

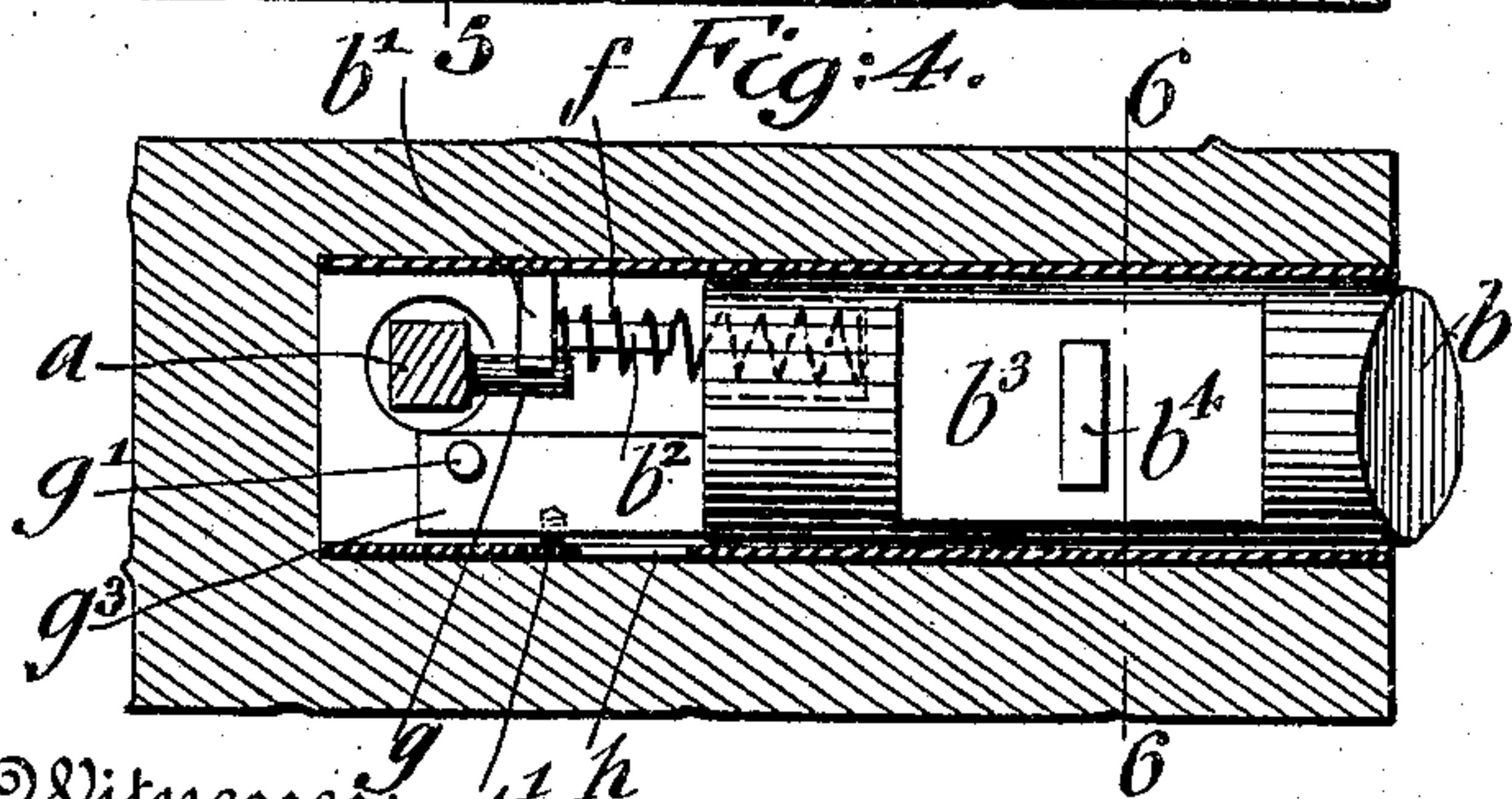
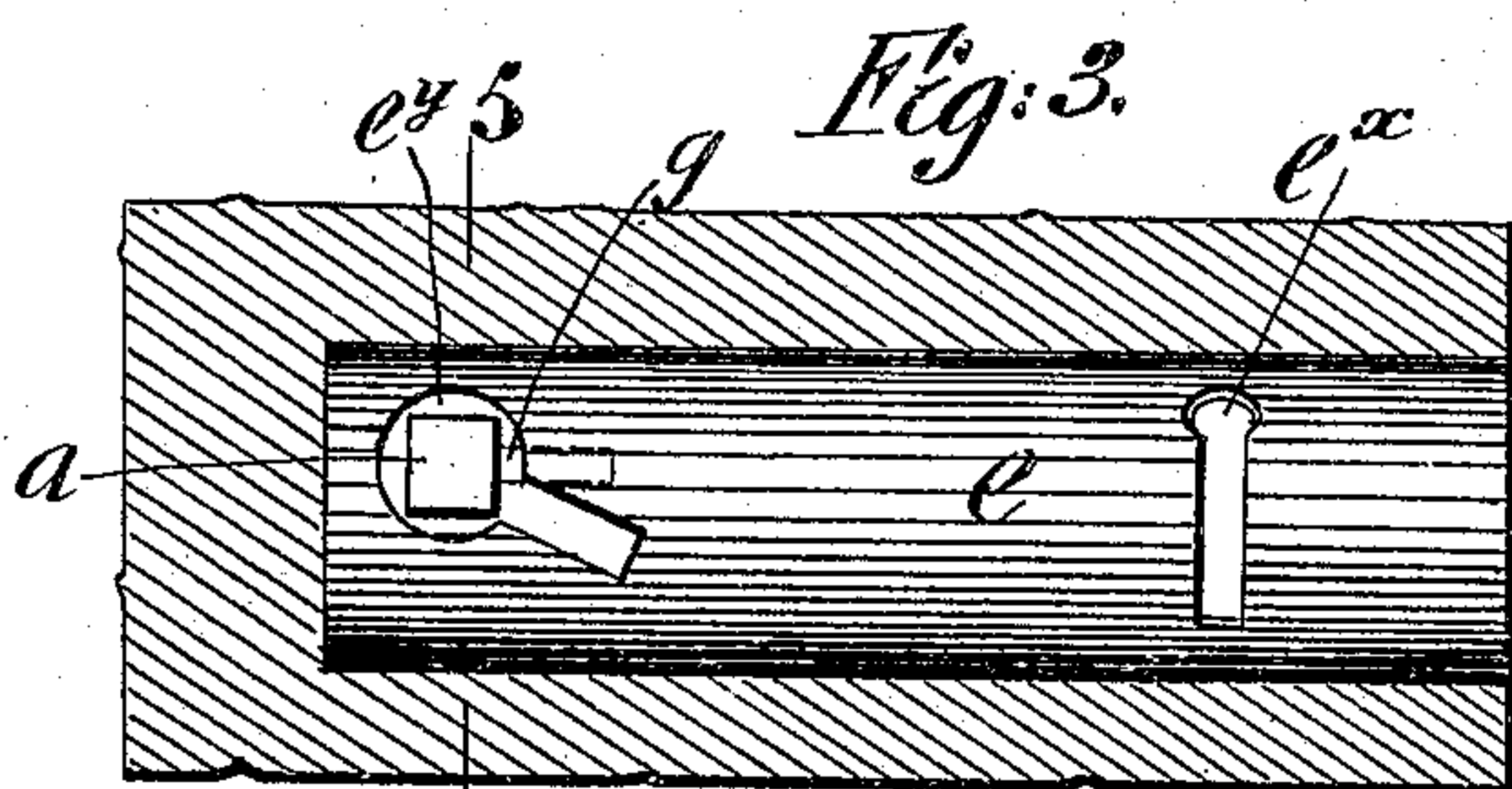
