

No. 832,551.

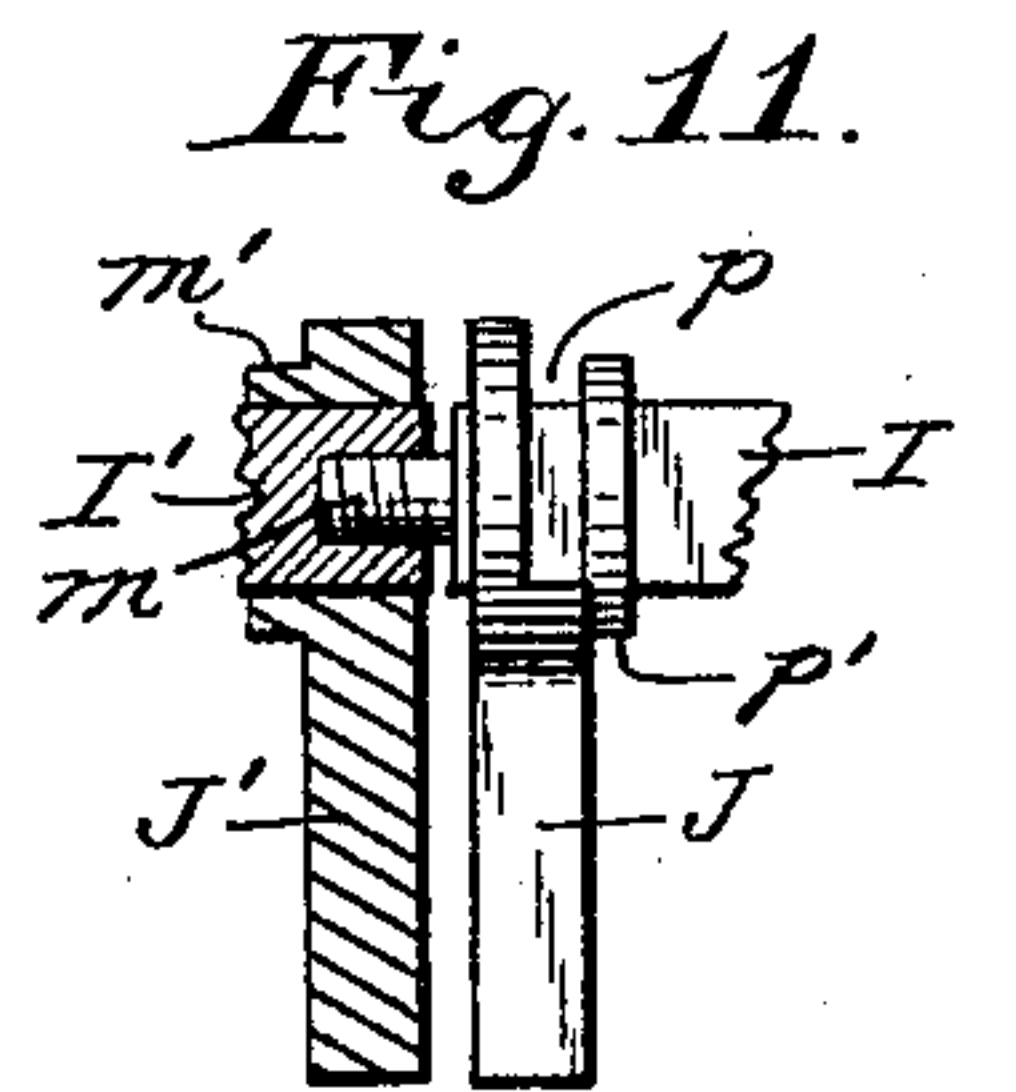
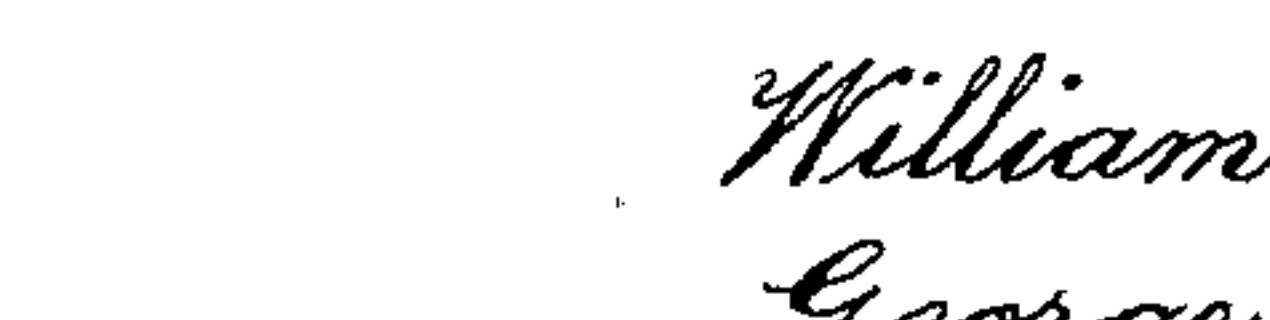
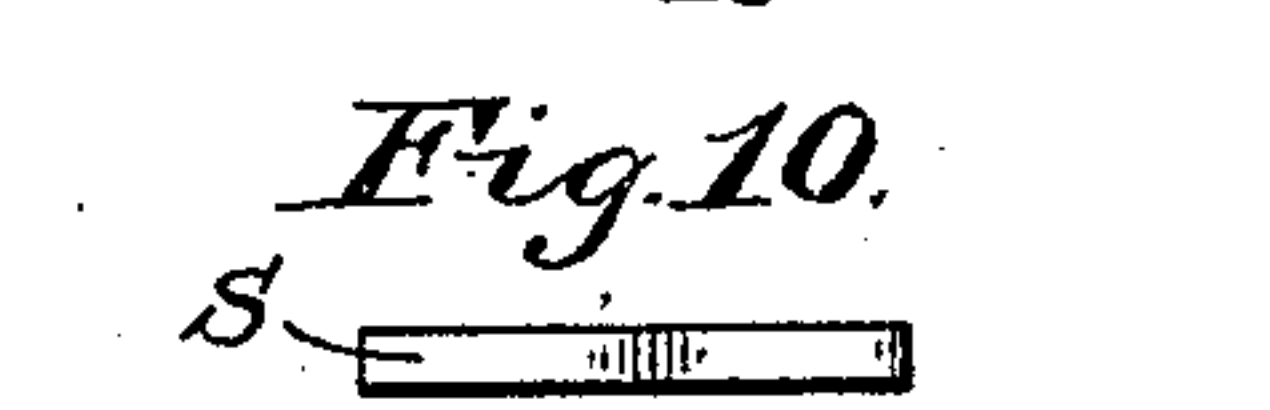
