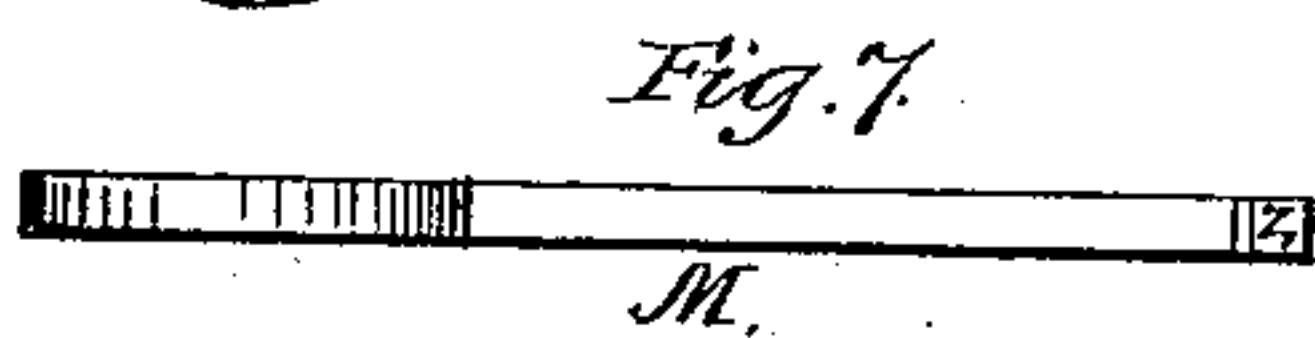
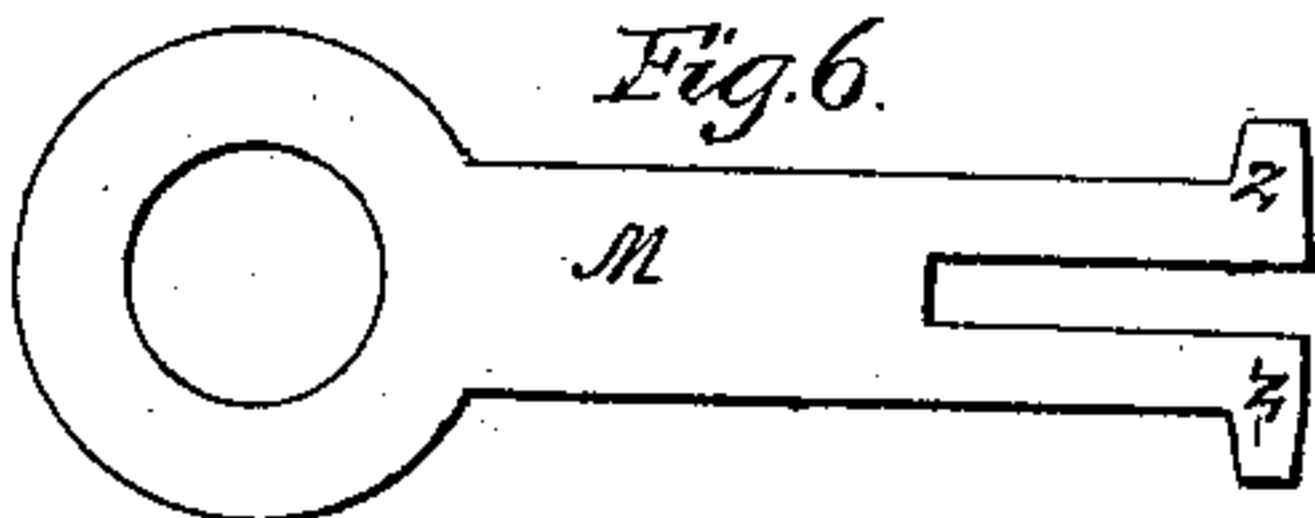
