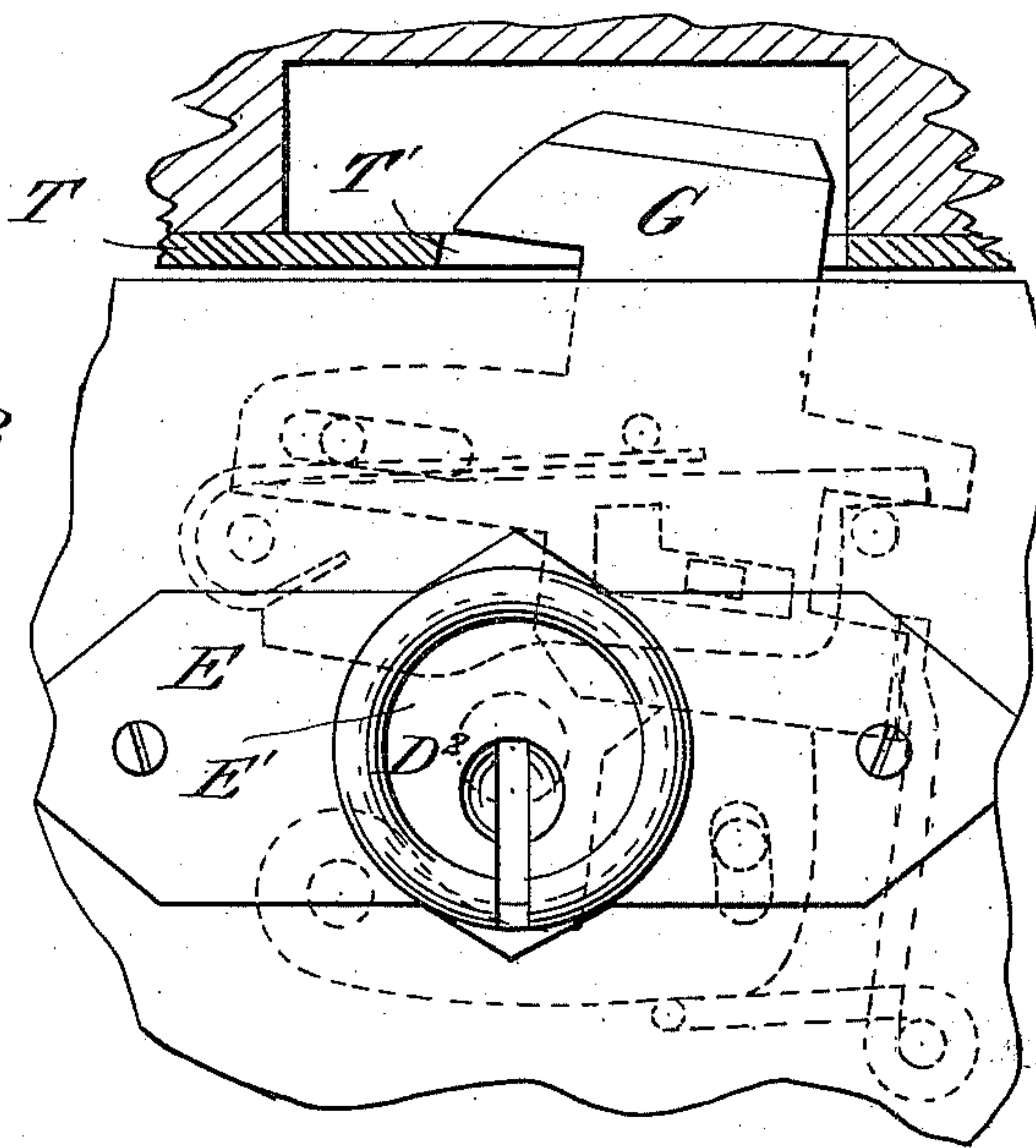
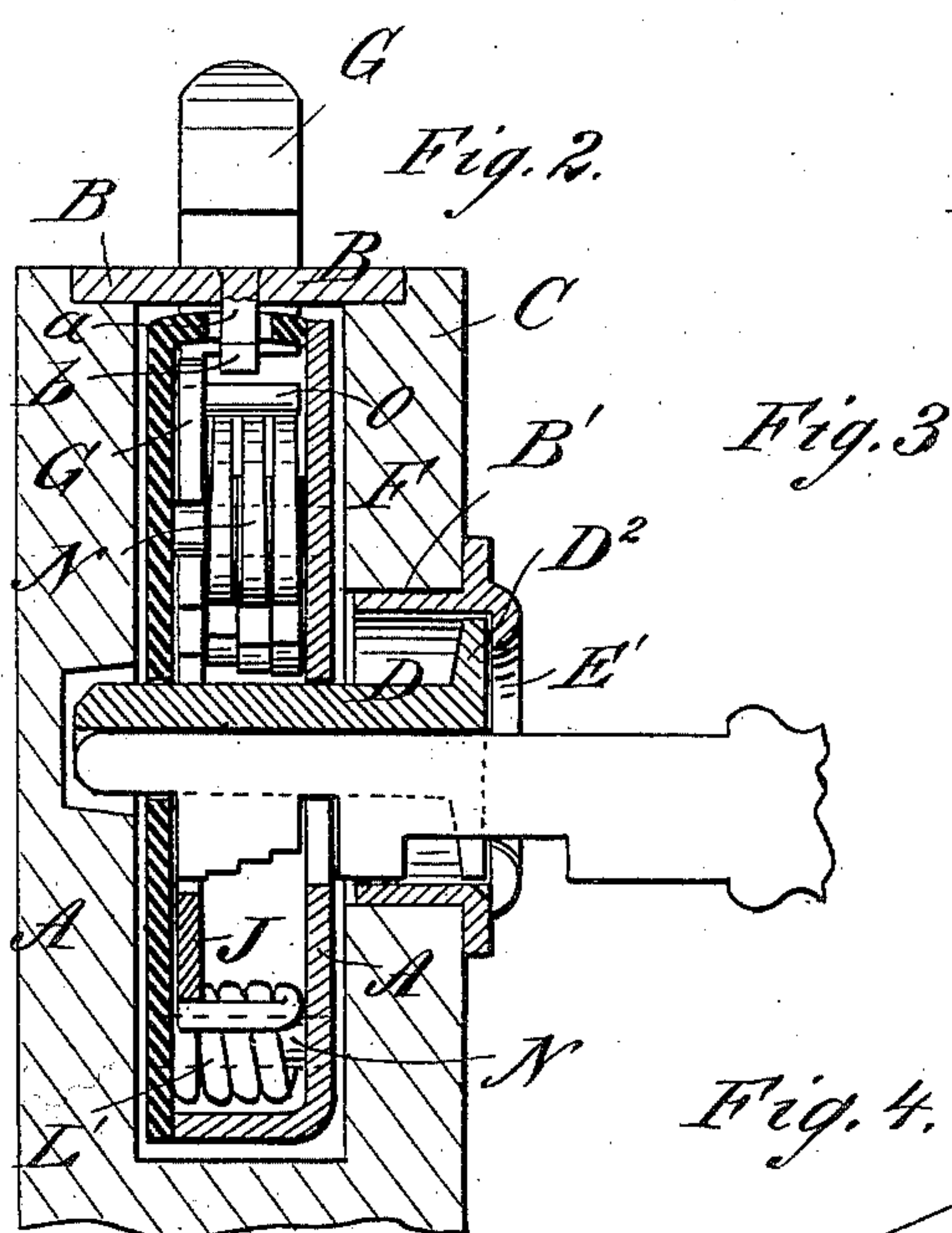
