

(No Model.)

2 Sheets—Sheet 1.

T. BRAND.
LOCK.

No. 596,473.

Patented Jan. 4, 1898.

Fig. 1. 3

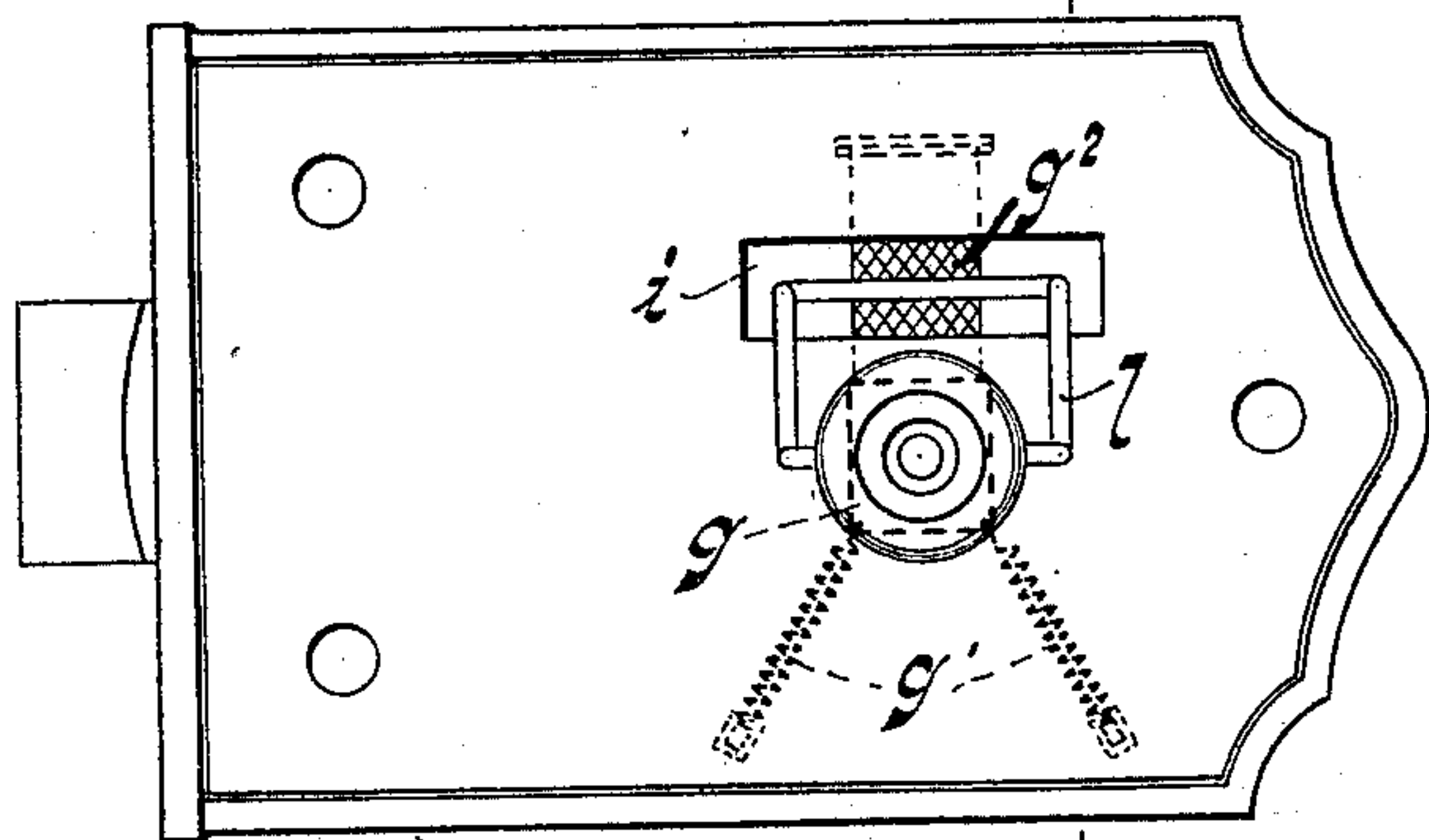


Fig. 2.