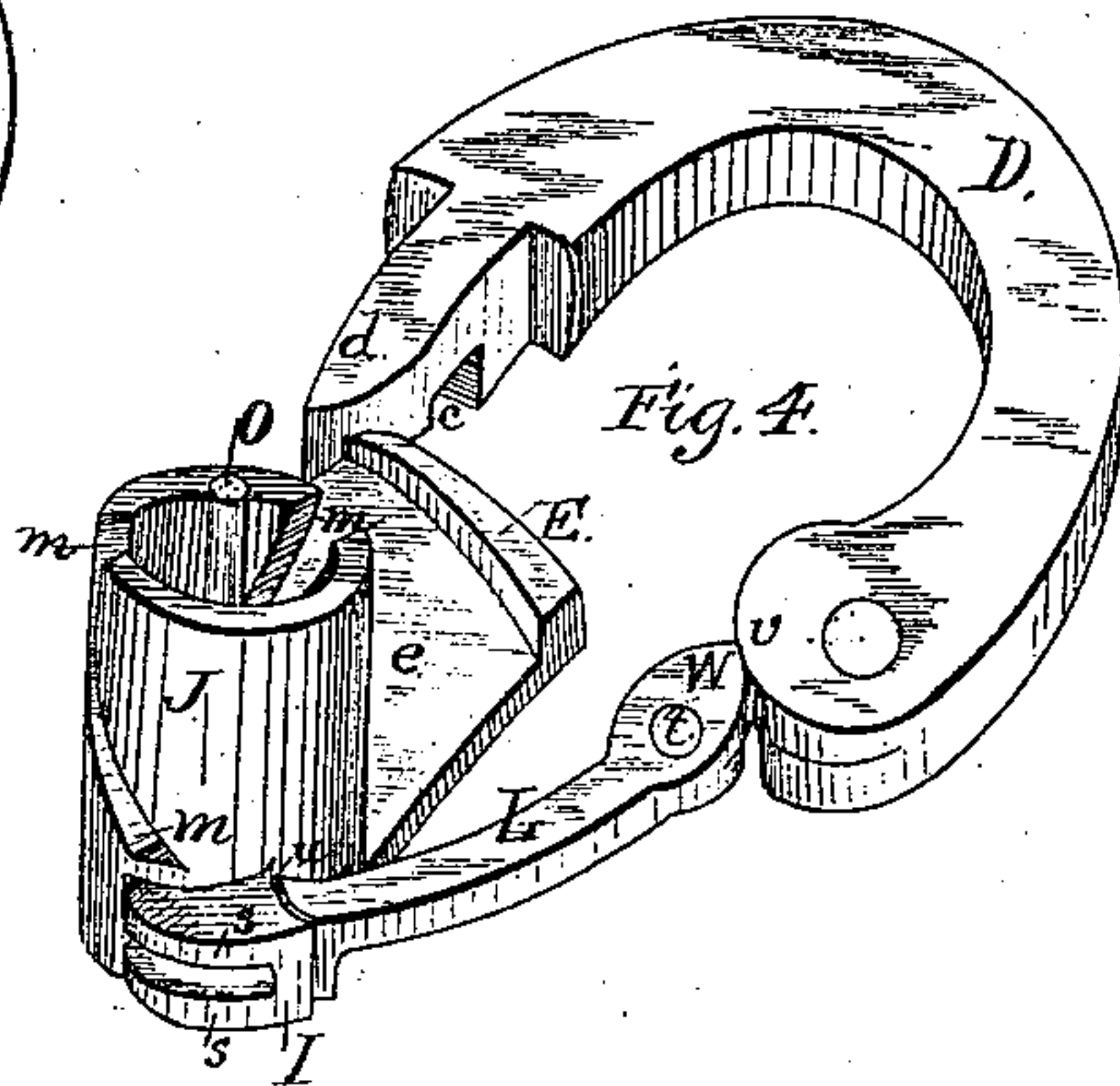
