

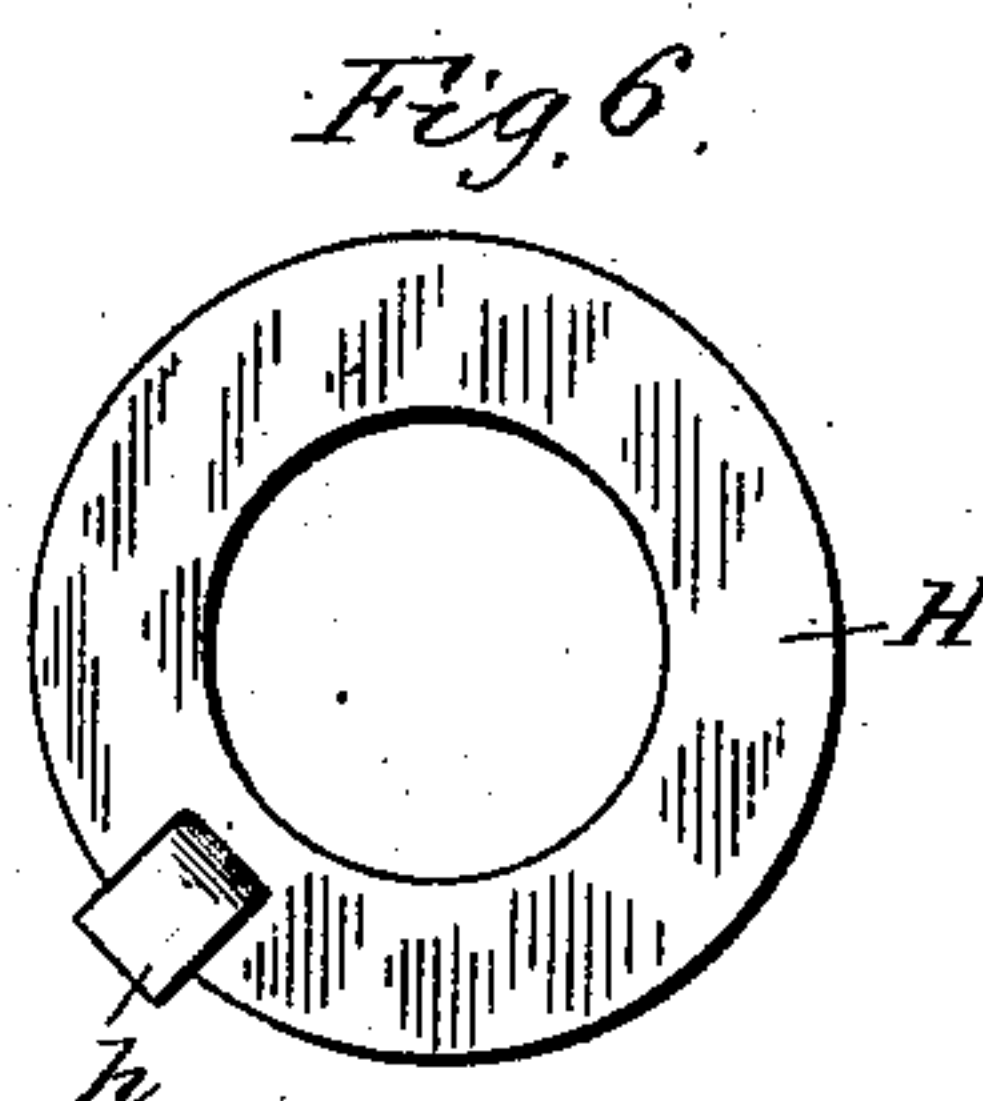
