

No. 829,715.

PATENTED AUG. 28, 1906.

D. HOYT.
SASH LOCK.

APPLICATION FILED NOV. 15, 1905.

2 SHEETS—SHEET 1.

Fig. 1.

Fig. 2.

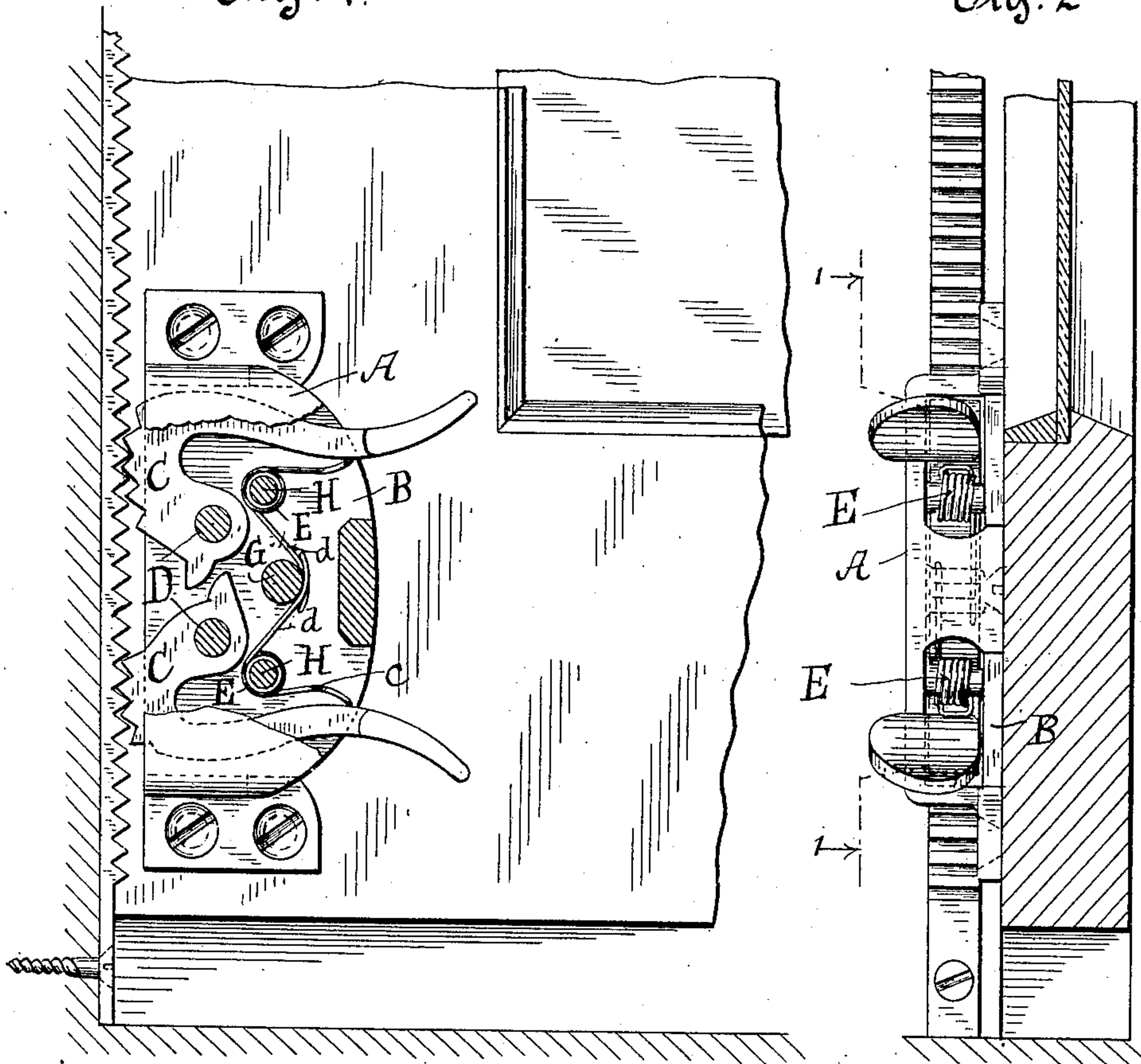
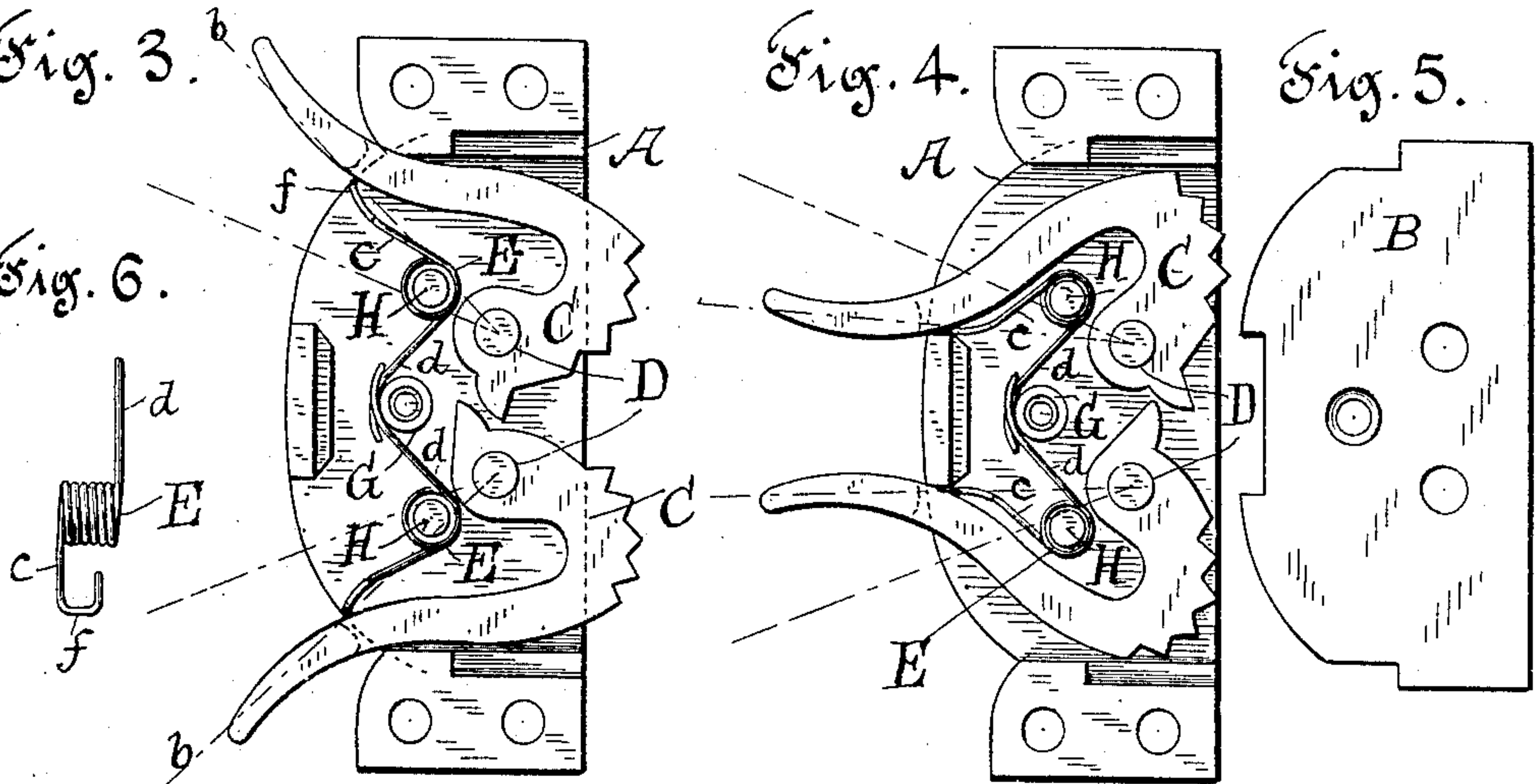


Fig. 3.

