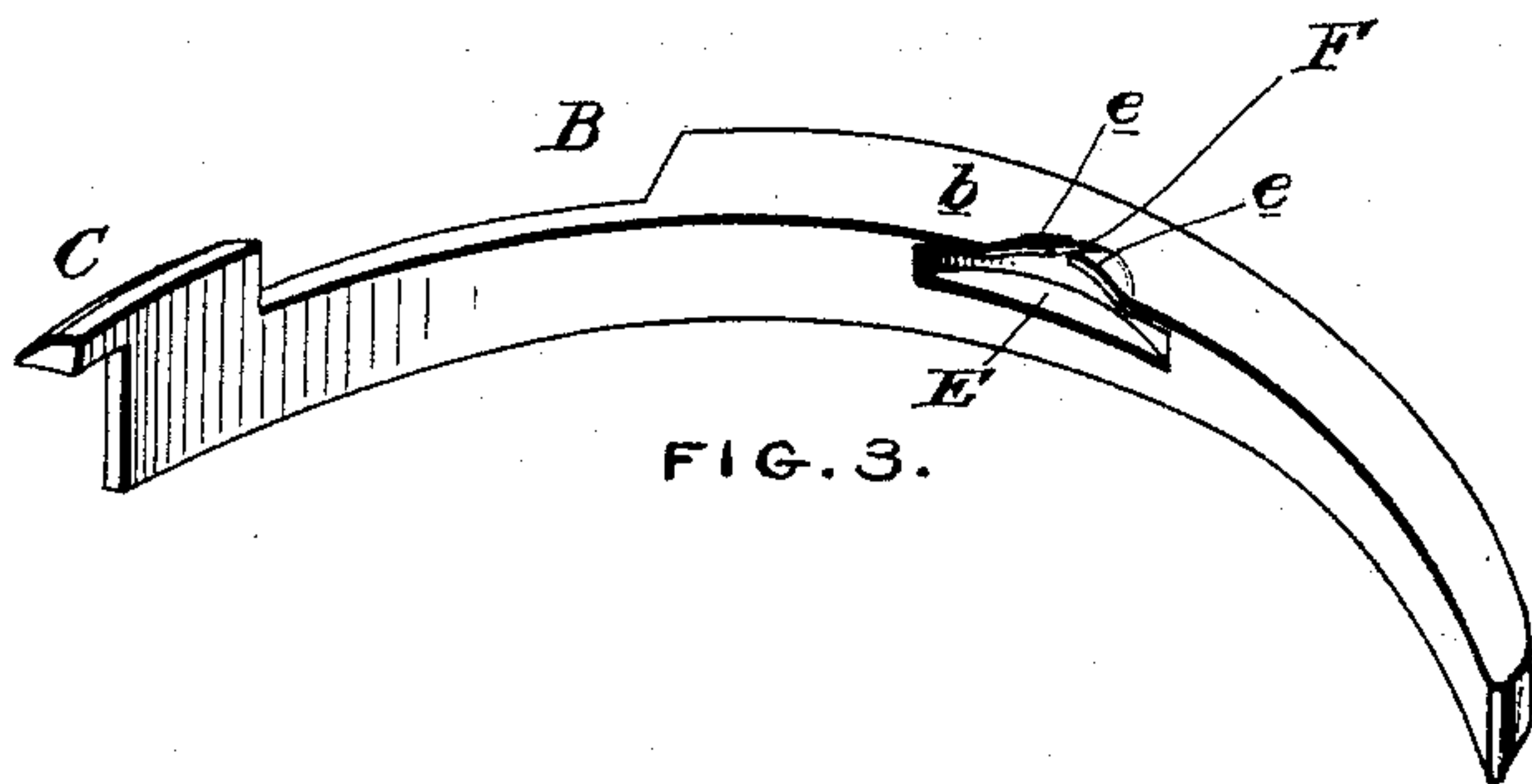
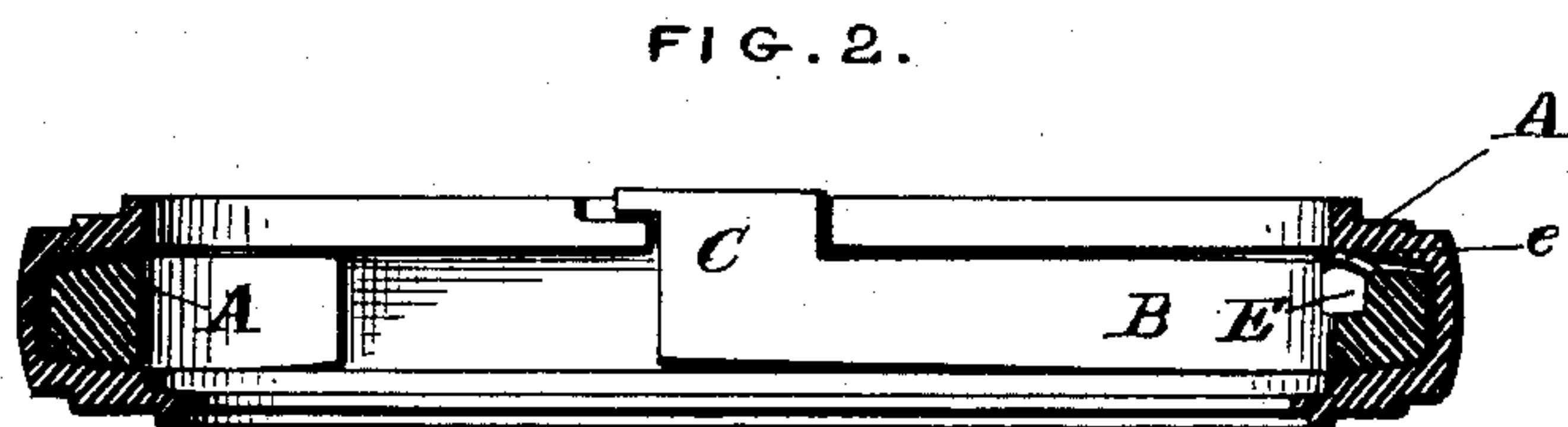