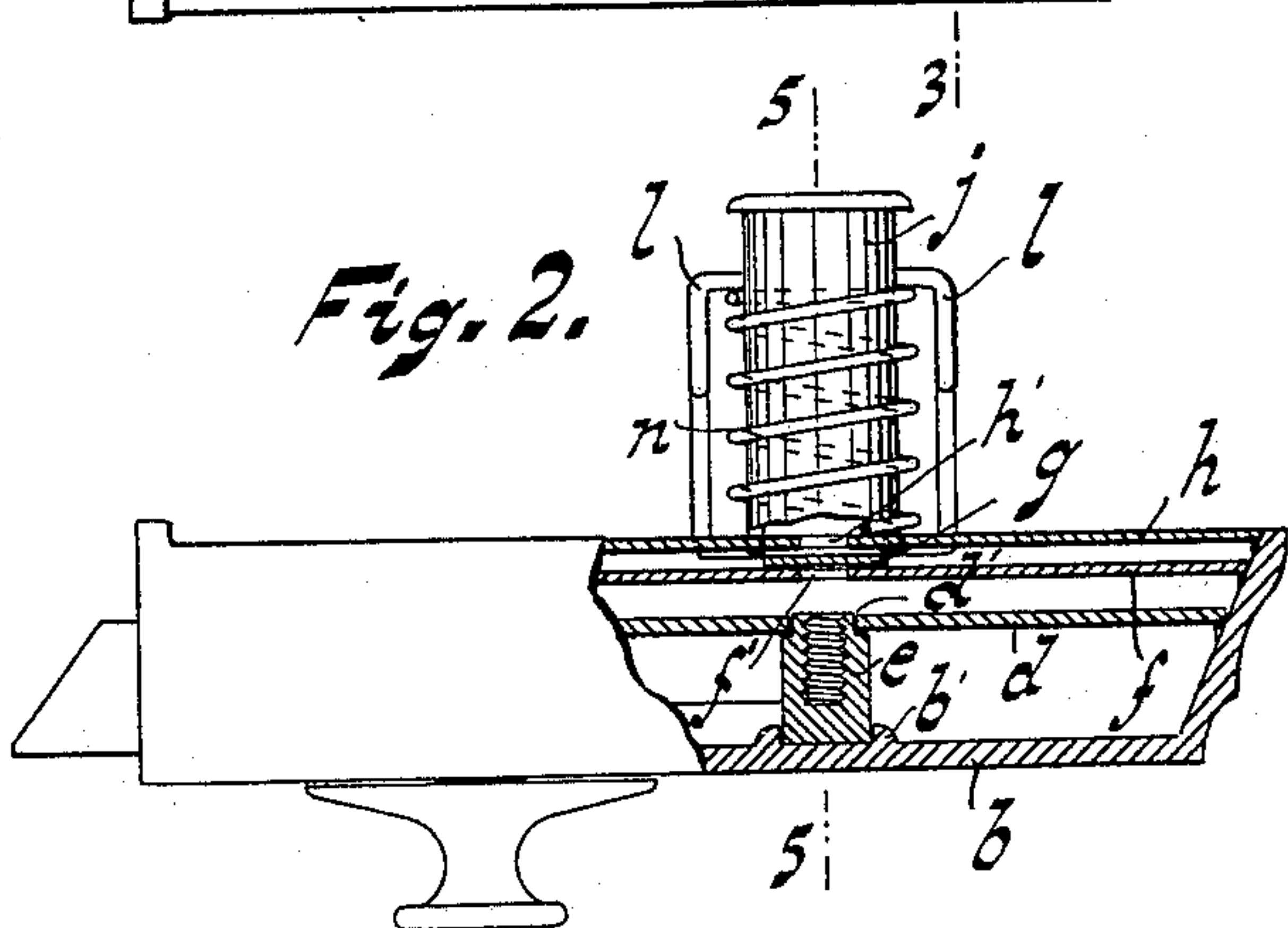
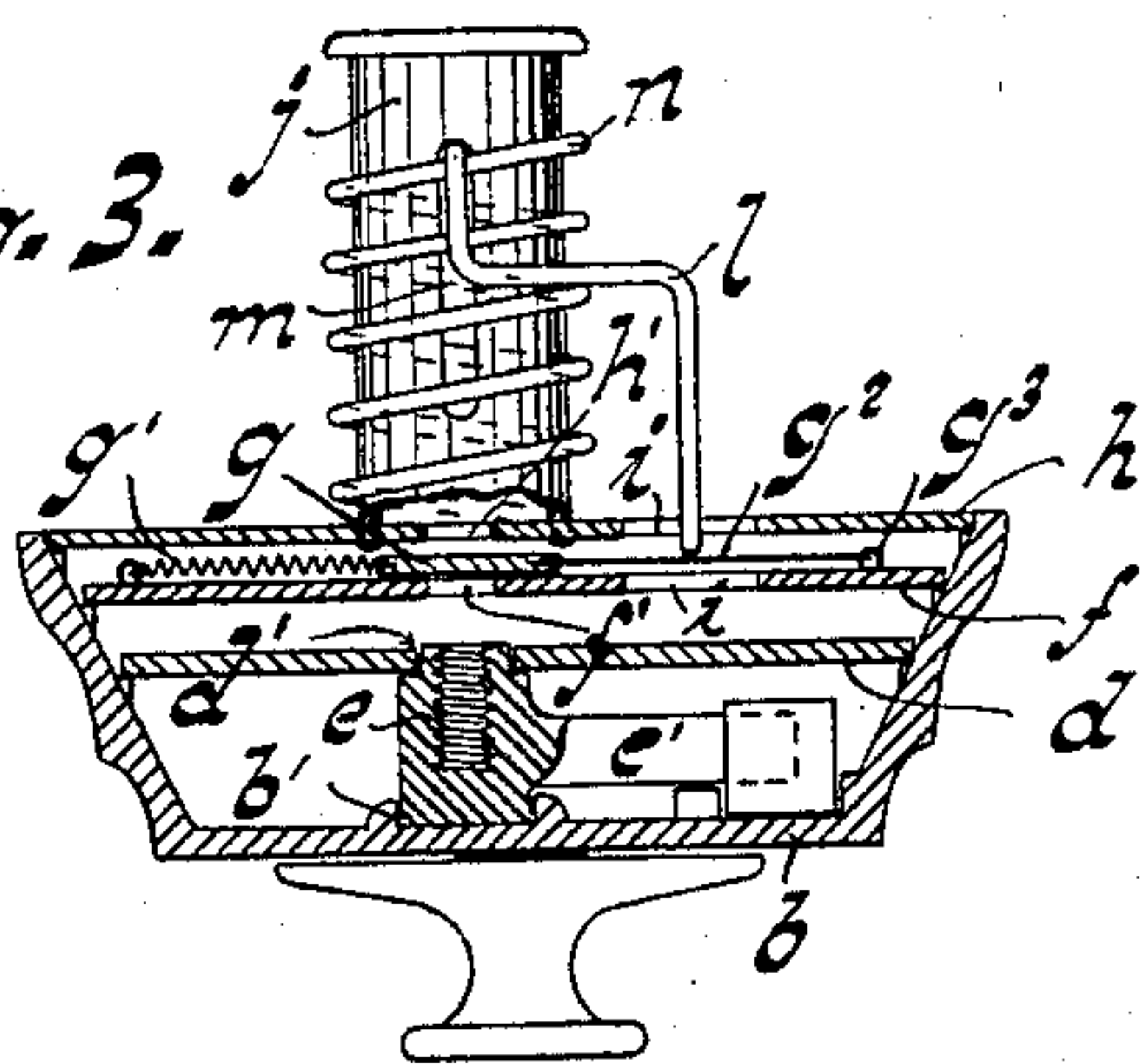