Fig. 4.

Fig. 5.

Fig. 6.



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2 SHEETS—SHEET 2.

Fig. 7.

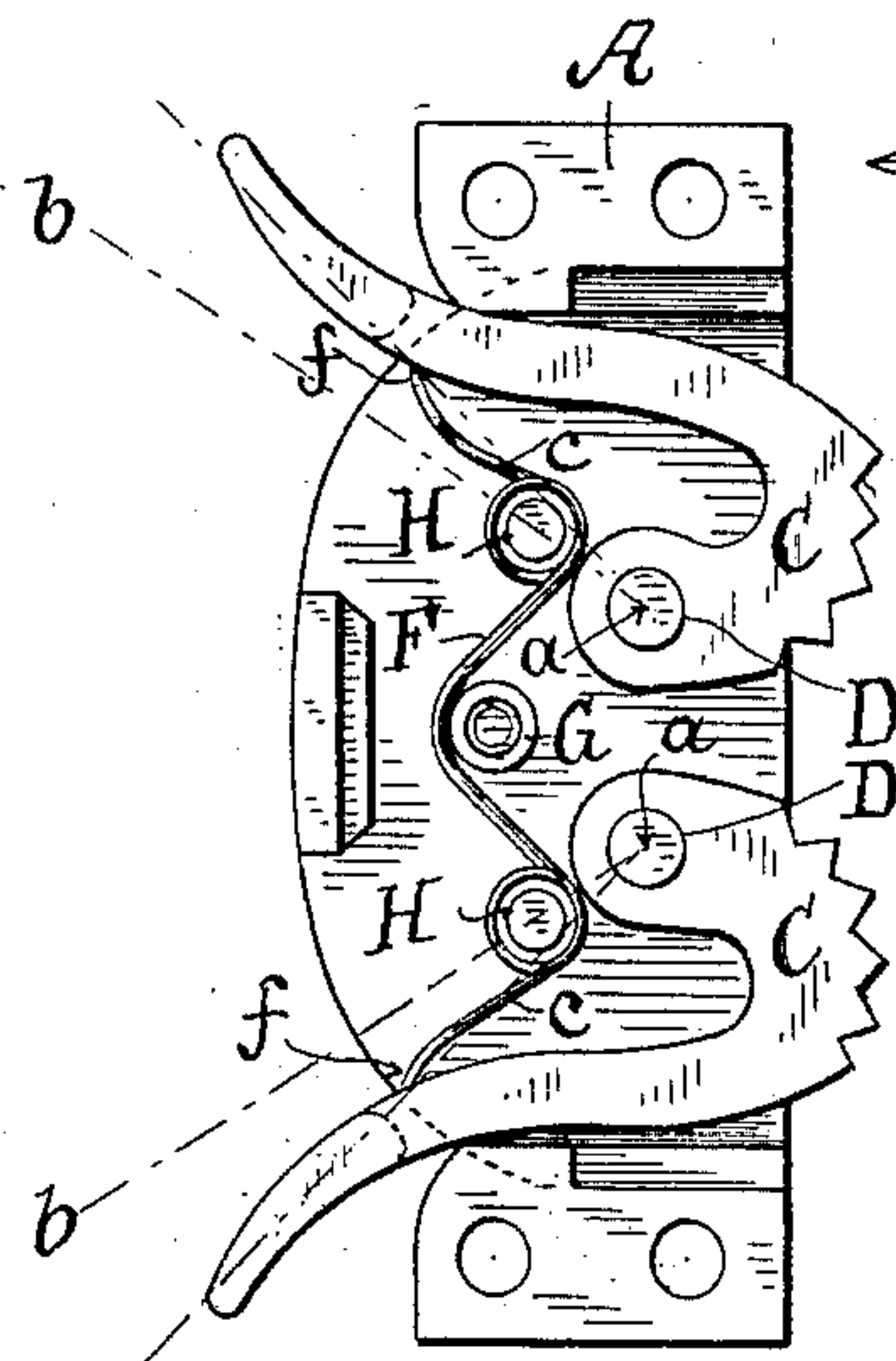


Fig. 8.