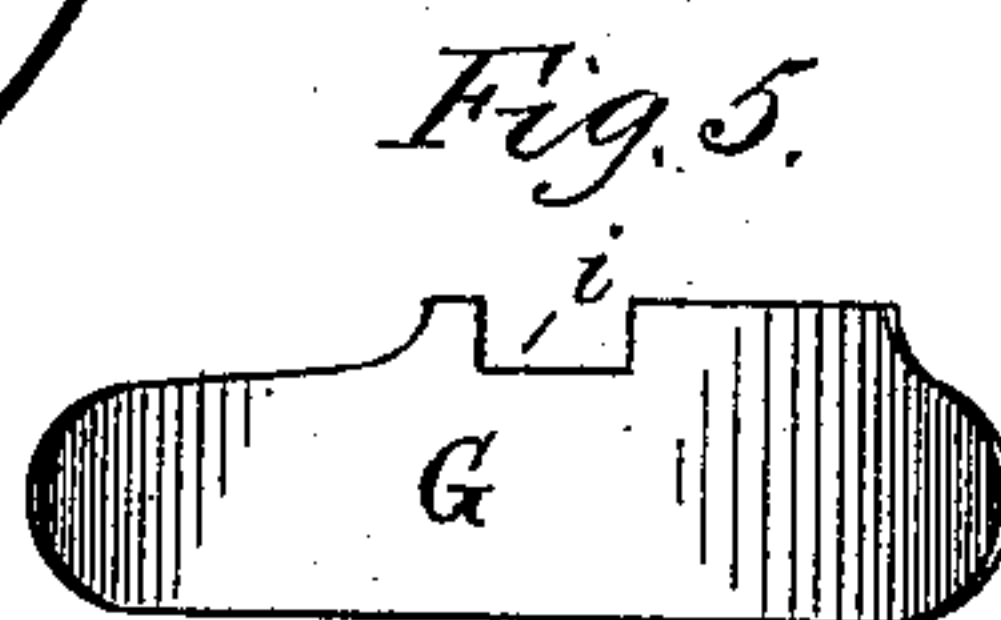