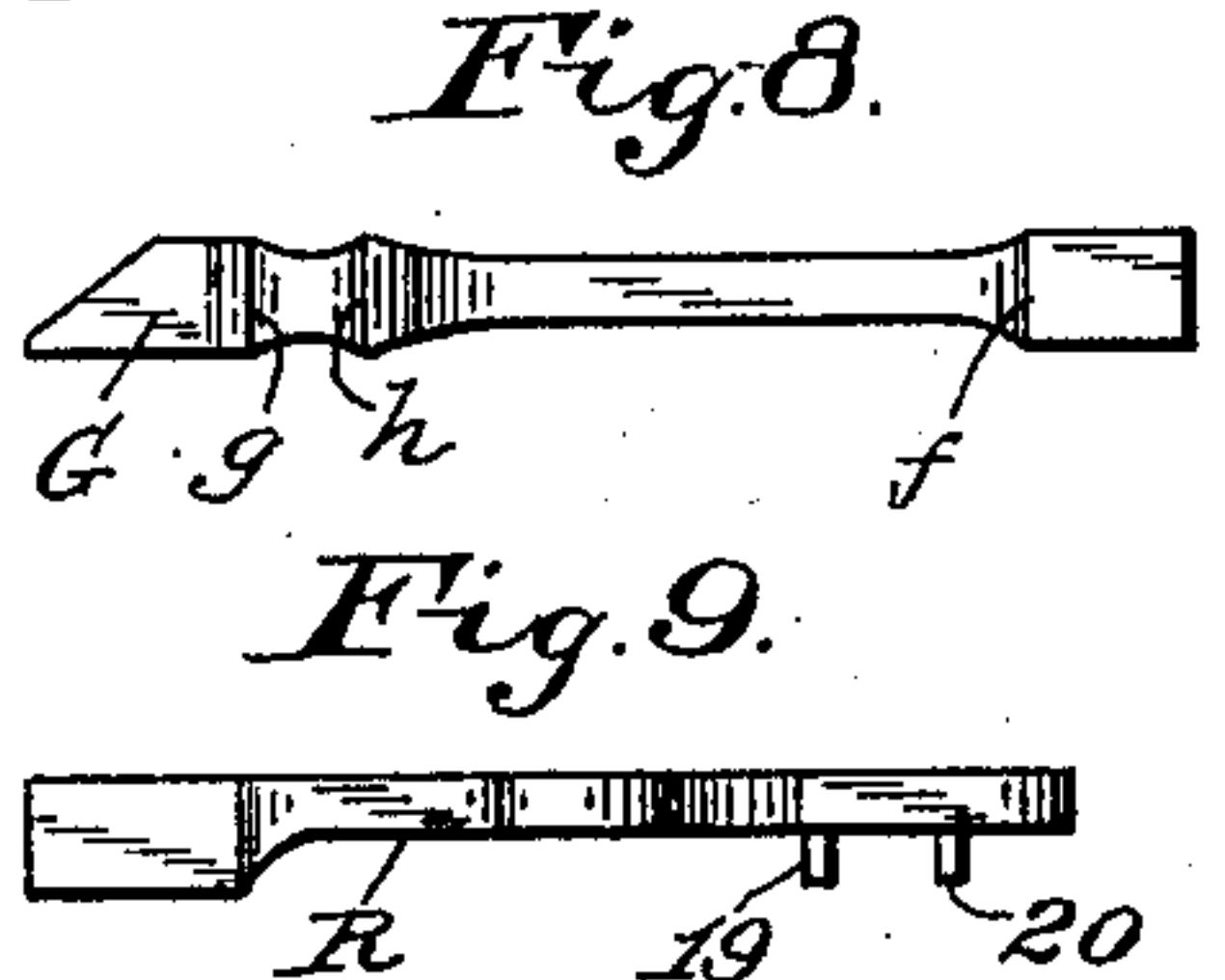
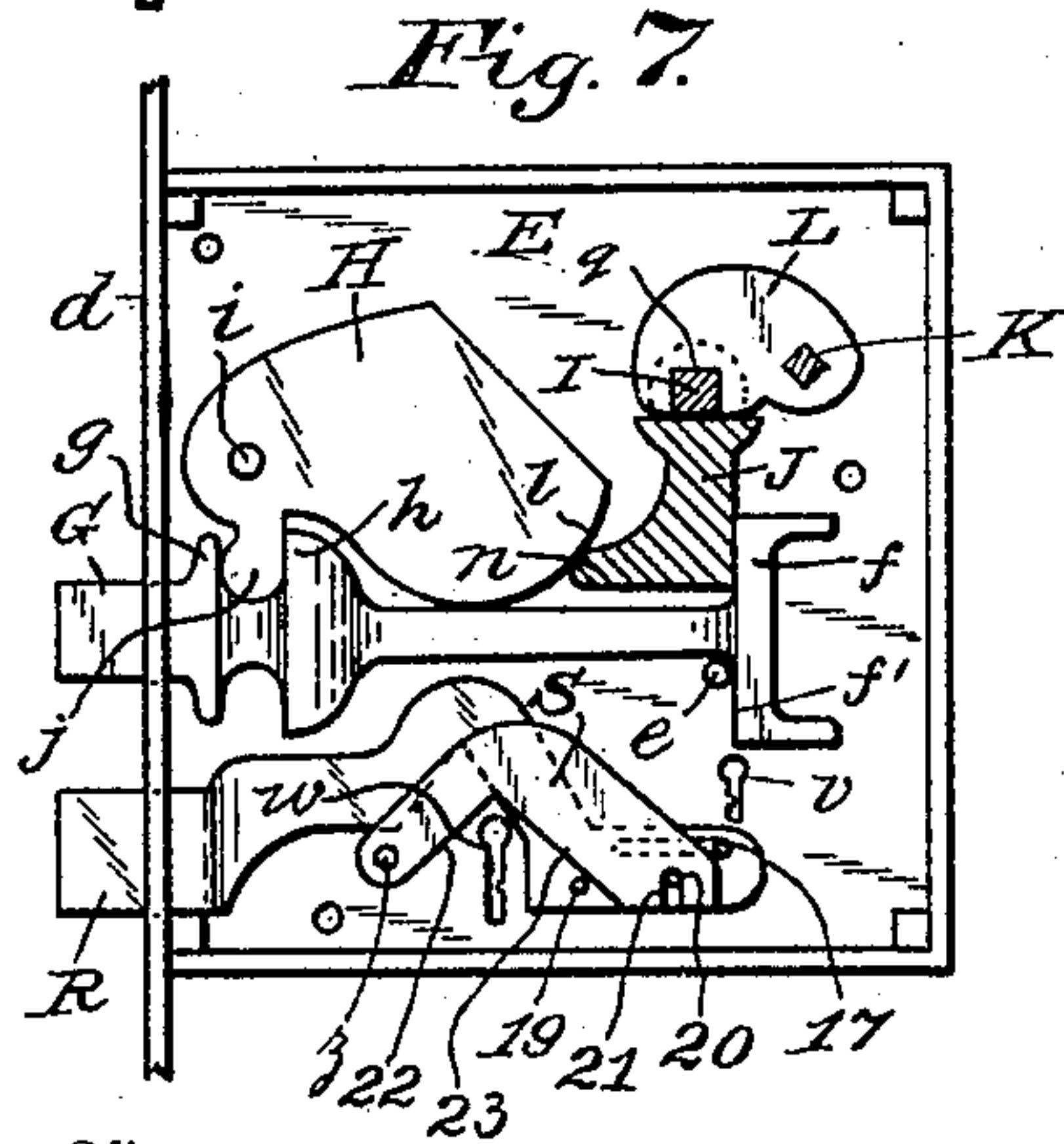
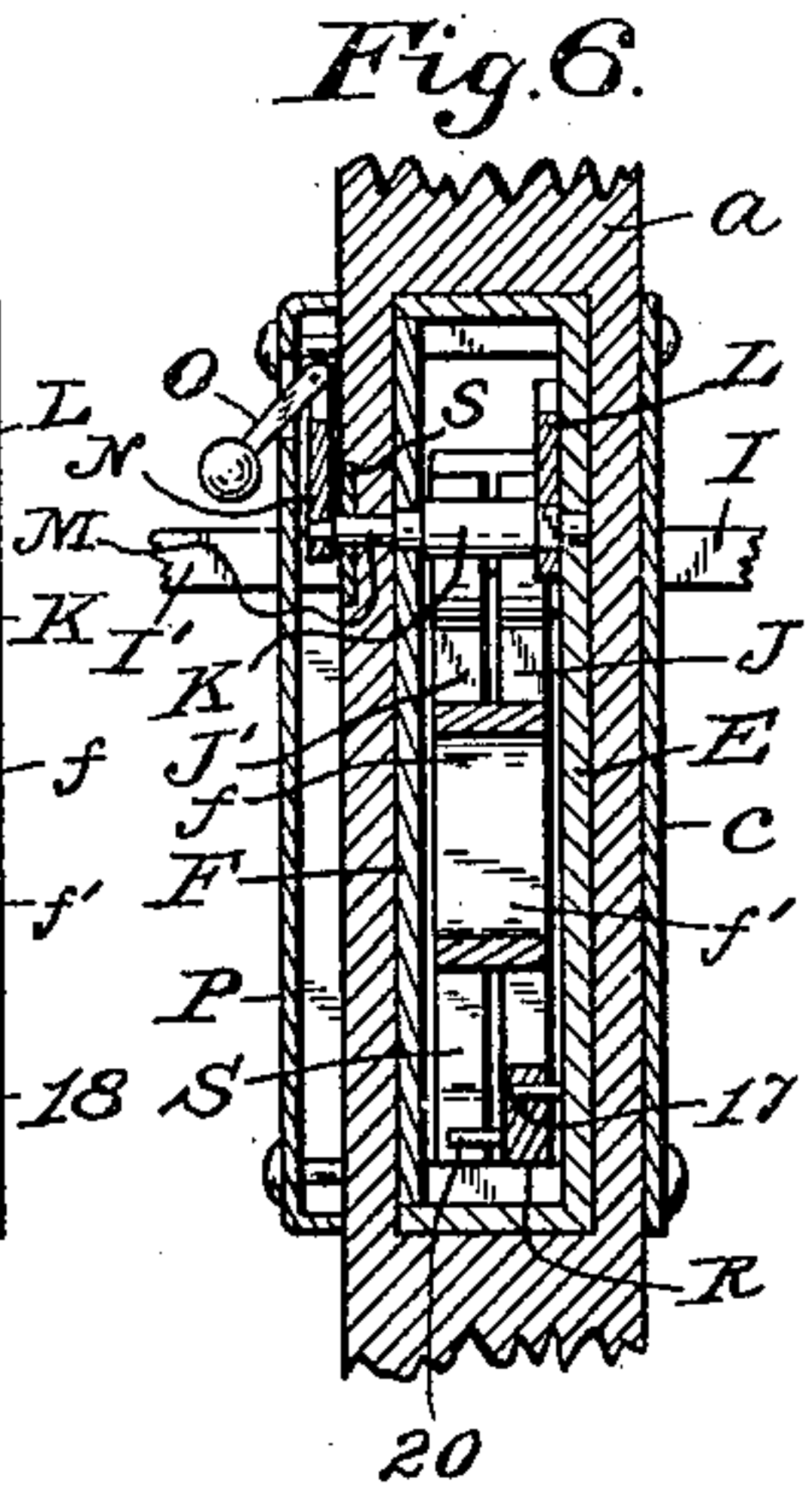