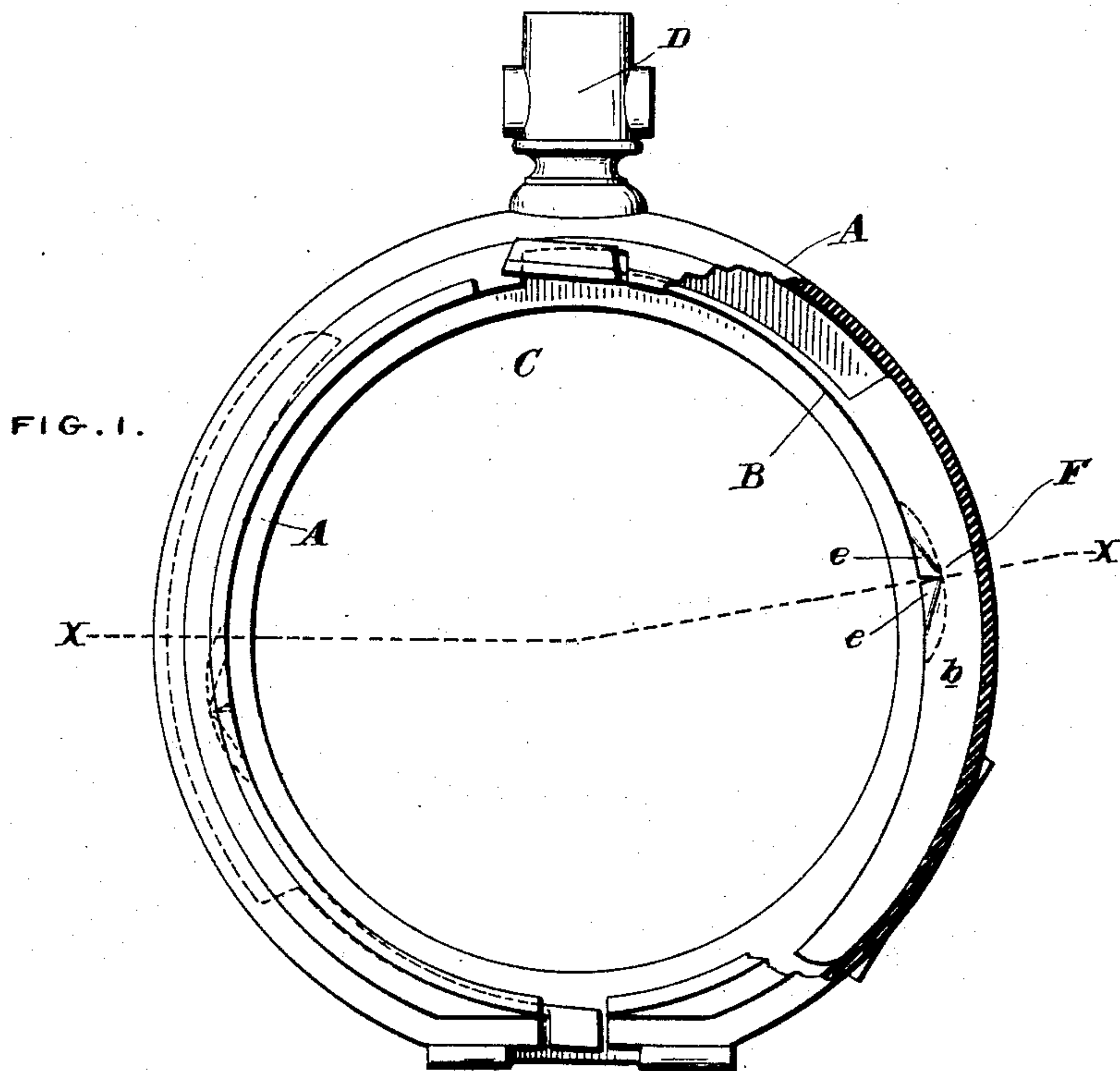