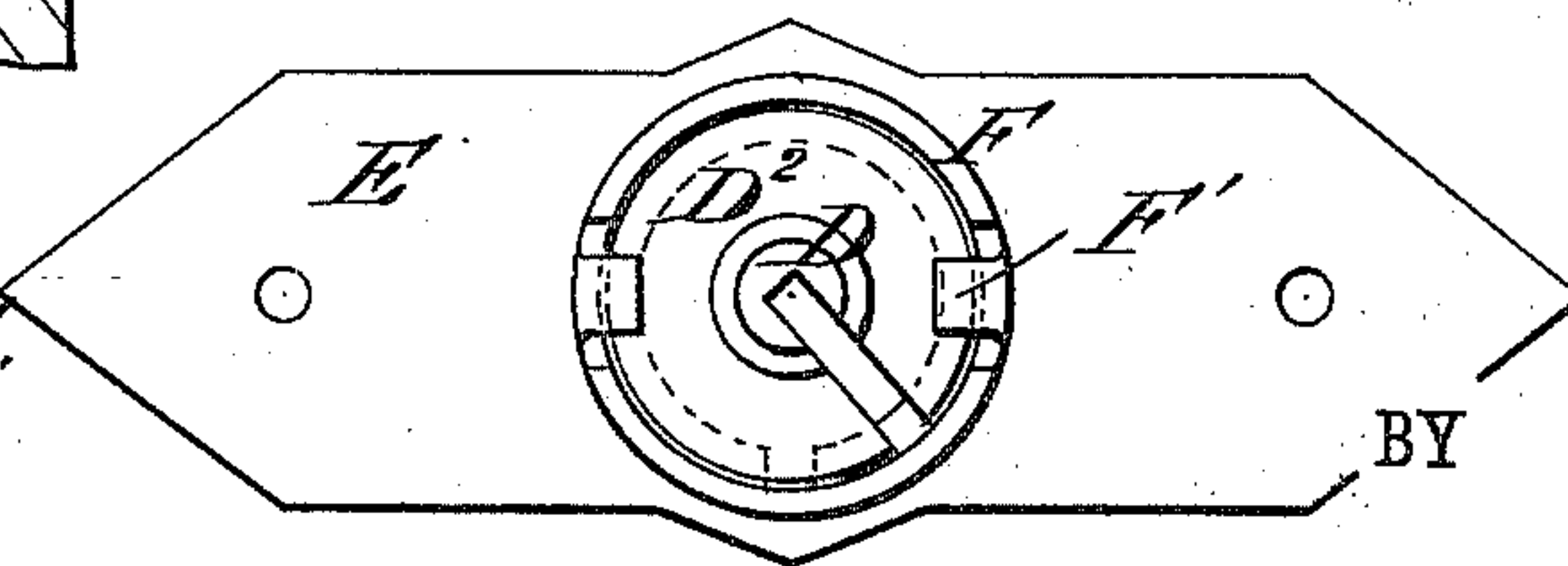