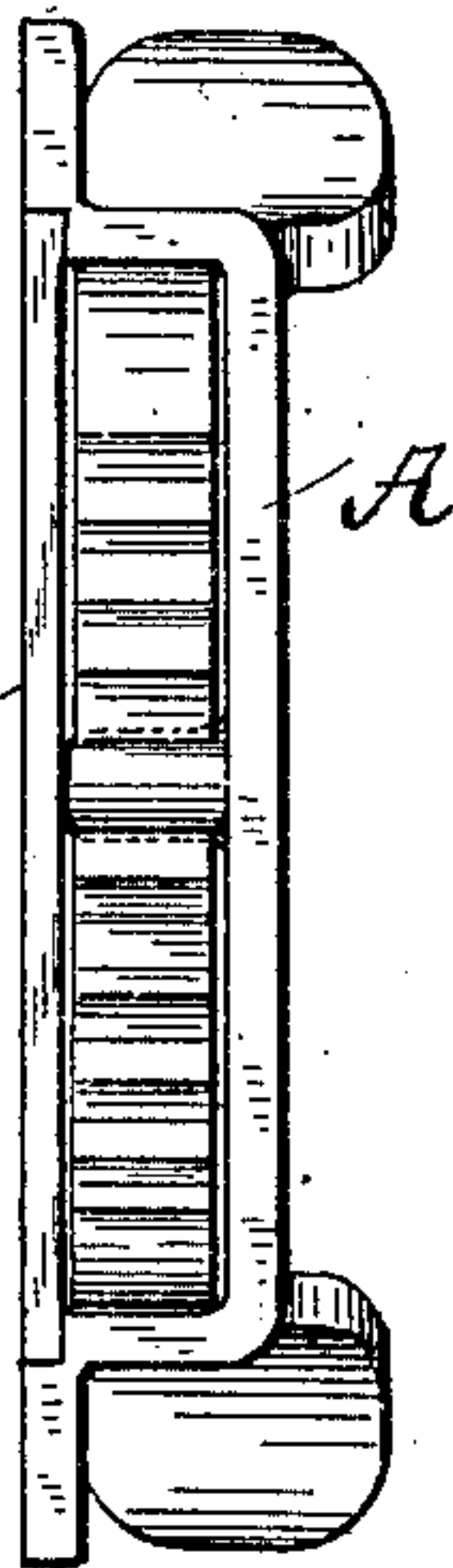


Fig. 9.