Fig. 3.



Witnesses

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& Mathews, his Attorneys.

(No Model.)

2 Sheets—Sheet 2.

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Fig. 4.

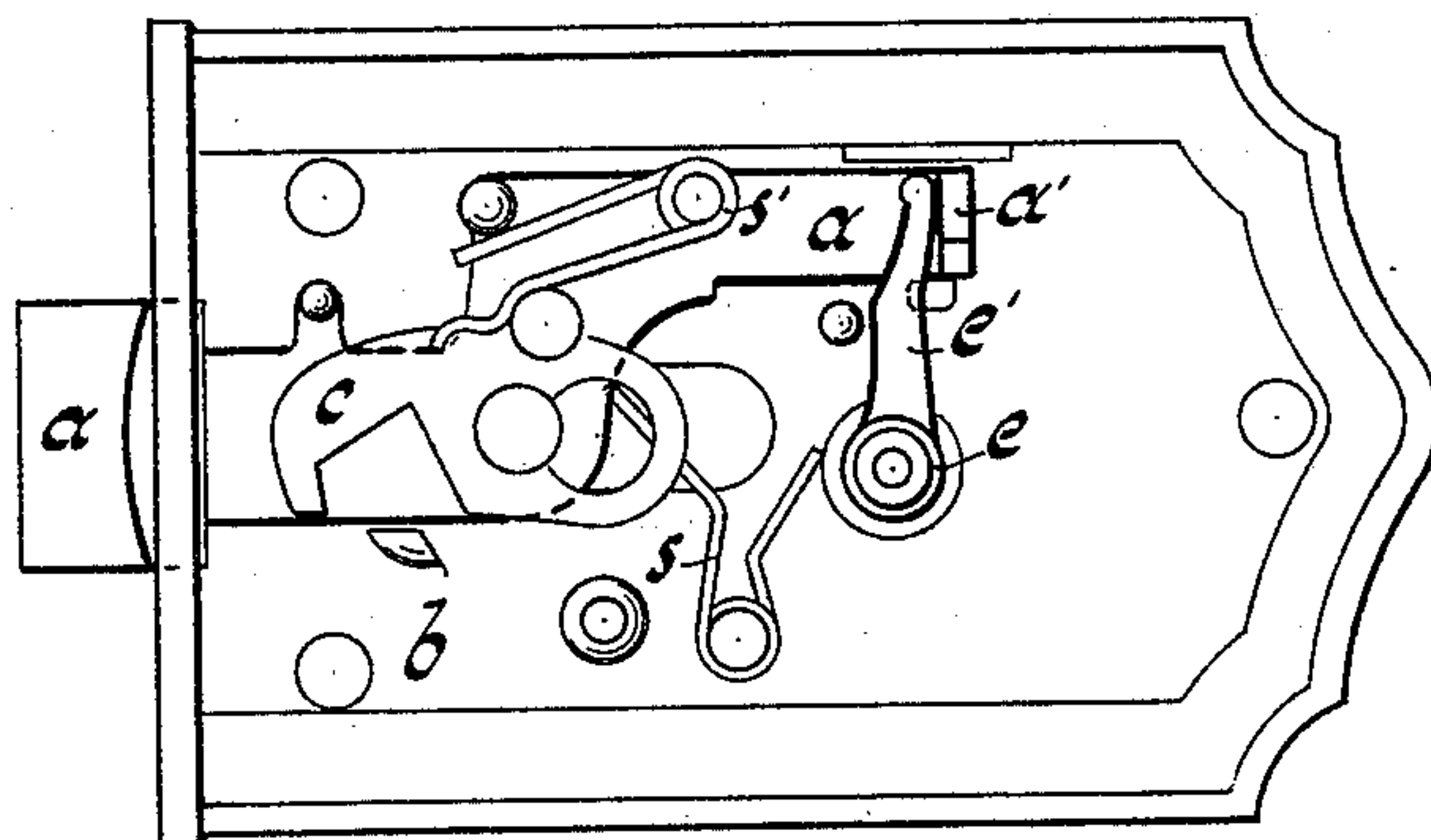


Fig. 5.

