

No. 679,944.

Patented Aug. 6, 1901.

C. CARLETON.  
HAIR CLIPPER.

(Application filed Feb. 9, 1900.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

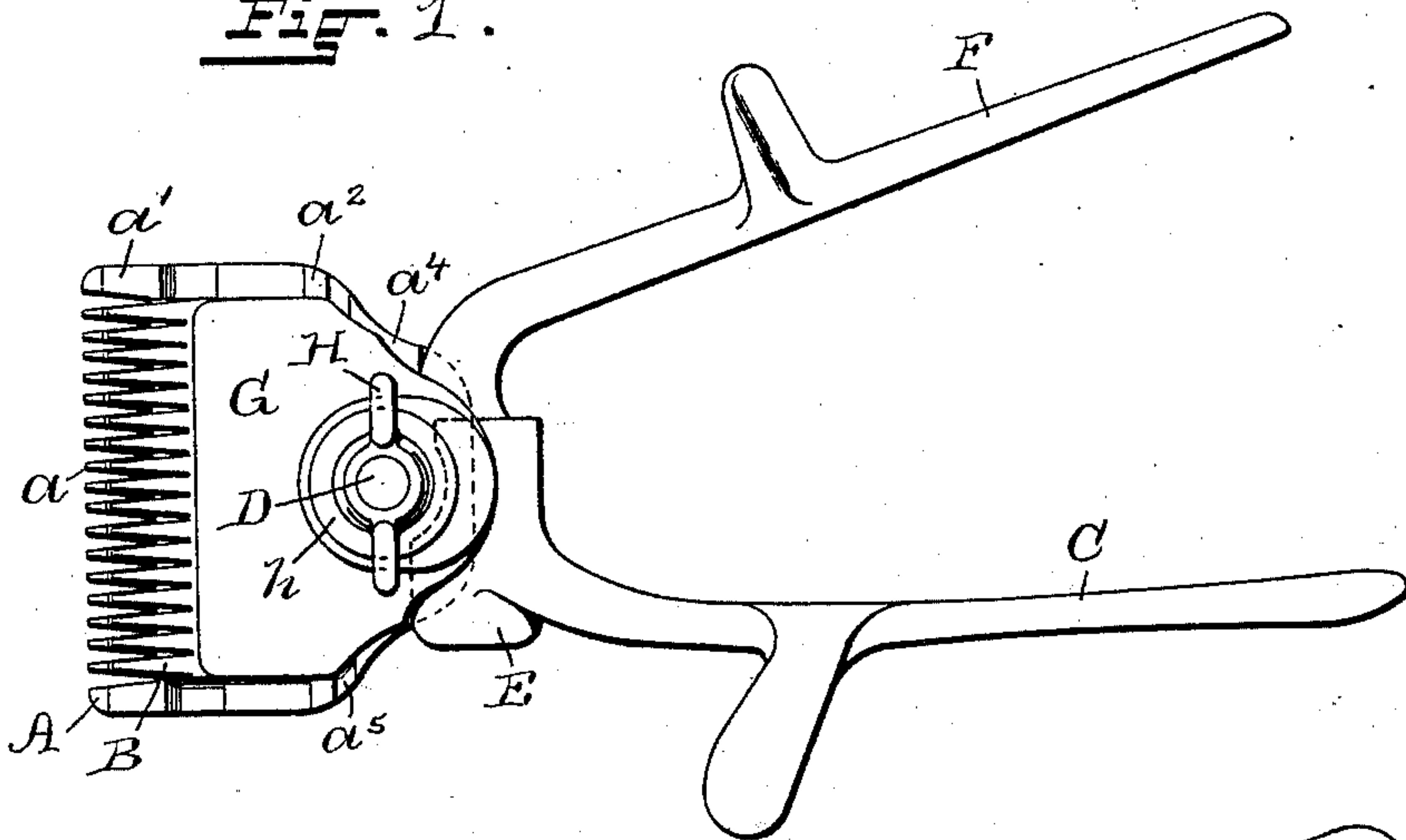


Fig. 2.

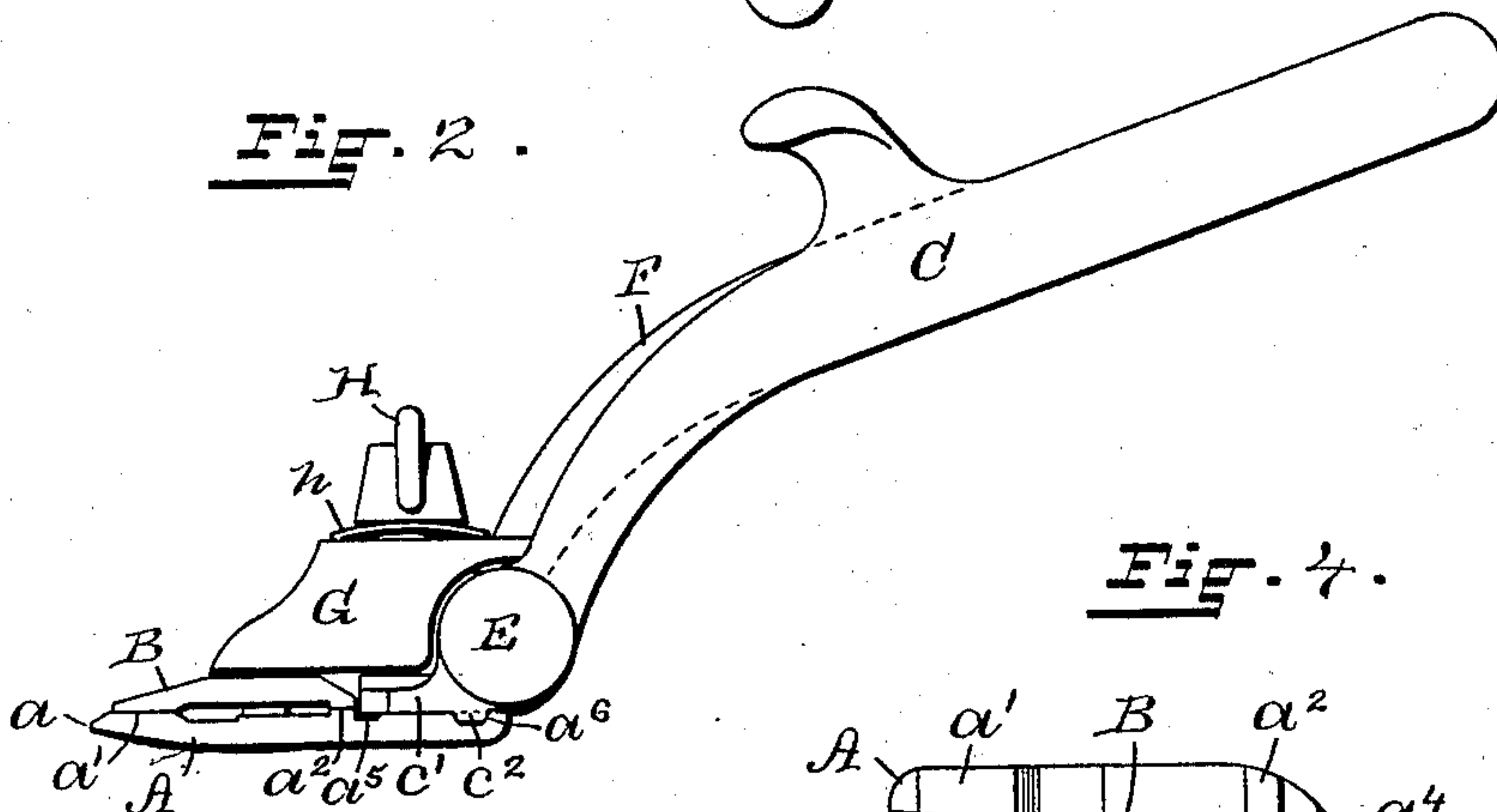


Fig. 4.