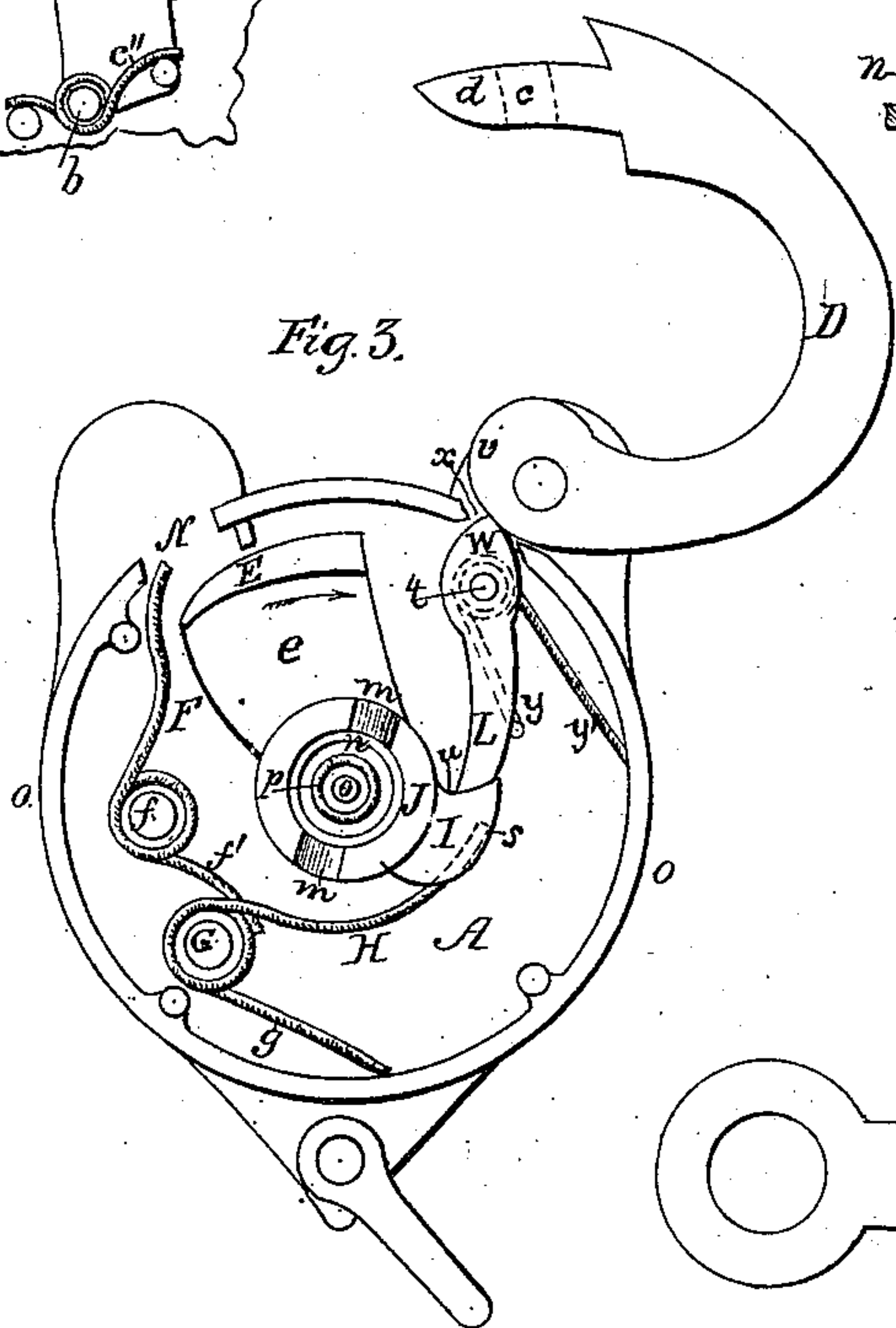
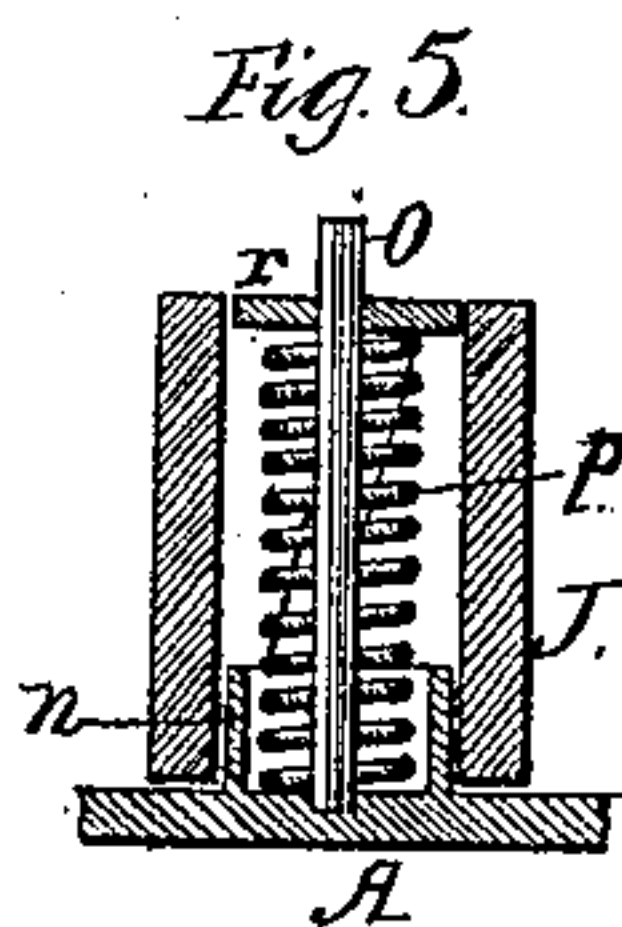