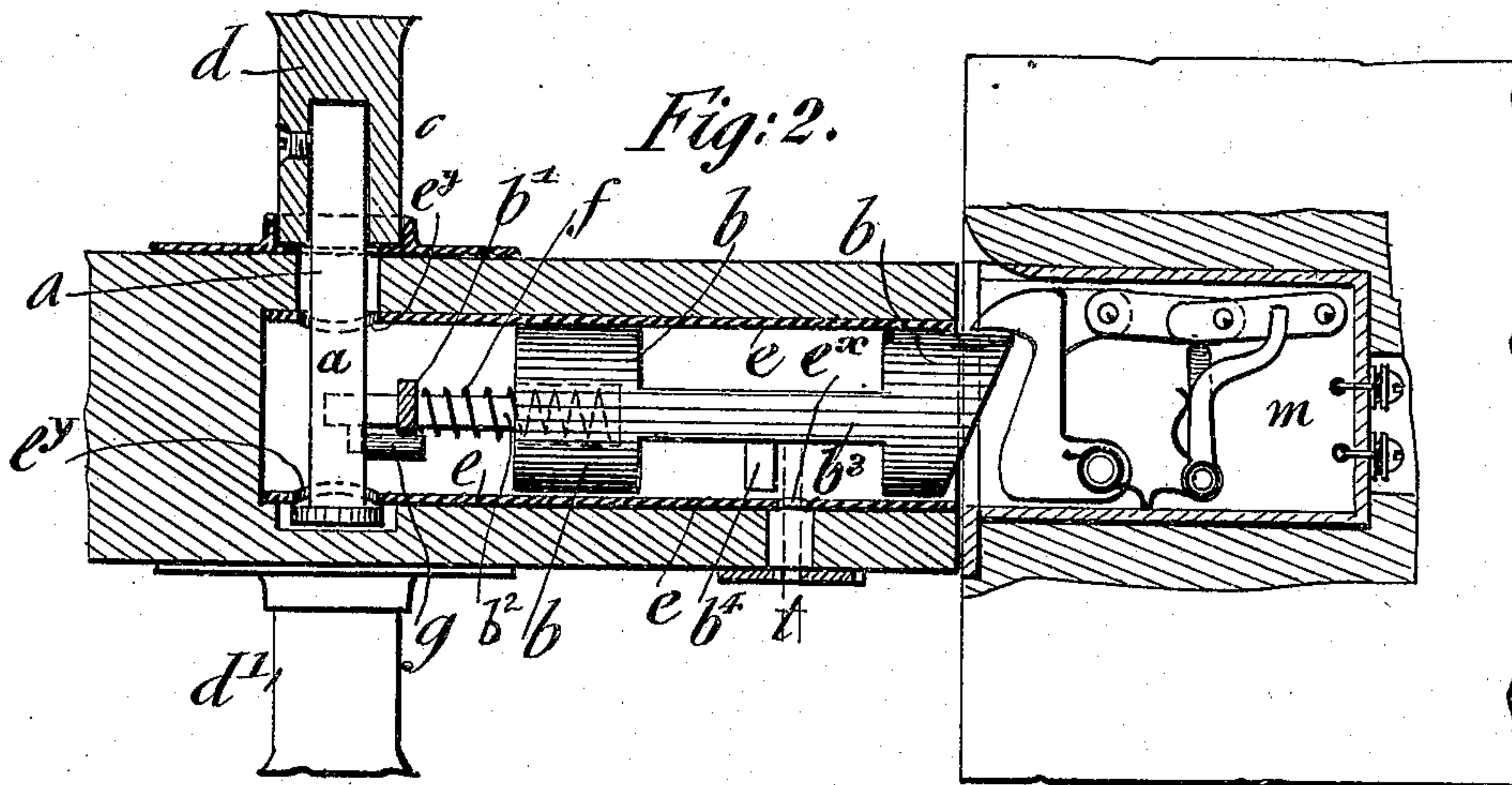