(No Model.)

J. D. EWING.
WATCH CASE SPRING.

No. 409,739.

Patented Aug. 27, 1889.



WITNESSES:

David S. Williams,
Henry Drury

INVENTOR:

James D. Ewing
by his Atty.

J. M. [Signature]

UNITED STATES PATENT OFFICE.

JAMES D. EWING, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO THE
KEYSTONE WATCH CASE COMPANY, OF SAME PLACE.

WATCH-CASE SPRING.

SPECIFICATION forming part of Letters Patent No. 409,739, dated August 27, 1889.

Application filed March 21, 1889. Serial No. 304,170. (No model.)

To all whom it may concern:

Be it known that I, JAMES D. EWING, of the city and county of Philadelphia, and State of Pennsylvania, have invented an Improvement
5 in Watch-Cases, of which the following is a specification.

My invention relates to watch-cases; and it consists of certain improvements, which are fully set forth in the following specification,
10 and shown in the accompanying drawings, which form a part thereof.

More particularly my invention has reference to the springs for the covers or lids of a watch by which they are held closed or forced
5 open; and it consists of certain improvements in securing the springs in the watch-center.

Heretofore it has been the custom in the manufacture of watches to fasten the springs into the center of the watch-case by means of
20 small screws extending through the center into the thick part of the spring. This requires considerable labor and great accuracy in locating the screw-hole in the spring, which is drilled therein before the spring is placed in
25 position, and it frequently happens that the hole in the spring and the hole in the center do not exactly fit over one another, in which case another hole must be drilled in the spring.

My invention is intended to do away with
30 the use of screws and the necessity of drilling the holes, and the means whereby this object is accomplished is more fully disclosed in the description of the drawings, in which—

Figure 1 is a plan view of a watch-case with
35 the cover removed, having a portion of the upper surface of the center cut away. Fig. 2 is a cross-sectional view of the same upon the line *xx* of Fig. 1, and Fig. 3 is a perspective view of my improved spring.

40 A is the watch-case center, and B the curved spring which is secured therein. This spring illustrated is the case-spring, and is provided with the catch C at its end, which is depressed by the push-pin in the stem D to release the
45 cover or lid in the usual manner. This spring B has the ordinary thick or heavy portion *b*, by which it is properly supported in the center.

E is a groove or recessed portion near one surface of the thick part of the spring, and F
50 is a small slit or cut made in the thin wall

formed by the groove E. The edges *e* of this thin wall of metal formed by the slit or cut E are turned up or raised a little, as shown in the drawings, forming a slightly raised spring part upon the surface of the thick part of the
55 spring B. The groove-slit F and raised edges *e* are formed before the spring is tempered, so that after tempering a strong spring is formed of the edge *e*, and as this spring *e* inclines upwardly it is apparent that the case or snap
60 spring may readily and with ease be inserted within the center, while the pressure of the spring-edges *e* against the under surface of the center will hold the spring firmly in position after it has been inserted. This slit F
65 may be dispensed with and the spring part formed simply by forcing up the thin wall of metal formed by the groove or recessed portion E; but I prefer the construction shown in which the slit F is used, as it is found to
70 give a much greater spring effect, and is thereby better adapted to hold the spring B more securely in place.

While in the drawings my invention is shown applied to the catch-spring, by which
75 the lid or case is held closed, it is apparent that it is equally adaptable to the lift-spring, which, as in all watches, presses upon the hinge of the lid and forces it open when it is released from the catch C. This spring is placed upon
80 the other side of the watch-center, as shown in dotted lines in the drawings, and is identical so far as my invention is concerned with the catch-spring.

While I prefer the details of construction
85 which are here shown, it is apparent that they may be modified in many ways without departing from the principle of my invention, the object of my invention being to secure the
90 springs in the watch-case center by the friction made by the pressure of the spring against the center, which pressure is produced by converting a portion of the heavy part of the watch-case spring into a spring, or by securing
95 on the said heavy part an independent spring, which spring portion or addition is so shaped and located as to admit of the watch-case spring being easily introduced into the center and yet to hold it there firmly after it
100 has been so introduced.

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

1. In a watch-case, the combination, with the watch-case center having a smooth or un-notched surface, of a curved spring to control the cover or lid fitting into said center and having integral with itself or attached to itself a spring portion or addition adapted to press upon the smooth portion of said center to secure said watch-case spring therein.

2. In a watch-case, the combination, with the watch-case center having a smooth annular surface, of a curved spring to control the cover or lid and having a non-flexible or body part fitting within said center, provided with a spring portion adapted to press upon said center to secure said spring therein by direct pressure between the spring and center.

3. In a watch-case, the combination, with the center A, of the curved spring B, having the slot or groove E, the slit F in the thin wall of metal formed by said groove, and the raised spring-edge e, substantially as and for the purpose specified.

4. A watch-spring for controlling the covers of a watch-case, consisting of a curved spring part provided at one end with a thick non-spring part furnished with a small spring projecting above its surface.

In testimony of which invention I have hereunto set my hand.

JAMES D. EWING.

Witnesses:

H. L. ROBERTS,
JOS. B. WILLITS.