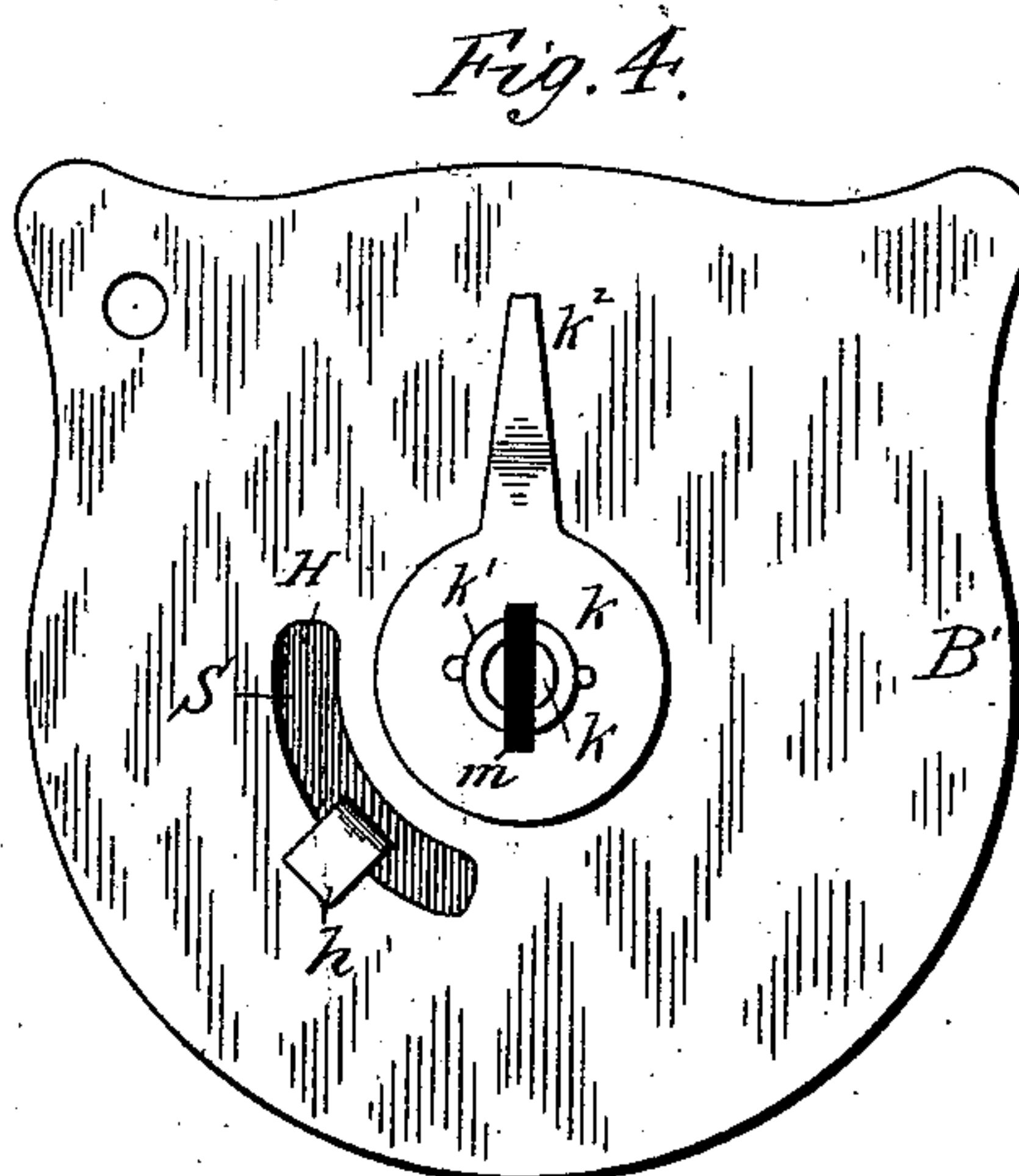
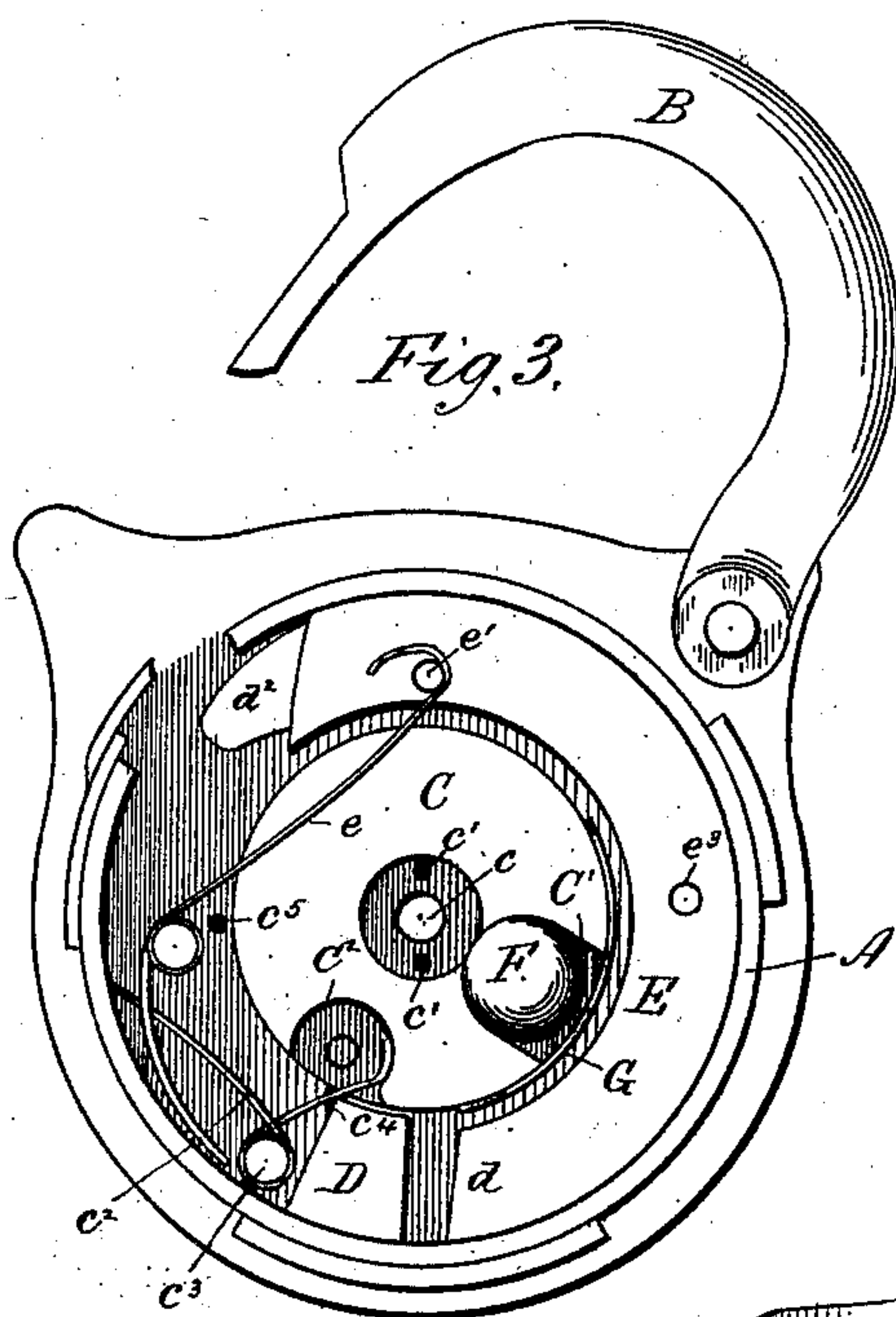