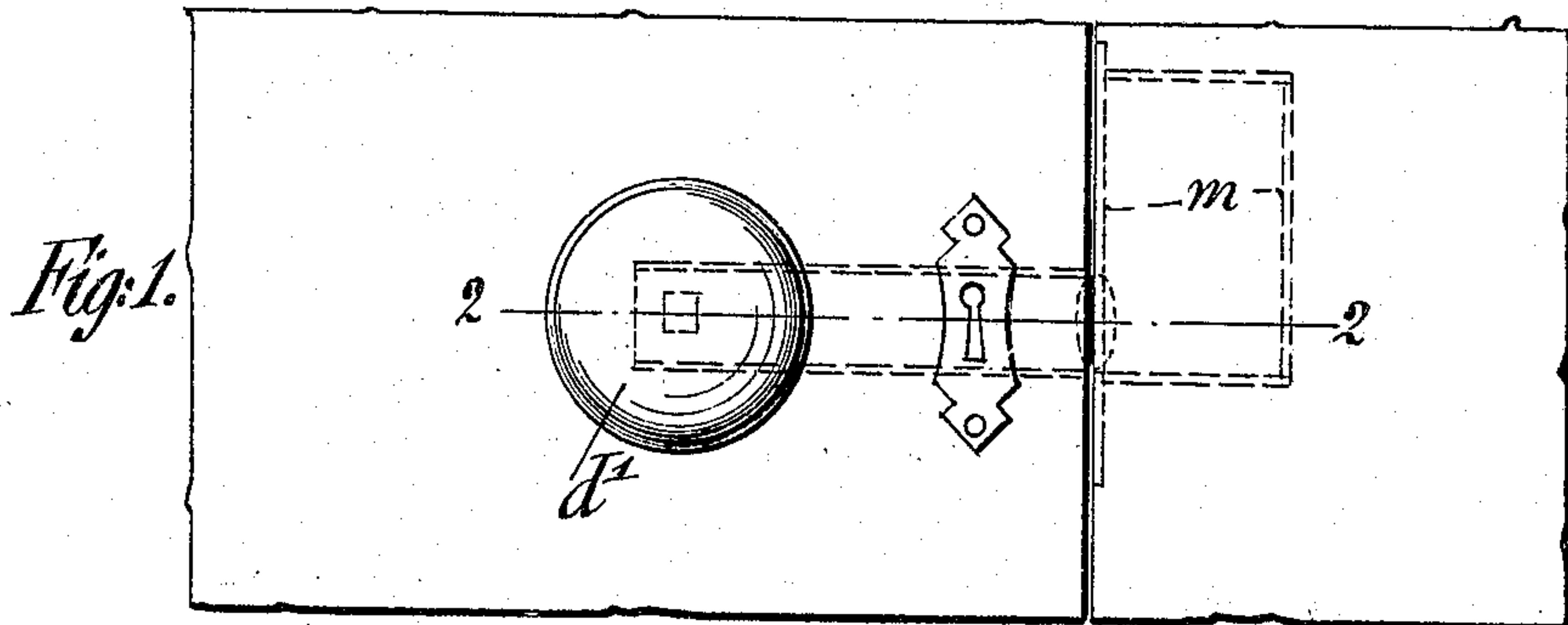
G. A. HUBER.
DOOR LOCK.