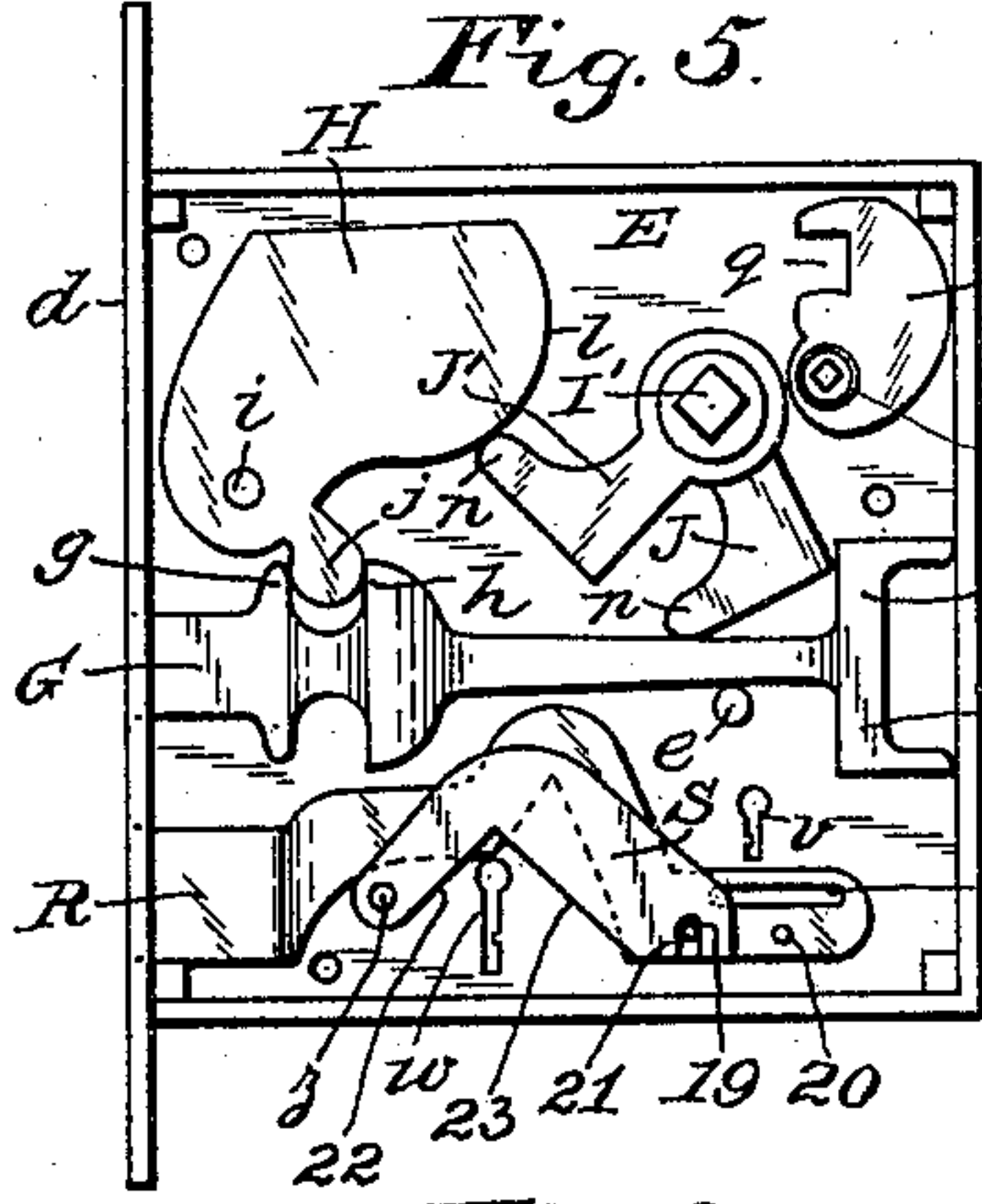
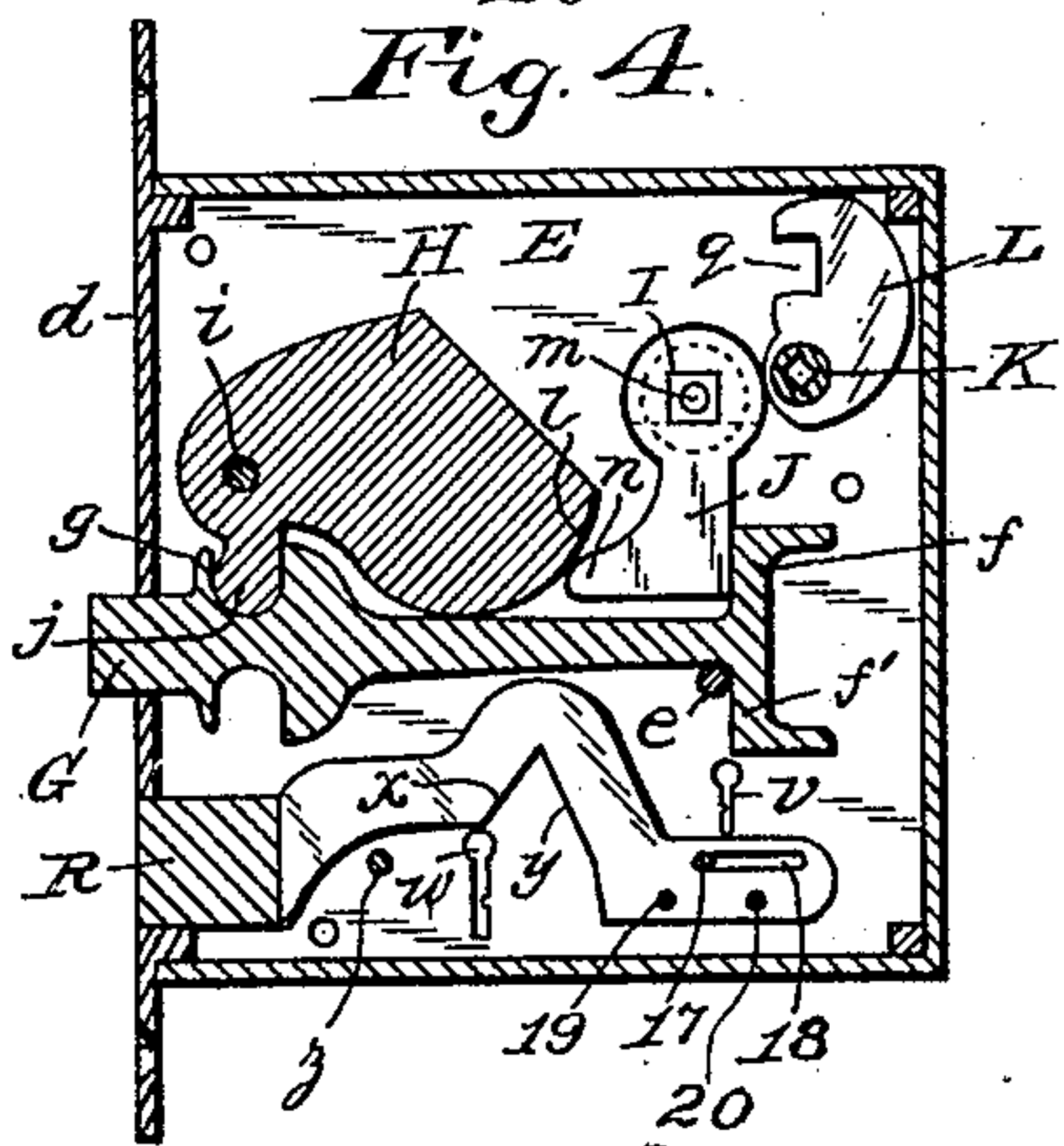
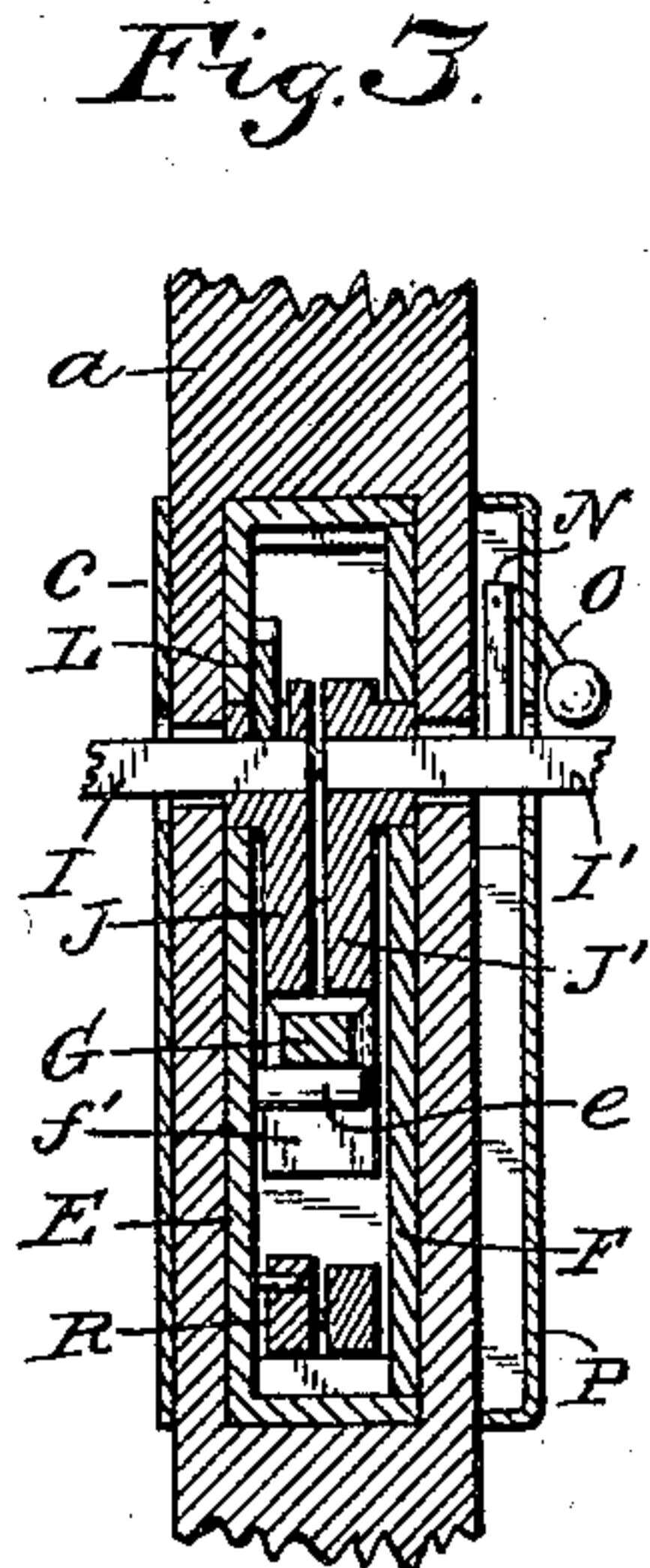