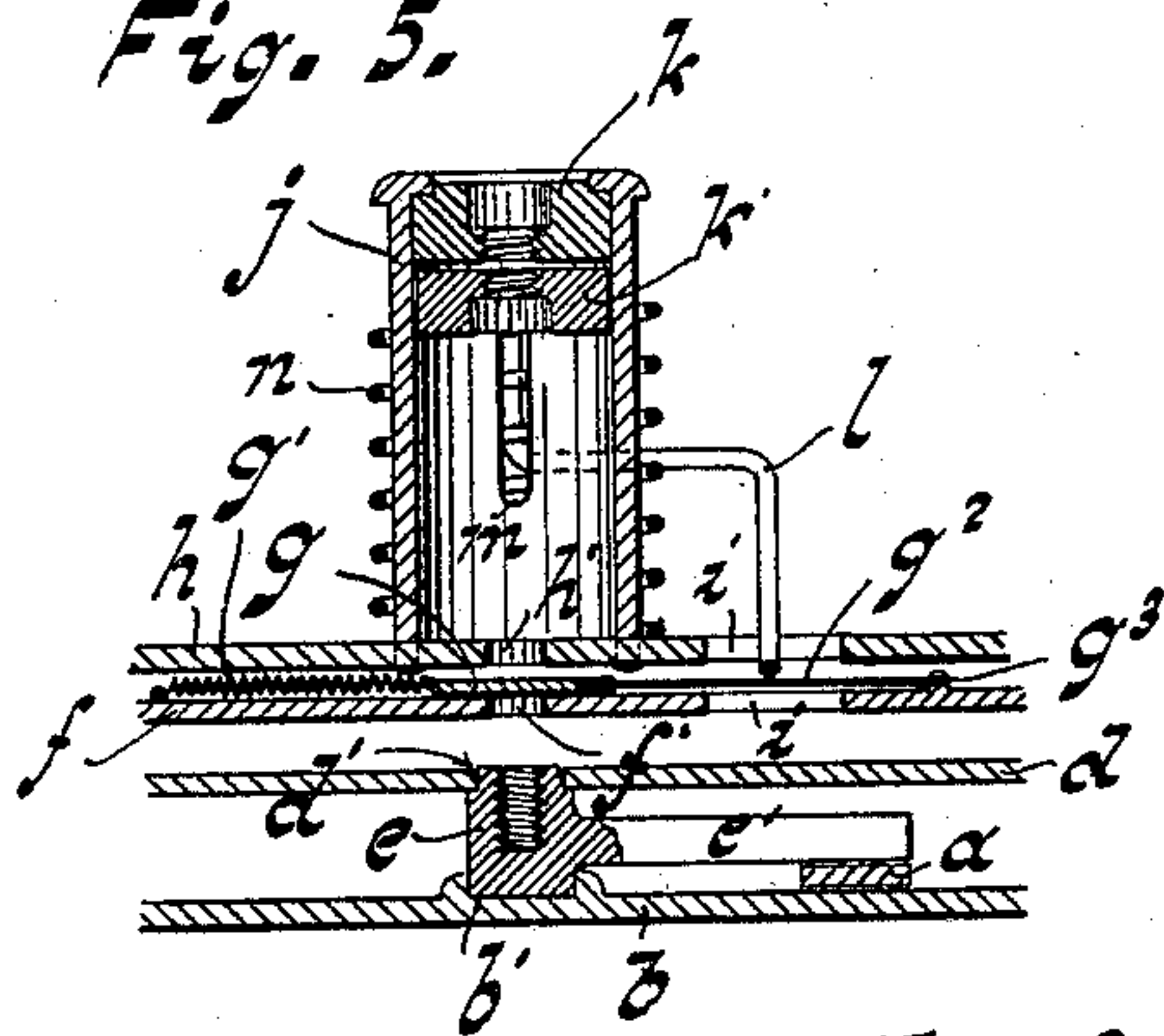


Fig. 6.