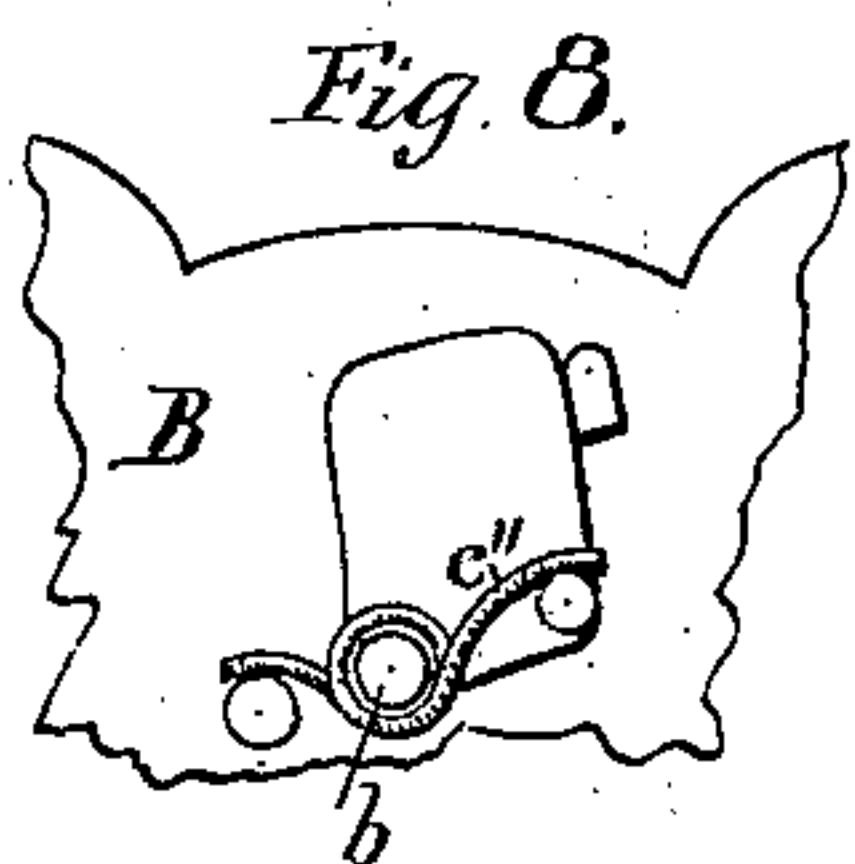