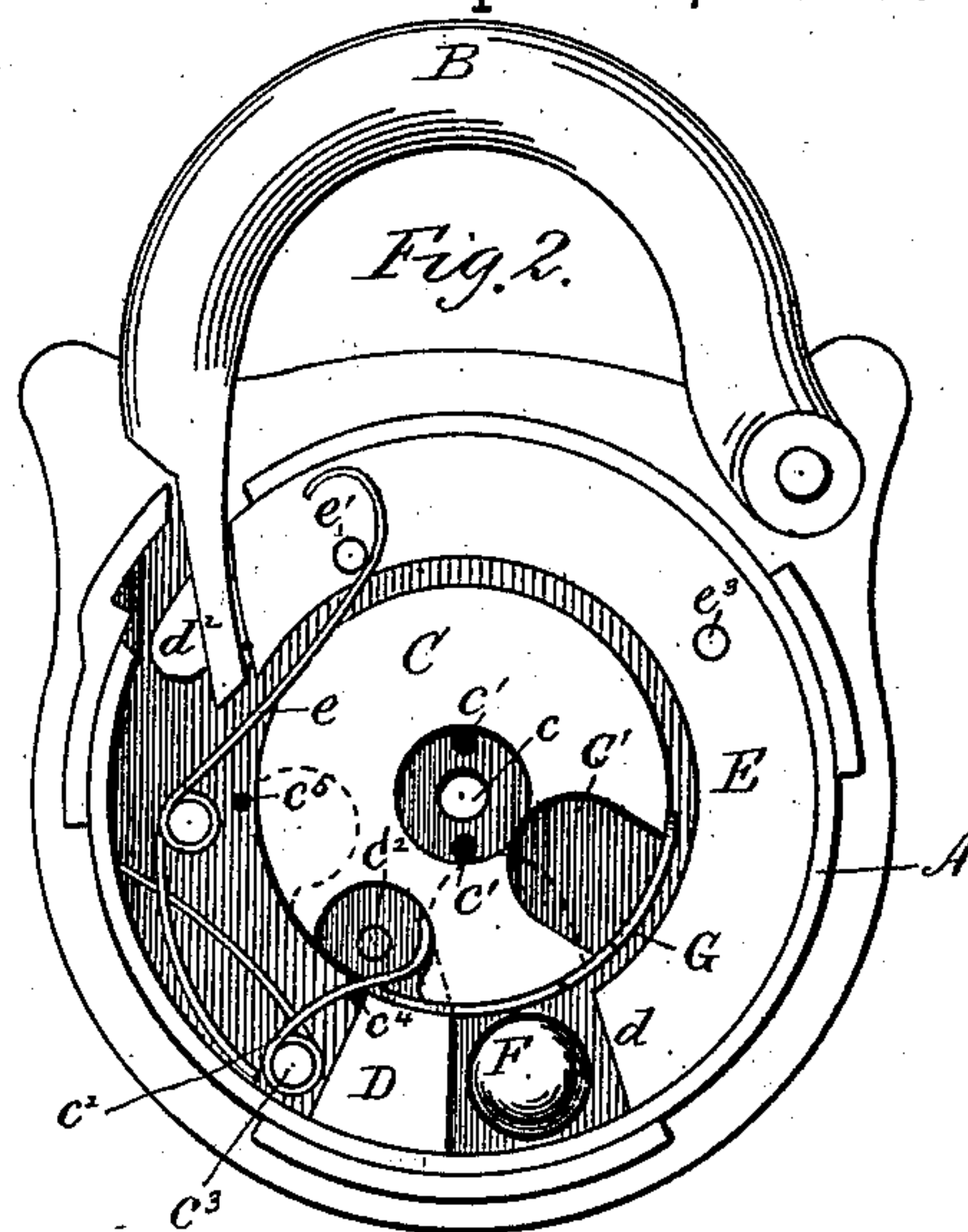