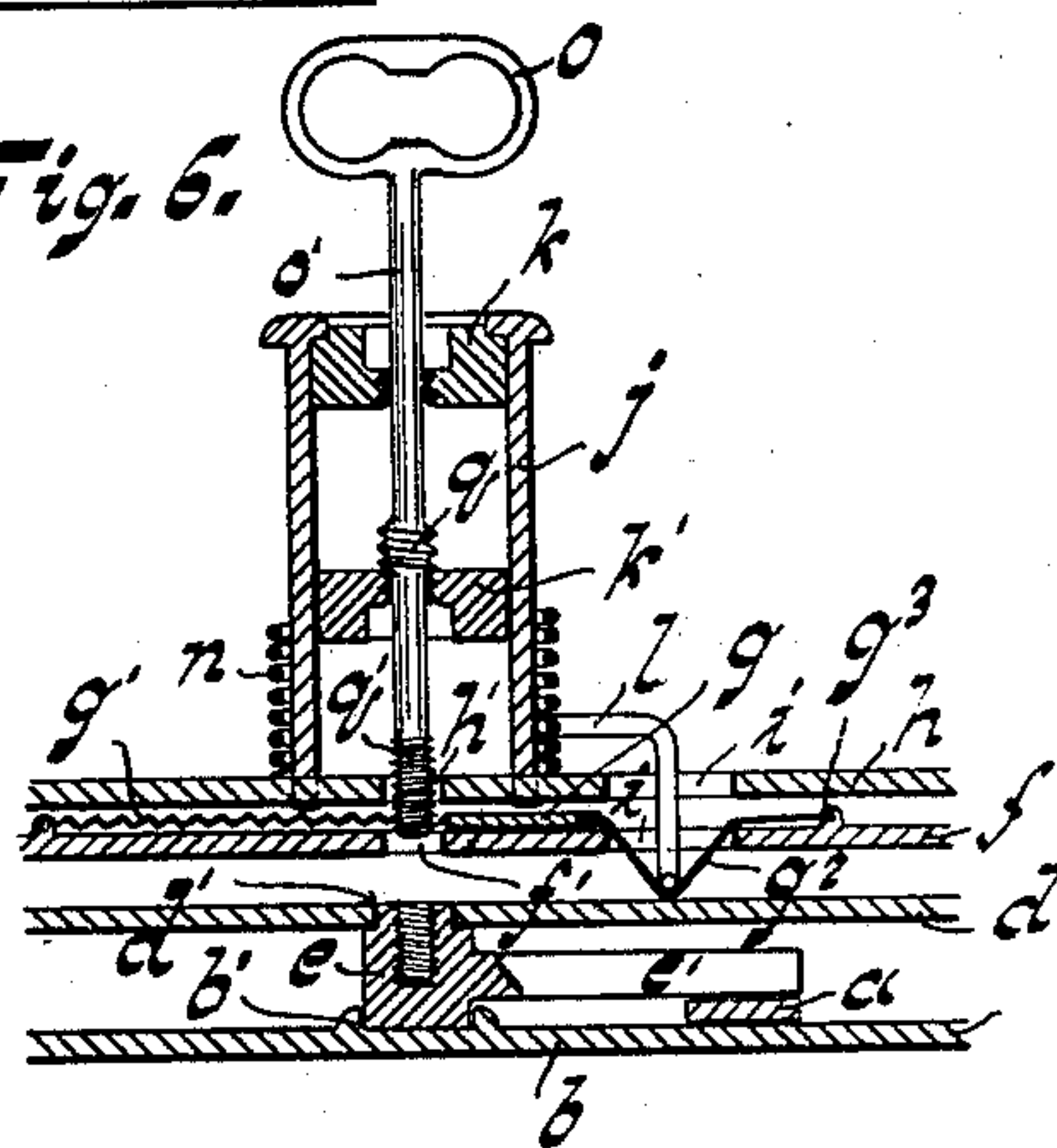


Fig. 9.