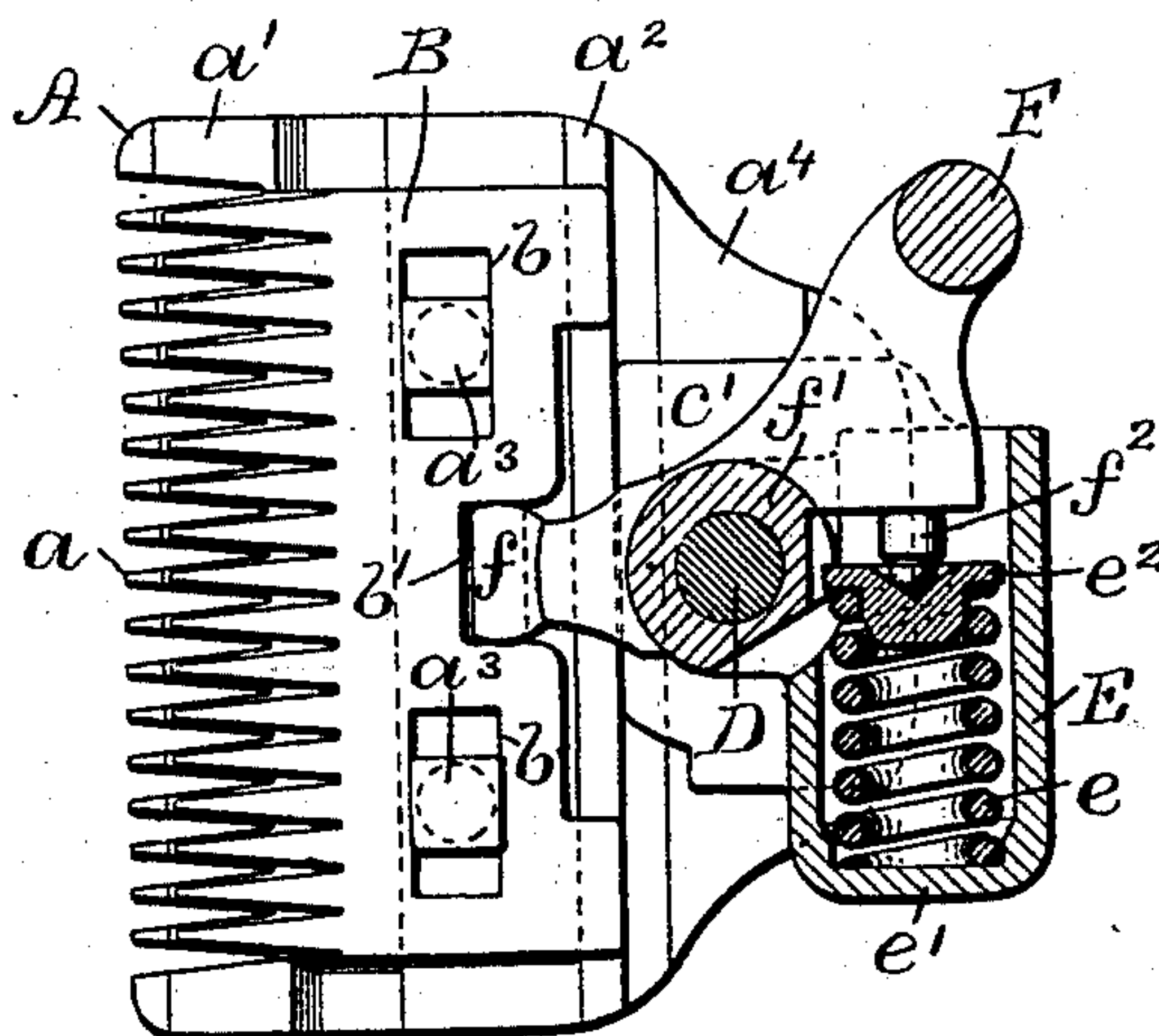
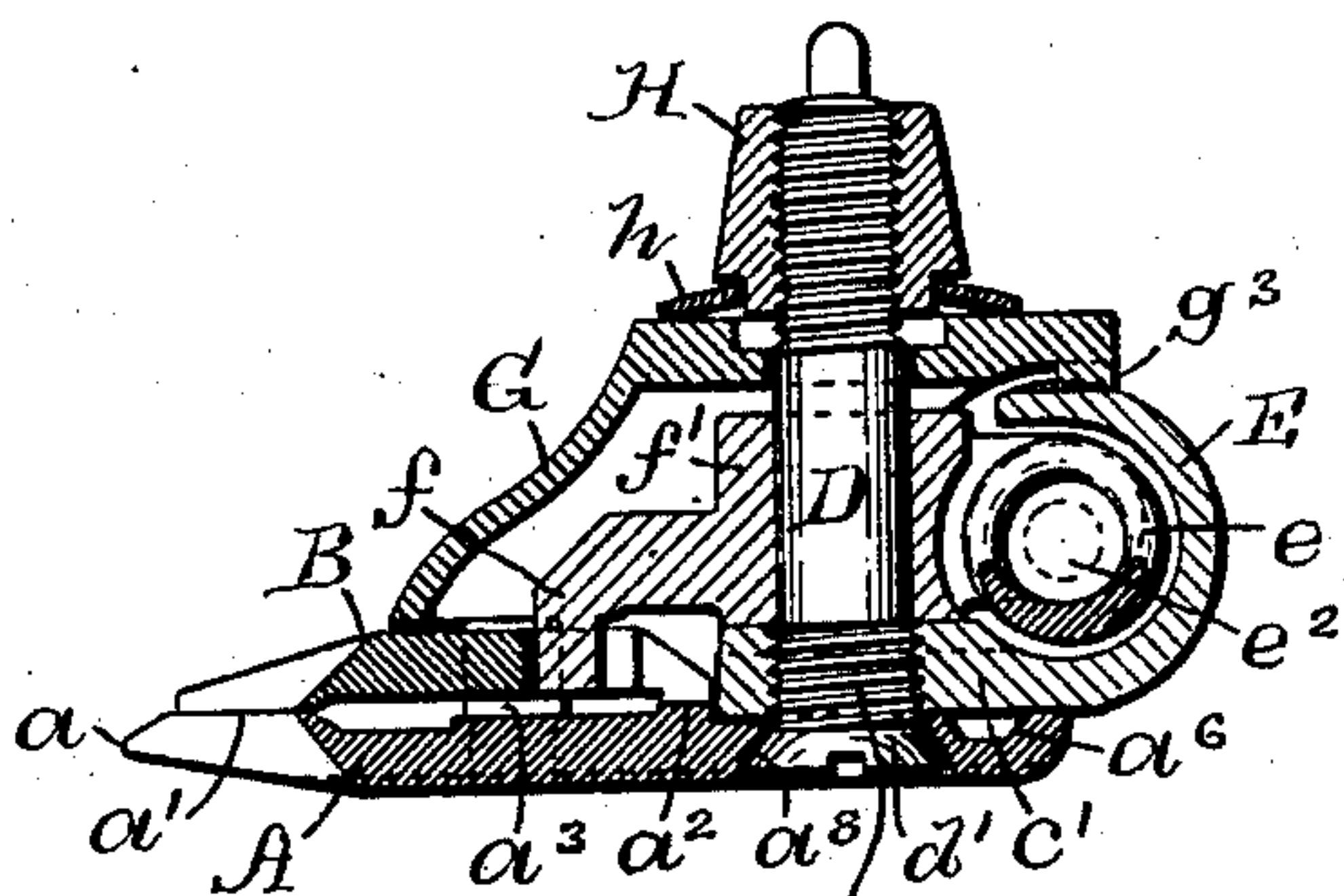


Fig. 3.