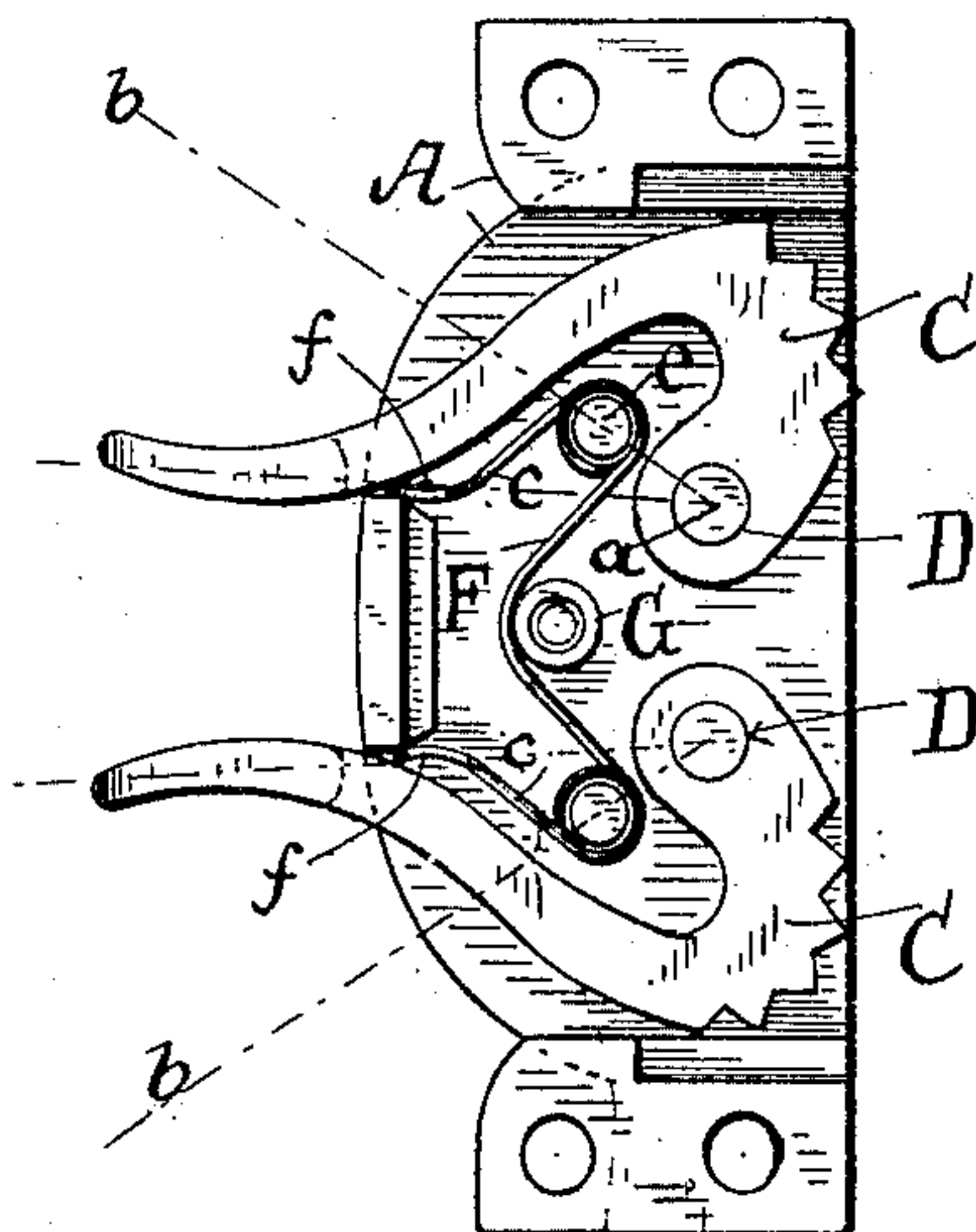


Fig. 10.