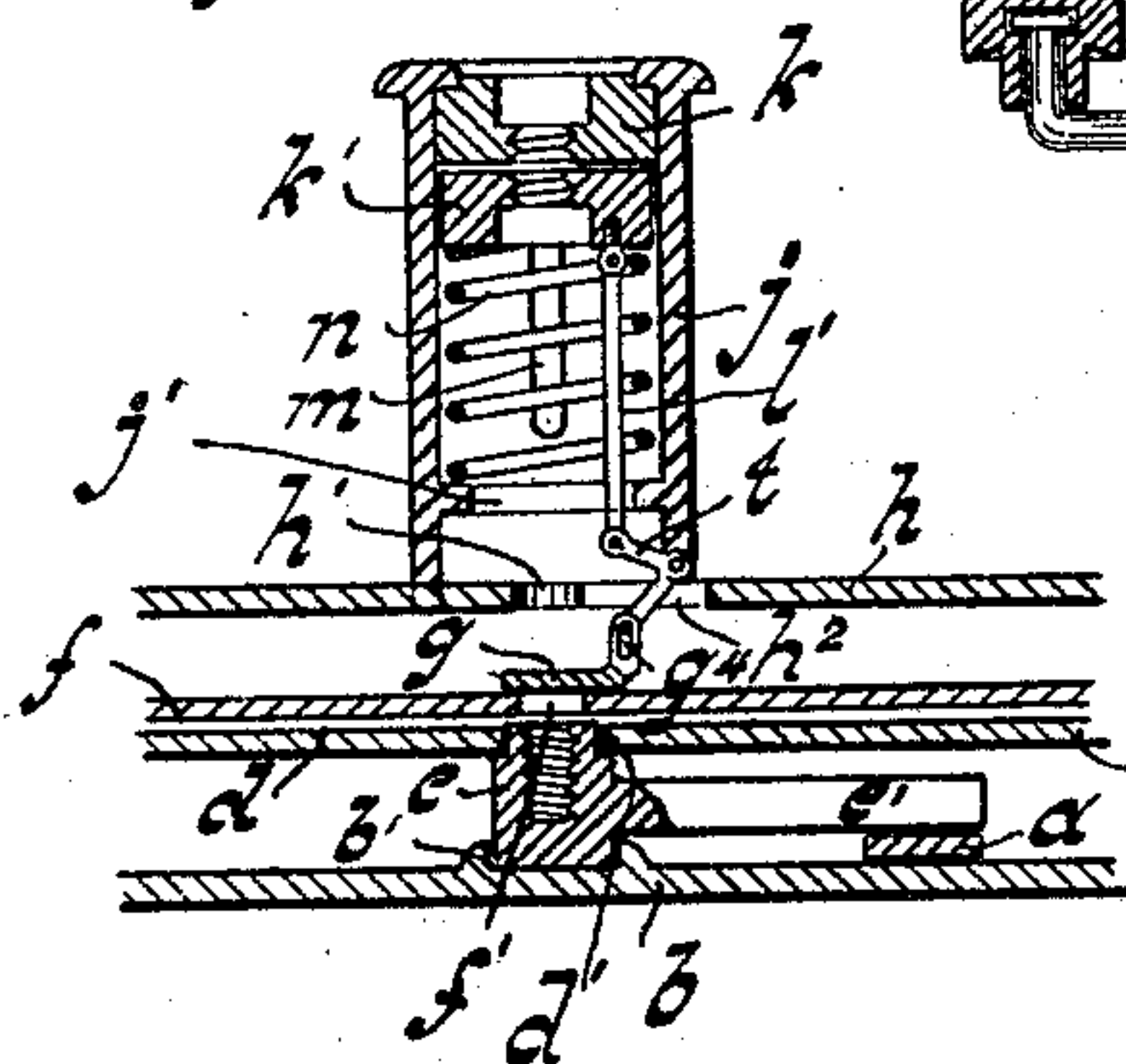


Fig. 8.

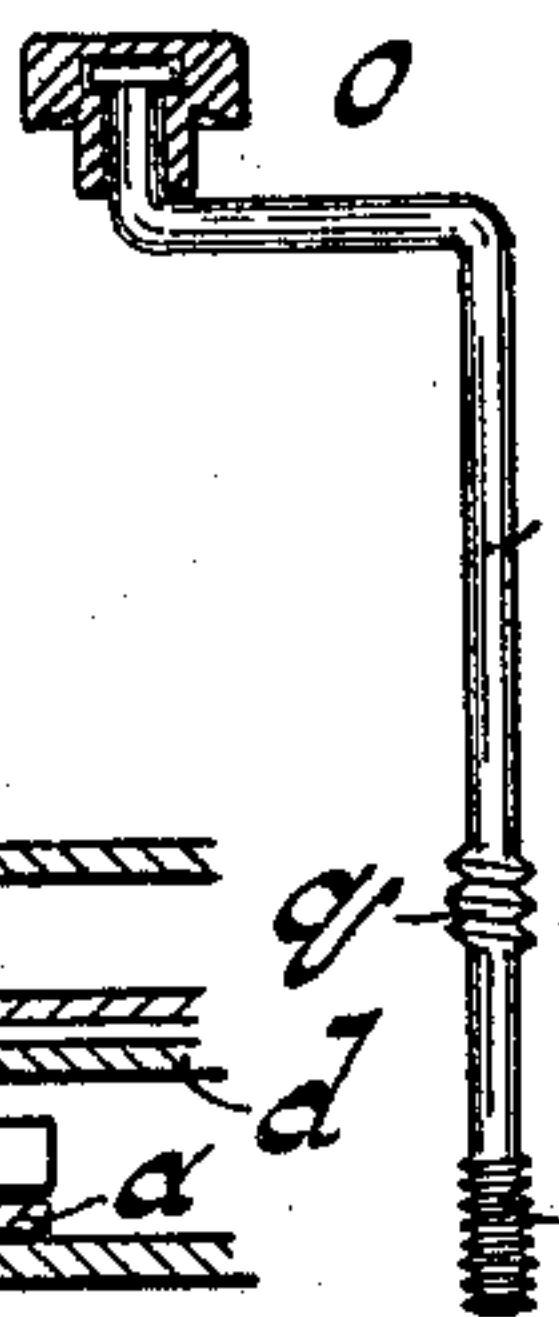
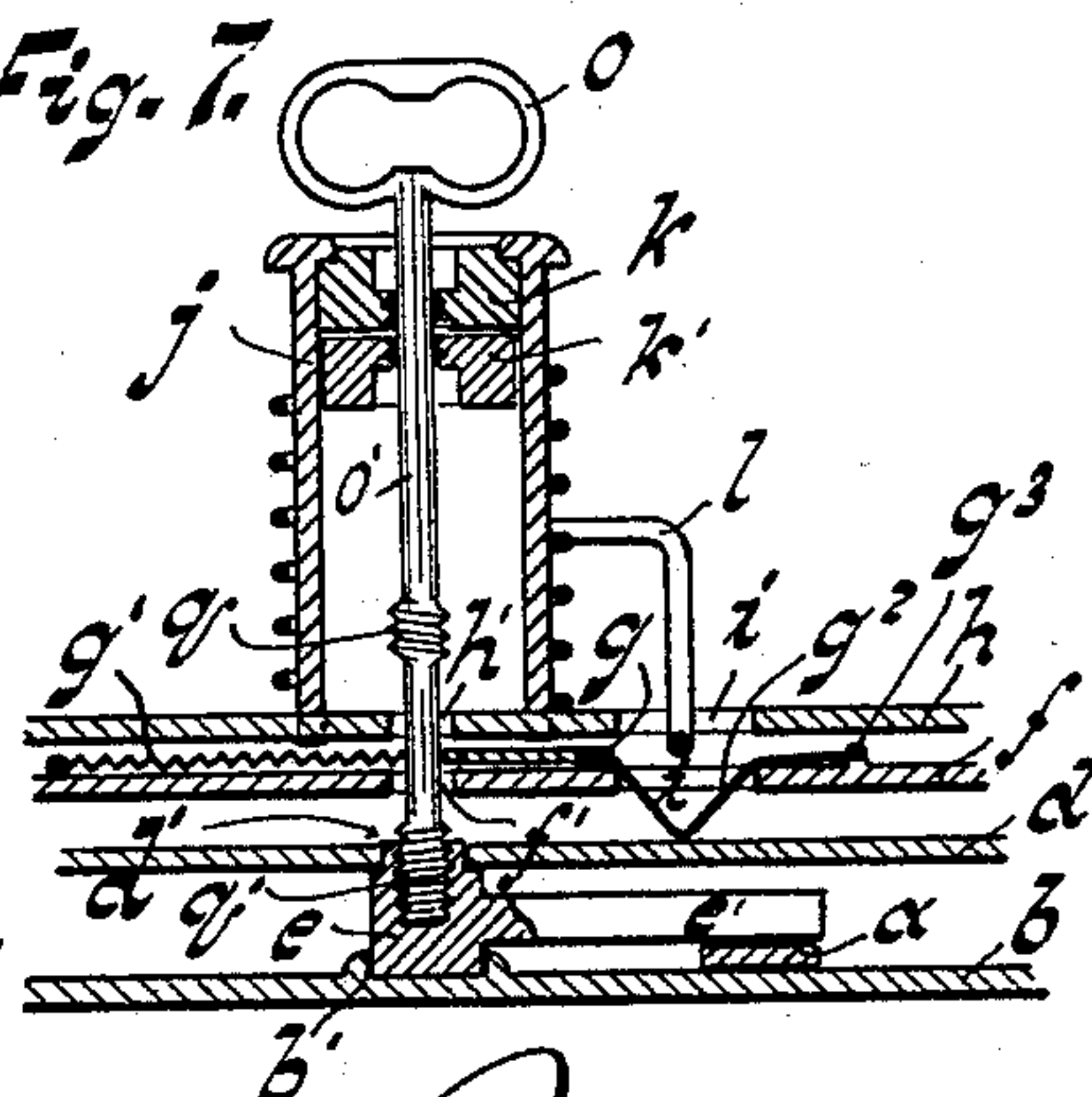