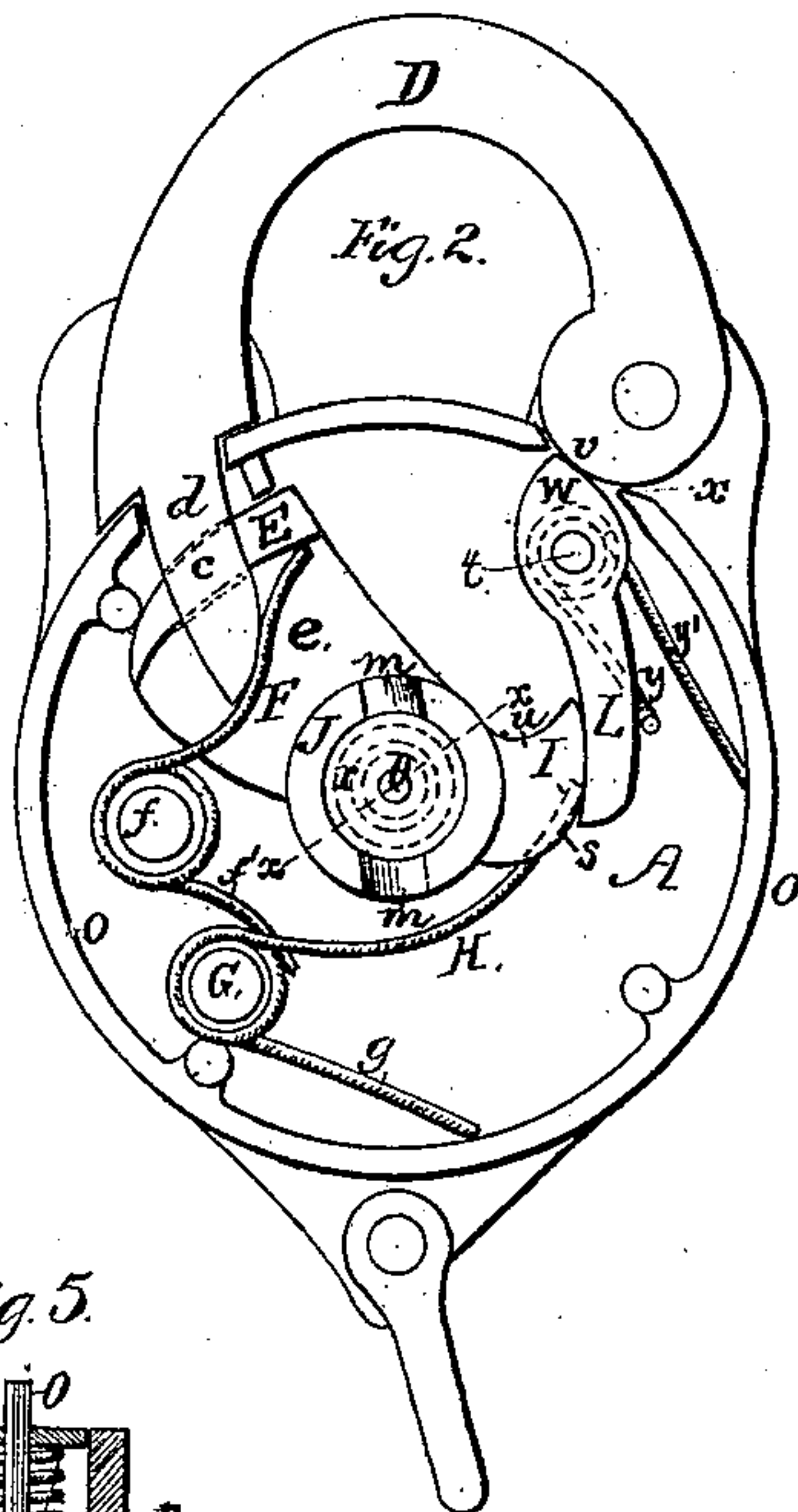
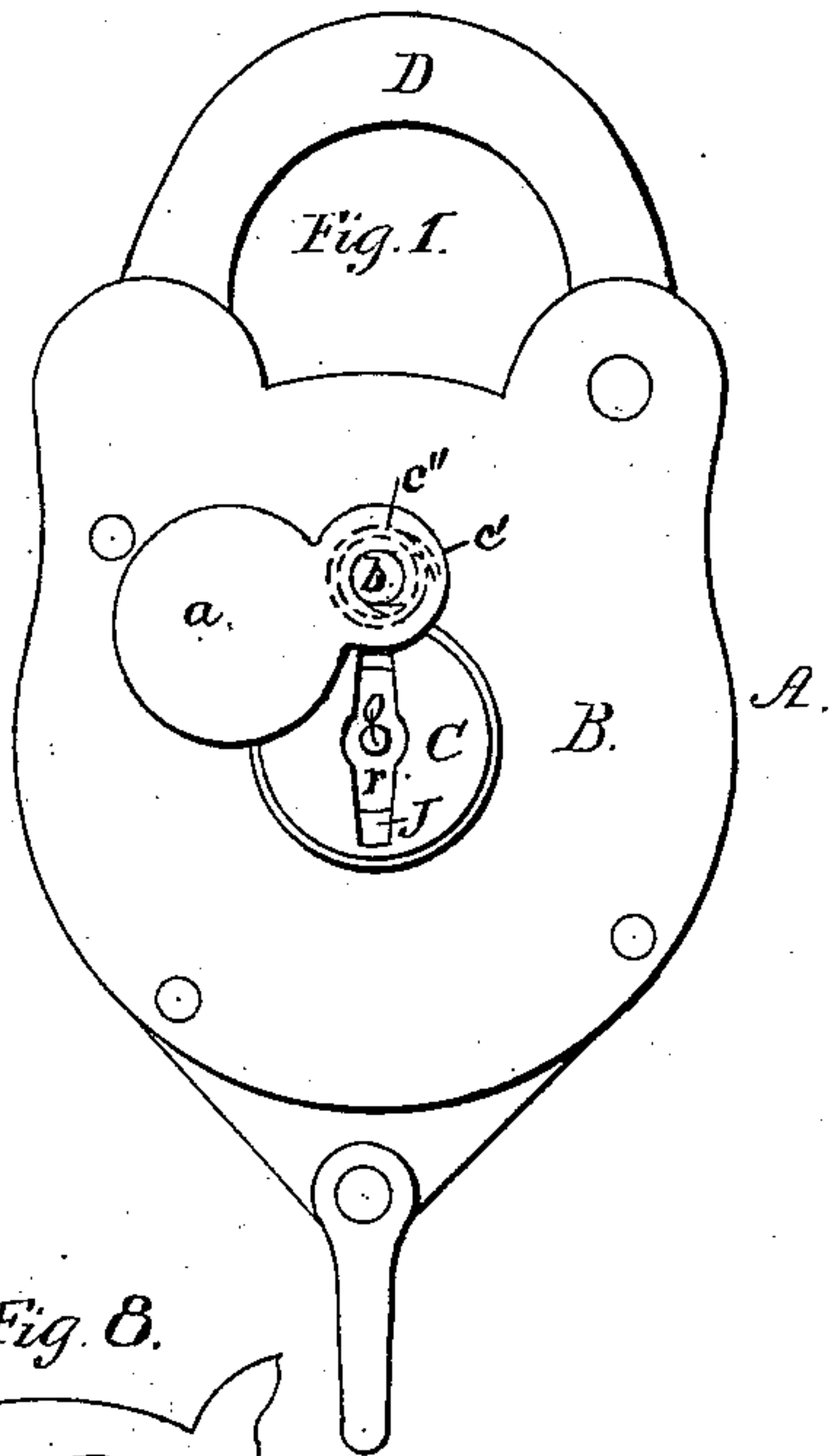


