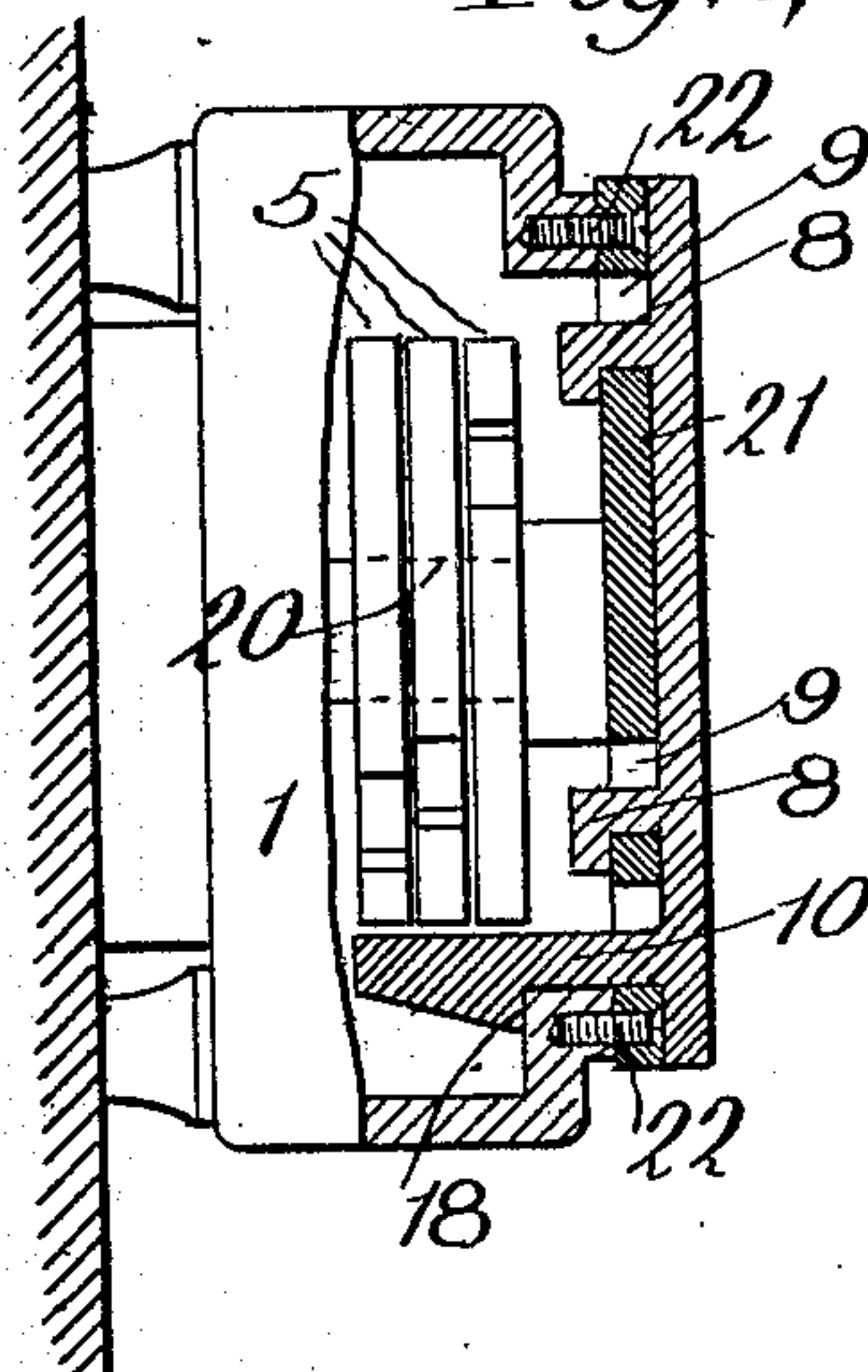
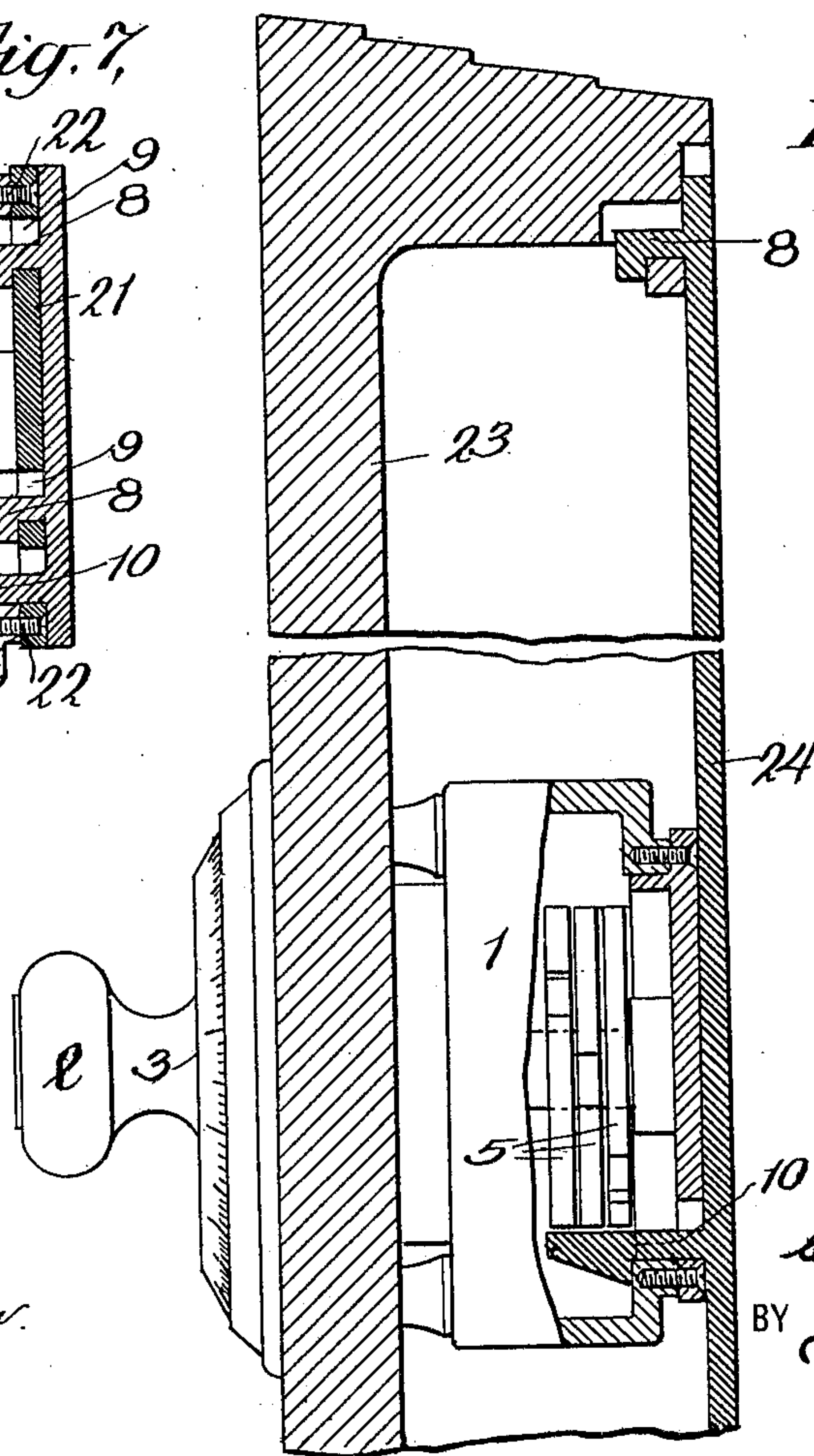