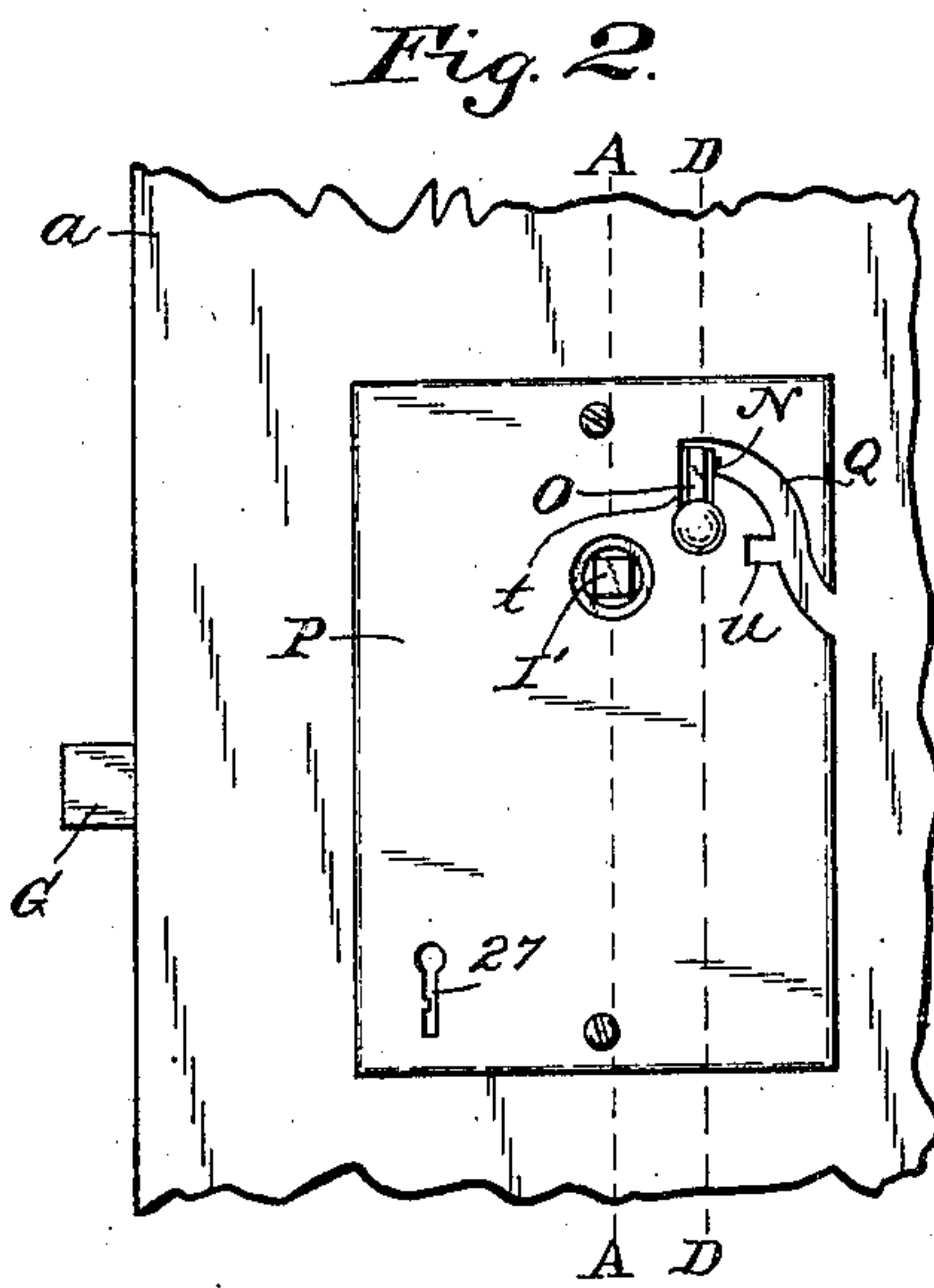
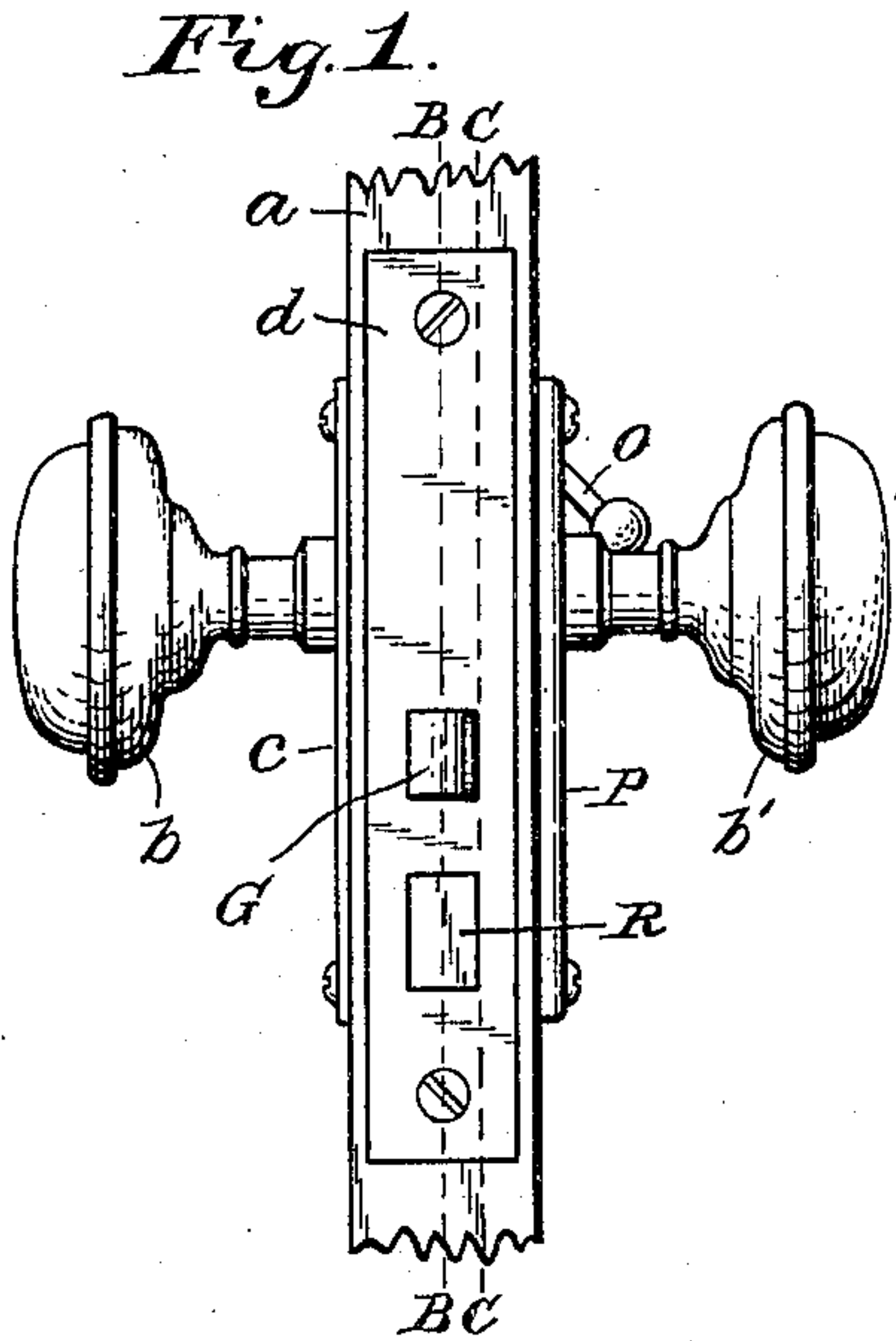
PATENTED OCT. 2, 1906.