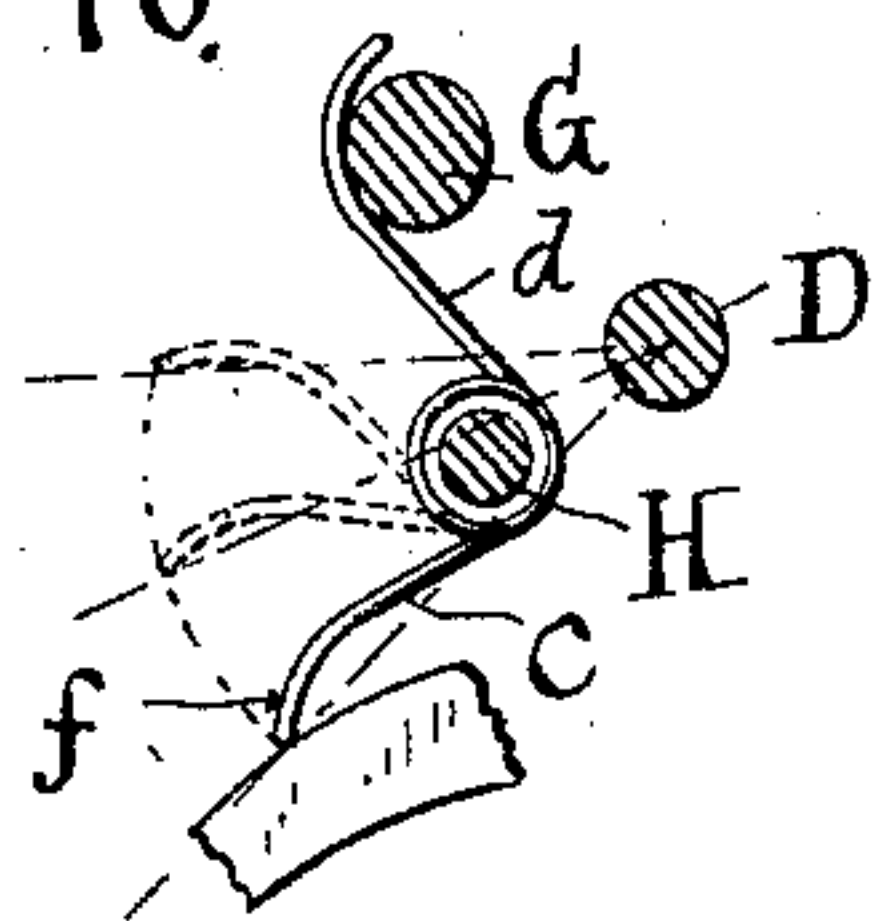


Fig. 11.

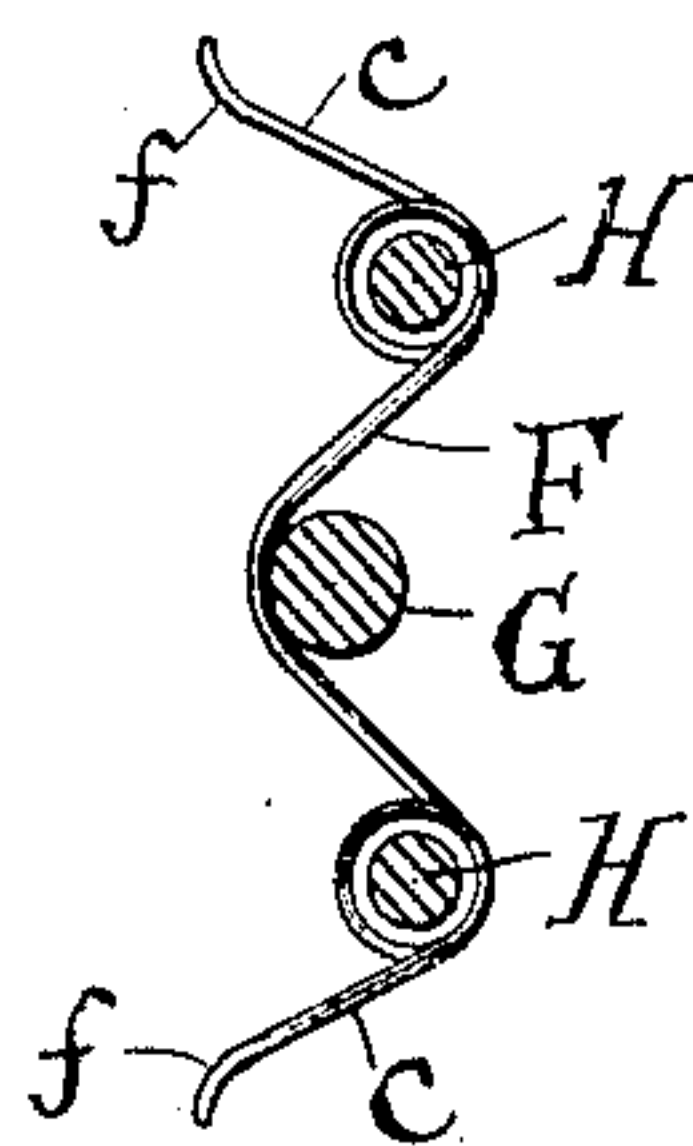
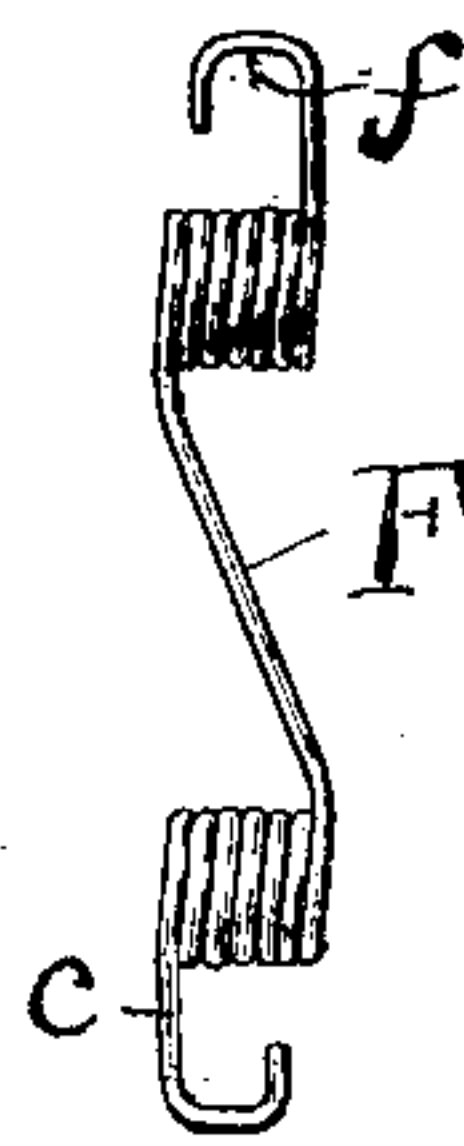