Fig. 8.



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UNITED STATES PATENT OFFICE.

CHARLES E. LEIGHTON, OF NEW YORK, N. Y., ASSIGNOR TO LEIGHTON LOCK PROTECTOR COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

LOCK-PROTECTING DEVICE.

No. 860,550.

Specification of Letters Patent.

Patented July 16, 1907.

Application filed July 18, 1906. Serial No. 326,721.

To all whom it may concern:

Be it known that I, CHARLES E. LEIGHTON, a citizen of the United States, residing at New York, in the borough of Brooklyn, county of Kings, and State of New York, have invented certain new and useful Improvements in Lock-Protecting Devices; and I do hereby declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in lock protecting devices, and is particularly intended for use in connection with permutation locks such as those commonly used on the doors of safes and vaults, the purpose of my invention being to prevent persons who do not have the combination of the lock from gaining access to the lock case, or a part thereof, while the door of the safe or vault is open, to prevent such persons from learning the combination of the lock by examination thereof, or from becoming familiar with its construction, to prevent tampering with the lock, such as may lead to derangement thereof, and to make my said protecting device applicable generally to all classes of permutation locks without any change whatever in the mechanism or interior construction of such locks.

My said protecting device, in its simplest form, comprises a plate or "false back" arranged to be secured to and to completely cover the removable back plate with which such locks are customarily provided, and provided with means so controlled by the tumblers of the lock that said protecting plate or "false back" may be removed only when the permutation mechanism of the lock has been operated suitably to that end.

My invention consists in the novel construction of the lock protecting device, and in other features hereinafter described and particularly pointed out in the claims.

The constructions herein illustrated and described embody improvements on and modifications of the devices for the same purpose specifically claimed in my Patent No. 834,817, dated October 30th, 1906.