W. LINKENBACH & G. WALTON.

GRAVITY DOOR LOCK.

APPLICATION FILED MAY 10, 1905.

2 SHEETS—SHEET 1.



Witnesses:

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No. 832,551.

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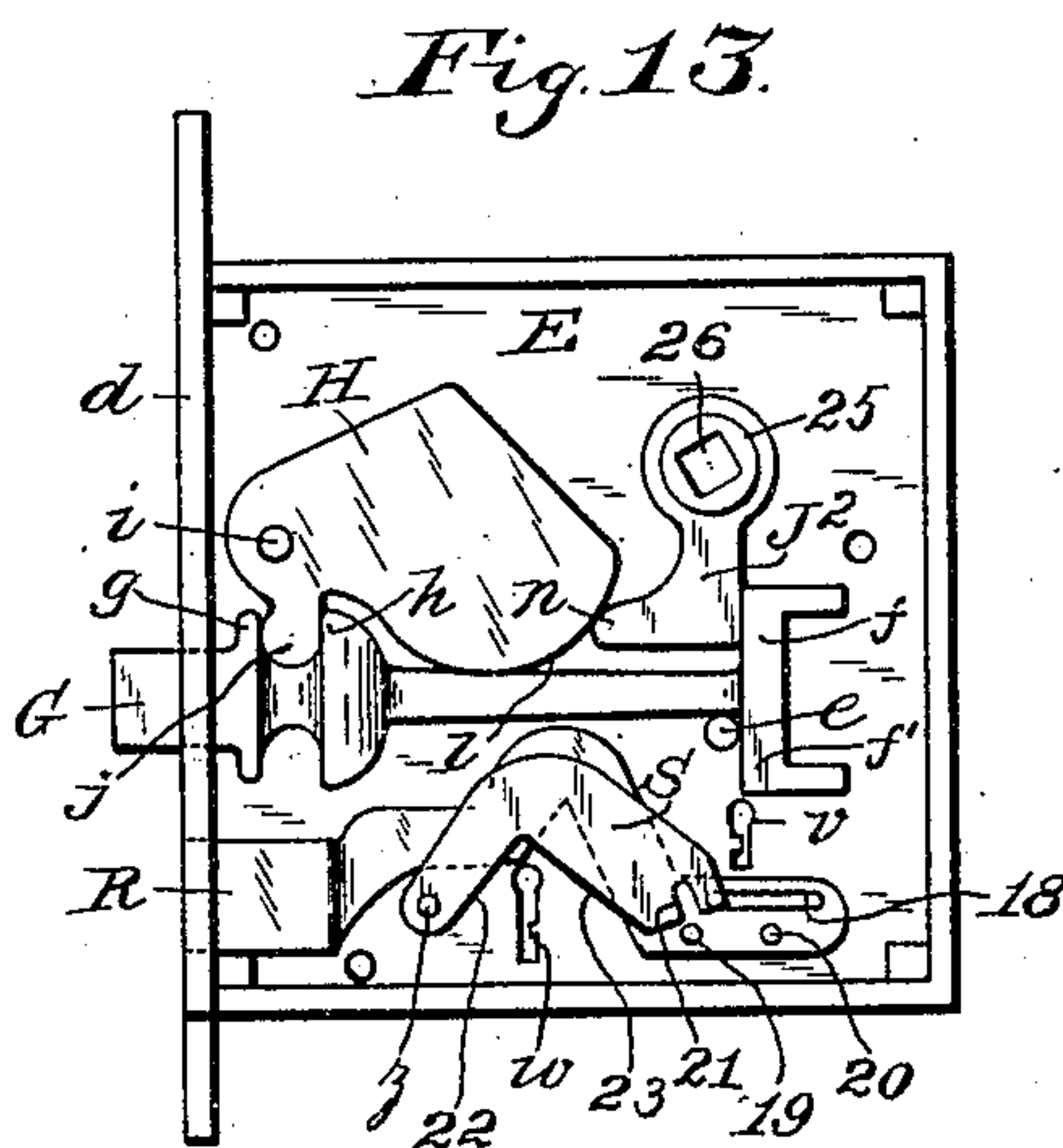
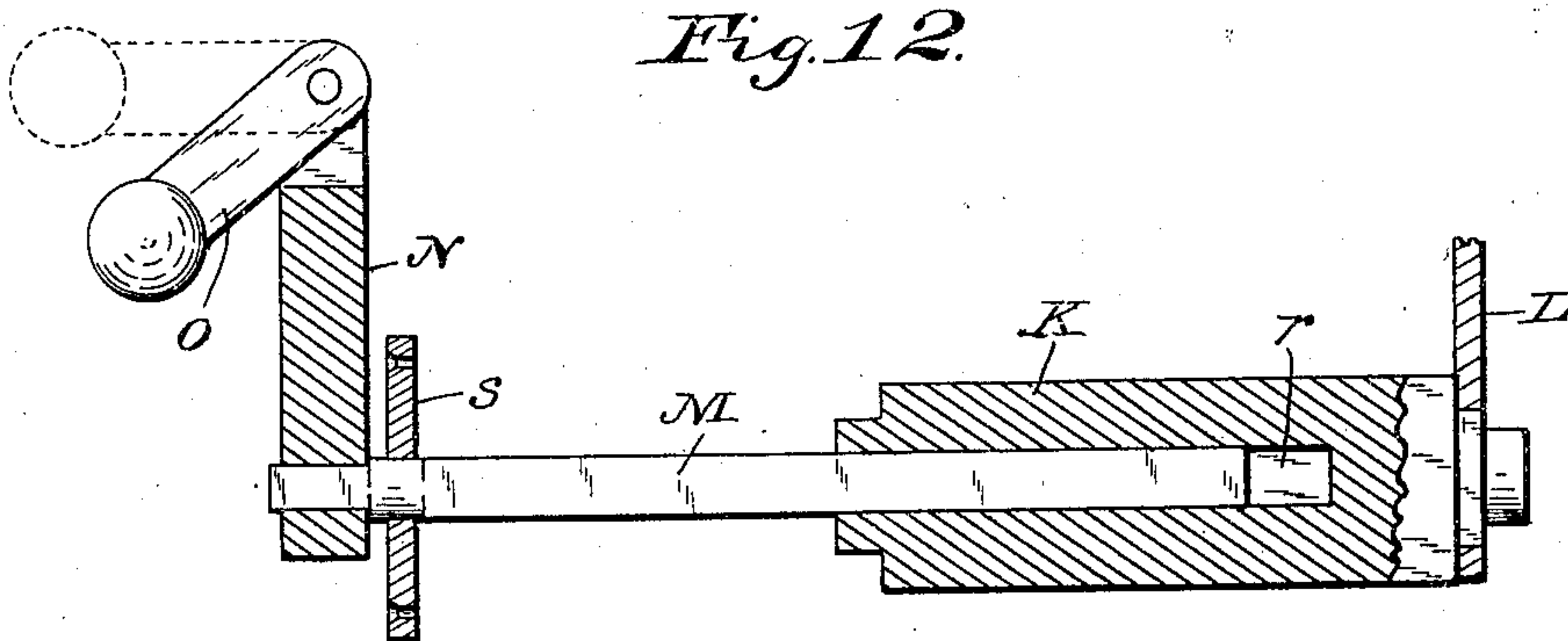