T. DONAHUE, J. ROCHE, W. T. GOODWIN & W. W. CONE.

No. 312,827.

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# UNITED STATES PATENT OFFICE.

THOMAS DONAHUE, JAMES ROCHE, WILLARD T. GOODWIN, AND WILLIAM W. CONE, OF TERRYVILLE, CONNECTICUT, ASSIGNORS TO THE EAGLE LOCK COMPANY, OF SAME PLACE.

## LOCK.

SPECIFICATION forming part of Letters Patent No. 312,827, dated February 24, 1885.

Application filed January 7, 1884. (Model.)

*To all whom it may concern:*

Be it known that we, THOMAS DONAHUE, JAMES ROCHE, WILLARD T. GOODWIN, and WILLIAM W. CONE, of Terryville, in the county of Litchfield and State of Connecticut, have invented a new and Improved Lock, of which the following is a full, clear, and exact description.

Heretofore cabinet-locks provided with a projecting tubular or barrel-shaped key-guide could not be mortised into desks, drawers, &c., as the projecting guide was made integral with the lock; and, further, it has been very difficult to fit a mortise-lock in such a manner that the key would not bind, and frequently locks had to be reset several times before they were held in the drawer or other article of furniture in such a position that the key could enter freely.

The object of our invention is to provide a new and improved mortise cabinet-lock having a key-guide which extends to the front of the desk-top, drawer, or other article; and a further object of our invention is to provide a lock which automatically adjusts itself in such a manner that the key can pass into the same without binding; and another object of our invention is to provide a lock which locks automatically when the desk-top is swung down, the drawer is closed, &c.

The invention consists in a mortise cabinet-lock provided with a removable key-guide.

The invention further consists in the combination, with a lock and its removable key-guide, of an escutcheon-plate, in which the said key-guide is held.

The invention further consists in a lock provided with a sliding bolt resting on a pivoted L-shaped piece, on the upper edge of which L-shaped piece the bolt is adapted to slide, whereby the bolt can be swung downward and then moved laterally.

The invention also consists in numerous parts and details and various combinations of the same, as will be fully described and set forth hereinafter.

Reference is to be had to the accompanying drawings, forming part of this specification,

in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a face view of one of our improved locks, the top plate being removed and parts being broken out and others shown in section, the lock being shown in place. Fig. 2 is a cross-sectional elevation of the lock and part of the piece of furniture in which it is held. Fig. 3 is a front view of the escutcheon and of part of the desk or other piece of furniture in which the lock is held, parts being broken out and others shown in section. Fig. 4 is an inside view of the escutcheon of the lock.