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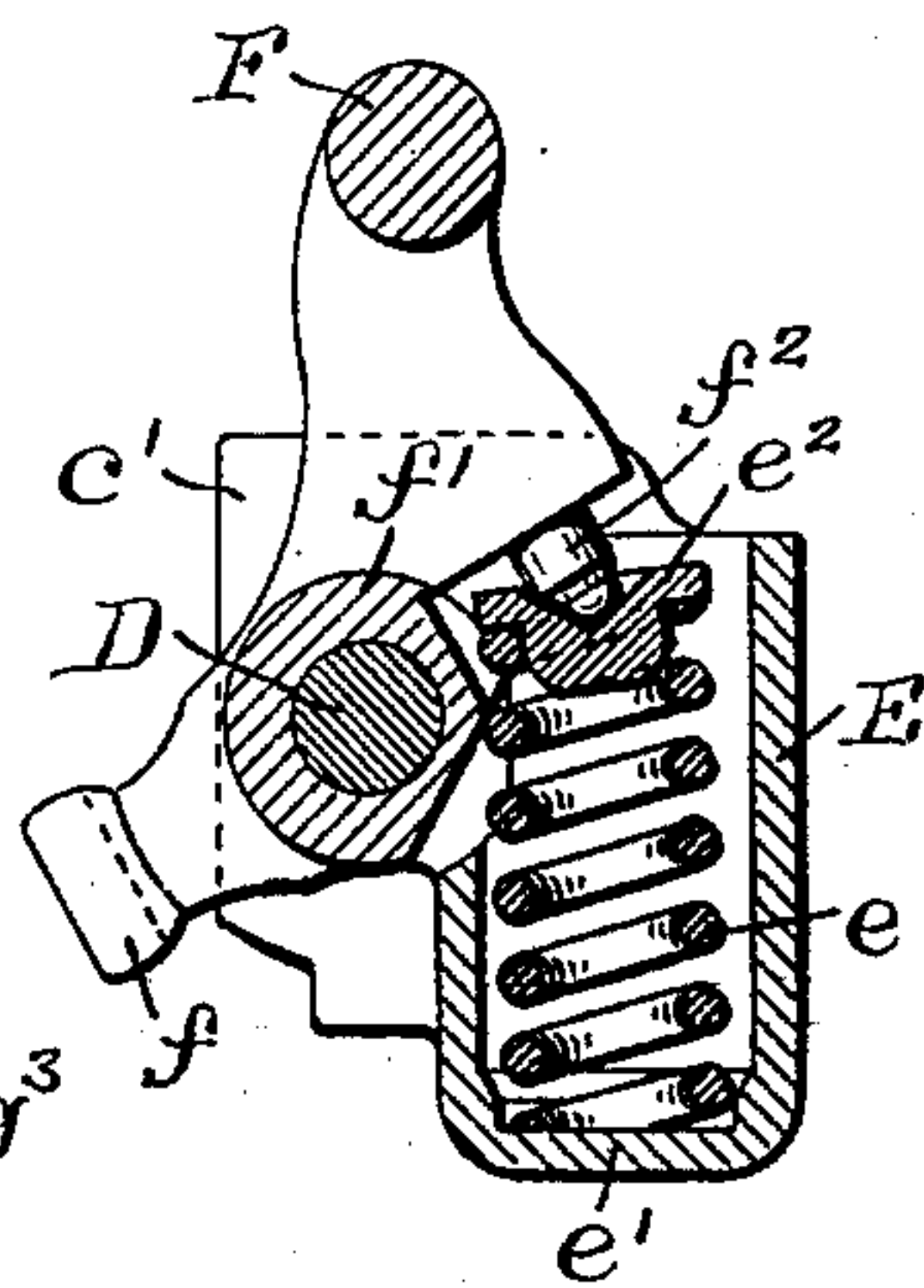
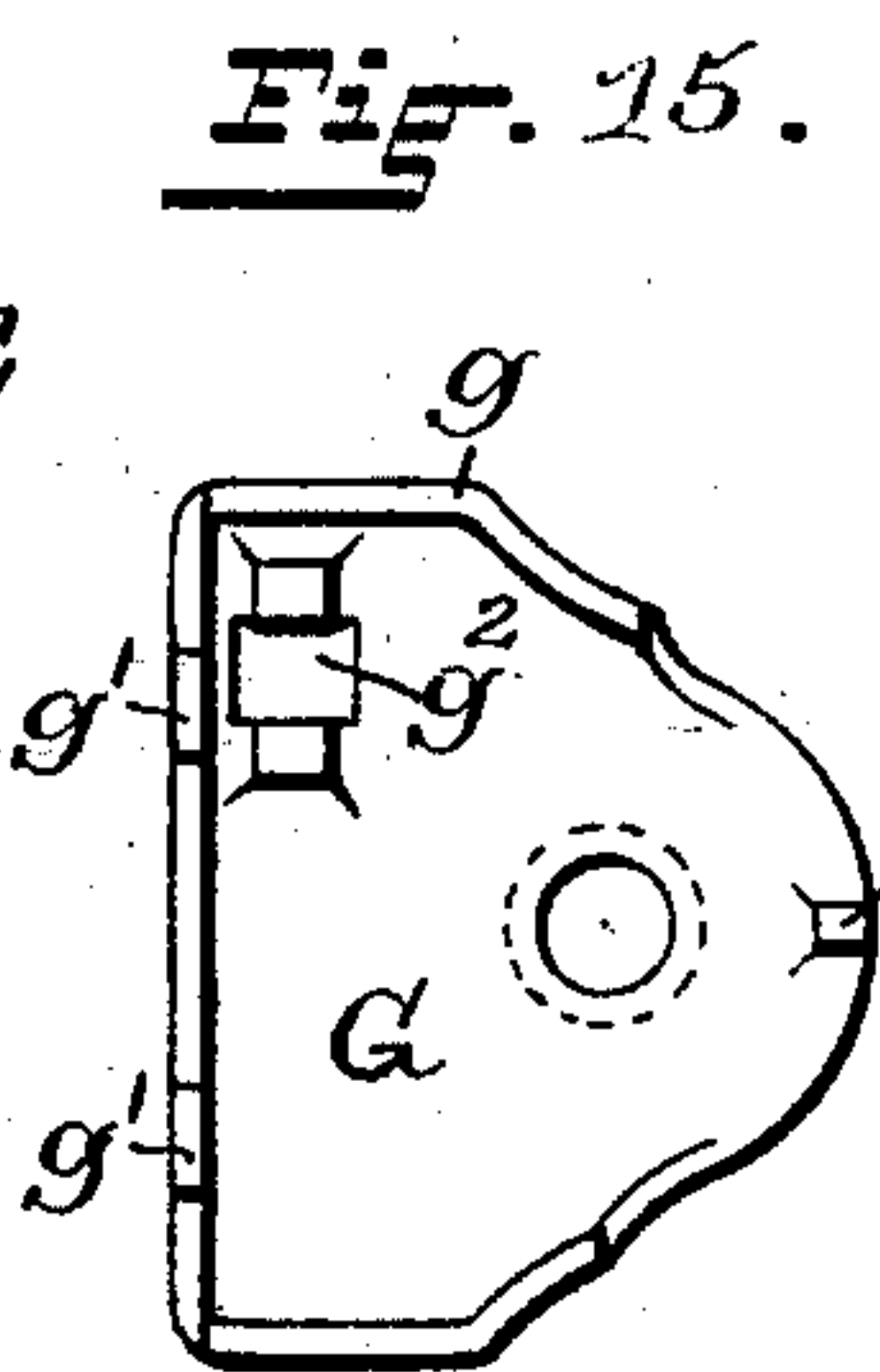