APPLICATION FILED JULY 27, 1908.

Patented June 8, 1909.

924,464.

2 SHEETS—SHEET 1.



G. A. HUBER.

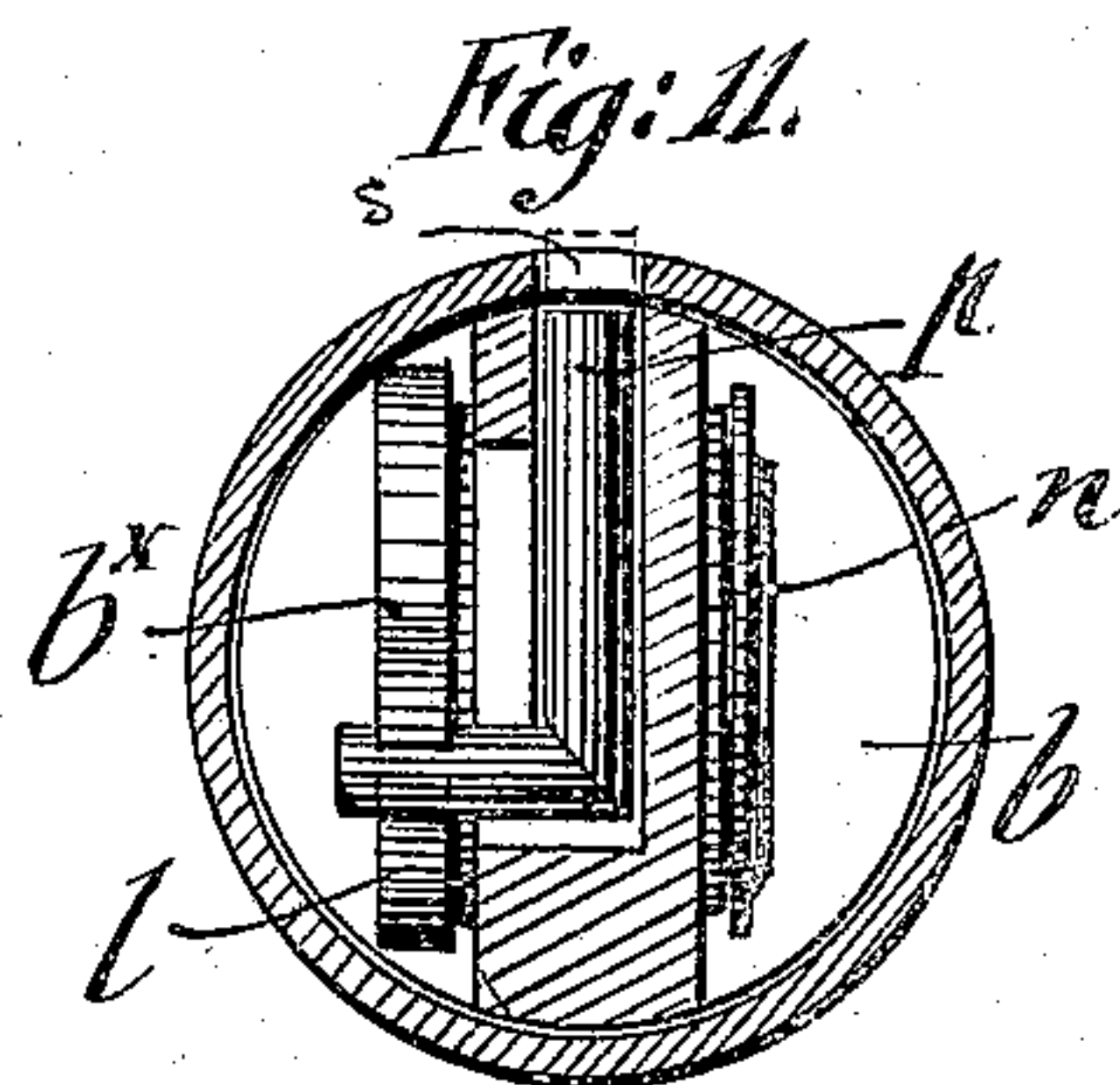
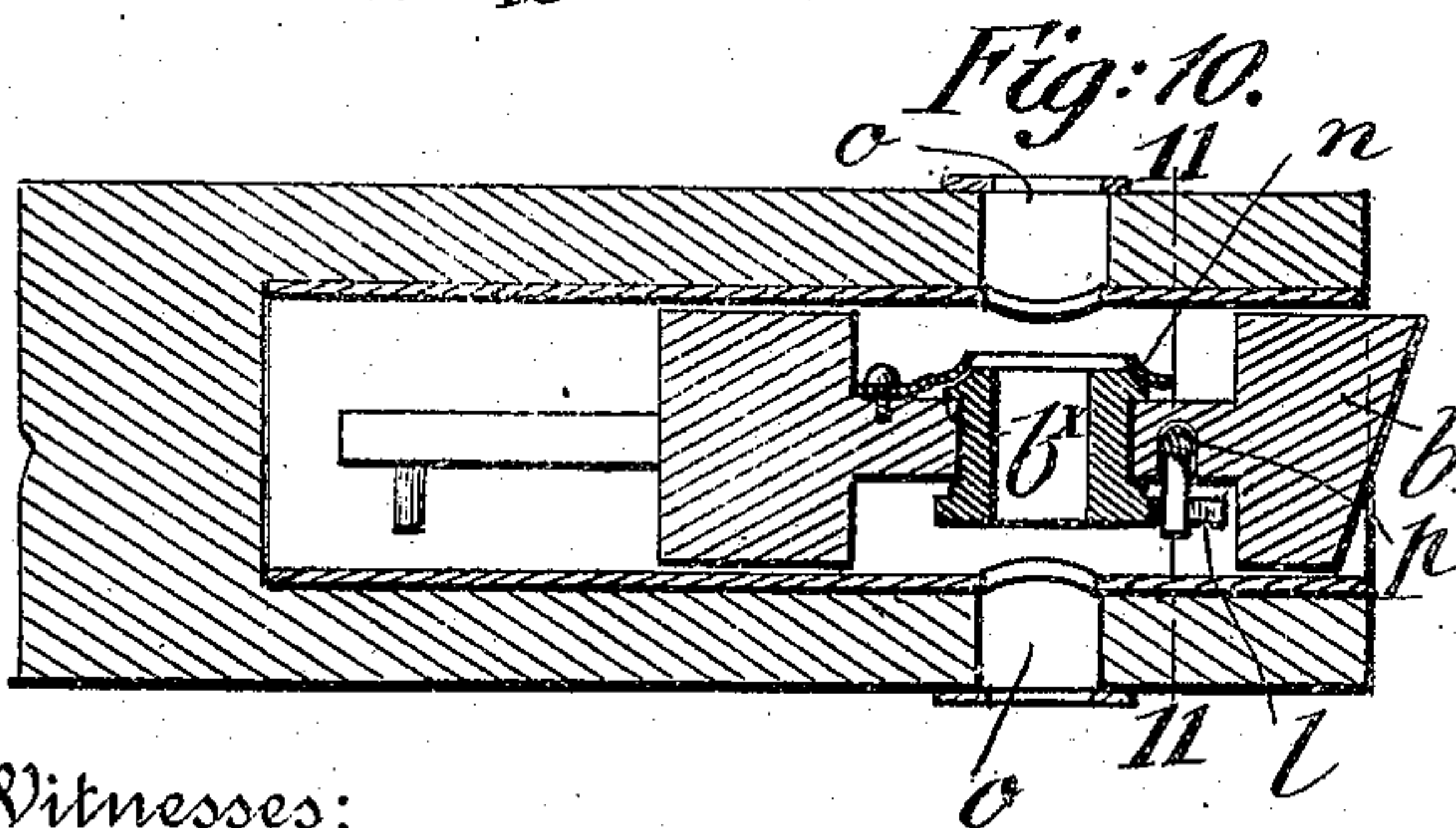
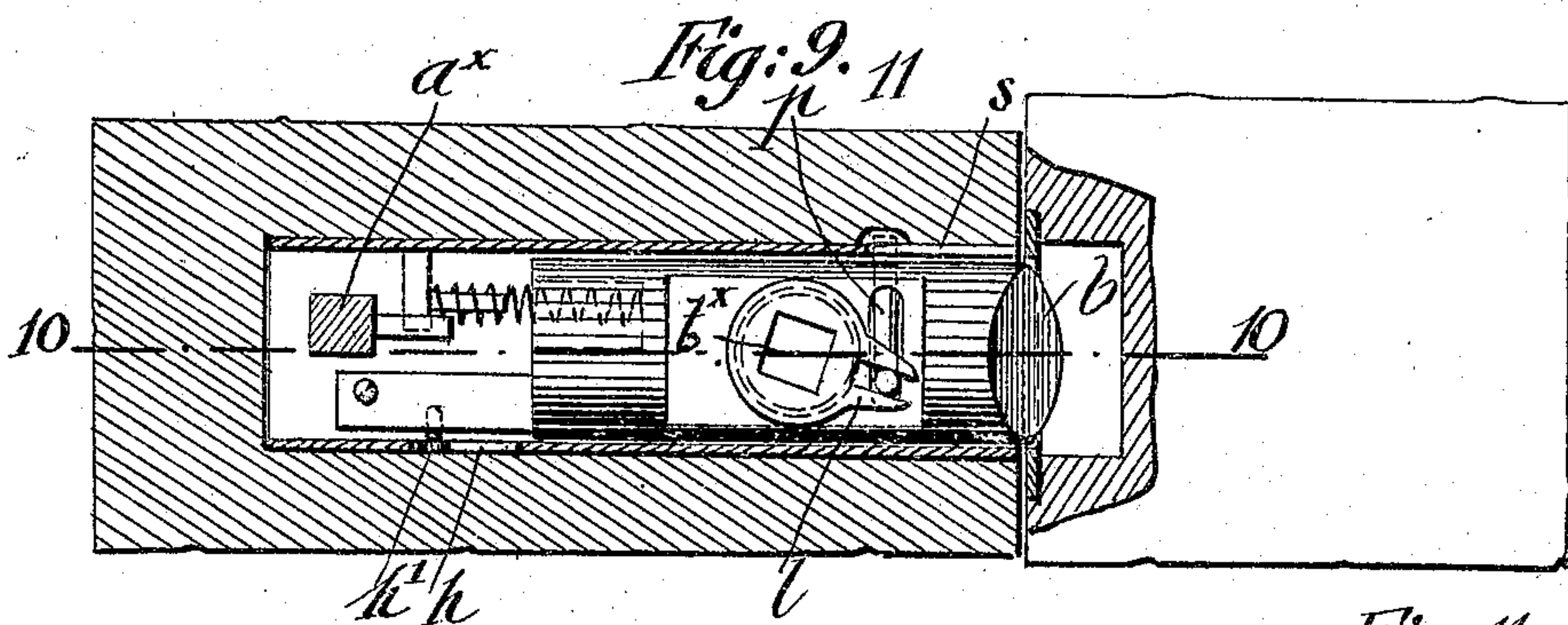