J. W. REINHART.
Padlock.

No. 230,055.

Patented July 13, 1880.



Attest:
F. B. Brock
Ino. Bowles

Inventor:
Joseph W. Reinhart
by S. Hannay
att'y.

UNITED STATES PATENT OFFICE.

JOSEPH W. REINHART, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO
JAMES McHENRY REINHART, OF SAME PLACE.

PADLOCK.

SPECIFICATION forming part of Letters Patent No. 230,055, dated July 13, 1880.

Application filed October 21, 1879.

To all whom it may concern:

Be it known that I, JOSEPH W. REINHART, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Padlocks, (Case C;) 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 appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification, in which—

Figure 1 represents a face elevation of a padlock to which my improvement has been applied, the spring-cover of the keyhole being turned to one side. Fig. 2 represents a plan of the lock with the cover removed, showing the hasp locked fast, and Fig. 3 a similar view with the hasp unlocked and thrown back. Fig. 4 represents a perspective view of certain details of the lock removed from the casing. Fig. 5 represents a detail section through the line *xx* of Fig. 2. Figs. 6 and 7, respectively, represent a plan and side view of the key. Fig. 8 represents a detail view of the stop-plate of the key-hole cover.

This improvement relates to a new and improved construction of padlocks, and more especially to that class of locks in which the key cannot be removed until the padlock has been fairly locked.

My invention consists in certain details of construction, hereinafter to be more fully set forth and described.