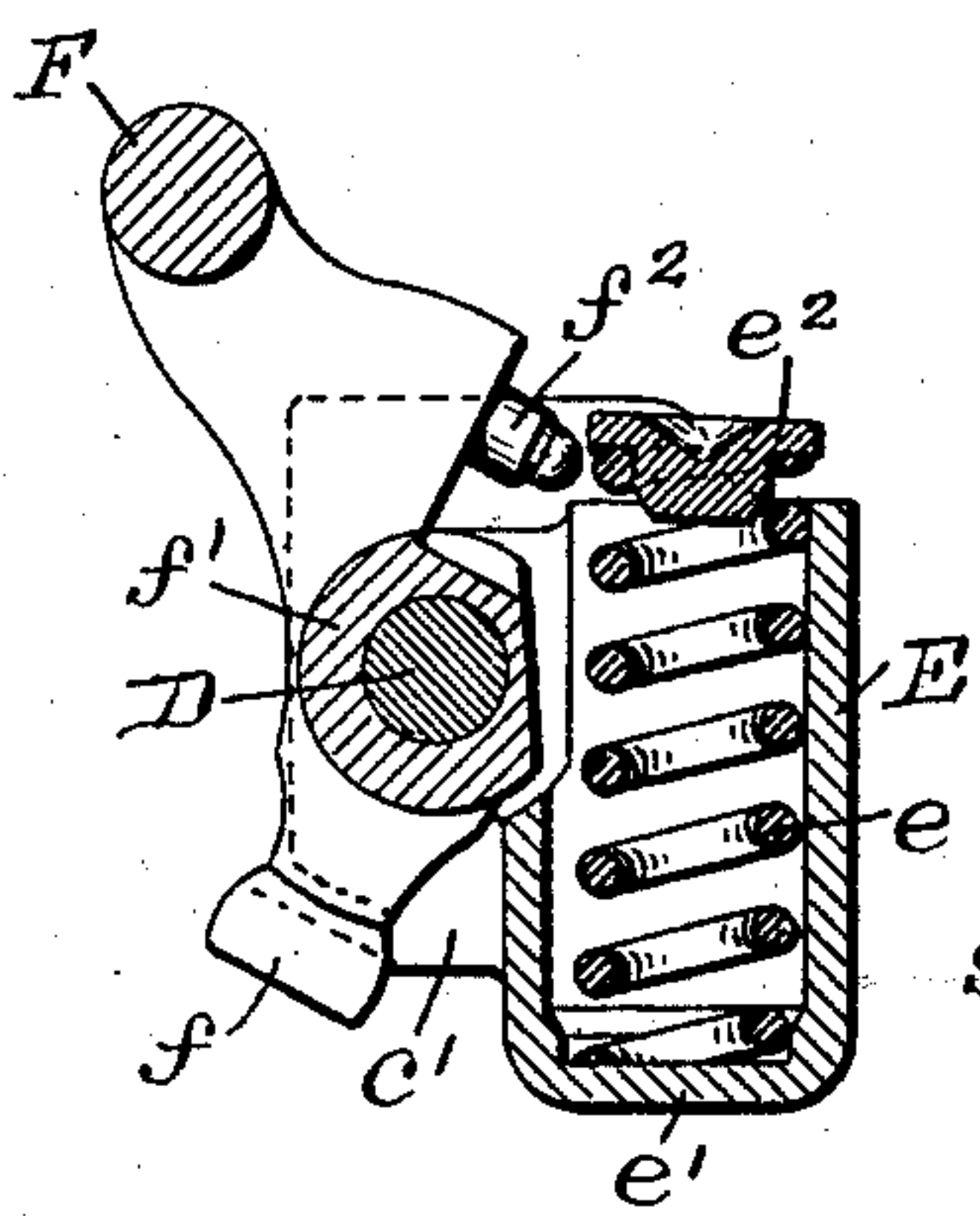
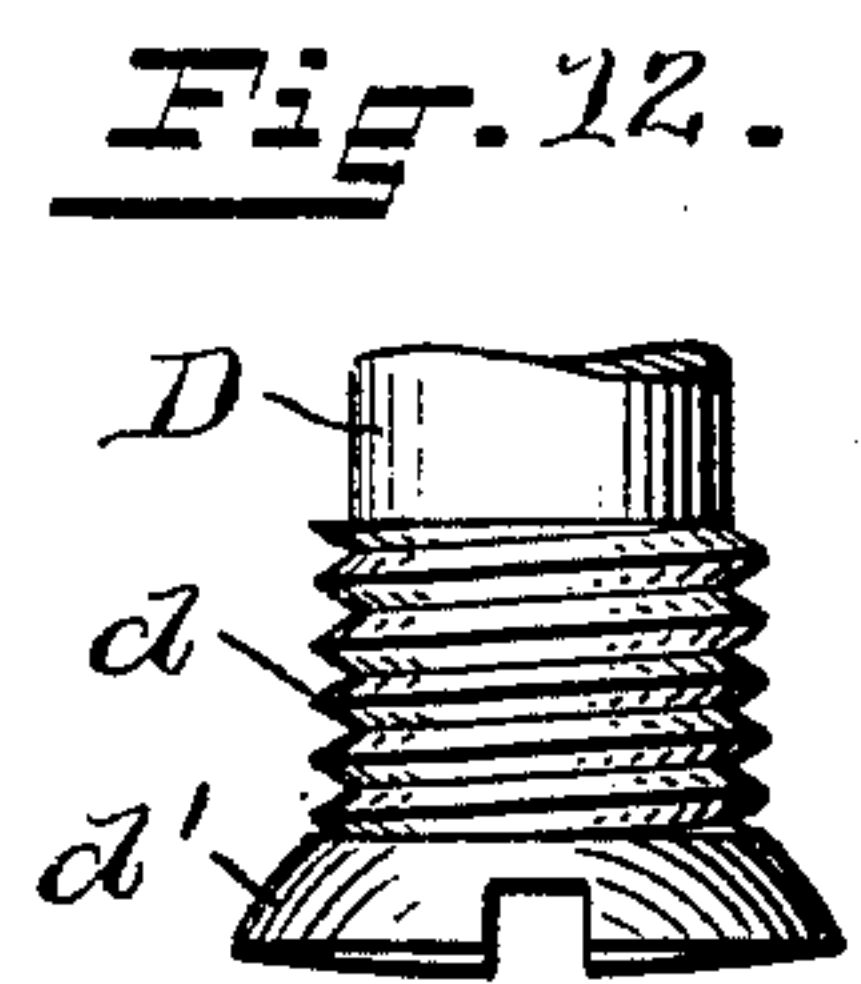
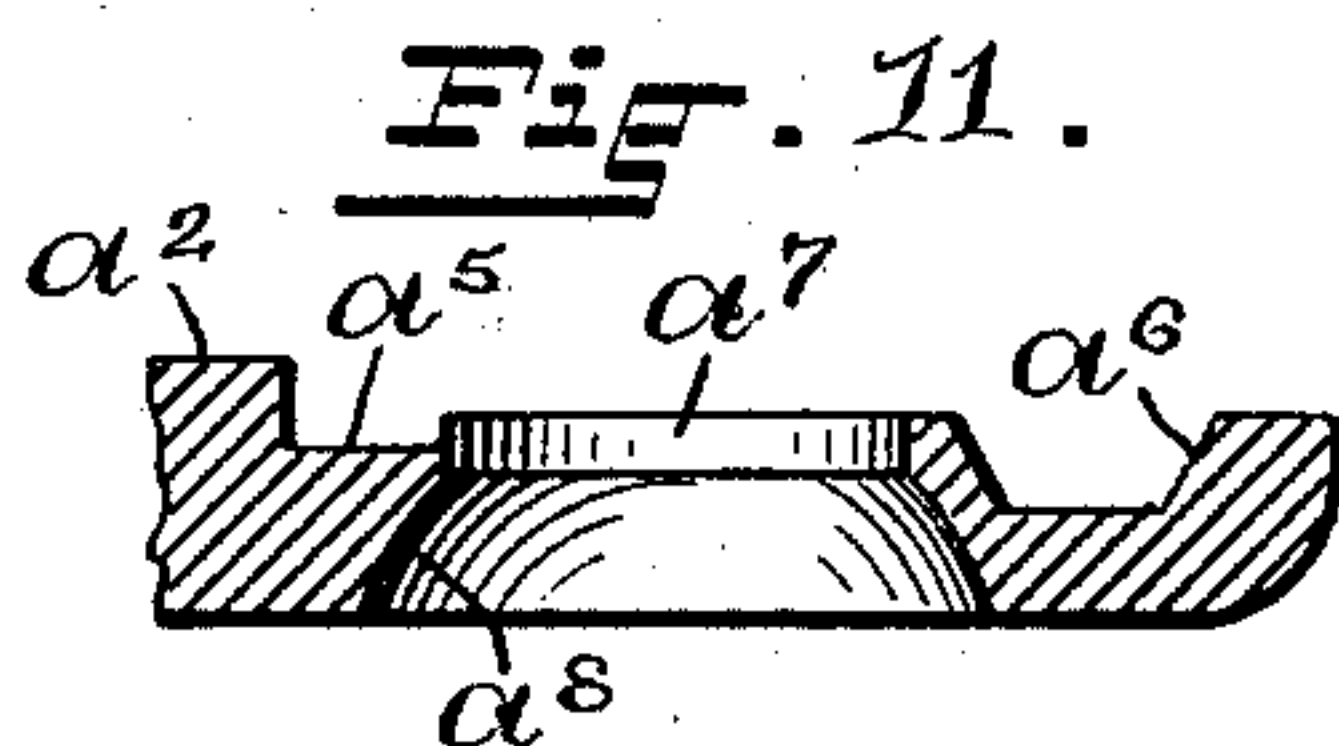