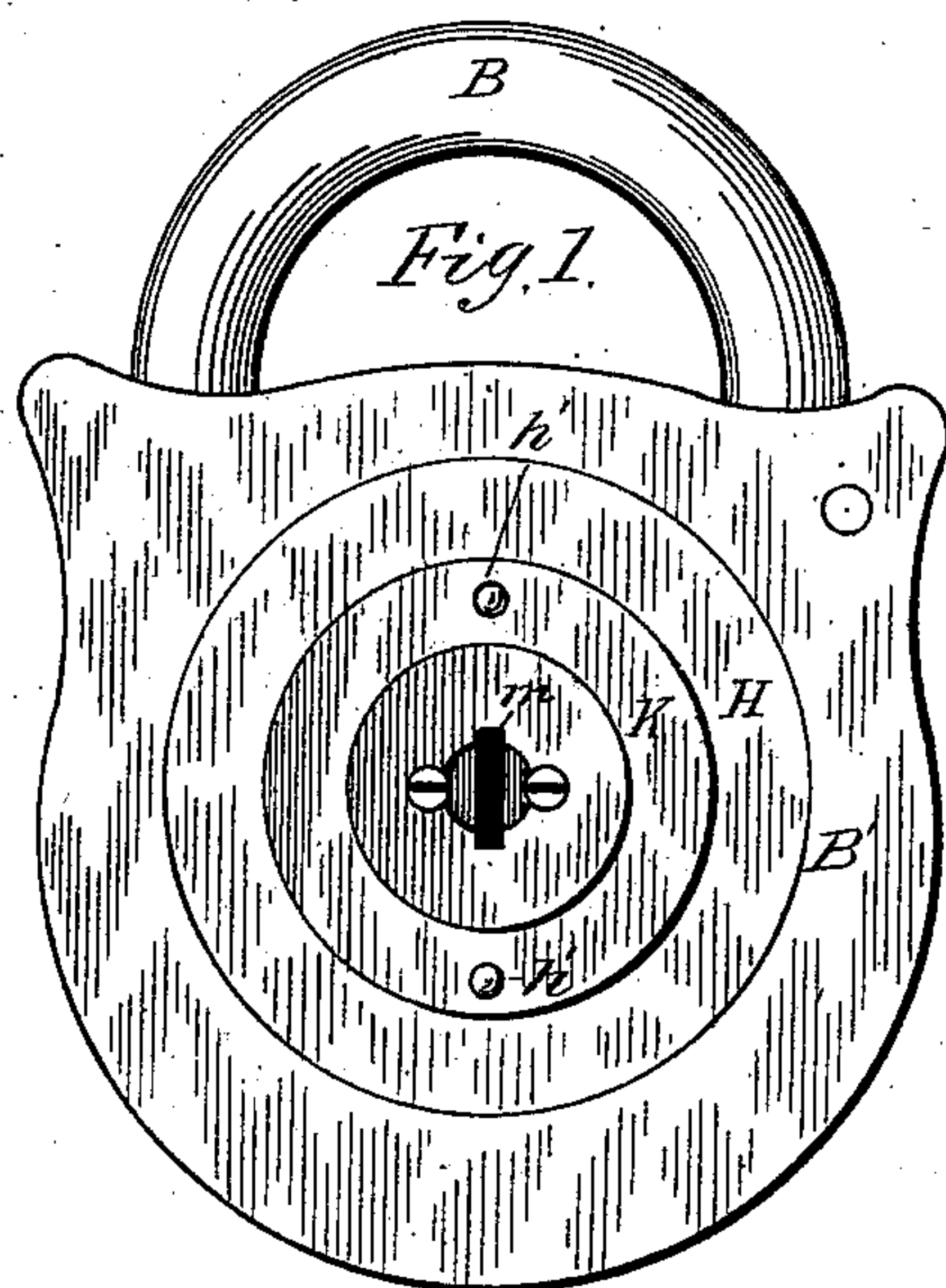
(Model.)