Fig. 14.

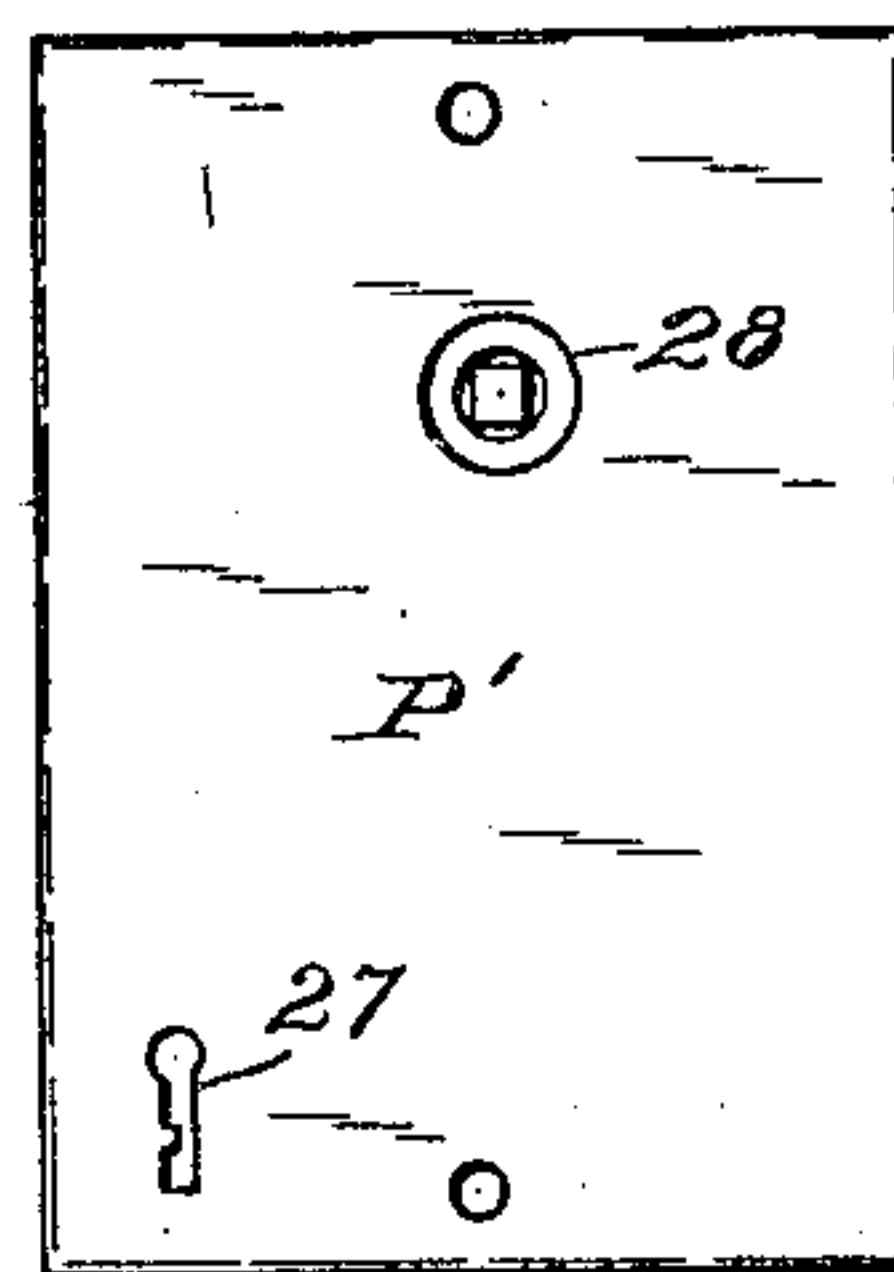


Fig. 15.