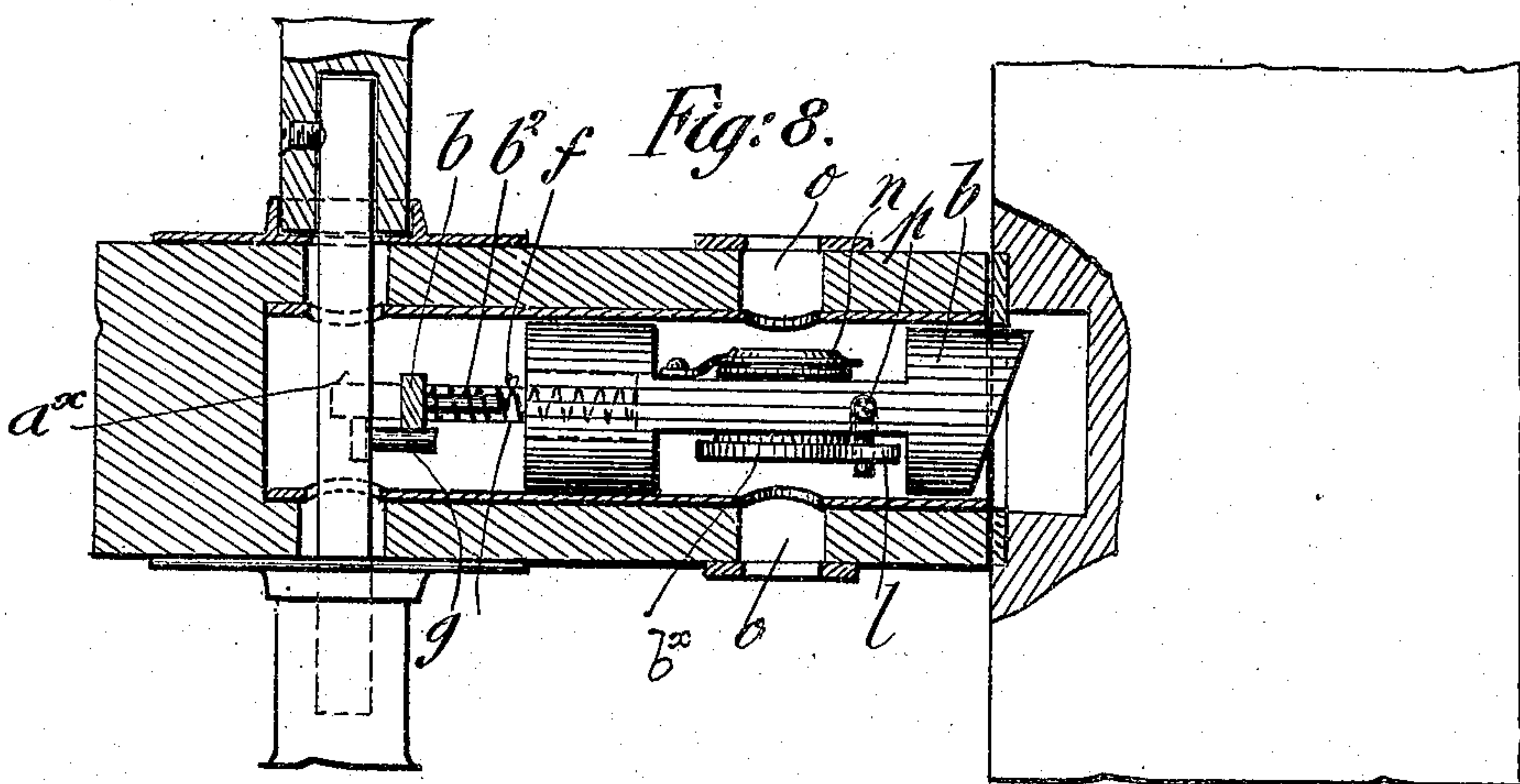
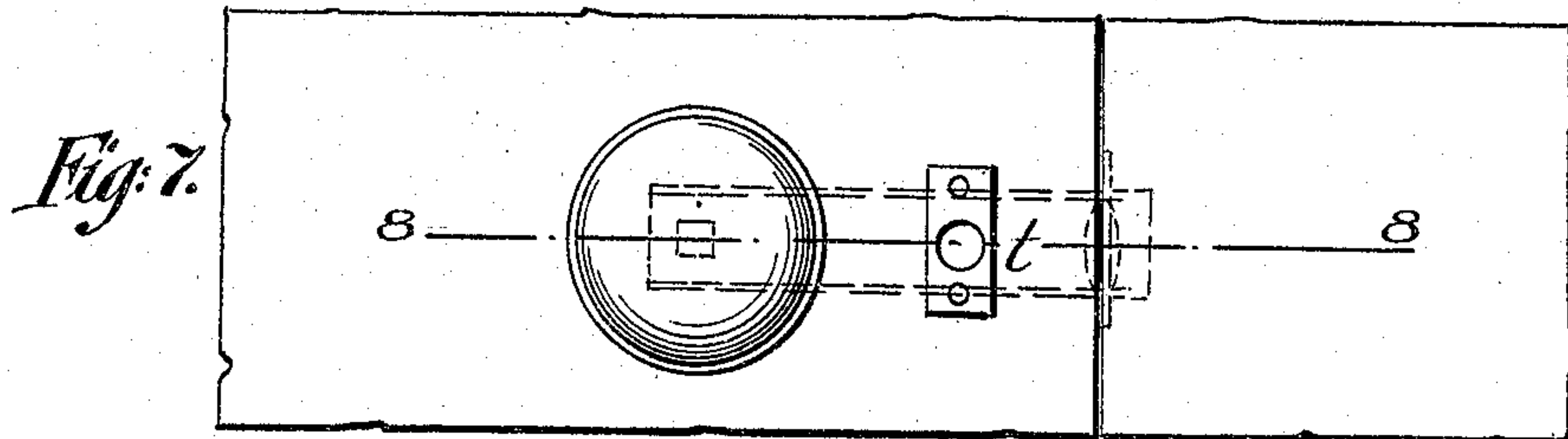
DOOR LOCK.