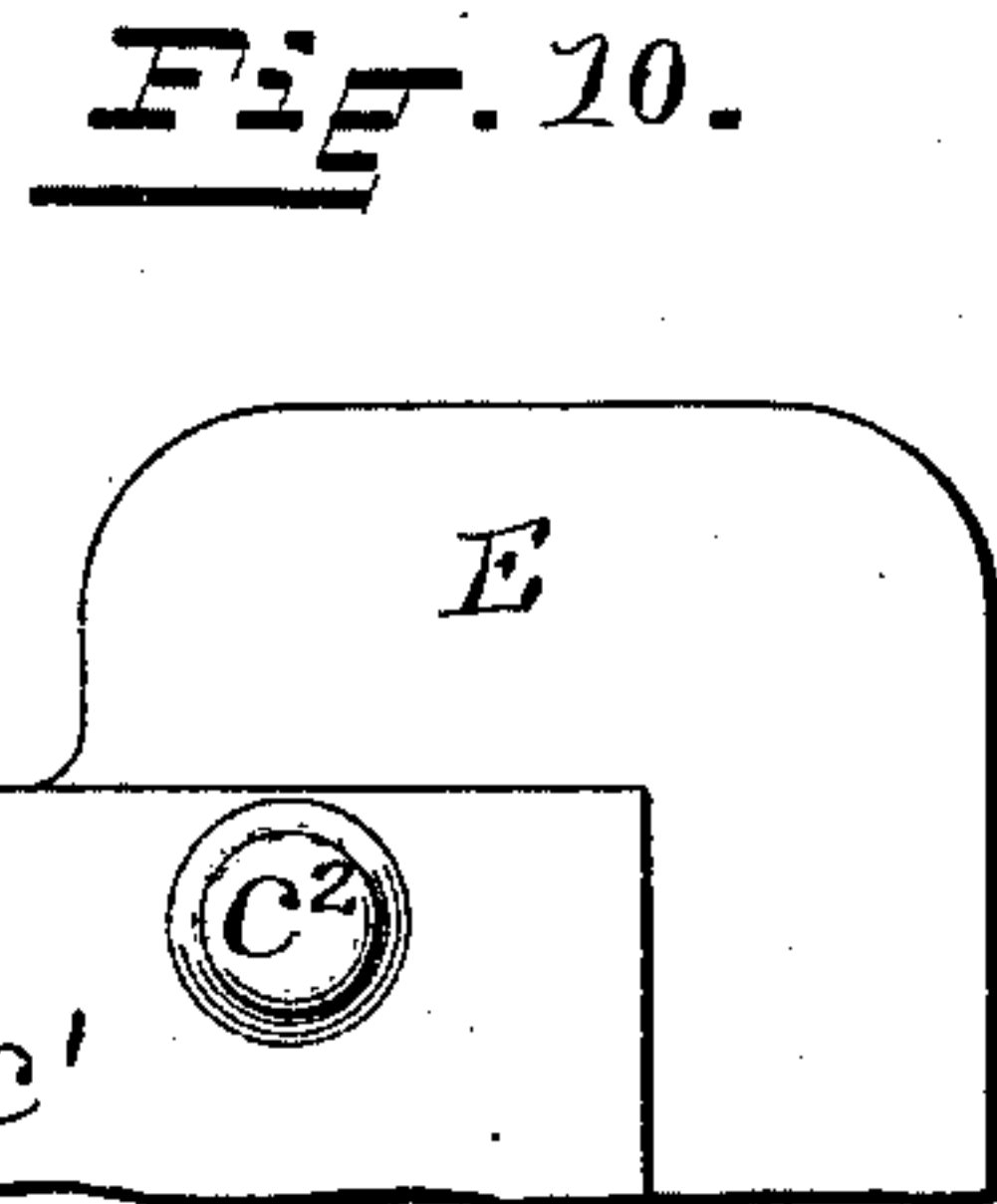
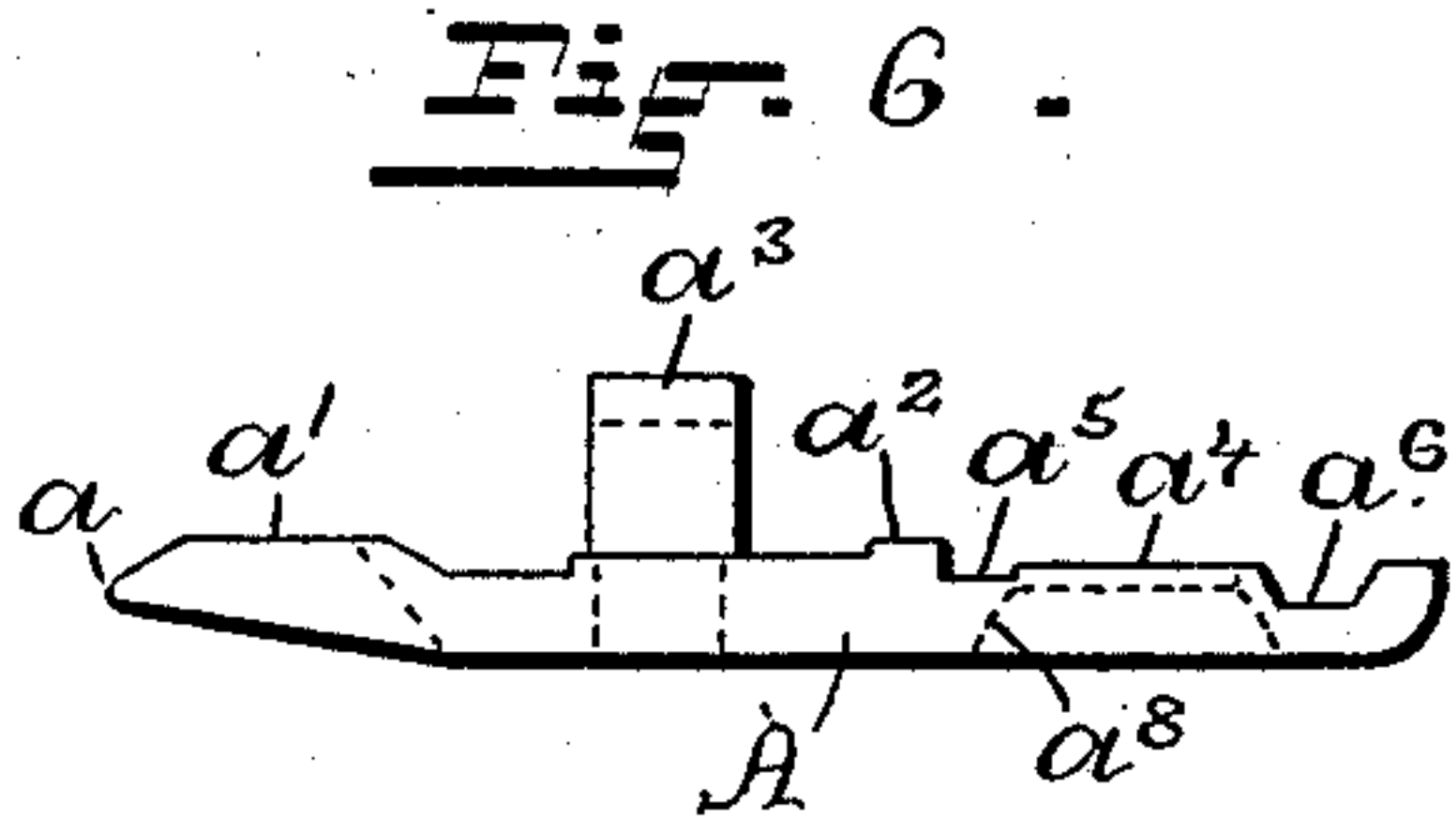
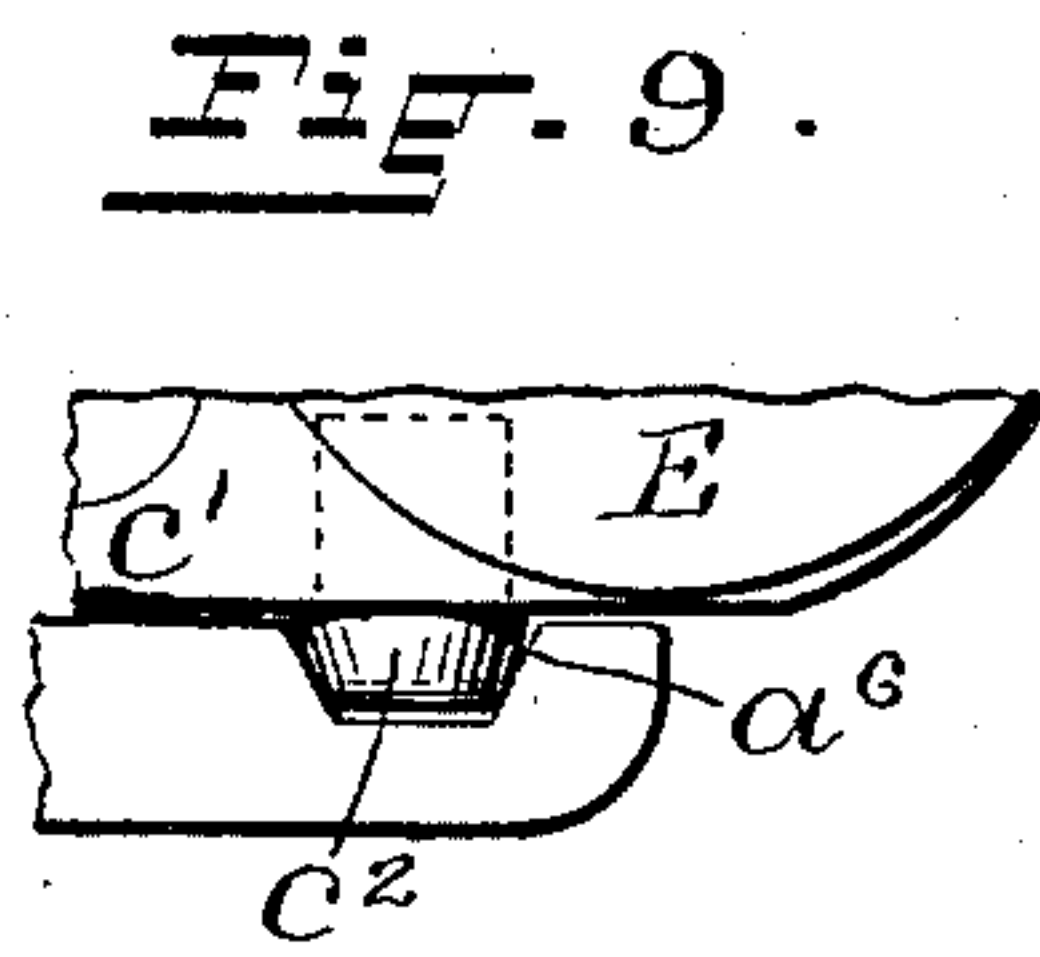