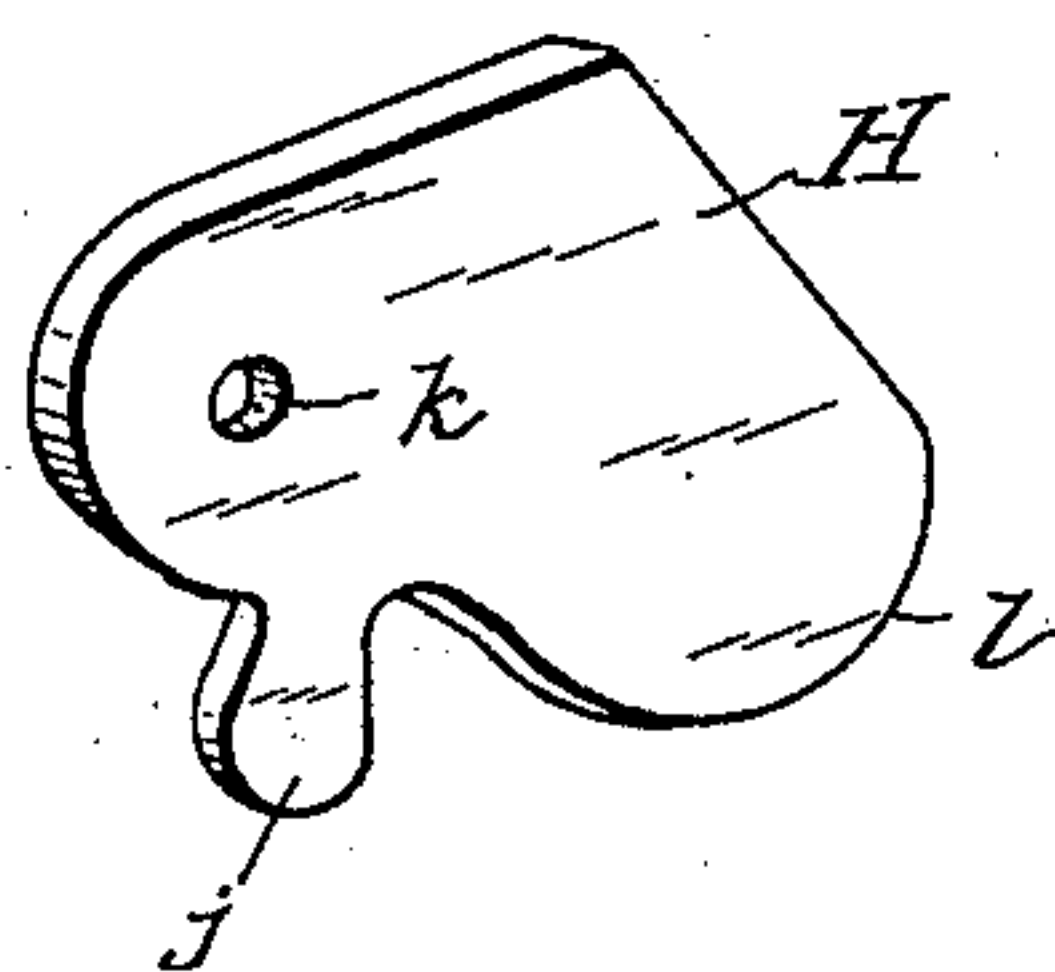
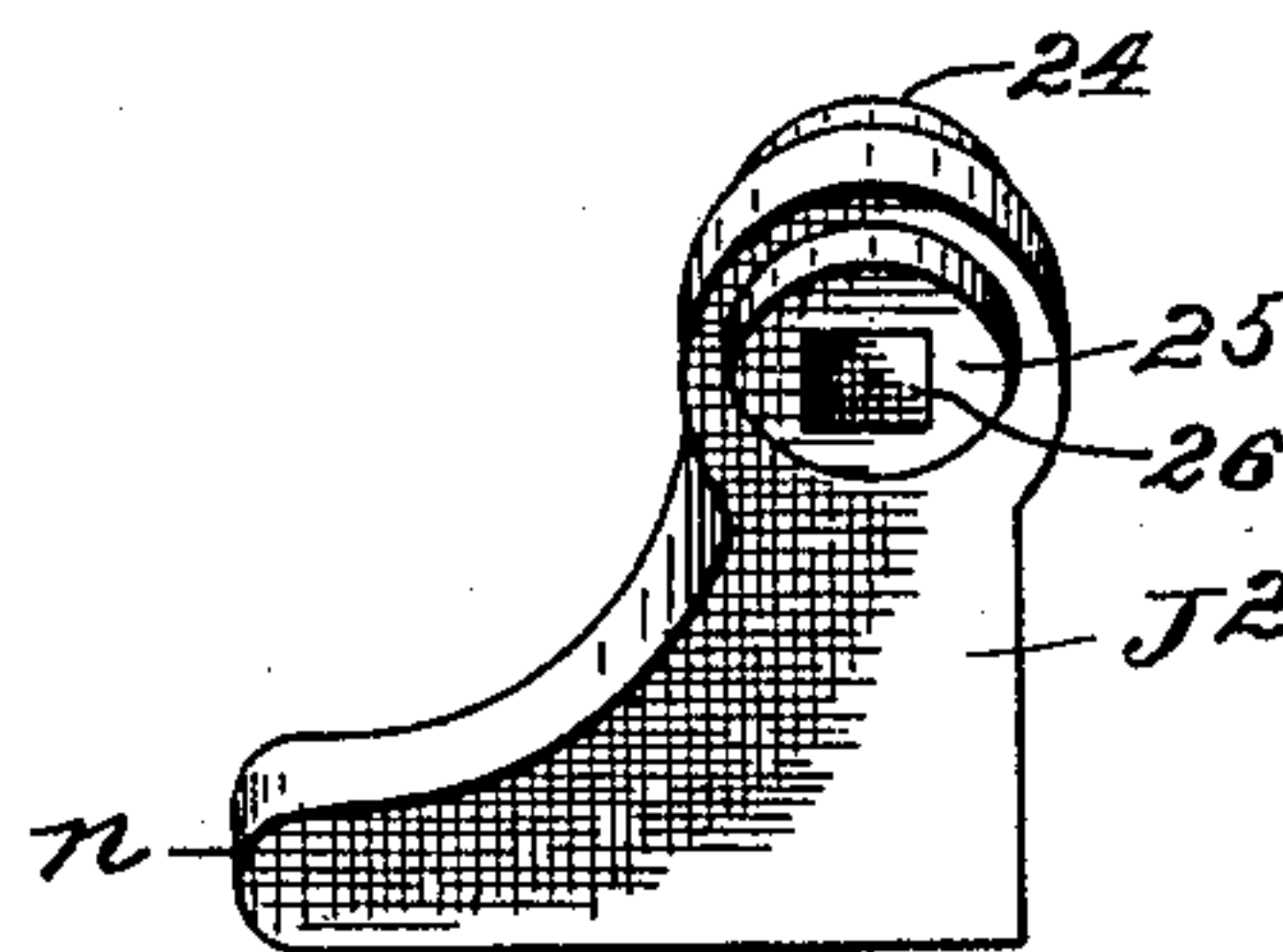


Fig. 16.



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UNITED STATES PATENT OFFICE.

WILLIAM LINKENBACH AND GEORGE WALTON, OF ADDISON TOWNSHIP,
SHELBY COUNTY, INDIANA; SAID LINKENBACH ASSIGNOR OF ONE-
EIGHTH OF THE RIGHT TO HARRY BEYNON, OF SHELBYVILLE,
INDIANA.

GRAVITY DOOR-LOCK.

No. 832,551.

Specification of Letters Patent.

Patented Oct. 2, 1906.

Application filed May 10, 1905. Serial No. 259,875.

To all whom it may concern:

Be it known that we, WILLIAM LINKENBACH and GEORGE WALTON, citizens of the United States, residing in Addison township, in the county of Shelby and State of Indiana, have invented new and useful Improvements in Gravity Door-Locks; and we do declare the following to be a full, clear, and exact description of the invention, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to door-locks that are designed to be set in mortises in the doors and which may be slightly modified, so as to be used against the sides of the doors, the invention having reference particularly to locks that are devoid of springs and also referring to dead-latch attachments of the locks.

The principal object of the invention is to provide improved locks in which the use of springs may be avoided and troubles arising therefrom obviated; and another object is to provide simple and cheap "dead-latch" attachments for door-locks adapted particularly for use at night.

A further object is to provide locks which may be manufactured at relatively small cost and be durable and economical in use without liability to derangement.

With the above-mentioned and minor objects in view the invention consists in a lock comprising a latch-bolt provided with a weighted gravity-lever for holding the latch-bolt in its advanced position and cooperating to retract the latch-bolt.

The invention consists also of improved devices for locking one of the spindles to prevent the operation thereof; and the invention consists, further, in the novel parts and the combinations and arrangements of parts, as hereinafter particularly described and claimed.