APPLICATION FILED JULY 27, 1908.

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Patented June 8, 1909.

2 SHEETS—SHEET 2.



Witnesses:
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UNITED STATES PATENT OFFICE.

GUSTAV A. HUBER, OF NEW YORK, N. Y., ASSIGNOR OF ONE-THIRD TO ALFRED MOSER, OF HOBOKEN, NEW JERSEY, AND ONE-THIRD TO HENRY WACKER, OF NEW YORK, N. Y.

DOOR-LOCK.

No. 924,464.

Specification of Letters Patent.

Patented June 8, 1909.

Application filed July 27, 1908. Serial No. 445,464.

To all whom it may concern:

Be it known that I, GUSTAV A. HUBER, a citizen of the United States of America, residing at New York, in the borough of the Bronx, county and State of New York, have invented certain new and useful Improvements in Door-Locks, of which the following is a specification.

This invention relates to door locks of that type in which the lock is inclosed in a cylindrical shell adapted to be inserted in a correspondingly shaped mortise bored in the edge of the door, and has as one of its objects to provide a construction in which the bolt is thrown, or released from fixed position in the shell, by means of the key which coöperates with the bolt at the intermediate portion of the latter, there being an improved arrangement of the actuating spring for the bolt and the connection of the bolt with the spindle.

A further object of the invention is to furnish an improved construction by which the bolt can be locked in position in the shell and unlocked by the key, the bolt being withdrawn, after release by means of the key, through its connection with the knob-spindle.

With these ends in view, the invention consists in the novel construction to be herein after described and claimed.

In the accompanying drawings, Figure 1 represents a front-elevation of my improved door-lock, showing the same from the outside, Fig. 2 is a horizontal section through the lock on line 2, 2, Fig. 1, drawn on a larger scale. Fig. 3 is a detail elevation of the lock from the outside of the same, Fig. 4 is a vertical longitudinal section through the shell, showing the bolt and its connection in side-elevation, Figs. 5 and 6 are vertical transverse sections respectively on lines 5, 5, Fig. 3, and 6, 6, Fig. 4. Fig. 7 is a modified construction of my improved door-lock, showing the same so that it can be opened from the inside or outside, Fig. 8 is a horizontal section on line 8, 8, Fig. 7, Fig. 9 is a vertical central section of the door-lock, Fig. 10 is a horizontal section on line 10, 10, Fig. 9, and Fig. 11 is a vertical transverse section on line 11, 11, Fig. 10.

Similar letters of reference indicate corresponding parts throughout the several figures.

Referring to the drawings, *a* represents a knob-spindle of that kind which is provided

with a door-knob *d* at the inside, while a fixed knob *d'* is attached to the outside of the door. The knob-spindle *a* passes through an opening of sufficient size in the door so that the square knob-spindle can turn freely therein. It also passes through aligned openings *e y* at the inner end of a cylindrical shell *e*, which is made of sheet-metal or other suitable material, and which serves to guide the bolt *b*, which is also made of cylindrical shape and fitted into the shell *e* so as to be freely guided therein. The bolt *b* is actuated by a helical spring *f*, which is interposed between a socket at the rear-end of the bolt *b* and a lug *b'* located at the interior of the shell and attached thereto. The lug is provided with a pin *b''* which is in line with the center of the socket, and which serves to receive the spring so as to hold the same in position against the stationary lug *b'* and the rear inner end of the bolt. The bolt *b* is provided with recesses at both sides, the outer inclined end of the bolt and the inner end of the bolt being connected by a web *b''* to one side of which is applied a pin *b'''*. This pin is located adjacent to a key-hole *t* which is cut in the frame of the door adjacent to the pin or lug adjacent to the web of the bolt in such a manner that by inserting a ward-key the turning of the key will produce engagement with the bolt and the withdrawal of the inclined head of the bolt. The key may be made of any shape, provided that the ward be of sufficient size to engage the lug *b'''* and permit the opening of the door by pushing it back inwardly on the turning of the key. The shell *e* is provided with an opening *e'* for the passage of the key.

The door is opened by a certain key through the key-hole from the outside, while from the inside it is opened by the knob which is attached to the knob-spindle in any approved manner. On the spindle *a* is placed a pin *g* which serves to engage a transverse pin *g'* which is attached to a longitudinal extension *g''* of the bolt, the pin *g'* being in the path of the pin *g* so that the latter engages the pin *g'* and withdraws thereby the spring-actuated bolt into the shell whenever the knob-spindle is turned from the inside. As the outer knob is stationary the bolt cannot be withdrawn except by inserting the key through the key-hole from the outside and withdrawing the bolt. The lock can also be used in connection with the

wellknown electric door-opener, in which case a yielding hook engages the bolt, the head or face of which is inclined. As soon as the door-opener is released by the action
 5 of the electrically operated mechanism *m* it clears the head of the bolt so that the door can be opened inwardly.

For preventing the dropping out of the bolt from the shell, the bolt is provided with
 10 a stop pin *h*¹ on the extension *g*³ which engages a longitudinal slot *h* in the shell. The bolt can only be thrown forward as much as the longitudinal slot *h* permits it, or, in other words, until the stop-pin on the bolt is ar-
 15 rested by the inner end of the slot in the shell.