I will now proceed to describe my invention with reference to the accompanying drawings, in which certain forms of devices embodying my said invention are illustrated, and will then point out the novel features in claims.

In the said drawings: Figure 1 shows an end view and partial section of a safe lock with one form of my lock protecting device applied thereto. Fig. 2 shows a transverse section of the said protecting device, detached from the lock. Fig. 3 shows a rear view of the said lock with the protecting device thereon, a portion of said protecting device being broken away. Fig. 4 shows a top view and partial section of a safe lock and

a protecting device thereon, said protecting device similar to but differing slightly from that shown in Figs. 1, 2 and 3. Fig. 5 shows a section of a protecting device for locks having knobbed backs, in place on the lock. Fig. 6 shows a form of locking device alternative to that shown in Fig. 5. Fig. 7 shows a section of another form of protecting device particularly applicable to locks of the class which have the tumblers mounted on a removable back plate, in place on such a lock. Fig. 8 shows a protecting device arranged to be secured to the door of a safe or vault, instead of to the casing of the lock, but controlled by the permutation mechanism of the lock.

Referring now to the drawings, and at first to Figs. 1, 2 and 3, 1 indicates a permutation lock of ordinary construction, 2 the knob thereof, 3 the dial, 4 the main bolt, and 5, 5 tumblers arranged to be rotated by rotation of the knob.

I do not illustrate the construction of the lock in detail, as said lock may be of any suitable or ordinary construction.

6 designates a removable back member of the lock casing, which is commonly termed the "back plate". By removing it access may be gained to the permutation mechanism for changing the combination or for any other purpose.

7 designates the said lock protecting device. In its simplest form, shown in Figs. 1, 2 and 3, it comprises a plate, arranged to be secured to the back plate 6 and to completely cover the same, constituting in fact what may be termed a "false" back plate. It is secured to said back plate 6 by hooks 8 projecting through slots 9 in plate 6; and when said hooks and slots are arranged as shown in Figs. 1, 2 and 3, gravity tends to hold said back plate 7 in place, even when not locked in place as hereinafter described. To lock said protecting plate 7 in place, it is provided with a projection or pin 10 extending through an opening 11 in back plate 6 into engagement with the lock tumblers 5. Normally the pin 10 is prevented by the tumblers from being raised sufficiently to permit hooks 8 to clear the edges of the slots 9; but when the notches 12 of the tumblers 5 are all lined up opposite said pin 10 (and this may be effected by operating the permutation mechanism according to its correct combination read with reference to a special mark 13 on the index ring 14 of the lock) the plate 7 may be raised sufficiently to free the hooks 8, pin 10 fitting into the notches of the tumblers. The protecting plate 7 may then be pulled off, exposing the back plate 6, by the removal of which access may be gained to the tumblers, and other parts of the mechanism of the lock. It will be observed, however, that until the permutation mechanism has been operated correctly, and the plate 7 removed, not only the tumblers, but

other parts of the lock, such as the pivot screw having its head in the back plate of the lock, with which many locks are provided, and the tumbler keyhole (25, Fig. 3) in locks having such keyhole, are entirely inaccessible. Unless this pivot screw be protected, it is easy for a malicious person to remove it and thereby make possible a "lock-out".

It will be observed that in the construction shown in Figs. 1, 2 and 3, the pin 10 is normally held clear of the tumblers by gravity, and hence causes no wear on the tumblers. In some cases it may be preferable to have the protecting plate move sidewise, instead of up and down. In such case I arrange the hooks 8 and slots 9 as shown in Fig. 4.

In the construction shown in Fig. 2, the pin 10 is integral with the protecting plate 7. Said pin may be made removable, to guard against a possible "lock-out" in the event of a possible mistake in noting down correctly the combination when changing the combination of the lock. However, in this form of device, it is hardly necessary to make the pin removable for that reason, since the plate 7, being separate from the lock, need not be applied to the lock at all until the lock has been tested fully after changing the combination. It will frequently be a convenience to the safe trade to have said pin removable, however, as they will naturally desire to display the lock with the protecting plate on it, and at the same time will not desire to be forced to operate the permutation mechanism every time they desire to inspect the lock mechanism. For this reason, and also to facilitate packing and shipping the device, the said pin may be removable from the plate 7. This is illustrated in Fig. 4, in which said pin, there designated 10^a, is shown as a screw removably secured to plate 7.