Referring to the drawings, Figure 1 is a fragmentary elevation of the front end of a door having the improved lock applied thereto; Fig. 2, a fragmentary elevation of the inner side of the door, showing the escutcheon with which a part of the dead-latch attachment cooperates, the door-knob being omitted; Fig. 3, a transverse sectional view on the

line A A in Fig. 2; Fig. 4, a vertical longitudinal sectional view of the lock detached from the door on the line B B in Fig. 1; Fig. 5, an elevation of the lock with the case-cover off and the latch-bolt retracted viewed at a plane corresponding approximately to the plane of the line C C in Fig. 1; Fig. 6, a transverse sectional view on the line D D in Fig. 2; Fig. 7, a view similar to Fig. 5, except that the latch-bolt and the lock-bolt are advanced and one of the spindle-arms for operating the latch-bolt is omitted and the other arm is shown in section and the spindle locked; Fig. 8, a top plan of the latch-bolt; Fig. 9, a top plan of the lock-bolt; Fig. 10, a top plan of the gravity-tumbler for the lock-bolt; Fig. 11, a fragmentary detail view showing parts of the connected spindles and the latch-operating arms connected thereto; Fig. 12, a detail sectional view of parts of the dead-latch attachment detached; Fig. 13, a view somewhat similar to Fig. 5, but modified as a plain latch and lock without the dead-latch attachment, the gravity-tumbler of the lock-bolt being shown disconnected therefrom; Fig. 14, a front elevation of a modified form of escutcheon for the plain lock; Fig. 15, a perspective view of the weighted lever that cooperates with the latch-bolt, and Fig. 16 a perspective view of the operating-arm used in the modified or plain lock.

Similar reference characters in the drawings designate corresponding elements or features.

In the drawings, *a* designates the door; *b*, the outer door-knob; *b'*, the inner knob; *c*, the outer escutcheon; *E*, the lock-case, having a suitably-attached cover *F*, and *d* the front plate of the lock-case. The bolts are mounted and operate in the case, the latch-bolt *G* being partially supported and guided in the front plate *d*, the body part of the bolt being supported on a bearing *e*, that is attached to the case. The bolt is reversible by being inverted and has wings *f* and *f'* at its rear end and opposing abutments *g* and *h* near its forward end at its upper and lower sides. A pivot-pin *i* is attached to the case above the bolt *G*, and a weighted lever *H*, having an arm *j*, is mounted on the pin, the lever having a pivot-bearing *k* to receive the pin, the arm *j* extending between the abutments of the latch-bolt and cooperating

therewith. The lever H has a curved end *l*, which normally rests upon the body of the bolt G, being held by the force of gravity, the arm *j* engaging the abutment *g* and holding the bolt yieldingly in its advanced position, with its outer end extending beyond the plate *d*, as in Figs. 4, 7, and 13. When the latch-bolt is retracted by contact with a striker-plate, (not shown,) the lever H is forced upwardly, as shown in Fig. 5, and when the bolt is released the weight drops and again advances the bolt.

The lock is provided with two spindles I and I' in alinement for supporting the knobs *b* and *b'* and for operating the latch-bolt G, one spindle having a threaded end *m* inserted loosely in the adjacent end of the other spindle, forming a swivel connection, so that the two spindles can turn independently of each other. An arm J, having a projection *n* and also a slot *p*, is attached removably to the spindle I and has a bearing *p'* arranged in the lock-case, thereby journaling the spindle. An arm J' is attached removably to the spindle I' adjacent to the arm J and has a bearing *m'* arranged in the case, and thereby journaling the spindle I', the arm also having a projection *n*. The projections *n* of the arms J and J' normally are near or in contact with the curved end *l* of the lever H, whereby the lever may be elevated and the bolt G retracted, as in Fig. 5, when either one of the spindles is rotated and their arms actuated, the spindle I' and arm J' having been operated in the figure mentioned. Also the operation of either spindle and its arm may cause the arm to engage the wing *f*, (or *f'*), so as to retract the bolt G, as the arm J does in Fig. 5, it being understood that either spindle may be rotated independently in either direction.

Near the spindles a dead-latch spindle K is mounted rotatively in the case, extending across the interior thereof parallel to the knob-spindles, and a gravity-dog L is secured to the spindle K and is provided with a recess *q*, adapted to receive the spindle I when the latch is moved into the recess *p* of the arm J to prevent rotation of the spindle I. The spindle K has a square socket *r* therein, receiving a square extension-spindle M, that extends from the lock-case through the wood-work of the door and through a bearing-plate *s*, that is secured to the inner side of the door. A crank-arm N is secured to the outer end of the spindle M and is provided with a weighted pivoted latch-bar O. The inner escutcheon P covers the end of the spindle M and the greater portion of the arm N and has a curved slot Q, through which the bar O extends, the slot having notches *t* and *u* to receive the bar O for latching the spindle K to prevent accidental movements of the dog L. Under usual conditions, however, the dog L will remain in either its operative or its inoperative position of its own weight, and the arm N

and bar O may be dispensed with, as also the slotted escutcheon, since the spindle M may be extended through the escutcheon and provided with a knob, and thus be adapted to be operated directly by hand.

In the lower portion of the case E the lock-bolt R, which may be suitably employed with the invention, is mounted slidingly, extending through the plate *d*, the inner end of the bolt having a slot 18, into which extends a projection 17, that is attached to the case for guiding and stopping the bolt. The case has a keyhole *v* in order that a key may be used for retracting the bolt G when the knobs cannot be operated for the purpose. The case also has keyholes *w* to receive a key for operating the bolt R, which has oppositely-inclined abutments *x* and *y*, adapted to be engaged by the key. A pair of projections 19 and 20 are attached to the bolt R to be used in holding the bolt at either extremity of movement. A pivot *z* is attached to the case E, and a gravity-tumbler S is pivoted thereon and operates against the bolt R in connection with the projections 19 or 20, the tumbler having a recess 21 to receive either one of the projections. The tumbler also has opposing inclined abutments 22 and 23, adapted to be engaged by a key for lifting and disengaging the tumbler S from a projection before the key engages the bolt R to move it.

When a plain lock is desired, without the dead-latch attachment, the latter may be omitted from the structure, and in lieu of the two arms J and J' and the two spindles a single arm J², having two bearings 24 and 25 and a hole 26, may be mounted on a single spindle, to which the knobs may be attached, and in this case a plain escutcheon P', having a keyhole 27 and a spindle-bearing 28, will be provided in lieu of the escutcheon P.

In practical use the normal relative position of the bolt G will be as shown in Figs. 4, 7, and 13, the operating-arms of the spindles being extended downwardly close to the lever H and the wing of the bolt and will remain idle when the bolt is retracted by contact with a striker-plate; but when the bolt is so retracted the lever H will be forced upwardly, as seen in Fig. 5. When either one of the arms J, J', or J² is moved to the position of J' in Fig. 5, the lever will be elevated, and thereby retract the bolt G. Also when either one of the arms is moved to the position of J in Fig. 5 the bolt will be retracted thereby and will elevate the lever H, as shown therein. It will be understood that either one of the arms J or J' may be operated separately independently of the other arm. If it be desired to prevent the operation of the outer knob, the dog L may be put in engagement with the outer spindle I, as shown in Fig. 7, the bar O being placed in the notch *t*, as in Fig. 2. To release the spin-

dle, the bar O should be placed in the notch *u*, when the dog L will lean over against the flange of the case E, as shown in Figs. 4 and 5. In order to lock the door by means of the bolt R, a suitable key may be inserted in either the keyhole *w* or the keyhole 27 and operated in the usual manner, the key first lifting the tumbler S when suitably turned rotatively and then advancing the bolt into a striker-plate, with which the door-frame should be provided, as usual. The operation of retracting the bolt will be obvious from the foregoing description.

Having thus described the invention, what is claimed as new is—

1. A door-latch including a case, a latch-bolt in the case having a wing, a gravity-lever pivoted in the case and engaging the latch-bolt, a knob-spindle mounted in the case and having an arm movable into engagement with either the gravity-lever or the wing of the latch-bolt.

2. A door-latch including a case, a movable latch-bolt in the case, a spindle having an arm for operating the latch-bolt, a gravity-dog in the case adapted to lock the spindle, a crank-arm for operating the dog and provided with a latch-bar, and an escutcheon having a curved slot and notches in a side of the slot in which the latch-bar may operate.

3. A door-latch including a case, a movable latch-bolt in the case, a spindle having an arm for operating the latch-bolt provided with a slot extending to the spindle, and a dog mounted in the case and movable into the slot of the arm into engagement with the spindle.

In testimony whereof we affix our signatures in presence of two witnesses.

WILLIAM LINKENBACH.
GEORGE WALTON.

Witnesses:

JAS. H. PHILLIPS,
E. B. THOMPSON.