Fig. 12.



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UNITED STATES PATENT OFFICE.

DANIEL HOYT, OF NEWARK, NEW JERSEY, ASSIGNOR OF ONE-HALF TO
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SASH-LOCK.

No. 829,715.

Specification of Letters Patent.

Patented Aug. 28, 1906.

Application filed November 15, 1905. Serial No. 287,383.

To all whom it may concern:

Be it known that I, DANIEL HOYT, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Sash-Locks, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to the class of sash-locks in which the sash is held in any desired position by the engagement with the casing or rack upon the casing of toothed locking-cams which are normally held in engagement therewith by spring-pressure. In the use of this class of sash-locks, especially upon car-windows, a spring which will not break under any conditions of use and that will operate at all points of the movement of the cam-levers with an approximately even pressure is the thing needed; and the object of the present invention is to produce and apply a spring that will effect such result. Heretofore cam sash-locks have been used, some with flat leaf-springs, some with coil-springs, and some with spiral springs. The flat leaf-spring which has been used most successfully is referred to in my Patent No. 651,570, June 12, 1900, and Nos. 696,819, 696,820, April 1, 1902. In these patents the cam-levers are of the same general shape, with the exception that in Patent No. 696,819 a construction is added whereby the lower lever operates the upper lever, as described. My present invention is shown in association with each and is adapted to both forms. With the flat leaf-spring I have found in practice that the spring will break after being in use a short time, owing chiefly to the excessive bend produced by the wide range of action of the cam-levers. The coil-spring heretofore used in this type of sash-locks has been discarded for lack of power and uneven tension, and the spiral springs heretofore in use therewith have also been found too weak and too variable in tension.

The present invention consists in a spiral coil-spring having projecting extremities that contact, respectively, with a fixed fulcrum and a pivoted cam-lever, the coil portion of the spring being mounted upon a post located in such relative position with the pivotal axis of the cam-lever and the central point of the movement or throw of the cam-

lever as to apply a practically even spring-pressure on the cam-lever at all points of its movement or throw.

The invention is illustrated in the accompanying drawings, which form part of this specification, the letters of reference indicating the several and similar parts in the respective figures.