Fig. 7.



Witnesses

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UNITED STATES PATENT OFFICE.

THEODORE BRAND, OF BROOKLYN, NEW YORK, ASSIGNOR OF ONE-HALF
TO MAX FEHRMANN, OF SAME PLACE.

LOCK.

SPECIFICATION forming part of Letters Patent No. 596,473, dated January 4, 1898.

Application filed March 5, 1897. Serial No. 626,041. (No model.)

To all whom it may concern:

Be it known that I, THEODORE BRAND, a citizen of the United States, and a resident of Brooklyn, county of Kings, and State of New York, have invented certain new and useful Improvements in Locks, of which the following is a full, clear, and exact specification, reference being had to the accompanying drawings, wherein—

Figure 1 is a top view of my improved lock. Fig. 2 is a side elevation, partly a section thereof; Fig. 3, a transversal section on lines 3 3, indicated in Fig. 1. Fig. 4 is a plan of the lock; Fig. 5, a transversal section on line 5 5, indicated in Fig. 2. Fig. 6 is a similar view showing the position of the parts of the lock after the key passed through the first stage. Fig. 7 is a similar view showing the position of the several parts of the lock with the key inserted in the lock. Fig. 8 is an elevation of the key, made in the shape of a crank. Fig. 9 is a sectional view similar to that in Fig. 5, showing modified arrangements of the parts in the keyway.

My invention relates to locks and locking devices; and it consists of a safety attachment to a lock having the purpose to prevent the picking of the lock by means of a skeleton key.

My invention is adaptable to any kind of a lock, whether a spring-bolt or latch or an ordinary door-lock or any lock of such varieties as are used for safes, desks, or safe-closets.

In the accompanying drawings I have shown my invention adapted to spring-locks such as are generally used on doors. The mechanism of the lock consists of bolt *a*, springs *s* and *s'*, catcher *c*, and case *b*. These parts are those of the ordinary pattern and construction and are not claimed as parts of my invention.

The safety attachment claimed as my invention consists of the following: Oppositely to keyhole *f'* and *h'* I provide a circular flange *b'* in the case of the lock and a circular hole *d'* in corresponding position in the plate *d*, covering the case *b* of the lock. In this circular flange *b'* is set a plug *e*, having its upper end recessed and snugly fitted into the hole *d'* of the plate *d*. To this plug *e* is secured (or produced in one piece therewith)

the arm *e'*, which is shaped according to the construction of the lock and serves the same purpose as the ward of a key. It may be made in the shape as shown in Fig. 4 of the drawings and adapted to engage the upwardly-bent end *a'* of the bolt *a* or it may be provided with clefts or grooves, as the construction of the lock may require.

Above the plate *d*, covering the mechanism of the lock, is arranged a second plate *f*, which is provided with a circular keyhole *f'* in concentrical position with the hole *d'*. This hole *f'* is normally covered by the sliding plate *g*, held in its position above the hole *f'* by springs *g'*, and by a flexible wire fabric *g²*, secured to the plate *f* by pin *g³*. Plate *f* and also plate *h*, surmounting it, are each provided with a slot *i*, as shown in Fig. 1.