The lock-casing A is held in a mortise in a drawer or door in the bottom edge of a desk-top, or in any other suitable part of any other piece of furniture, in the usual manner, the face-plate or selvage B of the casing being flush with the drawer, desk-top, or other article of furniture, as shown. Two rivets, *a*, project downward from the face-plate or selvage B through the top of the casing, which rivets are each provided with a longitudinal head, *b*, on the under side, the said heads being parallel with the selvage, and, on the upper edges of the heads, the top A' of the lock-casing rests. The rivets *a* are of such length, and are fastened to the face-plate or selvage B in such a manner, that the top plate, A', of the casing is not drawn up closely to the under side of the selvage—that is, the lock-casing is suspended from the selvage by means of the headed studs or rivets *a*, and can swing slightly in the direction of the longitudinal axis of the lock-casing on the said rivets. To permit of such swinging movement of the casing, the heads of the rivets are made parallel with the selvage or face plate and at right angles to the swinging movement of the casing. A hole, B', is bored from the front of the top or drawer C back to the mortise for receiving the lock. The key-guide consists of a rod, D, provided with a longitudinal groove, D', through which the key can be passed. On the outer end of the key-guide a disk, D<sup>2</sup>, is formed. On the rear side of the escutcheon-plate E, provided with



a central aperture, E', a short tube, F, is formed around the aperture E', which tube F fits in the aperture B' in the desk-front. At diametrically-opposite points of the tube F vertical cuts are made in the same, which form two prongs, F', which are bent over the inner surface of the disk D<sup>2</sup>, on the outer end of the key-guide, for the purpose of holding the key-guide to the escutcheon-plate, and at the same time permitting the said key-guide to revolve in the said escutcheon-plate. The lock-casing A is provided in its front and rear with apertures for receiving the key-guide.

To fit the lock in a desk or other piece of furniture, the lock is simply placed in its mortise and the key-guide is placed in the hole B', the inner end of the key-guide passing into the front aperture of the lock-casing or entirely through the said lock-casing, as may be desired.

As the key-guide is made detachable from the lock, the lock can readily be mortised, which could not be done if the key-guide were permanently attached to the casing. As has been stated before, the casing is suspended from the selvage or face-plate B, and always hangs vertically. If the key-guide is passed through the lock-casing, it will hold the said casing in such a position that the key-guide will be at right angles to the casing. If the lock-casing were secured rigidly to the selvage, the casing would have to be adjusted very finely in its mortise, so that the key-guide would be at right angles to the casing; but if the casing is pivoted to the selvage or suspended from the same, as described, the casing is adjusted automatically as soon as the key-guide is introduced, and is held in place by the key-guide. If the key-guide is not exactly at right-angles to the casing, the key introduced through the key-guide will bind on the lock, thereby making it difficult to throw the bolt, and causing the wear of parts of the lock, as well as of the edges of the key. A catch-bolt, G, having a beveled end projects through a slot in the face-plate or selvage B, which slot is of such length that the bolt can move in the direction of the length of the selvage. The bolt has a longitudinal slot, g, through which a pin, H, passes into the lock-casing, and the said bolt is also provided with a shoulder, H', against which the bit of the key can act to throw the bolt. The bottom edge of that side of the bolt G opposite the one provided with the slot g rests upon an L-shaped plate, J, pivoted to the lock-casing, which plate J is provided with a slightly-curved upwardly-projecting slot, h, through which a pin, K, passes into the side of the lock-casing. The bolt G is adapted to slide on the upper end of the said L-shaped piece or plate J. A coil-spring, L, provided with two projecting ends is held on a pin, M, of the casing, the end L' of the said spring acting on the under edge of the L-shaped plate J and pressing the said

plate upward against the bottom of the bolt G, and the upper end, L<sup>2</sup>, of the said spring pressing against the end of the bolt G and forcing the same in the direction of the arrow  $\alpha'$ . On the lock-casing a series of tumblers, N, are pivoted, each of which is provided with a spring, N', resting against the stud O, whereby the said tumblers will be pressed downward. The ends of the tumblers rest on a pin, P, projecting from the lock-casing. The tumblers are each provided with an L-shaped slot, R, the upwardly-projecting shank of which is a short one. A stud, S, projecting from the bolt G, passes through the upwardly-projecting shanks of the slots R. A catch-plate, T, is provided with a longitudinal slot, T', which slot has that end that comes in contact with the beveled end of the bolt G beveled.