Figure 1 is a face view showing the sash-lock attached and engaged with a window-frame; Fig. 2, an end of same view; Fig. 3, a face view of the lock with the cover-plate removed and showing the cam-levers at their extreme open position; Fig. 4, a similar view showing the cam-levers at their extreme compressed position; Fig. 5, a face view of the cover-plate detached; Fig. 6, a plan view of a separated spiral coil-spring detached; Fig. 7, an interior view of the lock, showing the adaptation of a duplicate spiral coil-spring and the cam-levers in open position; Fig. 8, an end view of the lock; Fig. 9, an interior view of the lock, showing the cam-levers in their compressed position. Fig. 10 is a view including a part of a cam-lever, the fixed posts that hold and engage with the spring and the post forming the pivot of the cam-lever relatively located therewith, the angular positions of the springs at intermediate points in the movement or throw of the cam-lever being indicated by dotted lines; Fig. 11, a view of a spring having a plurality of coils mounted upon the respective fixed posts; and Fig. 12, a plan view of a duplicate spiral coil-spring detached.

Referring to the drawings, A represents the casing; B, the removable cover-plate; C, the cam-levers; D, the fixed pivots or axis on which the cams and cam-levers partially revolve; E, a separated spring; F, a duplicate spiral coil-spring; G, the fixed center post, which forms a fulcrum for the arm of a spring and to which the removable plate B is secured, and H the fixed posts, upon which the coils of the spring are mounted. The operating-cams C are constantly retained in the locking position by the tension of the engaging spring. In the adaptation of the spring to accomplish the object sought by my invention I construct the spring with two spiral coils and mount the respective spiral coils to act separately upon each cam-lever. The spring may be made integral, as shown in

Fig. 10, and also in Figs. 7 and 9 as applied for use, or divided between the spiral coils, as shown in Fig. 6 and also in Figs. 1, 3, and 4 as applied for use. In this double-cam type of sash-lock I find that it is essential to employ a spring having two spiral coils and to place each coil substantially in line with the central point of the movement or throw of the respective cam-levers and their pivotal axis and as near such axis as possible in order to obtain an even spring-pressure thereon throughout their complete movement or throw.

Referring to Fig. 7 of the drawings, the post H, upon which one spiral coil of the spring is mounted, is located on the dotted line *b*, projected from the axis *a* of the cam-lever *c* to the central point of the throw of the cam-lever and as near the axis *a* of the lever as possible, which insures the bearing of the extension-arm *c* of the spring upon the cam-lever at the same point throughout its throw. The opposite arm or extension *d* of the spring bears upon the fixed center post G in the use of the spring either in its integral or separated form. The coils of the spring are normally mounted loosely upon the posts H, as shown in Figs. 3 and 7, and its arm *c*, that contacts with the cam-lever, moves parallel with the cam-lever and is bent, as shown at *f*, to bear upon the lever at its extreme end. The tension of the spring-arms or extremities is derived from the coils which contract when the levers are compressed or drawn together, as shown in Figs. 4 and 9. The posts H, upon which the coils are mounted, are on the line *b*, and the arms of the spring bear upon the cam-levers at practically the same point and make a long leverage from H to *f* and which is practically constant throughout their movement. As the movement of the spring-arms is derived from the expansion and con-

traction of the two spring-coils the spring-pressure does not vary thereon throughout their movements.

In Fig. 10 of the drawings the relative position of the respective arms of the spring at the extreme and intermediate points of compression is shown.

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

1. In a sash-lock the combination with a pivoted cam-lever, of a spiral coil-spring mounted through its coil upon a fixed post located adjacent to the pivot of the cam-lever and substantially in line with said pivot and the central point of the travel of the cam-lever, said coil-spring having arms projected on opposite sides of the coil that contact respectively with the cam-lever and a fixed fulcrum, whereby a practically uniform spring-pressure is maintained on the cam-lever throughout its movement or throw.

2. In a sash-lock of the type described, the combination with the cam-levers of a duplicate spiral coil-spring mounted through the respective coils upon fixed posts each located adjacent to the pivot of its coöperating cam-lever, and each substantially in line with said pivot and with the central point of the travel of its coöperating cam-lever, the respective coils having arms projecting to contact with each cam-lever and arms projecting from the opposite side of the respective coils made integral or separated and contacting with a common fulcrum, as set forth.

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

DANIEL HOYT.

Witnesses:

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