To enable others skilled in the art to make, construct, and use my improvements, I will now proceed to describe them in detail, omitting a particular description of such parts of a padlock as are old and common to others of its class.

In the drawings, A represents the casing, within which and to which the working parts of the lock are mounted and secured.

B represents the covering-plate of the lock, and is formed with a raised portion, C, in the face of which the key-hole is cut or formed. The key-hole is covered by a spring covering-plate, *a*, to keep it automatically closed, and

thus protect it from rain, snow, dust, &c. For this purpose the key-hole-covering plate *a* is secured firmly to a pivotal pin, *b*, which passes down through a sleeve, *c'*, made fast to cover-plate B, and which passes through the latter.

Pin *b* extends through cover-plate B and carries a stop-plate, which arrests the lateral motion of the cover-plate *a* to either side by being brought against either one of two lugs, between which it is arranged, and which are cast upon the under side of the plate B.

Upon the outer face of the stop-plate are formed two studs, around the larger one of which is coiled a spiral spring, the one end of which bears against one of the stop-studs formed on the inner side of the lock-covering plate B, and the other against the other stud, formed on the inner or under side of the stop or arrest plate of the key-hole cover. This is the spring *c''*, which, acting on the key-hole plate through the devices named, causes it to automatically cover the key-hole.

D represents the hasp of the padlock, the shank or free end *d* of which is provided with a slot, *e*, in one side, (see Fig. 4,) for the reception of the vibrating lock-bolt E, and is also cut away on the same side from the edge of the slot *e* to the extreme end of the shank *d*, in order that arm *e*, which carries lock-bolt E, may pass freely between the wall of the lock and the side of the shank *d* of the hasp when the lock-bolt is made to engage with slot *e* of the hasp-shank.

The inner face of the shank portion *d* is beveled or inclined, for the twofold reason that it may enter freely behind the presser-spring F and in front of the lock-bolt E, and, that being inclined, on being freed from the lock-bolt the presser-spring will act on it as a cam and force the hasp out from the interior of the lock-casing.

Presser-spring F is of the spiral variety, and is mounted on a stud, *f*, its stationary end *f'* bearing against another stud, G, which carries another spring, H, the free end of which bears against a cam, I, formed on one side of the sleeve J, which carries the arm *e* of the lock-bolt.

The stationary end *g* of spring H bears against the inner face of the peripheral wall of the lock.

Sleeve J, which carries, as before stated, the lock-bolt E and cam I, is provided with two spiraled or cam slots, *m m*, running in opposite directions, for the reception of the two cam-pins *z*, formed on the end of the key. (See Fig. 6.) The outer and inner faces of the lock-bolt are curved, corresponding with arcs whose radii are drawn from the center of sleeve J to points in the outer and inner peripheral lines of the lock-bolt, and the slot *c* in the shank *d* of the hasp is also curved, and is formed or cut along arcs joining radii, also emanating from the center of sleeve J, one of which is a little longer and the other a little shorter than the radii which form the outer and inner faces of the lock-bolt E, thus making the slot *c* slightly wider than the lock-bolt.

Sleeve J, with its lock-bolt E and cam I thus formed, is pivotally mounted upon a tubular stud, *n*, cast on the inner face of the casing A. Centrally within tubular stud *n* is secured to the casing A a stud, *o*, which serves as a guide to the key. Over this stud, and within the tubular stud *n*, is arranged a spiral spring, *p*, and above that a washer, *r*, or bearing-ring for the lower end of the key. This spring serves to eject the key when the hasp is locked fast. Cam I on sleeve J is provided with two curved flanges, *s*, one on each side, which serve the twofold purpose of keeping spring H in its proper position on the face of cam I and of acting as guides to stop L.

L represents a stop or detent pivoted on a stud-pin, *t*, formed on or otherwise secured to the inner face of casing A. The inner end of this stop engages with a curved depression, *u*, formed in the side of the cam I when the padlock is unlocked, and serves to hold the lock-bolt E in its retracted position until the hasp has been forced back again within the casing to be relocked, when, through the action of cam *v*, formed on the pivoted end of the hasp upon a tappet, W, formed on the pivoted end of the detent L, the latter is turned away from the front side of the cam I, freeing the latter, sleeve J, and its lock-bolt E, and allowing the spring H, through its action on cam I, to cause sleeve J and its lock-bolt E to make a partial revolution, and in so doing causing the latter to engage with slot *c* of the hasp, thereby locking it fast.