The operation is as follows: If the beveled edge of the catch-plate T comes in contact with the beveled end of the bolt G, it first presses the bolt downward, and the bolt swings the plate or piece J downward until the stud K rests against the upper end of the slot h in the said piece J. The plate or piece J can then move no farther. By the downward movement of the bolt the stud S is moved out of the short shanks of the L-shaped slots R, and the bottom of the said stud rests on the inclined bottom edges of the long shanks of the said slots R. If more pressure is brought on the bolt, the bolt will slide downward diagonally to the right, the bolt sliding on the upper edge of the plate J and the stud S sliding on the inclined bottoms of the slots R in the tumblers. The pin P, on which the ends of the tumblers rest, prevents the stud S from swinging the tumblers downward. When the end of the slot T' in the catch-plate T has passed the bottom of the bevel formed on the end of the catch-bolt G, the pressure on the bolt will be relieved and the end L<sup>2</sup> of the spring will press the bolt to the left until the stud S is at the short shanks of the slots R, and then the end L' of the spring L will press the plate J and the bolt upward. By swinging down that part containing the catch-plate T on the bolt, or by swinging the bolt down on that part containing the catch-plate T, the lock is locked automatically, and in being locked automatically the tumblers remain stationary, and the bolt first swings downward vertically and then slides diagonally. If the lock is unlocked by means of the key, the key raises the tumblers and then swings the bolt in the inverse direction of the arrow  $\alpha'$  in the usual manner.

We take special notice of the fact that the tumblers are raised when the lock is unlocked by means of the key, and that the tumblers remain stationary and the bolt is pressed down when the lock is closed automatically.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. The combination, with a mortise cabinet



or drawer lock provided with apertures in its rear and front, of a removable key-guide fitting loosely in said apertures, and having a smooth outer surface throughout its entire length, and provided with a longitudinal slot for the key, substantially as herein shown and described, whereby provision is made for adjusting the lock on the key-guide to adapt the same to different thicknesses of wood, as set forth.

2. The combination, with a mortise cabinet or drawer lock, of a removable cylindrical key-guide having a longitudinal slot for receiving and guiding the key, and provided at its front end with a head, and an escutcheon-plate provided with an inwardly-projecting neck in which the head of the key-guide revolves freely, the inner end of the key-guide projecting from the back of the lock, substantially as described.

3. The combination, with a mortise cabinet or drawer lock provided with apertures in its rear and front, and suspended in the mortise from the selvage, of a removable key-guide fitting loosely in said apertures, and having a smooth outer surface throughout its entire length, and provided with a longitudinal slot for the key, substantially as herein shown and described, whereby provision is made for allowing the lock-casing to adjust itself in the mortise and on the key-guide, as set forth.

4. The combination, with a mortise cabinet-desk or drawer lock, of a key-guide having a longitudinal groove in the stem, and having a disk on its outer end, an escutcheon-plate provided with a tube for receiving the said disk, and of prongs formed of the said tube and

pressed over the disk on the key-guide, substantially as herein shown and described.

5. In a lock, the combination, with a sliding catch-bolt, of a pivoted L-shaped piece or plate adapted to swing toward and from the outer edge of the casing, and on which piece the bolt is adapted to slide in the direction of its length, substantially as herein shown and described.

6. In a lock, the combination, with a sliding catch-bolt, of a pivoted L-shaped piece or plate on which the catch-bolt rests, tumblers pivoted on the lock-casing and resting on a stud of the lock, and of a stud projecting through the L-shaped slots in the tumblers, substantially as herein shown and described.

7. In a lock, the combination, with a sliding catch-bolt provided with a longitudinal slot, of a pivoted L-shaped piece provided with an upwardly-projecting slot, through which slots in the bolt and L-shaped piece pins project from the lock-casing, tumblers pivoted on the lock-casing and provided with L-shaped slots, a pin projecting from the casing, on which pin the tumblers rest, and of a pin or stud projecting from the bolt through the L-shaped slots in the tumblers, and of springs acting on the bolt and on the L-shaped piece, substantially as herein shown and described.

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