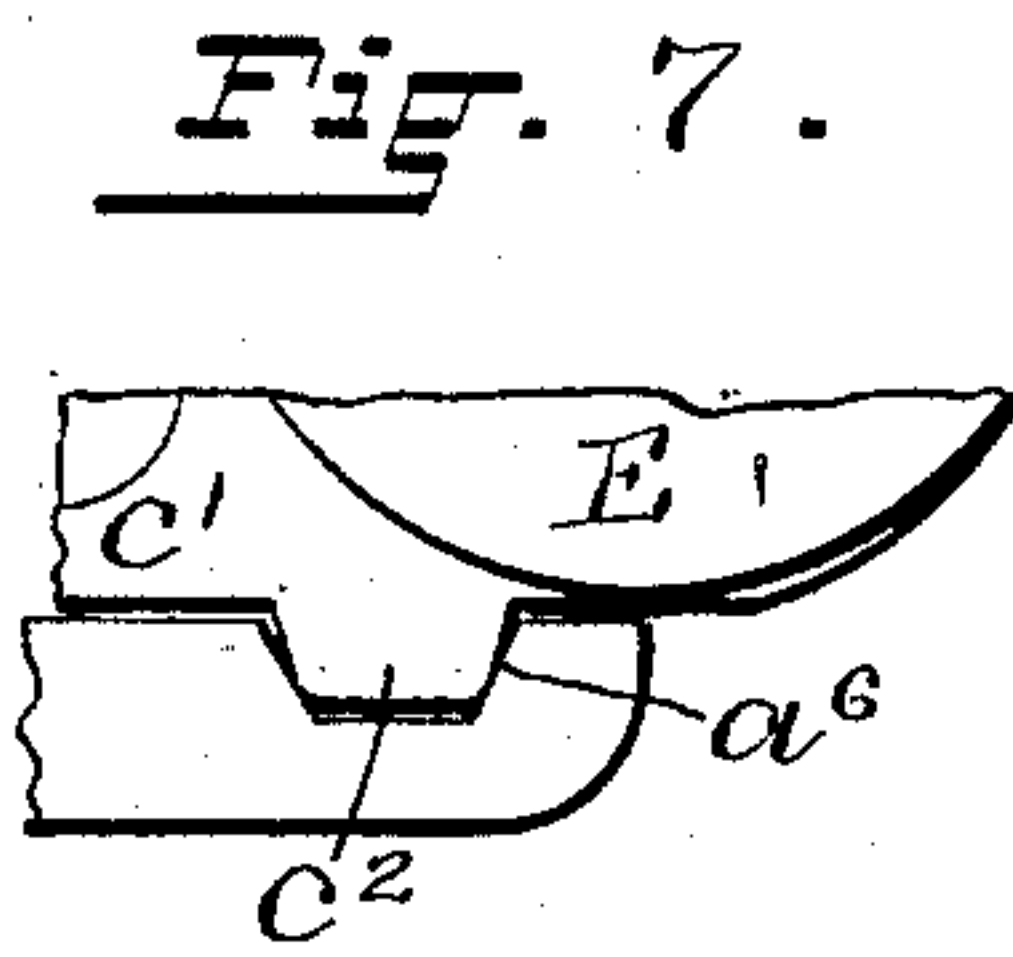
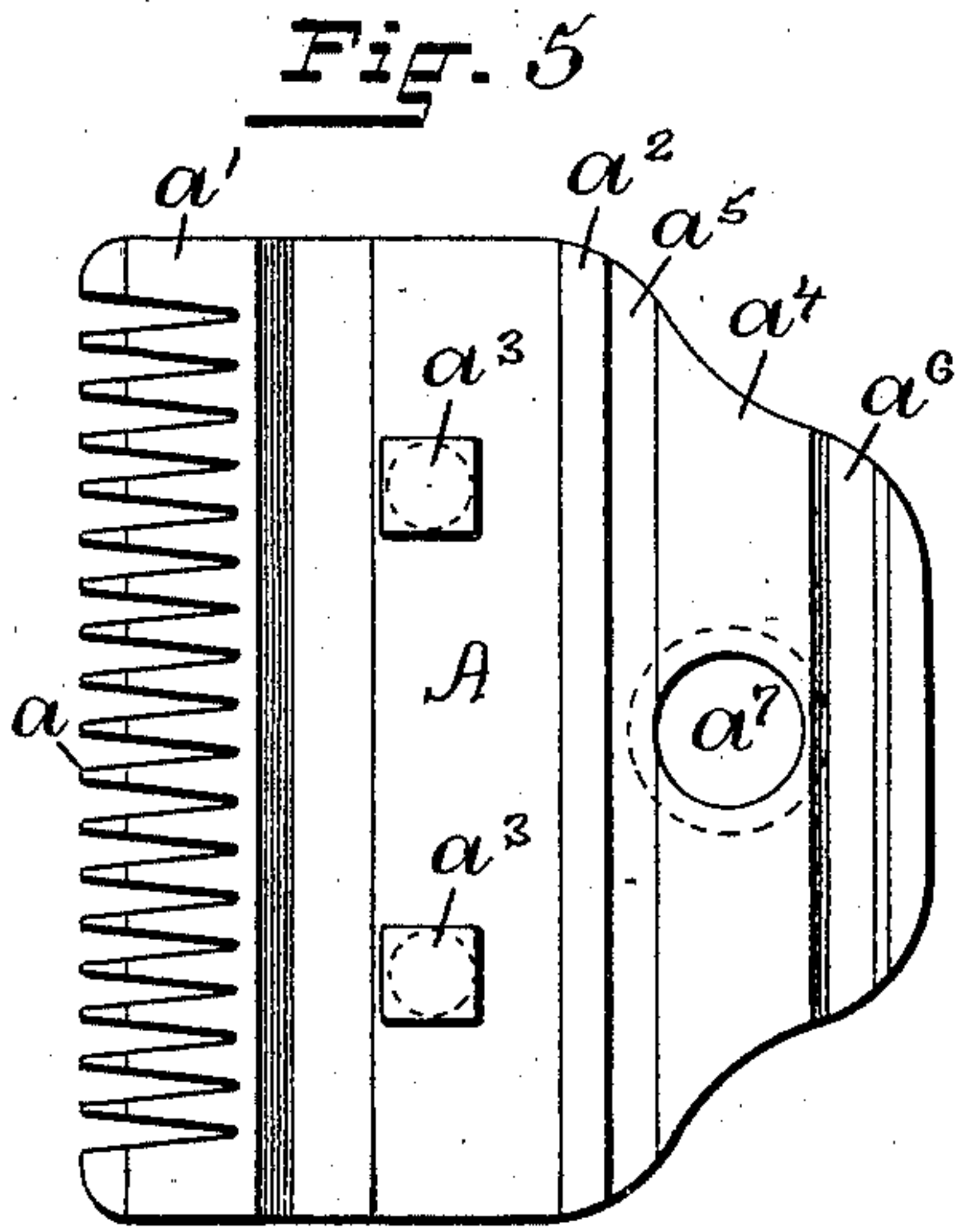
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INVENTOR:

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# UNITED STATES PATENT OFFICE.

CYRUS CARLETON, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR TO BROWN AND SHARPE MANUFACTURING COMPANY, OF SAME PLACE.

## HAIR-CLIPPER.

SPECIFICATION forming part of Letters Patent No. 679,944, dated August 6, 1901.

Application filed February 9, 1900. Serial No. 4,647. (No model.)

*To all whom it may concern:*

Be it known that I, CYRUS CARLETON, a citizen of the United States, residing at Providence, in the county of Providence and State of Rhode Island, have invented a new and useful Improvement in Hair-Clippers, of which the following is a specification.

This invention has reference to the class of hair-clippers adapted for the use of barbers and known in the art as "barbers' clippers." In this class of hair-clippers the clipper is held and operated by one hand. It is supported usually on the thumb by a curved bracket extending over the thumb, the weight of the operative portions of the clipper being partially counterbalanced by the handles, which are curved and shaped to closely fit the hand. The more nearly the weight of the operative parts is counterbalanced by the parts held in the hand the less it fatigues the operator. These barbers' clippers require to be frequently cleaned and ground to secure the clean cutting of the hair, and the force required to operate the cutter-plate should be practically uniform.

One of the main objects of this invention is to reduce the weight of the cutter portion of the clipper, so as to more nearly balance the weight in holding and operating the clipper.

Another object is to facilitate the cleaning and regrinding of the clipper without disturbing the accurate adjustment of the parts.

Further objects of the invention are to secure a more uniform spring action on the operating-lever and the cutter-plate, to more firmly secure the fulcrum-post on which the operating-lever turns, and to facilitate the manufacture and reduce the cost of the clipper.

The invention also comprises minor parts of construction and refinement, all of which will be more fully described hereinafter and more particularly pointed out in the claims.

Figure 1 is a top view of my improved barbers' clipper. Fig. 2 is a side view of the same. Fig. 3 is a vertical longitudinal sectional view, on an enlarged scale, of the cutter-head of the clipper. Fig. 4 is a plan view of the cutter-head of the clipper, partly in section, with the cap removed, showing the parts in the position when the clipper is cleaned. Fig. 5 is a top plan view of the

comb-plate. Fig. 6 is an end view of the same. Fig. 7 is an end view of part of the rear of the comb-plate and part of the base-plate of the fixed handle, showing the interlocking members. Fig. 8 is a bottom view of the base-plate of the fixed handle. Fig. 9 is an end view of the parts shown in Fig. 7, showing the modified form of the interlocking members. Fig. 10 is a bottom view of the base-plate of the fixed handle. Fig. 11 is a sectional view of the rear part of the comb-plate, showing the concaved seat of the fulcrum-post. Fig. 12 is a side view of the lower end of the fulcrum-post. Fig. 13 is a plan view, partly in section, showing the relative positions of the push-spring and the heel of the operating-lever. Fig. 14 is a plan view of Fig. 13, showing the push-spring initially compressed to permit the heel of the operating-lever to bear on the push-spring. Fig. 15 is a bottom view of the cap, showing the method of holding the same against the movement of the cutter-plate.

In the drawings, A indicates the comb-plate, the front  $a$  of which is provided with a series of comb-teeth, and the cutting-surface  $a'$  of which extending across the teeth is ground so as to present cutting edges on each of the sides of the teeth of the comb-plate. This cutting-surface also forms the front support of the cutter-plate B, the raised way  $a^2$  of the comb-plate forming the rear support of the cutter-plate B. The stops  $a^3 a^3$  form the guides of the cutter-plate and limit the reciprocating movement of the cutter-plate B. The spaces on the surface of the comb-plate between the cutting-surface  $a'$ , the way  $a^2$ , and the stops  $a^3 a^3$  are depressed, so that by removing the stops  $a^3 a^3$  the cutting-surface  $a'$  and the surface of the way  $a^2$  may be reground.

As heretofore constructed, the top surface of the rear portion  $a^4$  of the comb-plate A, on which the fixed handle and the operating-lever are supported, was on a line with the surfaces of the way  $a^2$  and the cutting-surface  $a'$ , and in regrinding by the barber or user this surface required to be ground down with the surfaces of the way  $a^2$  and the cutting-surface  $a'$ .

In practice the grinder to save time and labor ground the cutting-surface  $a'$  of the



teeth more than the rear surfaces, and thereby disturbed the accurate adjustment of the parts required to cleanly and, with the least possible exertion clip the hair. To overcome this defect, I depress all the rear portion  $a^4$  below the surfaces of the way and cutter-surfaces and below the practical point to which these surfaces may be reground.