Upon the plate *h*, which is also provided with a circular hole *h'* in corresponding position above the holes *f'* and *d'* in plates *f* and *d*, respectively, is set the tubular keyway *j* concentrically with the hole *h'*, and in it are provided the two blocks *k* and *k'*. Block *k* is stationary, preferably soldered in the mouth of the keyway, whereas block *k'* slides therein.

The ends of the frame *l* pass through the slots *m*, provided on both sides of the tubular keyway *j*, and are secured to the sliding block *k'*. Spiral spring *n*, wound around the keyway or set inside thereof, as shown in Fig. 9, supports the sliding block *k'* and also the frame *l* in their normal position.

Blocks *k* and *k'* and also plug *e* are provided with screw-threads, preferably of different pitch and grade and arranged changing from right to left, or vice versa. These screw-threads in the blocks *k* and *k'* and plug *e* may be varied almost indefinitely; also, additional sliding blocks, as *k*, may be set in the keyway or between the plates *d* and *f*, as may be required for greater complication of the combined safeguard.

The key *o* to be used for the operation of this lock consists of a slender stem *o'*, provided with screw-threads *q* and *q'*, (and with as many more as may be necessary for the purpose of a combination,) arranged in corresponding order with the blocks *k* and *k'*, and with screw-threads *q'* on the end of the stem of the key corresponding with that of

the plug *e*. The key may be in the shape of an ordinary key, as shown in Figs. 6 and 7, or it may be in the shape of a crank, as shown in Fig. 8.

5 In the construction shown in the drawings the screw-thread in the blocks *k* and *k'* runs from left to right and the screw-thread in the plug *e* from right to left. This is the simplest arrangement of a combination.

10 To insert the key in the lock protected by this combination, it is necessary, first, to screw the thread *q* through the stationary block *k*. Then by pushing the key as far as it will go the block *k'* is pressed downward, as shown
15 in Fig. 6, and while held so in suppressed position the key is drilled through this block. With the sliding block *k'* the frame *l* is moved downward and, acting on the flexible band *g*², draws the plate *g* from its normal position,
20 thereby freeing hole *f'* for the key to slide into it when screwed through the block *k'*. Screw-thread *q'* on the end of the stem of the key is then screwed into the plug *e*, and when their connection is sufficiently rigid the key will
25 turn the plug and move the arm *e'* as may be required to operate the lock.

The access to the keyhole may be covered by a plate of any construction or by a screw-block. The number of the blocks in the key-
30 way and the arrangement of the different screw-threads may be varied, as already explained above. The combination described there and shown in the drawings is only one example of the application of the principle of
35 my invention.

The construction shown in Fig. 9 is modified, inasmuch as the spring *n* is set inside of the keyway directly underneath the block *k'* and between it and the flange *j'*, and in sub-
40 stitution for the flexible band *g*² a bell-crank *t* is pivoted to the keyway. One arm of this bell-crank is connected by rod *l'* to block *k'* and the other to an eye *g*⁴, attached to plate *g*. This arm passes through slot *h*²,
45 provided in plate *h*, transmitting to the plate *g* the motion of the block *k'*, connected to its other arm. In this construction springs *g'* are omitted. In the same manner spring *n* might
50 also be dispensed with if the springs *g'* are restored and made sufficiently strong to return block *k'* to its normal position.

Having thus fully described the principle of my invention and the manner of its application for the purpose stated, I claim as my

invention and desire to secure by Letters Patent— 55

1. A safety attachment to a lock comprising a plug set turnably in the lock and having an arm adapted to operate the bolt, a slide, covering the aperture for the passage 60 of the key into the lock, springs holding the slide in its normal position and returning it thereto automatically, a plate set above the slide and provided with an aperture for the passage of the key in corresponding position, 65 a tubular keyway secured to this plate, a stationary block provided with a screw-threaded hole, and secured in the mouth of the keyway, a sliding block (or blocks) provided with screw-threaded apertures for the passage of 70 the key, set in the keyway between the stationary block and the plate, a spiral spring supporting this block or blocks in normal position and means for moving the slide from its normal position by pushing the sliding 75 block downward.

2. The combination with a lock, provided with a plug set turnably in the lock and having an arm adapted to operate the bolt, a slide, covering the aperture for the passage 80 of the key into the lock, springs holding the slide in its normal position and returning it thereto automatically, a plate set above the slide and provided with an aperture for the passage of the key in corresponding position, 85 a tubular keyway secured to this plate, a stationary block provided with a screw-threaded hole, and secured in the mouth of the keyway, a sliding block (or blocks) provided with screw-threaded apertures for the passage of 90 the key, set in the keyway between the stationary block and the plate, a spiral spring supporting this block or blocks in normal position and means for moving the slide from its normal position by pushing the sliding 95 block downward, of a key provided with screw-threads of different sizes, pitch and grade, corresponding with the size, pitch and grade of the screw-threads provided in the blocks and in the plug set in the lock. 100

In witness that I claim the improvements described in the foregoing specification I have signed my name in the presence of two subscribing witnesses.

THEODORE BRAND.

Witnesses:

A. W. KURZ,
HARRY CALHOUN.