The back plates of many safe locks are provided with knobs to facilitate handling them. This is particularly the case when the safe doors are very thick and consequently the lock is much recessed into the door. Such a lock I show in Fig. 5, in which figure the back plate 6 is provided with a knob or handle 15. In such locks I may cause the protecting device to interlock with the knob itself, thereby avoiding the use of hooks projecting through slots in the back plate, as in Figs. 1-4 inclusive. In Fig. 5 the lock protecting device, there numbered 16, is provided with a hollow boss adapted to receive the knob 15, said boss having on one side of the knob a portion 17 adapted to fit underneath the knob and thereby to interlock therewith, the boss being sufficiently large on the opposite side of the knob to permit enough lateral movement of the protecting device 16 to disengage lug 17 from the knob. Such lateral movement is normally prevented, however, by the pin 10 projecting through the slot 11 of the back plate and engaging the tumblers of the lock. In the form shown in Fig. 5 this pin 10 has a shoulder 18 engaging a portion of the lock case and serving to resist any possible attempt to pry off the protecting device 16.

Fig. 6 shows a form of lock protecting device similar to that of Fig. 5, except that the protecting device, here numbered 16^a, instead of engaging the knob 15, engages the head of a shouldered screw 19 securing the back plate to the casing of the lock.

One familiar form of a safe lock has its tumblers 5 (Fig. 7) mounted upon a hollow spindle 20 carried by a

removable back plate 21, which in this instance I have shown to be secured in place by means of screws 22. In such a lock the protecting device 7 may be arranged to cover these screws, as shown in Fig. 7, said protecting plate being secured to the back plate by hooks 8 and being provided with a pin 10 controlled by the tumblers, said pin having as in Fig. 5, a shoulder 18 engaging the casing of the lock.

In some cases the protecting device may be the back plate of the safe door itself. This is illustrated in Fig. 8, in which numeral 23 designates the safe door into which the lock is set, and 24 the back plate thereof. This back plate is secured to the safe door by hooks 8 and is provided with a pin 10 projecting through the back plate of the lock and arranged to be engaged and controlled by the tumblers 5.

What I claim is:—

1. A protecting device for permutation locks which comprise permutation mechanism and an inclosing casing having a removable member affording access to such mechanism, and are provided with means normally holding it in place, said protecting device consisting of a plate adapted to cover such removable section of the lock case and provided with holding means permitting removal of said protecting device upon movement thereof in one direction, said protecting device provided with means adapted to engage the permutation mechanism of the lock and to be controlled thereby to prevent such movement of said protecting device normally.

2. A lock protecting device of the class described, consisting of a plate separate from the usual casing and removable back plate of permutation locks and provided with means for securing it to the lock, and having a locking member adapted for engagement with the permutation mechanism.

3. A lock protecting device of the class described, consisting of a plate separate from the usual casing and removable back plate of permutation locks and provided with retaining means adapted to interlock with the lock, and having a locking member adapted to engage the permutation mechanism.

4. A lock protecting device for permutation locks having knobbed backs, comprising a plate adapted to fit over said knob and to interlock with a portion of the lock, and provided with locking means adapted to engage permutation mechanism.

5. A lock protecting device for permutation locks having knobbed backs, comprising a plate adapted to fit over said knob and to interlock with said knob, and provided with locking means adapted to engage permutation mechanism.

6. A lock protecting device of the class described, consisting of a plate separate from the usual casing and removable back plate of permutation locks and provided with means for holding it normally in fixed relation with respect to a lock, and having a locking member adapted for engagement with the permutation mechanism of such lock.

7. A lock protecting device of the class described, consisting of a plate separate from the usual casing and removable back plate of permutation locks and having a locking member adapted to project through an opening in the casing of a lock to be projected into engagement with the tumblers of such lock, and thereby to prevent movement of said plate, except as permitted by said tumblers, said plate provided with fastening means for holding said plate in fixed relation with respect to said lock, said fastening means arranged to permit removal of said plate when the latter is moved as permitted by said tumblers.

8. A lock protecting device of the class described, consisting of a plate provided with means for holding it normally in fixed relation with respect to a lock to be protected, said plate arranged to cover and prevent access to means for holding in place the back plate of said lock, and provided with a locking member adapted for engagement with the permutation mechanism of such lock.

9. The combination with a permutation lock comprising

permutation mechanism and an inclosing casing having a removable member affording access to such mechanism, and provided with means normally holding it in place, of a protecting device consisting of a plate adapted to cover such removable section of the lock case and provided with holding means permitting removal of said protecting device upon movement thereof in one direction, said protecting device provided with means adapted to engage the permutation mechanism of the lock and to be controlled thereby to prevent such movement of said protecting device normally.

10. The combination with a permutation lock comprising permutation mechanism and an inclosing casing hav-

ing a removable member affording access to such mechanism, and provided with means normally holding it in place, and with a knobbed back, of a protecting device comprising a plate adapted to fit over said knob and to inter-lock with a portion of the lock, and provided with locking means adapted to engage said permutation mechanism.

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

CHAS. E. LEIGHTON.

Witnesses:

H. M. MARBLE,
MAY I. TRIMBLE.