Immediately in the rear of the way  $a^2$ , in the rear portion  $a^4$  of the comb-plate A, I cut the shallow groove  $a^5$ , and parallel with it, near the end of the rear portion  $a^4$ , I cut the groove  $a^6$  and provide the same with tapering sides. Near the center of the rear portion of the comb-plate A, I place the hole  $a^7$  and countersink the under portion of the plate by surrounding the hole  $a^7$  with a bearing-surface of spherical section  $a^8$ . By this construction a flexibility is imparted to the rear portion of the comb-plate which when brought into action does not affect the more rigid front portion of the comb-plate.

To the rear portion  $a^4$  of the comb-plate the base  $c'$  of the handle C is secured by means of the fulcrum-post D, the lower portion of which has the screw-thread  $d$ . The head  $d'$  forms a section of a sphere and bears on the spherical annular surface  $a^8$ , surrounding the hole  $a^7$  in the rear portion of the comb-plate. The base  $c'$  is provided with the conical and preferably slightly-rounded projecting member  $c^2$ , which enters the conical groove  $a^6$  and bears on the inclined sides of the same before it bottoms in the groove. When now the screw-thread  $d$  of the fulcrum-post is in screw-thread engagement with the base  $c'$  of the fixed handle, the tightening up of the screw draws the base  $c'$  close to the upper surface of the comb-plate; but before actual contact is made the member  $c^2$  bears on the inclined sides of the conical groove  $a^6$ , and the tightening of the screw causes the point of the comb-plate on which the member  $c^2$  bears to slightly yield and permit of the seating of the base  $c'$  on the comb-plate, while the ball-and-socket connection of the head  $d'$  of the fulcrum-post with the comb-plate permits of the automatic adjustment of the fulcrum-post D and the uniform bearing of the head on the comb-plate. The member  $c^2$  firmly holds the fixed handle in the required position on the comb-plate and against sliding on the same by the action of the hand on the fixed lever in operating the clipper. By this construction the fixed handle is held firmly to the comb-plate and against the strains exerted by the operation of the clipper.

The cutter-plate B has the usual rectangular openings  $b$ , through which the stops  $a^3$  extend, and the opening  $b'$ , into which the actuating-arm  $f$  of the operating-lever F extends. The operating-lever F is provided with the sleeve  $f'$ , journaled on the fulcrum-post D. Parts of this sleeve  $f'$  are cut away to permit of the placing of the push-spring  $e$  as close as possible to the fulcrum-post on which the operating-lever turns and to secure

the greatest possible leverage in the operating-lever.

The base  $c'$  of the fixed handle is provided with the cylindrical pocket E, the axis of which is tangential to the heel  $f^2$  of the operating-lever F. The push-spring  $e$  is placed into the pocket E, so as to bear on the closed end  $e'$  of the pocket. The push-spring  $e$  is provided with the cap  $e^2$ , which may be of such form as will be best adapted to cooperate with the form of the heel  $f^2$  of the operating-lever F.

In the preferred form (indicated in the drawings) a pin having a rounded, somewhat semispherical, end forms the heel  $f^2$  of the lever and bears on the conical cup in the cap  $e^2$ .

In operating the barbers' clipper with one hand the force exerted by the push-spring on the operating-lever should be practically uniform, so that while the spring action transmitted by the operating-lever to the cutter-plate at one end of the reciprocation may be somewhat in excess of the force required to cut the hair it must be amply sufficient to cut the hair to the extreme opposite end of the reciprocation of the cutter-plate, and to enable the operator to manipulate the barbers' clipper without fatigue the force required to compress the spring should be practically uniform, although the operator can exert somewhat more pressure without fatigue when the hand is nearly closed than when it is open.

To secure the desired action of the spring on the operating-lever of the hair-clipper, the force exerted by the spring must be nearly uniform through the movement of the lever and sufficient to operate the cutter and move the operating-lever in one direction. Screw-blocks and other means have heretofore been used to compress the spring to give it the desired resilient force. These have increased the cost of the hair-clipper. I find that by the use of a coiled push-spring of sufficient length to extend when placed in the pocket beyond the heel of the operative lever, as shown in Fig. 13, and then compressed to allow the heel of the operative lever to engage with the end of the spring, as shown in Fig. 14, the required practically uniform force is secured.

The cutter-plate B is held against the comb-plate A by means of the cap G, so as to insure the clean cutting of the hair by the reciprocation of the cutter-plate. The marginal edge  $g$  of the cap is nearly in contact with the surface of the cutter-plate B, the wearing-point  $g'$  being in close contact with the cutter-plate. The cap G is held by the thumb-nut H in screw-thread engagement with the upper end of the fulcrum-post D, acting on the interposed spring-washer  $h$  against the cutter-plate B with a yielding pressure.

In the hair-clipper constructed after my present invention the fulcrum-post D forms the sole means of securing the parts together.



The cap G requires to be rigidly held against moving with the cutter-plate and as close to the front edge of the cap as possible. To this end I provide the socket  $g^2$  on the under side of the cap, so that one of the stops  $\alpha^3$ , which are made to project above the cutter-plate, enters the socket  $g^2$  and rigidly holds the cap in place. To allow for the slight adjustment required, I fit the fulcrum-post D loosely in the cap and rest the pin  $g^3$  on the rear of the cap on a flat surface formed on the pocket E. This construction I find in practice superior to and cheaper than the constructions heretofore used.

The improved hair-clipper as I have constructed it is lighter, exerts a more even spring-pressure on the operating-lever, is cheaper in construction, more readily accessible for cleaning and grinding, and when held in the hand more nearly balanced. The operator can use the hair-clipper with less fatigue to the hand.

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

1. A hair-clipper having a fixed handle provided with a perforated base, a comb-plate provided with an opening, a bolt extending through the opening in the comb-plate and the perforation of the base of the fixed handle and forming the fulcrum-post of the operating-lever, and means for securing the bolt in the base of the fixed handle, as described.

2. A hair-clipper having the comb-plate secured to the fixed handle by a fulcrum-post in screw-thread engagement with the fixed handle, as described.

3. A hair-clipper having a comb-plate provided with an opening and a depression in its upper surface, a fixed handle having a perforated base, a member projecting from the base into the depression in the comb-plate, and a fulcrum-post bearing on the comb-plate and in screw-thread engagement with the base of the fixed handle, as described.

4. In a hair-clipper, a comb-plate having the rear upper surface below the plane of the cutter-surface and provided with a depres-

sion, a fixed handle having a perforated base, a member projecting from the base into the depression in the comb-plate, and a bolt bearing on the comb-plate and in screw-thread engagement with the base of the fixed handle, as described.

5. A hair-clipper having a comb-plate, a fixed handle, an operating-lever, a cutter-plate, a cap and a fulcrum-post extending through the comb-plate, in screw-thread engagement with the fixed handle, and having a nut on the upper screw-threaded end, where- by all the operative parts of the clipper are secured together by the fulcrum-post, as described.

6. A hair-clipper having a fixed handle, a pocket for a coiled spring having a non-adjustable closed end, an operating-lever with a heel near its fulcrum, and a coiled spring projecting beyond the heel and requiring to be compressed to engage with the heel, as described.

7. A hair-clipper having a comb-plate the rear portion of which is thinner than the front portion, a depression on the rear portion of the comb-plate, a fixed handle the base of which is provided with a pocket containing a push-spring, an interlocking member on the base of the fixed handle engaging with the depression in the comb-plate, and a fulcrum-post the head of which engages, by a ball-and-socket connection, with the comb-plate and the lower screw-threaded portion with the base of the fixed handle, as described.

8. A hair-clipper having a comb-plate provided at the rear portion with a depression having inclined sides, a fixed handle, the base of which has an interlocking member formed to bear on the inclined sides of the depression in the comb-plate, and a screw-threaded fulcrum-post, as described.

In witness whereof I have hereunto set my hand.

CYRUS CARLETON.

Witnesses:

J. A. MILLER, Jr.,

A. E. HAGERTY.