J. L. CULBERSON.

PADLOCK.

No. 360,861.

Patented Apr. 12, 1887.



Witnesses:
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UNITED STATES PATENT OFFICE.

JOHN L. CULBERSON, OF HENDRYSBURG, ASSIGNOR OF ONE-THIRD TO
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PADLOCK.

SPECIFICATION forming part of Letters Patent No. 360,861, dated April 12, 1887.

Application filed February 19, 1887. Serial No. 238,146. (Model.)

To all whom it may concern:

Be it known that I, JOHN L. CULBERSON, a citizen of the United States, residing at Hendrysburg, in the county of Belmont and State of Ohio, have invented certain new and useful Improvements in Padlocks; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it ap-
10 pertains to make and use the same.

My invention relates to an improvement in padlocks; and it consists in the construction and arrangement of the parts thereof, which will be more fully hereinafter described, and
15 pointed out in the claims.

The object of my invention is to construct a lock in such a manner as to form a safe and durable fastening practically free from the danger of being picked and only unlocked
20 when operated by those familiar with its workings, and, further, to arrange and construct the several parts so as to form a strong, simple, and effective lock readily understood and operated and positive in its action and ultimate
25 result. I attain this object by the device illustrated in the accompanying drawings, wherein like letters of reference indicate similar parts in the several views, and in which—

Figure 1 is a front elevation of my improved
30 lock. Fig. 2 is a like view with the front plate removed, showing the parts in a locked adjustment. Fig. 3 is a similar view with the parts in an unlocked adjustment. Fig. 4 is a rear view of the front plate. Fig. 5 is a detail view of the curved slide. Fig. 6 is a detail view of the slide-actuating plate.

In the drawings, A represents the casing, preferably constructed in a circular form, and B the hasp, pivotally secured at one end and its
40 free end provided with a slot, which portion is allowed to be inserted in an opening made in the casing A, all of which is a well-known form of construction.

C represents a circular-shaped tumbler, situated in the center of the lock and journaled at its center on a stud, *c*, rigidly secured to the rear plate. This tumbler C is formed with a chamber, *C'*, made in its edge, which extends inward toward its center, as shown in Figs. 2
50 and 3. Key-holes *c'* *c'* are placed in said tumbler on each side of the stud *c*, in which

the two prongs of a key operate. A depression, *C*², is made in the outer edge of the face of the tumbler C, in which is placed the end of a coiled spring, *c*², which engages with the
55 side wall of said depression and serves to force the tumbler back after it has been turned. This spring *c*² is held in place by being coiled around a post, *c*³, and having its lower end brought in contact with the casing, and there-
60 by preventing any slipping of the same.

*c*⁴ is a lug on the side of the tumbler, which is adapted to prevent said tumbler from being turned beyond a certain point by its coming in contact with a post, *c*⁵, on its upper side and
65 a triangular-shaped block, D, on its lower side, both of which are rigidly secured to the stationary portions of the lock, thereby limiting the throw of the tumbler.

A semicircular bolt, E, made to conform to
70 the curvature of the inside of the casing A, occupies a portion of one side of the space between the said casing A and tumbler C, leaving a space equal to the size of the chamber *C'* in the tumbler C, between the lower end,
75 *d*, of the bolt E and block D, when said bolt E is carried up to a locking position. When the bolt E is in this position, its upper end will come in contact with the edge of the casing A at the hasp-opening, thus preventing its being
80 forced beyond said edge, and thereby preventing the increasing of the space left between the block D and the end *d* of said bolt.

The upper end of bolt E is made with a tongue, *d*², which conforms in size to the slot
85 in the free end of the hasp B, through which it passes. The under side of this tongue *d*² is preferably beveled, so as to allow of the extraction of the hasp B when the bolt is not
90 secured. To hold the bolt E up in the position above described, thereby forming the space between its end *d* and the block D, I place the end of a coil-spring, *e*, back of a lug, *e'*, situated on the upper end of the side of the bolt E, which, by virtue of its resiliency,
95 forces the bolt up and retains it in its elevated position. This spring *e* is constructed and secured in a manner similar to the spring *c*², heretofore described, and the upper end is bent back and formed into a hook shape, thus pre-
100 venting the lug *e'* from getting beyond said spring when the bolt is forced down. A lug,

e^3 , is made on the side of bolt E, for purposes hereinafter described.