The door-lock shown in Figs. 1-6 is inserted into a cylindrical mortise which is bored by means of an auger into the jamb
 20 of the door from the face-edge of the door inwardly, the shell abutting against the inner end of the mortise. After the bolt with its shell is driven into the mortise the spindle is inserted through the alined openings at the
 25 inner end of the shell so as to hold the lock firmly in position in the door-frame. The great facility by which the door-lock can be inserted in the door-jamb adapts the same especially for vestibule-doors or doors which
 30 lead into apartments or flats as it permits the quick insertion of the lock and its connection with the operating spindle. In some cases, however, it is necessary that the lock be opened from both sides both by
 35 the knob and by a key. This is especially necessary for interior doors. The modified construction which is shown in Figs. 7-11 is specially adapted for this purpose. In this case the knob-spindle *a*^x passes through the
 40 door and is provided with knobs at both ends, which are attached to the spindle in the usual manner. The pin *g* on the spindle operates for withdrawing the bolt in the same manner as in the lock shown in Figs. 1-6.

45 A friction spring *n* is applied at one end to the web of the bolt and at the other end to a transverse bushing *b*^x inserted into the web. The key is inserted through openings *o*, *o* at both sides of the door-frame, which openings
 50 are in line with an opening of any suitable shape in the bushing *b*^x which the key enters so that it can turn the bushing, which is normally held immovable by the spring *n*. The end of the bushing opposite to that to
 55 which the friction retaining spring is applied is provided with a recessed lug *l* that engages the lower inwardly bent end of a pin *p* which passes through a hole in the web of the bolt and through a longitudinal slot *s* at the
 60 outer end of the shell. When the pin is set into said slot *s* the bolt is prevented from being opened by either one of the door-knobs, but when said pin is lowered so as to be withdrawn within the shell, as shown in
 65 Fig. 11, the pin will not engage the slot in

the shell and the bolt will be free to swing back so as to open the door by the knob. The key-holes in this case serve only for permitting the insertion of the key to the inside
 70 and the release of the locking pin by means of the oscillating bushing so as to permit the drawing in of the bolt by the knob-spindle or the locking of the bolt so that the same cannot be drawn by the knob-spindle. The inner end of the bolt is provided with a stop-
 75 pin *h*¹ which engages a slot *h* in the shell in the same manner as in the door-lock shown in Figs. 1-6. The mortise in the door-casing is provided with a face-plate which has an opening for the bolt and with which the bolt
 80 interlocks in the usual manner. The modified door-lock is inserted in the same manner into the jamb of the door by boring a cylindrical hole with an auger for the required
 85 depth, then inserting the door-lock by the shell, then passing the knob-spindle through the alined openings in the rear-end of the shell, and then attaching the knobs to the ends of the knob-spindle in the usual man-
 90 ner. A reliable door-lock is thereby obtained, which can be easily applied by any one without requiring a special carpenter as for the Yale and other locks, and which can be furnished at a low price.

Having thus described my invention, I
 95 claim as new and desire to secure by Letters Patent:

1. In a door-lock, the combination of a cylindrical shell, a bolt movable longitudinally therein, a longitudinal extension on the
 100 lower part of the bolt, a lug projecting down from the shell above said extension, a spring above and independent of said extension interposed between said lug and the rear-end of the bolt, and a knob-spindle having means
 105 to engage said extension and withdraw the bolt against the action of said spring.

2. In a door-lock, the combination of a shell, a bolt guided longitudinally by the walls of said shell, a longitudinal extension
 110 at the inner end of the bolt and at the lower part thereof, a pin on said extension, a knob-spindle passing transversely through the shell and having means to engage said pin and withdraw the bolt, a lug projecting
 115 downward from the upper portion of the shell between the knob-spindle and bolt and above said extension, and a spring interposed between said lug and the rear-end of the bolt above said extension.
 120

3. In a door-lock, the combination of a cylindrical shell having a longitudinal slot, a bolt guided in said shell and having a longitudinal extension at its inner end, and a stop-
 125 pin on said extension traveling in said slot in the shell and limiting the movement of the bolt.

4. In a door-lock, the combination, with a sliding bolt and a knob to actuate the same, of a bushing mounted to turn in said bolt
 130

and having means to be engaged by the key, and means operated by said bushing to lock the bolt in position.

5 5. In a door-lock, the combination, with the shell, the sliding bolt and the knob-spindle for operating the latter, of an oscillating bushing mounted directly in and extending through the bolt and arranged to be turned by the key, and means operated by said
10 bushing to lock the bolt against complete withdrawal into the shell.

6. In a door-lock, the combination, with the bolt, of an oscillating bolt-locking bushing turning in the bolt, and a friction-spring
15 acting on the bushing to normally hold the same immovable.

7. In a door-lock, the combination, with the sliding bolt, of an oscillating bushing turnable in the bolt and having its axis ar-

ranged transversely with respect to the lat- 20
ter, said bushing having an opening extending therethrough arranged for engagement with a key from either side, and a locking pin for the bolt operated by said bushing.

8. In a door-lock, the combination, with 25
a shell having a longitudinal slot and a bolt guided in said shell, of a bushing turnable in the bolt by direct engagement with the key, and a pin operated by the bushing and slidable in the bolt into and out of the slot in the
30 shell.

In testimony, that I claim the foregoing as my invention, I have signed my name in presence of two subscribing witnesses.

GUSTAV A. HUBER.

Witnesses:

PAUL GOEPEL,

HENRY J. SUHRBIER.