For the above purpose tappet W is made to project through a notch, *x*, cut on the edge of the peripheral wall of the casing of the lock.

In order to cause detent L to engage with the face of cam I, to keep the lock-bolt in its retracted position while the padlock is unlocked, a spring, *y*, is mounted on the pivotal stud-pin *t*, the free end of which bears against the rear side of detent L, and the stationary end against the peripheral wall of the casing.

M represents the key of the lock, and is fully illustrated in Figs. 6 and 7. The edges of the stem of the key extend into the lateral

notches of the key-hole, and hence it cannot turn, but can only be pushed straight in.

The operation is as follows: To lock the padlock the operative parts occupy the relative positions shown in Fig. 3, the hasp is turned down, and its shank *d* made to enter the notch N, formed in the peripheral wall *o* of the casing. As it enters the notch the point of its shank passes between wall *o* and the free end of the spring F, forcing the latter back and placing it under tension. As it continues to enter, the inner face, which is beveled so as to act as a cam, comes in contact with the end of the lock-bolt E, forcing the latter back and freeing the end of detent L from the pressure of spring H through cam I. Meanwhile, as the hasp continues to be pressed home to its place to be locked the cam *v* on its pivoted end is brought to bear against the tappet W on the detent L, causing the latter to turn on its pivotal pin *t* until it is fairly disengaged from the notch *u* in the end of cam I. Simultaneously with this disengagement of the detent and stop I the slot *c* in the side of the shank *d* of the hasp D will have been brought opposite the lock-bolt E, when the latter will be immediately sprung into the slot *c* of the shank by the action of spring H on the cam I of the sleeve J, which carries the lock-bolt, thus securely bolting the hasp to the casing of the lock, as shown in Fig. 2.

To unlock the padlock the key M is inserted into the key-hole and forcibly pushed inward. The pins *z* on its end act against the sides of the cam-slots *m m*, causing sleeve J to turn in the direction of the arrow, Fig. 3, thereby withdrawing lock-bolt E from slot *c* of the hasp, at which moment it will also have caused cam I to have turned sufficiently far to allow the spring *y* to force the lower end of detent L to engage with the curved depression *u*, formed on the end of cam I, and thereby hold lock-bolt E in a retracted position, ready for the entrance of the hasp again. In this position, when the padlock is unlocked, the key cannot be withdrawn from the lock, because of the walls of the cam-slots *m* projecting over the cam-pins *z* of the key, nor can it be withdrawn until the padlock has been fairly locked—a point of great importance where it is used to lock switches. As soon, however, as the padlock is locked the spring *p* will eject or aid in ejecting the key from the lock.

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

1. In combination with a hasp, D, of a padlock having a slot, *c*, or its equivalent, a vibrating lock-bolt, E, and cam-slotted sleeve J, substantially as set forth.

2. In combination with a hasp, D, of a padlock, a spring, F, vibrating lock-bolt E, and cam-slotted sleeve J, substantially as set forth.

3. In combination with the hasp of a padlock, a cam-slotted sleeve, J, vibrating lock-bolt E, cam I, and spring H, substantially as set forth.

4. In combination with the hasp D, vibrating lock-bolt E, cam-slotted sleeve J, and stop I, a detent, L, for the purposes set forth.

5. In combination with the hasp of a padlock, a vibrating lock-bolt, E, cam-slotted sleeve J, stop I, spring H, and spring y, substantially as set forth.

10 6. The combination of a cam-slotted sleeve, J, and a vibrating lock-bolt, E, having a stop, I, and a pivoted detent, L, carrying a tappet, W, with the hasp of a padlock provided with a cam, v, on its pivotal end, substantially as set forth.

7. In a padlock, the combination of the vibrating lock-bolt E and cam-slotted sleeve J, 15 substantially as shown and described.

In testimony that I claim the foregoing I have hereunto set my hand this 4th day of September, 1879.

JOS. W. REINHART.

Witnesses:

I. Y. KNIGHT,
F. B. BROCK.