F is a metal ball placed in the chamber C', as shown in Fig. 3, and is adapted to be delivered into the space formed between the end d of the bolt E and the block D, thereby locking the bolt E and preventing it from being forced down and unlocking the hasp.

A curved slide, G, is interposed between the bolt E and the tumbler C, and is adapted to be moved down over the opening between the end d and the block D, as shown in Fig. 2. This slide is constructed of a metallic strip, part of which is of a width equal to the width of the space between the sides of the lock, but permitted to be actuated freely therein. It is constructed with a groove, i , of rectangular shape, cut in its upper side, in which is placed an arm, h , of the plate H, for purposes more fully hereinafter described.

As shown in Fig. 1, I have placed a series of circular plates, H and K, on the plate B' of the lock, and through which passes the key-hole m , which is formed of rectangular shape.

The plate H, as shown in detail in Fig. 6, has a circular opening in its center, and is provided on its outer under surface with an angle-arm, h , which passes through a curved slot, S, cut in the front plate, B'. This angle-arm h is extended down through said slot S, and there bent out at right angles, and when the plate B' is secured to the lock it comes in contact with the slide G and is inserted in the groove i , so that moving the plate H will necessarily move the slide G. The plate H is provided with knobs $h' h'$, situated on its outer surface, to facilitate the moving thereof.

Situated upon the upper face of plate H and loosely mounted thereon, so as to allow of an independent movement thereof, is a circular plate, K, of somewhat smaller diameter than said plate H. This plate K is rigidly secured to and united with a plate, k , situated on the rear side of plate B'. These plates K and k are united by having their inner faces made somewhat thicker than their outer faces, thereby forming a flange on their outer peripheries, which rest, respectively, on the plate H and under side of plate B', and by means of the circular slot in the plate H and a like slot cut in the plate B' (not shown) their inner faces are allowed to come in contact with each other and be rigidly united in any suitable manner, thus forming a cylinder which extends through the plate H and front lock-plate, B', thereby holding the plate H in place, and by the overlapping flanges on the outer peripheries of said plates K and k they are prevented from being moved laterally, but held firmly in place at all times, being allowed a rotary motion only.

The plate k is formed at its center with downwardly-extended projections $k' k'$, which are placed lightly against the center of the tumbler when the face of the lock or plate B' is in place, thus preventing any lateral movement of said tumbler. A radial arm, k^2 , is made integral with the plate k , which arm extends

out some distance from the same and is adapted to have its outer end placed between the lugs e' and e^3 on the side of the bolt E when the several parts of the lock are united.

The block D is made in width to conform to the width occupied by the bolt E, as shown.

The operation of my improved lock is as follows: When the hasp B is inserted in the opening in the casing A, the bolt is thrown back by inserting the key part way in the hole m and turning the plates K and k , thus bringing the arm k^2 in contact with the lug e^3 on the bolt, thus allowing the end of the hasp B to fall down below the end of the bolt E, which immediately springs back by virtue of spring e , and the tongue d^2 is inserted through the slot in the end of the hasp. In this position the hasp may be readily extracted, by reason of the beveled portion allowing it to be withdrawn, by forcing the bolt back.

When it is wished to lock the hasp and prevent the bolt from being forced back, the tumbler C is turned back until the lug e^4 comes in contact with the post e^5 and the chamber C', containing the bolt F, is brought directly opposite the space between the block D and end d of bolt E, as shown in dotted lines, which space, being of the same dimensions as said chamber, immediately receives the ball F, which rolls down out of chamber C'. The tumbler is then allowed to fly back by virtue of spring e^2 until the lug e^4 comes in contact with block D, thus forcing the chamber C' out of alignment with said space and preventing the ball from being thrown back, thus blocking and preventing the bolt E from being forced down; thereby releasing the end of the hasp and unlocking the lock. To secure the retention of the ball in this position and further insure the safety of the lock, I have inserted the slide G in the position as described, and when the ball is thus secured said slide is forced down by turning the plate H with the arm h , which is placed in the groove i in the slide, to the right, thereby operating the latter. This plate is allowed to turn and prevented from becoming misplaced by the slot S, which is cut so as to allow said slide to pass back sufficiently to uncover the space between the end d of bar E and block D. To unlock the hasp, it is only necessary to force the slide back by turning plate H to the left and forcing the key into the holes $e' e'$ in the tumbler and turn the same until the lug e^4 comes in contact with the post e^5 , thereby bringing the chamber C' in alignment with the said open space, and then tilting the lock down and allowing said ball F to roll therein, and while in this position releasing the key, and the tumbler springs immediately back. The key is then partially withdrawn and turned, so as to turn the plates K and k , and thus force the bolt back.

In constructing the tongue d^2 , I may bevel the upper side, thereby allowing the hasp to be forced down and the bolt forced back without turning the plates K and k to admit said

hasp. I also may construct the under or beveled side square, and thereby secure the hasp when inserted; but the manner described in the first instance I have found to be more preferably adapted for general use.

In manipulating my improved lock I employ a key having a rectangular shank, which is provided with two prongs on its lower end, which prongs are inserted in the holes *c' c'* in the tumbler; but it is obvious that any desired style of key may be adapted to be used by making minor changes in the construction of the lock.

It is obvious that many minor changes in the construction and arrangement of the parts of my improved lock can be made and substituted for those shown and described without in the least departing from the nature and principle of my invention.

Having thus described my invention, what I claim as new, and wish to secure by Letters Patent, is—

1. A padlock comprising a casing and hasp, a locking-bolt, a chambered tumbler, a ball, and means for limiting the movement of the same, said ball adapted to secure said bolt in place when in a locked adjustment, substantially as described.

2. In a padlock, the combination, with the hasp, of a locking-bolt, a chambered tumbler, a ball, and a rigidly-secured block, said ball adapted to secure said bolt in place when in a locked adjustment, substantially as described.

3. In a padlock, the combination of a semicircular locking-bolt, a hasp, a chambered tumbler pivoted within said lock, a block secured to said lock adjacent to said bolt, and a ball adapted to be admitted into the space between said bolt and block, substantially as described.

4. In a padlock, the combination, with the casing and hasp, of a spring-actuated locking-bolt, a spring-actuated chambered tumbler pivoted within said lock, a ball adapted to secure said bolt in a locked adjustment, a sliding plate adapted to retain said ball in said position, and a rigidly-secured block, substantially as described.

5. In a padlock, the combination, with the casing having a hasp mounted thereon, of a

spring-actuated bolt, a circular tumbler mounted therein, having a chambered portion, a ball adapted to secure said bolt in a locked adjustment, a slide adapted to secure said ball in said position, a block rigidly secured to said lock, and plates situated on the face of said lock, having inwardly-extending arms adapted to manipulate said bolt and slide, substantially as described.

6. In a padlock, the combination, with the casing and hasp, of a spring-actuated semicircular locking-bolt, a circular chambered tumbler pivoted in said lock, having a lug thereon, a post and block secured to the lock, adapted to engage said lug, whereby the throw of said tumbler is limited, a ball adapted to secure said bolt in a locked adjustment, a slide adapted to retain said ball in said position, a rigidly-secured block situated adjacent to said bolt, and a series of plates adapted to manipulate said bolt and slide, substantially as described.

7. In a padlock, the combination, with the casing and hasp, of a semicircular spring-actuated chambered tumbler having a lug thereon which is adapted to come in contact with a post and block rigidly secured to said lock, a ball adapted to secure said bolt in a locked adjustment, a curved slide adapted to retain said ball in said position, and a series of plates mounted on the face of said lock, said plates having inwardly-extending arms adapted to engage with a lug on said bolt and a groove in said slide, and thereby manipulate the same when turned, substantially as described.

8. In a padlock, the combination, with the casing and hasp, of a semicircular locking-bolt, *E*, a circular tumbler, *C*, having a chamber, *C'*, therein, a rigidly-secured block, *D*, a ball, *F*, adapted to secure said bolt in a locked position, a slide, *G*, and plates *H*, *K*, and *L*, having arms *h* *h'* for actuating said bolt and slide, all arranged in the manner specified, substantially as described.

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

JOHN L. CULBERSON.

Witnesses:

W. T. EVANS,

WM. H. MURPHY.